



#### DOWNLOAD ME



#### HEAD OFFICE

Unit V2 Winchester Avenue,  
Blaby,  
Leicester,  
Leicestershire,  
LE8 4GZ

SBS PRODUCT GUIDE V4

#### FOLLOW US



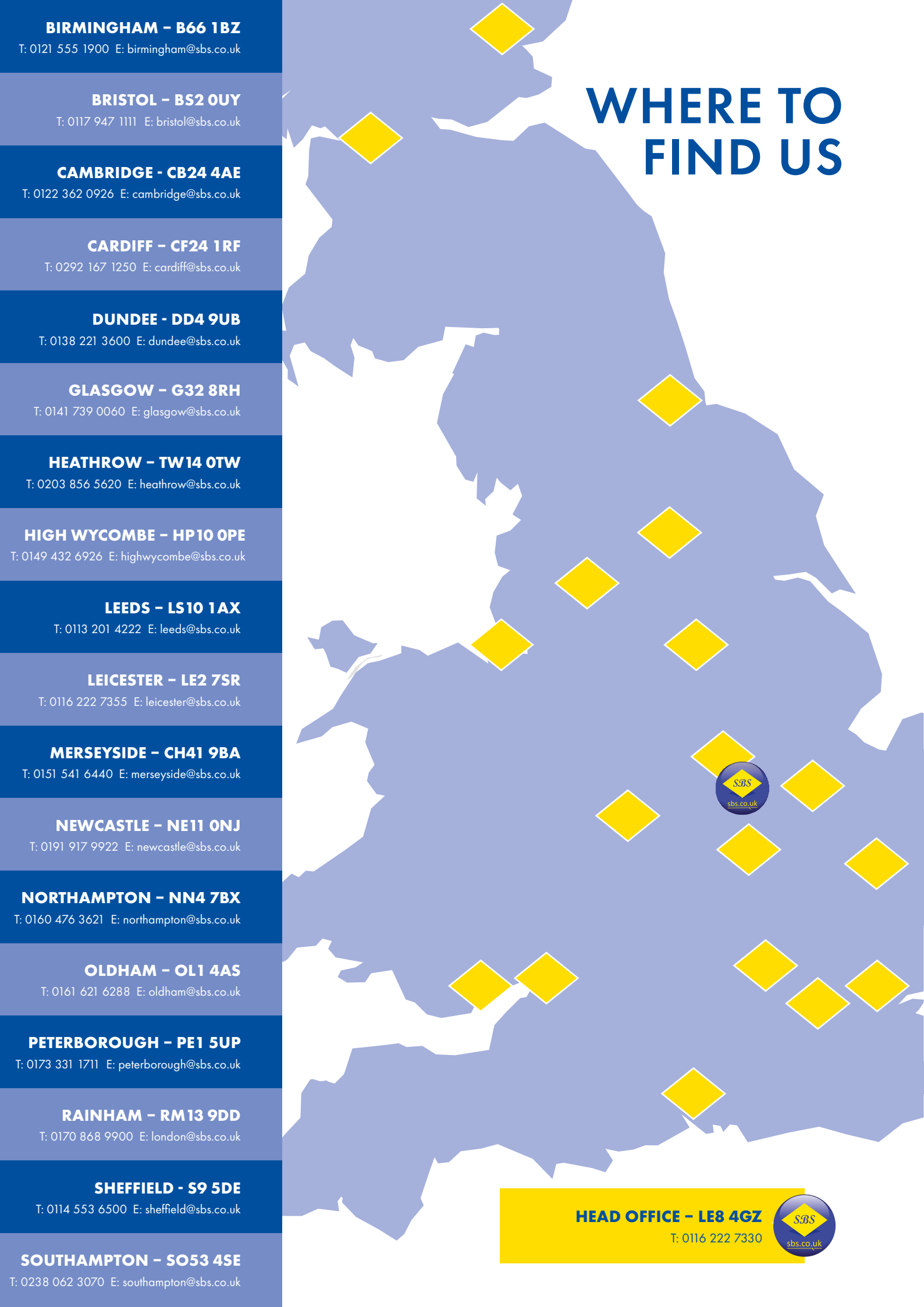
#### ACCREDITED



# PRODUCT GUIDE

The largest family-owned commercial HVAC merchant operating in the UK





**BIRMINGHAM – B66 1BZ**

T: 0121 555 1900 E: birmingham@sbs.co.uk

**BRISTOL – BS2 0UY**

T: 0117 947 1111 E: bristol@sbs.co.uk

**CAMBRIDGE - CB24 4AE**

T: 0122 362 0926 E: cambridge@sbs.co.uk

**CARDIFF – CF24 1RF**

T: 0292 167 1250 E: cardiff@sbs.co.uk

**DUNDEE - DD4 9UB**

T: 0138 221 3600 E: dundee@sbs.co.uk

**GLASGOW – G32 8RH**

T: 0141 739 0060 E: glasgow@sbs.co.uk

**HEATHROW – TW14 OTW**

T: 0203 856 5620 E: heathrow@sbs.co.uk

**HIGH WYCOMBE – HP10 OPE**

T: 0149 432 6926 E: highwycombe@sbs.co.uk

**LEEDS – LS10 1AX**

T: 0113 201 4222 E: leeds@sbs.co.uk

**LEICESTER – LE2 7SR**

T: 0116 222 7355 E: leicester@sbs.co.uk

**MERSEYSIDE – CH41 9BA**

T: 0151 541 6440 E: merseyside@sbs.co.uk

**NEWCASTLE – NE11 0NJ**

T: 0191 917 9922 E: newcastle@sbs.co.uk

**NORTHAMPTON – NN4 7BX**

T: 0160 476 3621 E: northampton@sbs.co.uk

**OLDHAM – OL1 4AS**

T: 0161 621 6288 E: oldham@sbs.co.uk

**PETERBOROUGH – PE1 5UP**

T: 0173 331 1711 E: peterborough@sbs.co.uk

**RAINHAM – RM13 9DD**

T: 0170 868 9900 E: london@sbs.co.uk

**SHEFFIELD - S9 5DE**

T: 0114 553 6500 E: sheffield@sbs.co.uk

**SOUTHAMPTON – SO53 4SE**

T: 0238 062 3070 E: southampton@sbs.co.uk

# WHERE TO FIND US

**HEAD OFFICE – LE8 4GZ**

T: 0116 222 7330



# CONTENTS

|                                |     |
|--------------------------------|-----|
| ABOUT SBS                      | 4   |
| ONLINE CUSTOMER PORTAL         | 16  |
| INTRODUCING CORE               | 20  |
| TESTIMONIALS & CASE STUDIES    | 24  |
| OUR BRANCHES                   | 28  |
| ENVIRONMENTAL COMMITMENT       | 35  |
| SUPPLY PARTNERS                | 36  |
| SBS EXCLUSIVE SYSTEMS          | 38  |
| METAL PIPE SYSTEMS             | 40  |
| PLASTIC PIPE SYSTEMS           | 54  |
| VALVES                         | 66  |
| DRAINAGE                       | 72  |
| COMMERCIAL HEATING & PLANT     | 76  |
| AIR CONDITIONING & REFRIGERANT | 88  |
| ANCILLARIES & CONSUMABLES      | 100 |
| RENEWABLES                     | 108 |
| TOOL HIRE                      | 114 |
| VITAL STATISTICS               | 116 |
| GENERAL INFORMATION            | 160 |

Disclaimer: The information within this brochure is believed to be correct at the time of publication; however, the literature is for guideline use only. For complete accuracy, always check the product with an SBS representative. Missing information was either not available or disclosed. Confirm with manufacturers for complete and accurate information, as it is your responsibility that any product meets the necessary requirements. Any reliance placed upon this information will be totally at the user's risk.

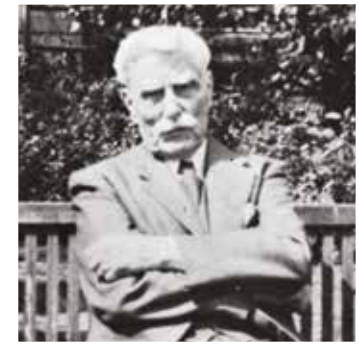


# OUR STORY

Smith Brothers (Leicester) Limited (SBL) was originally founded in 1897 and has a collection of companies operating within its structure, with Smith Brothers Stores Ltd being one of them. Throughout its history, it has maintained family ownership status under the total control of family members and an independent Chief Executive.

Walter Smith founded the company in 1897 and his photo along with other pictures from the earlier days of operation are often displayed around our various locations to remind everyone of our heritage. Smith Brothers currently has 4th and 5th generation family members working within the business and had been trading for 10 years before our official incorporation in 1907. The strength of the business is down to our underlying structure and cash flow management, which has been maintained

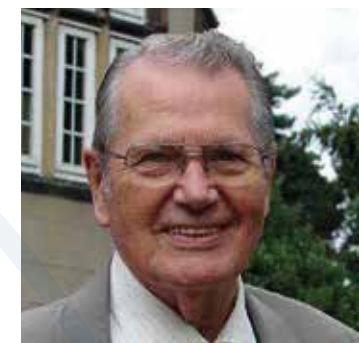
from the outset ensuring a long and successful history. The strict management of the financial principles the company follows means that even when the economy is far from stable, SBS is still secure and well placed to capitalise in such markets. Nothing could highlight this more than our turnover and branch expansion since 2006, even despite more recent challenges brought about by Brexit and the Covid-19 pandemic. Major strides have been made over our 125 plus year history to develop with market requirements and demands.



1st Generation  
Walter Smith



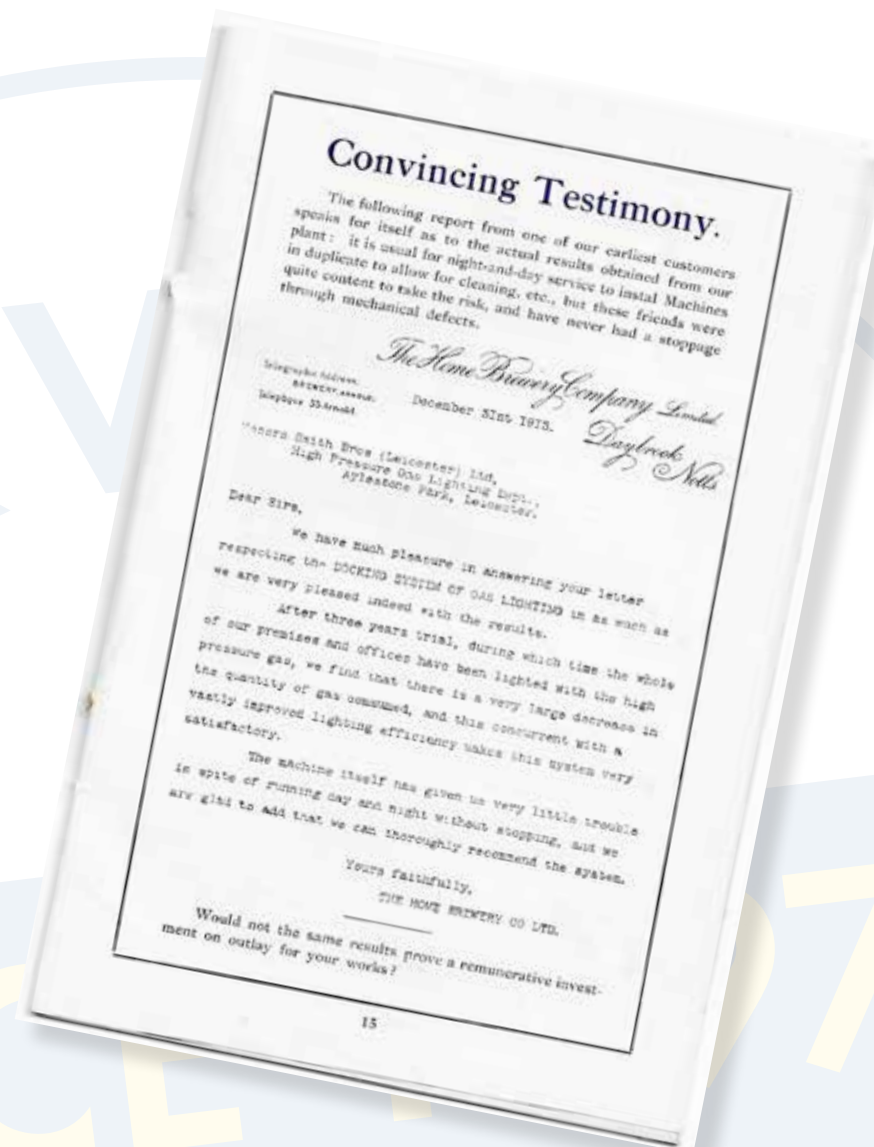
2nd Generation  
Sydney Smith



3rd Generation  
John Smith



4th Generation  
Steve Smith



SINCE 1897

# TIMELINE

## 1897 – PRESENT

1897

Smith Brothers is established by founder Walter Smith.

1902

Smith Brothers move from Saffron Lane to Aylestone Road which was occupied up until 2016.



1907

Smith Brothers becomes a limited company.

1908

From this date, Walter Smith would use his entrepreneurial prowess to invest in, and expand Smith Brothers product portfolio, including dust extraction, fans and tooling.

1918

Sydney Smith, son of founder Walter, joins the business. The first steps of the company becoming a 'family' business.

1937-45

Smith Brothers assisted with the war efforts. The railings outside the Batten Street premises were scrapped to increase military steel supplies. The business also supplied air raid shelters for domestic and industrial use.



1959

Postcodes were introduced and Sydney Smith gave the parent company the famous 'wrong' postcode of LE2 7PB. Wrong because it didn't mirror the adjacent buildings, but instead his house located 900 yards away. The incorrect postcode stood the test of time up until 2019 when it changed to LE2 7QJ.

1978

Smith Brothers expand Leicester by purchasing units on adjacent road, Batten Street.



1980

SBS decide to expand for the first time opening a branch in Northampton.

1998

Logo is redesigned to incorporate our yellow diamond which is still present today.



2004

SBS completes the purchase of Apex Ltd in Peterborough giving better coverage with distribution available across the East of England.



2006/07

The previously acquired company Apex changes its name to SBS and joins the expanding branch network. SBS opens at Oldham servicing the Lancashire & North West area. Shortly after the Oldham branch, SBS Leeds followed in 2007, taking the network of branches up to five.

1800s

1900s

2000s

2008

SBS opens its 6th Branch based in Smethwick which is well placed to service the Birmingham & West Midlands region. 2008 also sees the launch of SBS on the web.



2011

SBS Bristol opens for business, which can service the South West. Leeds have six figure investment covering their roof in 200+ solar panels generating annual yields nearing 50,000 kWh.

2012

Southampton becomes the most southern branch situated in Eastleigh. The new redesigned website is launched along with a new circular logo. Partnership with MEP (HireStation) is announced to assist customers with tool hire.



2013

SBS transport becomes FORS accredited across the national network demonstrating the commitment to safety and the environment. Patented WRAS approved Aquatechnik multilayer system comes exclusively to SBS giving a great alternative to traditional steel or copper. Tool hire through HireStation can now be ordered online [www.sbs.hirestation.co.uk](http://www.sbs.hirestation.co.uk)

2015

New I.T. system is launched to help with all aspects of the business from sales through to accounts. The move sets the next level of foundation and shows our desire to constantly adapt for the needs of our customers.

2016

New branches Heathrow, Cardiff & Merseyside open taking the expansion to 12 branches over two countries. SBS Leicester, Bristol and HQ relocate to larger and more modern premises. SBS brings Isotubi, 316L Stainless Press-Fit system to the UK up to 108mm.



2017

SBS transport gets upgraded to the silver standard FORS accreditation. The hiab crane is improved on the HGV/LGV giving greater lifting capacity.



2018/19

The expansion continues with an additional branch in Gateshead. SBS expands its sales force into Northern Ireland and relocations take place in Birmingham, Oldham and Thurrock to satisfy increased demand. SBS are included in The Sunday Times Grant Thornton Top Track 250.

2020

Smith Brothers' first Scottish branch opens in Glasgow in the midst of the Covid-19 pandemic and Southampton relocates to a modern 25,000 sq. ft. premises. SBS retains the HVR Wholesaler/Distributor of the Year award for the third year running and are also featured in the London Stock Exchange's top 1000 companies to inspire Britain 2020.

2021

New trading locations open in Sheffield and High Wycombe. Smith Brothers was named in the East Midlands Top 500 companies and the Leading Lights 2021. The business also began its transition from fossil-fueled cars to electric and hybrid.



2022

SBS Cambridge opens in January taking the total number of trading locations to 17. A newly developed online portal would allow existing customers to place orders 24/7, taking the SBS service to the next level.

2023

Smith Brothers gain ISO 9001 accreditation in Quality Management Systems and expand further into Scotland with an additional branch in Dundee.



2000s



# DEFINING OUR BUSINESS

SBS is one of the oldest and largest independent merchants operating within the UK, directly focusing on supplying the commercial and industrial mechanical services sector.

Smith Brothers specialise in the distribution of pipework, valves and air conditioning, along with all associated fittings and ancillaries. The business has extensively increased its product portfolio and geographical coverage since the turn of the millennium. With branch coverage across England, Wales and Scotland, including a Head Office based in Leicester, we are able to meet our customer's service commitments, our brand promise since 1897. SBS should be the number one choice for the mechanical services contractor that relies on the quality of service and competitive pricing.

SBS can offer added value over its competitors in many ways. By drawing from our close relationships with our carefully selected and quality assured supply chain and by maintaining excellent stock levels at all branches, we are able to reduce supplier lead times. In turn, our operation is well set to provide unrivalled service levels and competitive pricing.

Our investment strategy for sustainable growth, along with our commitment to our branch expansion programme and product range development, are just some of the reasons behind the unprecedented success of the business, resulting in turnover increasing to over £200 million per annum today.

Through the development of our people and product range, and with the support of our suppliers, shareholders and parent company, we shall maintain our desire to surpass our customer's expectations with a level of service that will continually add value to their changing needs.

**Steve Smith**  
Managing Director



**WE SHALL MAINTAIN OUR  
DESIRE TO SURPASS OUR  
CUSTOMER'S EXPECTATIONS  
WITH A LEVEL OF SERVICE  
THAT WILL CONTINUALLY  
ADD VALUE TO THEIR  
CHANGING NEEDS**

Steve Smith, Managing Director

ONE OF THE OLDEST AND  
LARGEST INDEPENDENT  
MERCHANTS



19 DEPOTS, INCLUDING  
HQ DISTRIBUTION CENTRE



EXCELLENT  
STOCK LEVELS



£200M+ TURNOVER  
PER ANNUM



COMPETITIVE PRICING  
& QUALITY SERVICE



NUMBER 1 CHOICE FOR  
MECHANICAL SERVICE  
CONTRACTORS



DELIVERING FOR **YOU**, NOT THE SHAREHOLDER



# IT'S BETTER TO...

## HAVE HISTORY

Being an established merchant in the industry means we can draw from years of industry experience. The company has an extensive portfolio of testimonials and case studies from customers and projects, highlighting the added value we give our customers. Whilst reputation is an intangible concept, it can often be seen as a company's greatest strength. Nothing demonstrates Smith Brothers' reputation better than our continued growth since the turn of the millennium.

**WITH OVER 125 YEARS OF EXPERIENCE, COMES EXPERTISE AND CREDIBILITY**

## REMAIN UNDER FAMILY OWNERSHIP

Having 5th generation family members in the business gives the stability and commitment to our customers and staff that Smith Brothers will be around for another 125 years and is not merely an evolving purchasable asset. The company is going from strength to strength, capitalising on its strong financial position by opening fourteen branches and relocating eight since the recession back in 2007!

**YOU WILL NEVER HEAR, "SORRY, BUT THAT'S NOT IN MY JOB DESCRIPTION"**

## BE INDEPENDENT

Smith Brothers remain flexible and decisive, responding to every situation by having no ties and remaining off the political merry-go-round which can plague multi-billion pound companies. Customers aren't just an account number; we genuinely hope they grow alongside us, creating history and success together. Our objective will always be to surpass expectations for our customers, staff and the industry, not just the shareholders.

**INDIVIDUALS, NOT ACCOUNT NUMBERS & CASH COWS**





# SERVICE & EXPERTISE

## BRANCH EXPANSION PROGRAMME

Our head office is strategically based in Leicestershire with excellent access routes to all corners of the UK. Each branch location is carefully selected to give us a significant presence across England, Scotland and Wales. All geographical coverage and positions are heavily based on being able to support customers with the high level of service that has formed the foundations of 125+ years of successful trading. SBS have and will continue to make efforts to widen our network with the expansion programme aiming to:

## INCREASING GEOGRAPHICAL COVERAGE

Giving better flexibility to our customers, wherever the project is located.

## ADDING DEPTH TO STOCK

In both quantities & range, shortening lead times for our customers.

## IMPROVING THE TRANSPORT CAPABILITIES

With a larger fleet, we can manipulate the vehicles to maximise our operational capacity.

## WIDENING KNOWLEDGE

With all staff, we actively encourage the sharing of best practices, product knowledge and continued training.

## STAFFING

Various staff members are trained in multiple job roles and can cover different branches if ever an emergency or operational demand requires.

## SUSTAINABILITY

Like most companies, we are keen to grow and continue to capitalise on our successes; however, SBS will never jeopardise current business operations by over-stretching ourselves for quick success.

## TRANSPORT DEVELOPMENT

To maintain service excellence, a significant investment has been made into our transport department giving greater flexibility for our customers. Our fleet of vehicles have continually reduced CO<sub>2</sub> emissions over the years, ensuring our vehicles conform to the 'low emission zone' which started operation in 2008 as administered by the Transport for London. The guidelines mean our vehicle fleet conforms to the Euro 6 standards set.

Our branches are following suit and improving their green credentials where possible. All branches have EV charging points and other additions/improvements include the introduction of a bike2work scheme, purchasing electric & hybrid vehicles and switching to paperless technology. The H&V News Awards have recognised our decarbonisation efforts as Smith Brothers were nominated for their Low Carbon Achievement of the Year award in 2021 and Merchant Innovation of the Year Award in 2022.

Our dedicated transport team ensures all branches have various transportation options, from large lorries with Hiab cranes or tail lifts to small box vans. We also offer a courier service to deliver small back orders or final balances to complete a project, ensuring our customers are never let down.

Our high standards have been externally verified by 'FORS', a fleet operator recognition scheme. The scheme aims to improve safety and reduce the environmental impact of our transport, giving SBS tangible evidence of our hard work and development in this area. More recently, our vehicles have been fitted with audio indicator sirens, side and rear cameras and in-cab recording, resulting in SBS being upgraded to Silver standard in 2017. Look out for the FORS sticker when you next see an SBS vehicle.

## NATIONAL PRODUCT SPECIALISTS

The business's growth and product range expansion led to an investment in specialist personnel working in national roles, tasked to oversee product sales and offer key support. Our customer base has benefitted by having access to a single point of contact, a key person with extensive industry and product knowledge.

The product areas with national specialists are highlighted below and they are available for site visits, meetings or simply on call to offer support when and however it is required:

- Isotubi, Frabo & AQ MLCP System
- Air Conditioning Units & Ancillaries
- CORE





# SBS PROMISE

## KNOWLEDGE & COMMITMENT

### STAFF

One of the key areas to our success has been the investment in people throughout the business. Committed, helpful and product knowledgeable staff with excellent reputations within the industry have been key to maintaining our success. Building upon those foundations, the business works closely with suppliers so information, training and relationships are maintained to a high level for the benefit of the customer. With over 125 years of experience, comes expertise and credibility.

### STOCK

While others may look to reduce stock levels to improve cash flow or minimise investment, Smith Brothers remains committed to holding high levels of key product stock. This ensures we can support our trade counters whilst drawing from such reserve to support different stages within a project, or even a site 'take off'. Our service and stock has on many occasions fulfilled project work or back orders after customers have been let down elsewhere. On average, each branch holds a minimum of one million product stock holding, with the business having over 20,000+ stocked product lines across the UK.

### SERVICE

Our vision since the company was founded has been to offer value through service. Ensuring our customers never fall short on their commitments will hopefully lead to them having a long and successful trading history like ours. We have personnel dedicated to making sure all our branches have the facilities on hand to meet demands of the external climate. Whether it be branch cranes, mezz floors, racking or extra investment in vehicles to increase delivery options and reduce lead times, SBS will do whatever is required. Smith Brothers keep the customer informed from start to finish, aiming to supply, support and surpass your expectations.

**SBS ALWAYS  
AIM TO KEEP  
THE CUSTOMER  
INFORMED FROM  
START TO FINISH.**

“

We make no secret of the promises we make to our customers when talking to the building services industry. By being transparent, it not only guarantees stakeholder backing, it also notifies our support network from suppliers to delivery drivers the level of performance we expect.

Our promises break down into 3 areas:

**STAFF STOCK SERVICE**





# ONLINE CUSTOMER PORTAL

[www.sbsonline.net](http://www.sbsonline.net)

The portal is an online platform which allows existing SBS customers to access their account information and place orders 24/7. Customers previously obtained this information via email or post, so this development helps users view, download and print information when it is most convenient, whatever time of the day.

The project has no end goal with an extensive roadmap to enhance the customer experience, ensuring the SBS promise of excellent service is also demonstrated online. The technology now means customers can fully utilise and manage their accounts online, if they prefer. While branches are limited to opening hours, the world wide web does not have such restrictions.



Scan the QR code to watch a short video highlighting some of the features available on the online customer portal.



**I WAS APPROACHED BY SBS TO ASSIST WITH THE LAUNCH OF THEIR ONLINE CUSTOMER PORTAL. THIS INVOLVED EXPLORING, TESTING AND PROVIDING FEEDBACK ON ALL OF THE PORTAL'S FEATURES AND SUGGEST IDEAS AS TO HOW CERTAIN ASPECTS COULD BE IMPROVED FROM A CUSTOMER'S POINT OF VIEW. WHEN I EXAMINED THE PORTAL, I DISCOVERED IT WAS VERY INFORMATIVE FROM PRODUCTS TO ACCOUNTS. I WAS EASILY ABLE TO SEARCH PRODUCTS AND ALL SUPPORTING DATA, MANAGE OUR ACCOUNT, OBTAIN PENDING ORDERS, RETRIEVE MISSING INVOICES AND MAKE ONLINE PAYMENTS. I FOUND IT VERY CONVENIENT AS I WAS ABLE TO OBTAIN THE INFORMATION STRAIGHT AWAY RATHER THAN SENDING AN EMAIL REQUESTING THE INFORMATION.**

Claire Cox, Accounts,  
Combined Gas Services Ltd

## ONLINE ORDERS

Online orders are still processed by our branch network. Upon processing, staff at the relevant branch are notified within 90 seconds of receipt, with your stock allocated and reserved. Our expert staff review online orders prior to processing, so customers still benefit from our knowledgeable staff checking over the order should anything need correcting – i.e. sizing, quantities, items, pricing and more.

## COLLECTION

Within each item displayed online, users can see stock at every depot location, which can help when processing orders, especially same day collections. To make it easier for users, we highlight at checkout any items not currently at your desired location. If you encounter any items currently unavailable at your desired branch, transferring stock between depots only takes 2 to 3 working days.

## DELIVERY

These orders are sent to the customer's home branch so the relevant account managers review the request. Once assessed, the staff will process the order in the most efficient manner to fulfil the client's needs. This may mean another depot or courier service is used to deliver the items. Customers can advise should shortages occur, if they want a split or complete delivery.

## ONLINE PAYMENTS

Customers select the invoice(s) they want to pay, and upon processing, their credit account is adjusted within 3 minutes. If a general bulk payment is made, users can see the credit applied to their account, but the balance will only adjust once an SBS staff member allocates payment, which will be made against the oldest invoice by default.

## PODs & TEST CERTIFICATE

Users can see all their POD's (Proof of Delivery) and external documents, such as test certificates, online. All housed within the delivery note screen. To make it easier for customers, all invoices publish the relevant order and delivery note document numbers, making it easier for users to match up records.



Scan the QR code to watch how to send SBS an online order.

**SIGN UP BY COMPLETING THE ONLINE FORM  
AVAILABLE AT [WWW.SBSONLINE.NET/LOGIN](http://WWW.SBSONLINE.NET/LOGIN)**



# ONLINE CUSTOMER PORTAL

View, Print and Download documents

## ACCOUNT LEDGER

View invoices and credit notes along with viewing both account BACS and card payments on your account. Each invoice gives document numbers for the corresponding order and delivery note document.

## CREDIT BALANCE

See your account balance, the amount on backorder, and a period breakdown of monies owed. This screen is live, real-time status of account balance. For this reason, it may take longer to load.

## PAYMENTS

All outstanding invoices and unprocessed credit notes are listed within this screen, oldest to newest date order. Reduce your credit balance online by making a payment, either selecting individual or multiple invoices for payment, or one bulk payment. Selecting invoices adjust your balance within 3 minutes of a successful payment. However, a bulk payment is also available, but this will not adjust your account balance until an SBS staff member allocates payment.

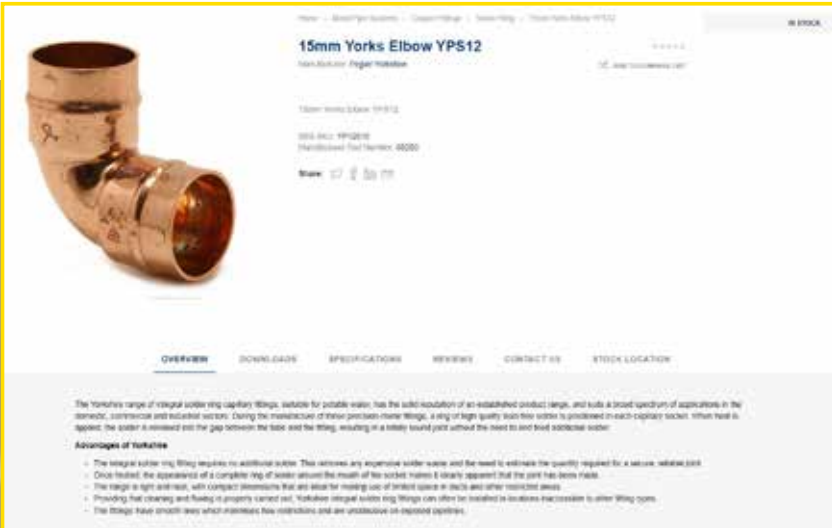
## STOCK LOCATION AND PRODUCT INFORMATION

Every product displayed online shows both companywide and individual depot stock information. Currently, the website houses over 15,000+ SKU's, complete with product information. The majority of listings also contain external links and technical details such as:

- BIM
- Gtin or EAN number
- Product Videos or Literature
- Luckins
- MPN

Each product can be easily shared with other colleagues via email and social media, with the ability to write product reviews or contact us should users have a specific question. To help make the ordering process quicker, users can save products to a wish list (which helps with reordering), easily compare up to 5 items and re-order products from previous orders. See the URL's below to discover just how easy it is to access this information:

[www.sbsonline.net/ensign](http://www.sbsonline.net/ensign)  
[www.sbsonline.net/viega](http://www.sbsonline.net/viega)  
[www.sbsonline.net/tectite](http://www.sbsonline.net/tectite)



## QUOTATIONS

Both ordered and active (un-ordered) quotes can be viewed online. Currently, you cannot convert active quotes to orders online (it is on the development roadmap). However, all quotes state SBS staff member and branch details, making it easy to contact them to process the quote further.

## ORDER HISTORY

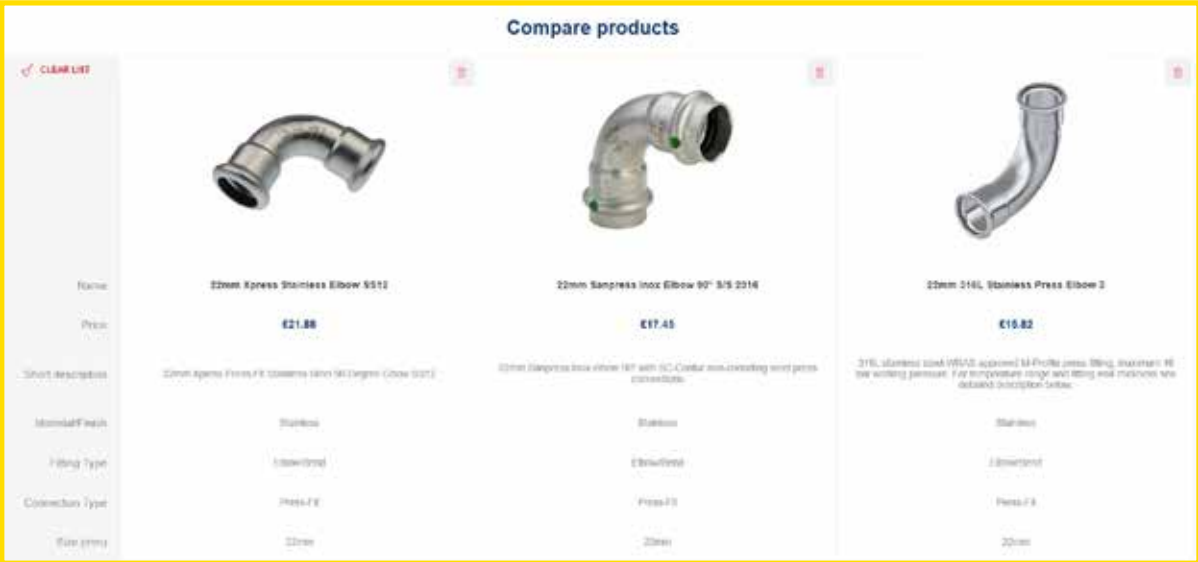
Within this screen, users can view the status of each order which is constantly updated so customers can see if items have been shipped/part-shipped, or still waiting to be picked. Each order can be expanded to view each item line by line, and customers easily re-order both individual items or the total order. If products are not uploaded online (i.e. specials), these are currently not available to order online and have to be placed to the branch direct (email or phone). This area is also useful should users want more information on any of the products ordered, as clicking on the images takes the individual straight through to the product listing page.

## DELIVERY NOTES

Every order has a corresponding delivery note, even trade counter collections. Within these documents, customers can find the relevant POD (electronic and paper signed). If one isn't listed, the branch hasn't loaded it on the account yet. Contact them directly if you incur such a situation. This area allows external documents, such as test certificates, to be loaded against the delivery note containing the relevant items. Simply advise your SBS account manager should you want your account to house any extra external documents.

## ORDERING

Orders can be placed anytime, day or night, with all orders processed by our branch network. Upon processing, SBS staff at the relevant branch are notified within 90 seconds of receipt, with your stock allocated and reserved. Our expert staff review online orders before processing, so customers still benefit from our knowledgeable workforce, checking over the order should anything need correcting – i.e. sizing, quantities, items, pricing and more. Both delivery and collection orders can be processed online, with the usual high service standards applied to every order.





# INTRODUCING

# CORE<sup>®</sup>

Core values, quality products

**CORE** offers a range of HVAC products that represent exceptional quality and true value, supported by the service levels SBS have maintained since 1897.

Ultimately, the **CORE** range aspires to be at the forefront of every HVAC installation project within the UK.



Visit [www.sbscore.co.uk](http://www.sbscore.co.uk) for more information

## The benefits of CORE



### For Customers

**CORE** offers customers a competitively priced, trusted alternative to other branded products across various HVAC categories. With Smith Brothers' ethos of Service and Value (since 1897) applied to every business area, including **CORE**, customers can rely on its quality, regardless of application.

### For Staff

Whether customer contact occurs at the trade counter, with internal sales or through external sales managers, all staff understand the preferred product choice for our customers. With dedicated staff members employed to ensure product quality with thorough auditing and monitoring systems, SBS staff can trust **CORE** products will service their customers with the utmost confidence.

### For Suppliers

The manufacturers selected within the **CORE** range commit to Smith Brothers that they trust the products, are invested in growing market share and are actively promoting their development at every opportunity. Through constant 360-degree feedback and appraisal, product quality and relationships will strengthen over time.

Look out for the CORE logo throughout this literature to see the products currently available under the CORE brand.



### ● CONFIDENCE

Have total confidence that when Smith Brothers put their name on a **CORE** product, it offers true quality and value that only comes with over 125 years of expertise.

### ● OPPORTUNITY

Value engineer projects without compromising on quality; **CORE** offers excellent opportunities for our customers.

### ● RELIABILITY

With every product fully audited and traceable back to source, reliability is part and parcel of **CORE's** DNA.

### ● EFFICIENCY

Product performance in application with minimal wastage ensures **CORE** offers genuine efficiency.

The **CORE** brand was built using our 125+ years of knowledge and expertise, which included drawing from our close relationships forged with our customer base and suppliers. By encompassing the traits below, **CORE** will continue to develop and grow with the customer at heart.

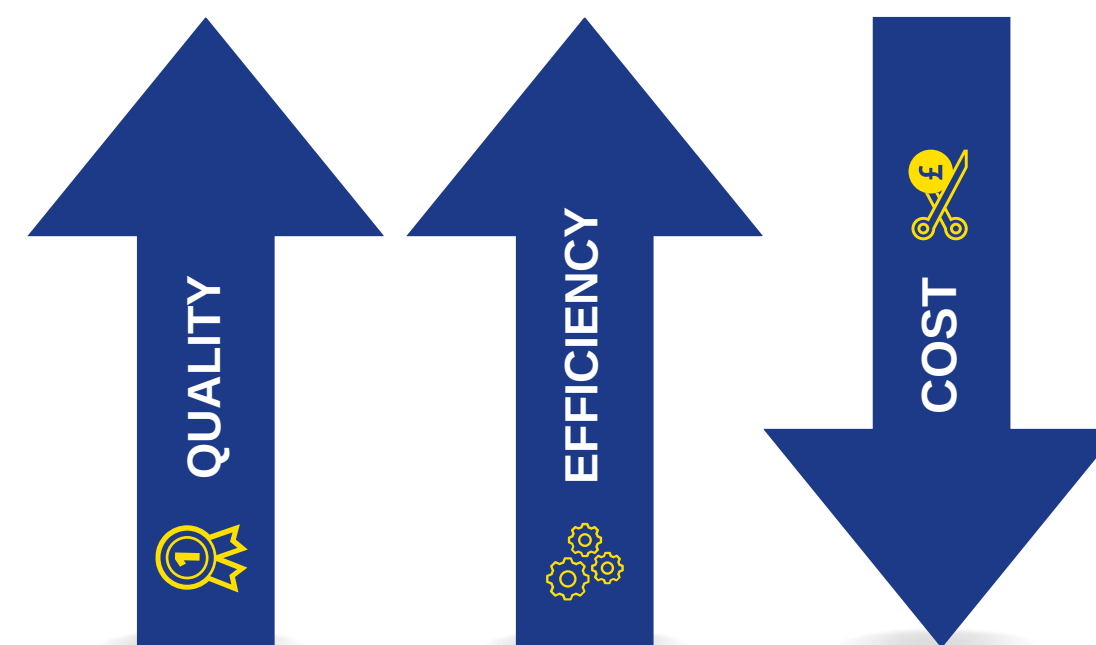
- ◆ Exceed customer expectations
- ◆ Superior product availability and performance
- ◆ Trust and integrity
- ◆ Product longevity
- ◆ Environmental sustainability is integrated into the decision-making process

# ASK FOR



Core values, quality products

**A RANGE OF HVAC PRODUCTS THAT REPRESENT EXCEPTIONAL QUALITY AND VALUE!**



FOR FURTHER INFORMATION PLEASE CONTACT YOUR LOCAL SBS BRANCH



CORE by SBS



[www.sbcore.co.uk](http://www.sbcore.co.uk)



CORE is a registered trademark owned by Smith Brothers Stores Ltd



# STAKEHOLDER TESTIMONIALS

## CUSTOMER

Most of the time, I require items the next day AM and SBS always deliver. With a wide range of products and high volume of stock, I always get the goods! Working with the Engineer to forward plan quantities of plant, tube and fittings, Smith Brothers always gives an idea of what stock we require on the projects. They are more than happy to get stock in knowing they can get it out the door the next day, if not the same day! I mainly deal with SBS Leicester who offer excellent customer service and always go that extra mile to ensure they meet our high demands. Prices are always on point. However, this isn't the main reason I use SBS - service is!



**Ben Hewitt,**  
**Mechanical Project Manager,**  
**WM Building Services.**  
**Customer rating:**



## STAFF MEMBER

Teamwork, commitment, hard work and communication are some of the key reasons SBS Leeds has continued to excel and grow throughout the years. Like myself fifteen years ago, anybody who joins the team quickly buys into the sense of unity and the general family feeling of the workplace. This positive working environment, in addition to the trust Smith Brothers management places on staff members to make key decisions and take ownership of any promises made to their customers, has allowed a positive culture to emerge over the years. Each member of staff plays their part to help deliver the service that Smith Brothers is renowned for and we have access to tools to hone our skills through our learning management platform, the SBS Academy. Our hard work and commitment are rewarded as the business continues to grow and we monitor, adapt and improve our services to suit the needs and requirements of our customers. I have learnt, adapted and achieved so much during my career at Smith Brothers and have the desire to continue to be a part of the business's ever-growing success.



**Danny Mannion,**  
**Assistant Branch Manager (Leeds),**  
**Smith Brothers Stores Ltd.**  
**Staff rating:**



## CUSTOMER

JCW have been well supported by Smith Brothers Stores for a number years. Their Leicester branch have provided us with expertise, pre-sale knowledge, on-time deliveries and excellent technical after care. This family owned business goes the extra mile to make sure our expectations are met and beyond. I would definitely rate them five out of five stars for their excellent service. We have been dealing with SBS since 2004.



**Mick Stevenson,**  
**National Installations Manager,**  
**JCW Energy Services Ltd.**  
**Customer rating:**



## SUPPLIER

Smith Brothers Stores continue to be a great partner to Viega for a number of reasons. Their commitment to customer service is supported by first-class professionalism and product knowledge. The company's continual expansion across the UK, with enhanced branches and early adoption of new installation technologies, is evidence of ambition and commitment to investment. But above all, Smith Brothers Stores, like Viega, have never lost sight of their 125 year history and the key values that have underpinned and defined a true family business.



**Scott James,**  
**Managing Director,**  
**Viega Ltd.**  
**Supplier rating:**



**SMITH BROTHERS STORES  
HAVE NEVER LOST SIGHT OF  
THEIR 125 YEAR HISTORY AND  
THE KEY VALUES THAT HAVE  
UNDERPINNED AND DEFINED A  
TRUE FAMILY BUSINESS.**

Scott James, Managing  
Director, Viega Ltd.



# CASE STUDIES

## BUXTON CRESCENT SPA & THEMAL SPA

|   |
|---|
| OWNER   |
| HIGH PEAK BOROUGH & DERBYSHIRE COUNTY COUNCIL |
| CLIENT  |
| VINCI CONSTRUCTION UK                         |
| LOCATION                                      |
| BUXTON, DERBYSHIRE                            |
| PROJECT DURATION                              |
| 40 WEEKS                                      |
| PROJECT VALUE                                 |
| £46 MILLION                                   |
| CONTRACTOR                                    |
| IMTECH  |
| SERVICES USED                                 |
| MECHANICAL & PLUMBING                         |

- PRODUCTS SUPPLIED
- Aquatechnik System
  - MEP Tool Hire

Vinci Construction UK ran the project on the hotel, spa and pump room which now runs a visitor experience for the general public.

Having been empty for many years the restoration and redevelopment of the Hotel & Spa was a major project. It presented considerable construction challenges involving specialist contractors trusted in returning this magnificent building to its former glory. Retaining original and important features required careful planning during the project works.

It was partly due to the specific challenges of the project that Imtech, the M&E services provider, decided to incorporate the Aquatechnik Safety System into their solution for the heating and potable water distribution system. The unique features of the system satisfied the challenges of the project due to its ability to meet the demands of long pipe runs with minimal joints, along with easy and quick installation. The full-bore fitting system provides improved flow rates over other similar systems ensuring the associated energy costs are minimised. The PEX-Al-PEX construction provides long life and

durability with excellent warranties to give the client and public-sector bodies piece of mind.

Utilising the ‘Multicalor’ pipe, which is available on coils (with no re-coil/memory when straightened) up to 32mm diameter, has enabled the routing of pipes to be made with minimal disturbance to existing structure. Although the pipe is flexible enough to facilitate this, due to its 5-layer composition with a fully welded aluminium centre core, it retains sufficient rigidity so as to prevent excessive expansion usually associated with a non-metallic pipework system. The end result is an impressive building conforming to modern building standards.



## COLEG MENAI CAMPUS - CANOLFAN STEM CENTRE

|                       |
|-----------------------|
| LOCATION              |
| ANGLESEY, WALES       |
| PROJECT VALUE         |
| £13.5 MILLION         |
| MAIN CONTRACTOR       |
| CAPITA                |
| M & E CONSULTANT      |
| A J FIELD             |
| SECTOR                |
| EDUCATION             |
| SERVICES USED         |
| MECHANICAL & PLUMBING |

### PRODUCTS SUPPLIED

- Viega Profipress
- Viega Megapress
- Pipe Support & Bracketry



The £13.5m centre for engineering excellence, named Canolfan STeM, was officially opened by the First Minister of Wales in spring 2019. The centre provides training to learners of all ages, from school enrolments to higher and further education courses, to work based learning and commercial clients.

Spanning 4612m² over three floors, Canolfan STeM features workshops, Mechanical Systems & Electrical Training, CAD Suites, IT based training classrooms and a second floor glazed refectory featuring breathtaking panoramic views of Snowdonia.

Viega’s Profipress connections for copper pipe were used across the centre’s domestic hot and cold water (DHCW) and drinking water systems. Specialist M&E contractor AJ Field selected the Viega system in consultation with Capita, who provided M&E consultancy on the project and merchant SBS Merseyside.

David Sanders, Mechanical Operations Manager at AJ Field explained: “We had used press connection systems previously and while the speed and simplicity of the install was a big advantage we had experienced some issues with reliability. We had to ensure that the fittings would perform as intended on a project such as this to prevent costly remedial work after the building was

completed. Quality at each stage was a key focus for RL Davies Construction, the main contractor on the project. SBS showed us the benefits of the Viega system, and we were convinced by what we saw. The SC-Contur leak path detection feature was a major factor in our selection of the system.”

Graham Foster, Area Sales Manager at SBS Merseyside explained: “The AJ Field team had originally intended to use screw and socket fittings; however, when we looked at the plans and requirements, we recognised that the Megapress system would be ideal.”

A range of Megapress fittings was used during the installation of the low pressure hot water (LPHW) heating system, including the latest addition, Megapress S. The unique innovation allows larger sized tube with diameters between 2 and 4 inches to be press connected. Furthermore, the construction of Canolfan STeM is intended to illustrate modern construction techniques and engineering technology. As such, sections of the pipework were left exposed to provide an installed example of the systems that students will be trained to use.

David Sanders added: “From the start of the project, we looked for systems and solutions that represent the cutting edge of modern construction. We have been thoroughly impressed with not only the Viega systems but also the product training and support we have received throughout the project from SBS.”

## MAN3 SITE PROJECT

|                         |
|-------------------------|
| LOCATION                |
| BOLTON                  |
| PROJECT DURATION        |
| ONE YEAR                |
| CONTRACTOR              |
| WM BUILDING SERVICES    |
| MECHANICAL CONTRACTOR   |
| G&H GROUP OF COMPANIES  |
| PROJECT VALUE           |
| £50 MILLION             |
| SERVICES USED           |
| MECHANICAL & ELECTRICAL |

### PRODUCTS SUPPLIED

- Pegler Yorkshire Xpress
- Lochinvar Water Heaters
- Crane Valves
- Polypipe Terrain Soil and Waste
- Georg Fischer
- Lawton Copper Tube
- Polypipe Effast
- Weld Fittings
- Steel Tube

The Winvic site, based on the Man3 site in Bolton, followed on from the previous successful scheme of the Lyons Park distribution warehouse in Coventry and the Amazon Fulfilment Centre in Bardon, Leicestershire.

The warehouse covers 75,000 sq. ft. over 3 levels. Leicestershire based M&E contractor WM Building Services chose their local Smith Brothers branch in Leicester as their preferred supplier for the project.

With SBS servicing the HVAC market for over 125 years, our business model ensured we could adhere to the ‘Considerate Construction Scheme’ rules in place at the site. The bulk of deliveries were supplied by SBS Leicester, with SBS Oldham and SBS Merseyside on hand to service any back orders or extra product requirements on site effortlessly drawing from substantial stock levels. WM Building are members of BESA, building a reputation of quality along with being associated with NICEIC,

MCS and Achilles Approved along with existing GasSafe, Watermark and RECC accreditations.

Jack Briggs, Operations Manager from WM Building Services said, “We are thrilled to be working on another Amazon warehouse distribution project following our success at previous developments (Lyons Park and Bardon). Smith Brothers Stores team have supported us on this project with exceptional service and remain a key component in our delivery strategy.”

James Swain, Branch Manager of SBS Leicester stated, “We were thrilled to be chosen again to support WM Building on such a large project. The demands of such developments are where we pride ourselves on delivering our service promises.”





# OUR BRANCHES



OUR BRANCH LOCATIONS  
ARE CAREFULLY SELECTED FOR  
OPTIMAL PRESENCE ACROSS  
THE SPINE OF ENGLAND,  
SCOTLAND AND WALES



Visit [www.sbsonline.net](http://www.sbsonline.net) to see live branch stocking statuses



## BIRMINGHAM

Unit 4 Alpha Park,  
Bevan Way,  
Smethwick,  
West Midlands  
B66 1BZ  
  
T: 0121 555 1900  
E: [birmingham@sbs.co.uk](mailto:birmingham@sbs.co.uk)

### OPENING TIMES

**Monday to Friday**  
Trade Counter: 7:30am to 5pm  
Sales Office: 8am to 5pm



## BRISTOL

Unit B St Vincents Trading Estate,  
Feeder Road,  
Bristol  
BS2 0UY  
  
T: 0117 947 1111  
E: [bristol@sbs.co.uk](mailto:bristol@sbs.co.uk)

### OPENING TIMES

**Monday to Friday**  
Trade Counter: 7am to 5pm  
Sales Office: 8am to 5pm



## CAMBRIDGE

Unit 20 Buckingway  
Business Park,  
Anderson Road,  
Swavesey,  
Cambridge  
CB24 4AE  
  
T: 0122 362 0926  
E: [cambridge@sbs.co.uk](mailto:cambridge@sbs.co.uk)

### OPENING TIMES

**Monday to Friday**  
Trade Counter: 6:30am to 5pm  
Sales Office: 8am to 5pm



# OUR BRANCHES



**CARDIFF**  
Unit 2 Dominion Way  
Industrial Estate,  
Newport Road,  
Cardiff  
CF24 1RF  
  
T: 0292 167 1250  
E: cardiff@sbs.co.uk

**OPENING TIMES**  
**Monday to Friday**  
Trade Counter: 7am to 5pm  
Sales Office: 8am to 5pm



**HEATHROW  
(LONDON WEST)**  
Unit 2 Pier Road,  
Feltham,  
Greater London  
TW14 0TW  
  
T: 0203 856 5620  
E: heathrow@sbs.co.uk

**OPENING TIMES**  
**Monday to Friday**  
Trade Counter: 7am to 5pm  
Sales Office: 8am to 5pm



**DUNDEE**  
Unit R  
Claverhouse Industrial Park  
Charles Bowman Avenue  
Dundee  
DD4 9UB  
  
T: 0138 221 3600  
E: dundee@sbs.co.uk

**OPENING TIMES**  
**Monday to Friday**  
Trade Counter: 7am to 5pm  
Sales Office: 8am to 5pm



**HIGH WYCOMBE**  
Unit B,  
2 Thomas Road,  
Wooburn Industrial Park,  
Wooburn Green,  
High Wycombe,  
HP10 0PE  
  
T: 0149 432 6926  
E: highwycombe@sbs.co.uk

**OPENING TIMES**  
**Monday to Friday**  
Trade Counter: 7am to 5pm  
Sales Office: 8am to 5pm



**GLASGOW**  
Unit 501,  
Clyde Gateway East,  
London Road,  
Glasgow  
G32 8RH  
  
T: 0141 739 0060  
E: glasgow@sbs.co.uk

**OPENING TIMES**  
**Monday to Friday**  
Trade Counter: 7am to 5pm  
Sales Office: 8am to 5pm



**LEEDS**  
Unit 1 Quantum Business Park,  
Pontefract Road,  
Stourton,  
Leeds  
LS10 1AX  
  
T: 0113 201 4222  
E: leeds@sbs.co.uk

**OPENING TIMES**  
**Monday to Friday**  
Trade Counter: 7am to 5pm  
Sales Office: 8am to 5pm  
  
**Saturday**  
8am to 11:30am  
Trade Counter Only

Visit [www.sbsonline.net](http://www.sbsonline.net) to see live branch stocking statuses

Visit [www.sbsonline.net](http://www.sbsonline.net) to see live branch stocking statuses



# OUR BRANCHES



**LEICESTER**  
99 Commercial Square,  
Freemen's Common,  
Industrial Estate,  
Leicester  
LE2 7SR  
T: 0116 222 7355  
E: leicester@sbs.co.uk

**OPENING TIMES**  
**Monday to Friday**  
Trade Counter: 7am to 5pm  
Sales Office: 8am to 5pm



**NORTHAMPTON**  
Unit 3 Reynoldston Close,  
Brackmills Industrial Estate,  
Northampton  
NN4 7BX  
T: 0160 476 3621  
E: northampton@sbs.co.uk

**OPENING TIMES**  
**Monday to Friday**  
Trade Counter: 7.30am to 5pm  
Sales Office: 8am to 5pm



**MERSEYSIDE**  
Unit 6 Turbine Road,  
Tranmere,  
Birkenhead,  
Wirral  
CH41 9BA  
T: 0151 541 6440  
E: merseyside@sbs.co.uk

**OPENING TIMES**  
**Monday to Friday**  
Trade Counter: 7:30am to 5pm  
Sales Office: 8am to 5pm



**OLDHAM**  
Units A & B,  
Vulcan Business Park,  
Derker Street,  
Oldham  
OL1 4AS  
T: 0161 621 6288  
E: oldham@sbs.co.uk

**OPENING TIMES**  
**Monday to Friday**  
Trade Counter: 7:30am to 5pm  
Sales Office: 8am to 5pm  
**Saturday**  
8am to 11:30am  
Trade Counter Only



**NEWCASTLE**  
Unit C11 The Avenues,  
Eleventh Avenue North,  
Team Valley,  
Gateshead  
NE11 0NJ  
T: 0191 917 9922  
E: newcastle@sbs.co.uk

**OPENING TIMES**  
**Monday to Friday**  
Trade Counter: 7am to 5pm  
Sales Office: 8am to 5pm



**PETERBOROUGH**  
Empson Road,  
Eastern Industry,  
Peterborough  
PE1 5UP  
T: 0173 331 1711  
E: peterborough@sbs.co.uk

**OPENING TIMES**  
**Monday to Friday**  
Trade Counter: 7:30am to 5pm  
Sales Office: 8am to 5pm

Visit [www.sbsonline.net](http://www.sbsonline.net) to see live branch stocking statuses

Visit [www.sbsonline.net](http://www.sbsonline.net) to see live branch stocking statuses



# OUR BRANCHES



## RAINHAM (LONDON EAST)

Unit 3 Avocet Park,  
Ferry Lane North,  
Rainham,  
Essex  
RM13 9DD  
  
T: 0170 868 9900  
E: london@sbs.co.uk

**OPENING TIMES**  
**Monday to Friday**  
Trade Counter: 7am to 5pm  
Sales Office: 7:30am to 5pm



## SHEFFIELD

Units 4 & 5 Tinsley Park Close,  
Sheffield,  
South Yorkshire  
S9 5DE  
  
T: 0114 553 6500  
E: sheffield@sbs.co.uk

**OPENING TIMES**  
**Monday to Friday**  
Trade Counter: 7am to 5pm  
Sales Office: 8am to 5pm



## SOUTHAMPTON

Unit F Omega Enterprise Park,  
Electron Way,  
Chandlers Ford,  
Eastleigh,  
Southampton  
SO53 4SE  
  
T: 0238 062 3070  
E: southampton@sbs.co.uk

**OPENING TIMES**  
**Monday to Friday**  
Trade Counter: 7am to 5pm  
Sales Office: 7:30am to 5pm

Visit [www.sbsonline.net](http://www.sbsonline.net) to see live branch stocking statuses

# OUR ENVIRONMENTAL COMMITMENT

Smith Brothers are introducing more and more green initiatives to help reduce wastage and greenhouse gases within the business. Since the declaration of zero carbon emissions by 2050 set by the Prime Minister, the company thought it was more important than ever to start putting schemes in place across the branch network to help reach this goal. For more information regarding the company's commitment to the environment, please visit our website, but some of the recent changes are highlighted below;

## HYBRID/ELECTRIC CARS

The business has transitioned from petrol/ diesel to hybrid and fully electric cars to significantly decrease the business's carbon emissions. At the time of publication, the business has taken delivery of fifty Model 3 Tesla, with more to follow.

## BIKE TO WORK SCHEME

Smith Brothers employees are able to purchase a bike through a bike to work scheme, helping to reduce carbon emissions whilst possibly improving fitness levels and mental well being due to increased physical activity.

## EV CHARGING POINTS

To accommodate our transition to hybrid and electric vehicles, charging points have been installed at all Smith Brothers locations. Some possess multi-point installations, such as our Rainham branch (London East), who have six. At the time of installation, this was the largest single charging installation in the area.

## PAPERLESS TECHNOLOGY

We use technology for environmental benefit, reducing waste by offering electronic copies. Such advancements decrease our demand for paper which helps to reduce deforestation. While this isn't always possible, we have installed paper recycling bins at every location. The online customer portal and the implementation of EDI also promote the use of paperless technology.





# OUR SUPPLY PARTNERS

Smith Brothers stock 20,000+ product lines sourced from quality suppliers with the customer in mind, so that every HVAC application is covered.



# SBS EXCLUSIVE PRESS FIT SYSTEMS

This 316L stainless steel press system is available in sizes ranging from 15mm – 168.3mm, the Isotubi NUMEPRESS system has a maximum working pressure of 16 bar and comes with a 25-year warranty. The products are manufactured to meet BSi and WRAS approval standards, as well as EN10217-7 and EN10312 standards.

Suitable applications include potable water, gas, heating, plumbing, solar, compressed air, steam, fire protection (sprinkler) and mining.



SBS stock Frabo M-profile press fittings from their copper & carbon range which are ISO 9001 certified. These products are typically used for plumbing installations, that include applications for potable water, heating, cooling, gas, solar, fire and many more...

The SECURFRABO press system is available in sizes of 15mm – 54mm, with an XL range up to 108mm. Like other systems, the product can identify un-pressed fittings during a leakage test.



# SBS EXCLUSIVE MLCP SYSTEM

The Safety system by Aquatechnik has a unique flared jointing method, which provides a simple, yet secure, installation method for multi-layer pipes. The EN21003 approved Lloyds registered product with high insurance backed warranties gives the user total peace of mind when installing.

The fully WRAS approved system with sizes between 16mm to 75mm utilises an easy to use tool, which expands the end of the pipe in order to accept the fitting. This method unlike other systems, gives a wide-bore fitting, keeping flow rates at their optimum.



## TRAINING

Smith Brothers offer FREE product installation training on exclusive SBS brands; Aquatechnik, Frabo and Isotubi.

The training is conducted by a Regional Product Specialist, who is on hand to provide complete technical support to customers, with training at a location of your choosing or via Microsoft Teams.

Upon completion of the course, participants will receive a certificate and ID card confirming they have undertaken the training, which can be carried and displayed when on site.

Successful completion of the course will also activate your 25-Year warranty on all three brands.

VISIT [WWW.SBS.CO.UK/SBS-TRAINING](http://WWW.SBS.CO.UK/SBS-TRAINING) FOR MORE INFORMATION



# METAL PIPE SYSTEMS

A wide range of tubes, flanges and fittings made from copper, carbon steel and stainless steel. The technique to join the products varies and materials used often depends on application/approvals along with the substance being transported.

Our vital statistics section is a useful guide to help determine which products are best suited in different environments. However, final reliance on information lies with the client; always consult with the manufacturer where necessary.



- ◆ STEEL TUBE
- ◆ MALLEABLE IRON FITTINGS
- ◆ FLANGES
- ◆ WELDING FITTINGS
- ◆ MILD STEEL & FORGED STEEL
- ◆ VICTAULIC
- ◆ FLEXIBLE GAS PIPING
- ◆ STAINLESS STEEL TUBE & FITTINGS
- ◆ COPPER TUBE
- ◆ ENDFEED
- ◆ SOLDER RING
- ◆ COMPRESSION
- ◆ PRESS CONNECTION SYSTEMS
- ◆ EXPANSION & FLEXIBLE SOLUTIONS
- ◆ PRIMOFIT
- ◆ PUSH-FIT SYSTEMS

## STEEL TUBE



SBS distribute hot finished tube of the highest standard (EN10255/EN10217-2 GH) to meet all requirements relevant to its application or pressure. Remaining true to only offering quality products, our stocked steel tube is British Standard, dual certified CE & UKCA - marked to meet the Construction Products Regulations (CPR) and Pressure Equipment Directive (PED). API tube available in shed 20, 40, 80, 160 and standard weight plain ended in full randoms.

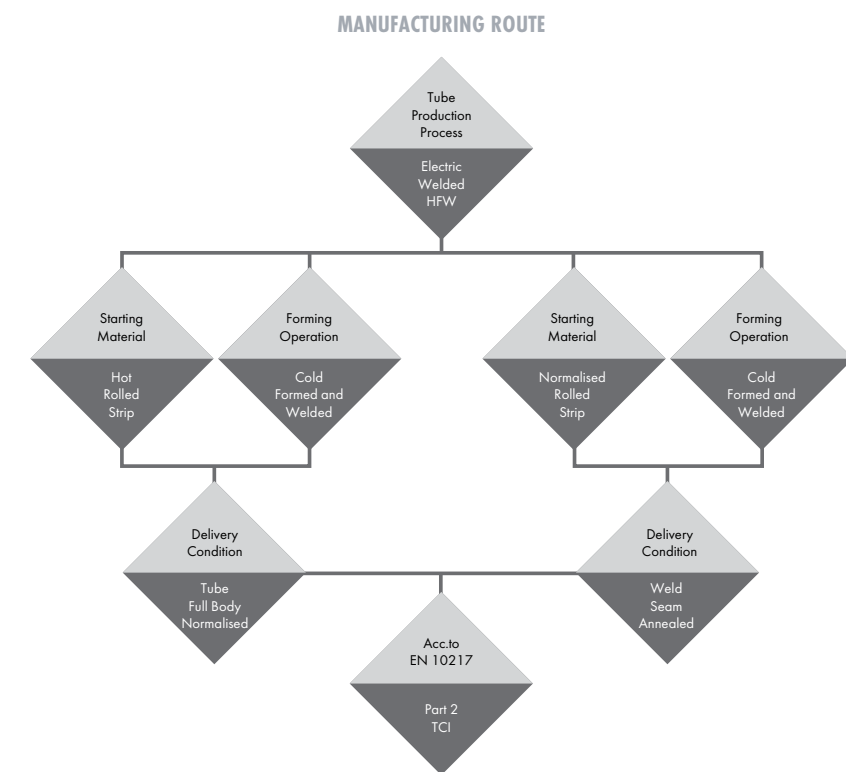
|              |  |
|--------------|--|
| SIZE:        | 15mm (½") to 150mm (6")                |
| GRADE:       | S195T-P235GH                           |
| TEMPERATURE: | -20 to 300 °C                          |
| API:         | 8mm (¼") to 900mm (36")                |
| CONNECTION:  | Screwed & socketed, plain end, grooved |
| FINISH:      | Galvanised, red, self colour           |
| LENGTHS:     | Full & half randoms available          |
| WEIGHT:      | Medium, heavy                          |



The tubes are manufactured by an electric welding process employing high frequency welding (HFW). All pipes are heated at normalising temperature for fine grain, homogenous microstructure and hardness.

### THE ADVANTAGES OF NORMALISED STEEL PIPE

- The heat affected zone (HAZ) is normalised and obtained a homogeneous microstructure
- The ductility that has been lost in some pipe processing, forming and welding are improved
- The hardness that has been increased by the mechanical forming and welding processes is reduced
- The toughness of the pipes is increased
- The internal stresses that occurred during the cold forming are reduced
- The machinability and stability are improved
- The strength and resistance for elevated temperature applications are increased



All raw materials are tested in terms of chemical and mechanical properties during incoming material control. In addition, for each casting, all products are retested after all production processes (including heat treatment) ensuring full traceability. Mechanical testing includes tensile, leak tightness, hydrostatic and NDT & flattening and expanding tests for weld durability.

For tube size, weight & thickness, recommended temperature and pressure by application along with chemical and mechanical compositions, please refer to the vital statistics section.





# MALLEABLE IRON FITTINGS



A comprehensive range of British Standard (BS EN 10242) malleable iron fittings are available from stock including one's which are kite-marked certified if required. The range also includes Primofit compression fittings, which offer full end load capacity ideal for HVAC and gas installations.

- SIZE: 6mm (1/8") to 150mm (6") depending on fitting
- CONNECTION: Taper/taper and taper/parallel threads available
- TEMPERATURE: -20 °C to 320 °C
- PRESSURE: 25 bar (max working pressure)
- FINISH: Black, galvanised



For comparison code numbers of each fitting please view the vital statistics section.



## PRIMOFIT

- SIZE: 15mm (1/2") to 76mm (3") depending on fitting
- CONNECTION: Compression
- FINISH: Black, galvanised



# EXPANSION & FLEXIBLE SOLUTIONS



The comprehensive range contains expansion joints (including drinking water application), rubber bellows, hoses, anchors and pipe guides which absorb vibrations and noise, compensating for thermal expansion and pressure differences as well as other kinds of movements. Rubber bellows are coming to the CORE range soon.

- SIZE: Expansion joints: DN 25 to DN 7000  
Bellows: DN 3 to DN 125  
Hoses & hose assemblies: DN 5 to DN 300
- CONNECTION: Screwed & socketed, plain end, grooved, flanged, crimped
- TEMPERATURE: -150°C to 650°C
- PRESSURE: Absolute vacuum to 200 bar

## ADVANTAGES

- Vibration resistance
- Noise Control
- Cleanliness (clean rooms classed ISO 5, 6, 7)
- Corrosion resistance, whatever the fluid or environmental conditions
- Guides, anchors & skids available



# FLANGES



An extensive variety of flanges from stock in both black and galvanised finishes. Upon request larger sizes can be made for any bespoke solution. Accompanying joint rings, nuts & bolts and flange packs are also available.

- SIZE: Flanges: 15mm (1/2") to 900mm (36")  
Gaskets & joint rings: 15mm (1/2") to 900mm (36")
- CONNECTION: Screwed, slip-on, weld-neck, blank to BS10, ANSI, EN 1092-1 (BS4504) plate, forged
- FINISH: Black, galvanised

CORE only applies to flange packs (gaskets & bolts) & clips

For flange charts and pack information, please refer to the vital statistics section.



# WELDING FITTINGS

A wide selection of butt weld fittings available, the majority from stock. Non stocked sizes (predominantly larger diameters) are subject to a longer lead times.

## EN10253-2 / BS1965

|                  |  |
|------------------|--|
| Fitting types    | 90's LR & SR, 45's, Tees, Red Outlet Tees, Con Reducers, Ecc Reducers, Caps, Branch Bends, Sweep Tees, Twin Elbows, 180 Return Bends LR & SR |
| SIZES:           | 15mm to 400mm (1/2" to 16")  |
| Material Grades: | P235GH / ASTM A234 WPB   |

## ANSI / ASME B16.9

|                  |   |
|------------------|---|
| Fitting types    | 90's LR & SR, 45's, Tees, Red Outlet Tees, Con Reducers, Ecc Reducers, Caps, 180 Return Bends LR & SR |
| SIZES:           | 15mm to 900mm (1/2" to 36")   |
| Material Grades: | ASTM A234 WPB & ASTM A420 WPL6 (LTCs)   |



# MILD STEEL & FORGED STEEL

A full range of mild steel BS EN10241 (BS1740) fittings in stock with availability of forged steel fittings to ANSI B16.11 (BS3799).

- SIZE: Mild steel: 6mm (1/8") to 150mm (6")  
Forged steel: 15mm (1/2") to 100mm (4")
- CONNECTION: NPT, BSP, socket weld end connections
- FINISH: Mild steel & forged steel





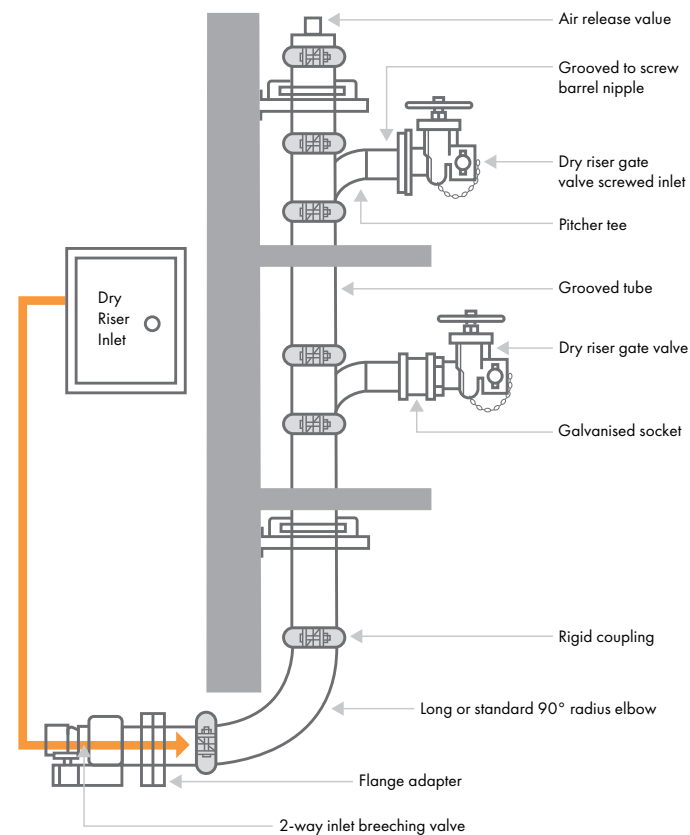
## VICTAULIC



SBS offers grooved piping products for HVAC and Building Services (heating, cooling, chilled and potable) through Victaulic, which includes pipe couplings and fittings, butterfly and ball valves, strainers, check valves, circuit balancing valves and pipe end grooving equipment. Since 1919, Victaulic's pipe joining and flow control solutions have optimised construction productivity and reduced risk, ensuring projects are completed safely, on time and within budget. Driven by a spirit of continuous innovation, Victaulic's portfolio of 100,000+ products and patented technologies promote freedom of design, as well as simplified inspection and maintenance for the life of any system.

With more than 4,000 employees and 50+ international facilities, Victaulic helps customers in over 140 countries succeed in the global construction industry. From the tallest buildings to the deepest mines, customers trust the products used to increase overall system durability in the most demanding construction projects and operating conditions.

**SIZE:** Diameter: 32mm (1¼") to 305mm (12")  
**CONNECTION:** Grooved  
**TEMPERATURE:** -30 °C to 120 °C



## FLEXIBLE GAS PIPING



### GASTITE

Gastite's CSST flexible gas piping system is able to transport natural gas or liquefied petroleum gas to appliances. Simple hand tools such as tubing cutters, wrenches and utility knives are all that are needed to work with the system, which is fully approved under BS EN 15266 (500mbar max working pressure) with Kitemark certification. Gastite offers flexibility and durability with easy routing through complex building structures and designs with coils pre-marked by the metre for easy measuring and installation.

**SIZE:** 12mm (DN15: ½") to 50mm (DN50: 2")  
**PIPES:** Stainless Steel 1.4306-304L  
**APPLICATION:** GAS  
**JACKET:** Yellow UV resistant polyethylene  
**LENGTHS:** 30m to 90m coils  
**CONNECTION:** XR2™ Fittings - Brass



### FITTINGS

Designed exclusively for use with Gastite® CSST, the XR2 fittings have a toolless, flare design with no special tools required for installation. The patented Jacket-Lock® fitting eliminates exposed stainless steel beyond the nut and the self-guiding assembly ensures a perfectly even flare. All components are reusable.

For comparison product & code information, please refer to the vital statistics section.



### GFS (GAS FLEX SYSTEMS)

GFS stainless steel semi-rigid gas piping system is used on commercial and residential projects for LPG or natural gas from the meter to the appliance. It has a unique patented Push & Seal design and is also BSi Kitemarked and approved to BS EN 15266 standards with an operating pressure up to 0,5 bar. It is supplied in long coils and can be bent by hand, no elbows are required, and the number of joints is greatly reduced. The fittings are simply attached without any special tools or hot work. The flexible system allows for simple routing through buildings with pre-marked metre markings for easy measuring of coils.

**SIZE:** 15mm (DN15: ½") to 50mm (DN50: 2")  
**PIPES:** Stainless steel 1.4404-316L  
**APPLICATION:** GAS  
**JACKET:** Yellow UV resistant polyethylene  
**LENGTHS:** 15m to 90m coils (bespoke lengths available for special projects)  
**CONNECTION:** Patented Push & Seal fittings - DZR



### FITTINGS

GFS CSST fittings are manufactured from dezincification resistant brass (DZR) to EN 12164 standards. They are nickel coated for added material protection and corrosion resistance.

All GFS CSST fittings include a heat resistant silicon rubber sealing ring olive and brass compression washer. They possess a unique yellow retaining clip that is removed and disposed of once the fitting has been inserted onto the CSST pipe. The fitting can then be fully tightened onto the CSST pipe with appropriate spanners or wrenches to achieve its mechanical gas tight seal. There is no disassembly of the GFS fitting required and no split ring assembly.

For comparison product & code information, please refer to the vital statistics section.





# COPPER TUBE



## PLUMBING

Plumbing copper for both commercial and domestic use is all supplied to EN 1057 (BS2871) in plain tube and coils, as well as plastic coated and chrome plated options when required. Strength and reliability is assured with virtually all stocked copper supported by Kitemark, ISO 9001 and CE certifications along with a minimum 25 year guarantee, meaning Smith Brothers sources quality copper from leading manufacturers.

- SIZE: 6mm to 219mm
- FINISH: Chrome plated, plastic coated, table Y, table X, table W, medical gas, MiniBore
- LENGTHS: 3m, 6m lengths, various other coils & lengths available upon request



## AIR CONDITIONING

Refrigeration and air conditioning copper all complies to EN 12735-1 supported by an ISO 9001 environment and are designed specifically for the industry being cleaned, nitrogen-purged and capped before SBS receive delivery. Available in both straight lengths and coils to various gauges (SWG), it is available along with a range of ancillaries and refrigerant gas to support your air conditioning installation and maintenance projects.

- COILS: 1/4" to 7/8"
- GAUGE: 19 to 22
- LENGTHS: 3/8" to 4 1/8"
- GAUGE: 11 to 21
- COILS: 6m, 15m & 30m
- LENGTHS: 3m & 6m



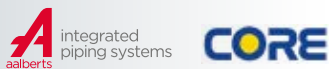
## FIELDS OF APPLICATION

- Drinking water
- Gas
- Central heating
- Hot & cold water
- Sanitation
- Air Conditioning
- Refrigeration

For tube thickness and maximum working pressures please refer to the vital statistics section.



# ENDFEED

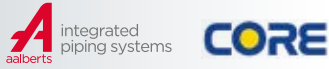


Manufactured in copper and brass and suitable for drinking water applications, this product complies with international standards being made to EN 1254 (BS864). Each fitting is made within an ISO 9001 environment and comes with a 25 year guarantee against manufacturing defects when installed in accordance with the manufacturer's guidelines.

- SIZE: Endfeed: 6mm to 54mm  
Endbrazed: 67mm to 159mm
- CONNECTION: Endfeed



# SOLDER RING

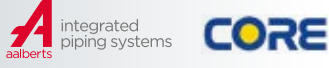


Suitable for drinking water applications, these fittings are manufactured in copper and brass, complying with international standards and made to EN 1254 (BS864). A ring of high quality lead free solder is located in each fitting which comes with a 25 year guarantee against manufacturing defects when installed in accordance with manufacturer's guidelines. Each fitting is made within an ISO 9001 environment ensuring quality management is present.

- SIZE: 6mm to 67mm
- CONNECTION: Solder ring



# COMPRESSION



Compression fittings create a mechanical joint when tightening the nut, compressing the ring onto the tube. This range of fittings can be used with a variety of materials including light gauge plain and chrome plated copper tube, stainless steel, carbon steel tube, PEX, PB and polyethylene pipe. The fittings are suitable for drinking water applications (approved to EN 1254 - formerly BS864) and come with a full manufacturer's guarantee.

- SIZE: 6mm to 159mm
- CONNECTION: Compression
- MATERIAL: DZR and brass





## STAINLESS STEEL TUBE & FITTINGS

Smith Brothers supply all of the commonly required forms of stainless steel with a full range of pipe, fittings, flanges and fixings for a wide range of applications. In addition to a comprehensive range of standard products, specific items often referred to as 'specials' can be ordered with numerous specialist products and alloys satisfying the needs of a broad range of industries.

Tubes sold are from companies conforming to BSI standards and virtually all tube will be embossed with the following information:

- Nominal pipe size (nominal bore)
- Schedule (wall thickness)
- Specification
- Grade
- Method of manufacture (seamless or welded)
- Heat number

### PIPES & FITTINGS

TUBE: SCH 10 & 40 Nominal Bore to ASTM A312:DIMS ANSI B36.19

FITTINGS: SCH 10 & 40 to ASTM A403:DIMS ANSI B16.9

TUBE: Metric to EN ISO 1127, EN10217-7

FITTINGS: Metric to EN10253-4

TUBE: True Bore Hygienic Dairy ASTM A270 Dull Polished or Descaled

FITTINGS: True Bore BS4825 Part 2 including RJT BS4825 Part 5, IDF BS4825 Part 4, Tri-Clover BS4825 Part 3 & DIN Unions

TUBE: True Bore Ornamental

TUBE: Small Bore Metric A269/213 316

### OTHER ACCOMPANYING FITTINGS

FLANGES:

PN16 Slip On, Screwed and Blind to EN1092

ASA 150 Slip On, Screwed and Blind to ASTM A182:DIMS ANSI

Table E Slip On, Screwed and Blind to BS10

Metric and Nominal Bore Pressed Collar & Backing Ring

BSP Class 150 Stainless Screwed Fittings. CFM8 ISO 4144

Box, Angle and Flat Bar

ISOTUBI Press-Fit system, available in XL sizes and available in gas

VALVES: Gate, Ball, Globe, Butterfly and Check



## PUSH-FIT SYSTEMS



### SHARKBITE

SharkBite brass push-fit fittings are tough. Able to withstand high temperature and pressure makes them ideal for connecting copper pipes directly to a boiler. Made from DZR brass, their sleek design makes them also look good in front of the wall.

Using a simple push action, SharkBite is installed without the need for tools, hot works, crimping or glue, and is compatible with both plastic and copper pipe. Sharkbite is suitable for drinking water applications and comes with a 25-year guarantee as standard, giving extra peace of mind.

**RANGE:** 10mm to 28mm (including 'slip' couplings and tees)

**PRESSURE:** Up to 12.0 bar (dependent on size and operating temperature)



### FITTINGS SUITABLE FOR FOLLOWING PIPES:

- Copper (including chrome copper) pipes to BE EN 1057 R250 and R290
- PEX Barrier Pipes to BS7921
- Polybutylene (PB) pipes to BS7921
- Galvanised Carbon Steel pipes to EN10305 (as used with Press Systems)

### TECTITE

VSH Tectite is a push-fit system which offers a heat free installation that is rodent resistant. It incorporates pipe fittings, valves and controls, delivering cost savings as a result of its speed of installation and a combination of push fit jointed technology across a range of materials, copper and PEX.

Typical Applications: Domestic, Multi-occupancy, Light commercial.



### CLASSIC

Tectite Classic offers all the performance of metal, with the installation benefits of push-fit. Demountable, slim profile and compatible with most domestic tube materials, it's an all-round performer.

- Up to 16 bar at 30°C & 6 bar at 95°C
- Compatible with Copper, Tectite Tube, PB and PEX
- DZR brass body
- Fully demountable

### SPRINT

Metal push-fit in its purest form, only 3 components make up this fitting allowing it to be as slim and attractive as possible. This doesn't prevent it from providing the exceptional performance.

- Up to 20 bar at 30°C & 10 bar at 114°C
- Compatible with Copper, PB and PEX
- Domestic and Commercial applications
- Electrical continuity
- Slim Copper body
- Available in sizes up to 54mm

### PRO

Specifically designed for the high demands of a modern commercial system, the Brass bodied Pro fitting makes high performance installations quicker, safer and more reliable.

- Up to 20 bar at 30°C & 10 bar at 114°C
- Compatible with Copper, Tectite Tube, PB, PEX and Carbon Steel
- Performance Fully demountable DZR Brass fitting
- Electrical continuity

### 316

For those specialist applications requiring Stainless Steel due to hygiene, 316 offers a swift installation without the need to scribe the tube prior to jointing.

- Up to 20 bar at 30°C & 10 bar at 114°C
- Specialised applications eg/ Brewery, Hospital etc
- Stainless Steel body and Pipe
- Electrical continuity



# PRESS CONNECTION SYSTEMS



Smith Brothers offer a comprehensive and flexible range of press systems for all modern building services providing customers with an easy, fast, cost effective and reliable jointing solution. Leak path, heat free and long guarantees are a few features of the technology which can be used in a wide variety of applications. With stainless, copper and carbon systems along with the ability to press on to 4" NB thick walled steel, the scope for application is wider than ever. If a multi-layer press system is required, view the flared mechanical system Aquatechnik. It is located within the plastic pipe system section.

Typical Applications: *Heating, Drinking Water, Fire Protection, Gas, Solar, Compressed Air, Oil*

Please note: Jaw profiles can vary between manufacturers and some ranges are limited on size. Refer to pipe application tables in vital statistics to compare all press systems available.



## VIEGA

Viega's V-profile system has a wide application range incorporating SC-Contur (leak-path) detection. The range includes Megapress, which can press thick walled steel pipe up to 4" NB and also has the capability to also transport gas (HNBR yellow sealing element).

### MEGAPRESS (STEEL)

The only thick walled press system available with sizes from ½" to 4" which can be used on seamless, welded, black, galvanised, epoxy-resin coated and industrially painted pipes. Comes with 25 year warranty, will work up to a maximum pressure of 16 bar and can also be used on gas applications.

#### TEMPERATURE & PRESSURE

BLACK SEALING ELEMENT: -5°C to 110°C

YELLOW SEALING ELEMENT: -20°C to 40°C (only up to 2")

### SANPRESS INOX (STAINLESS)

Approved for drinking water installations and gas safe (FKM yellow o-ring) with a 25 year warranty with a size range of 15 to 108mm.

#### TEMPERATURE & PRESSURE

BLACK SEALING ELEMENT: -5°C to 110°C up to 16 bar

YELLOW SEALING ELEMENT: -20°C to 70°C up to 5 bar

### PROFIPRESS (COPPER AND GUNMETAL)

Approved for drinking water installations, gas safe (FKM yellow o-ring), and suitable for solar (FKM matt black o-ring) with a 25 year warranty.

#### TEMPERATURE & PRESSURE

BLACK SEALING ELEMENT: -5°C to 110°C, up to 16 bar, 12mm to 108mm

YELLOW SEALING ELEMENT: -20°C to 70°C, up to 5 bar, 12mm to 54mm

MATT BLACK SEALING ELEMENT: 0°C to 140°C, up to 16 bar, 12mm to 35mm



# PRESS CONNECTION SYSTEMS



## ISOTUBI

With over 40 years of stainless steel manufacturing and global experience, Isotubi's NUMEPRESS system provides a stainless steel press solution for both gas and water (suitable for drinking water applications and BSi approved) and also meets EN 10312 standards (up to 108mm currently). It is available from 15mm to 168.3mm with a maximum working pressure of 16 bar along with a 25 year warranty.

The M profile product is suitable, providing the correct O-ring is used, for steam, drinking water, solar, natural gas (and other gasses), compressed air and other applications.

With annual press fitting production approaching four million from the factory based in Barcelona, Spain, quality is assured with Isotubi, a global brand and leader in stainless steel.

#### KEY INFORMATION

TUBE: 6m lengths available in 304 and 316L

FITTINGS: 316L

SIZE: 15mm to 168.3mm

BLACK (EPDM) O-RING: -20°C to 110°C

GREEN (FKM) O-RING: -20°C to 200°C

RED (FKM) O-RING: -10°C to 160°C

YELLOW (HNBR) O-RING: -20°C to 70°C (up to 5 bar)



### XL FITTINGS AVAILABLE FROM STOCK

Isotubi's M-profile stainless steel press-fit system can be pressed in XL sizes 5" (127mm) and 6" (152.4mm) for both water & gas, eliminating the need to weld down to 4" (101.6mm).

The availability of these XL tube and fittings is advantageous for gas and water installation projects, enabling a quick and simple jointing process which can be utilised with larger diameters down to its smallest size, 15mm.



## PRESS CONNECTION SYSTEMS



### XPRESS

Xpress is the complete M profile press-fit system from Pegler Yorkshire offering leak before press (LBP) detection and various approvals in a diverse range suitable for most installation environments. A brief overview of their range is listed below:



#### COPPER

Ideal for fast, efficient jointing of copper tube to BS EN 1057 R250 and R290 in sizes 12 to 108mm. XPress fittings are designed for use on hot and cold water services, vented and unvented closed circuit heating, chilled water and oil-free compressed air applications within permissible pressure and temperature limits. Approved to Kitemark certification BS 8537:2010 for use with copper tube.

XPress Copper Gas available for internal and external above-ground 2nd and 3rd-family gas services.

**SIZE:** 12mm to 108mm (54mm for solar, Viton green o-ring)

#### TEMPERATURE & PRESSURE

**BLACK O-RING:** -20°C to 110°C up to 16 bar

**GREEN O-RING:** -20°C to 200°C up to 10 bar

**YELLOW O-RING:** -20°C to 70°C up to 1 bar inside and up to 5 bar outside

#### CARBON

A cost effective system for vented and unvented closed circuit heating and chilled water applications, with a size range from 15mm to 108mm. Temperature capacity ranging between -35°C to 135°C with pressures up to 16 bar and 5 year warranty. Plastic coated and internally galvanised tube range available along with 67mm sizes.

#### STAINLESS

Fittings manufactured from 316L stainless steel and designed for potable water applications where water quality and hygiene are crucial and chilled water applications. Water purified by Reverse Osmosis (RO) is likely to have a low pH and an extremely low dissolved solid content. XPress Stainless provides resistance to RO purified water. The size range is from 15mm to 108mm complete with a 25 year warranty.

XPress Stainless Gas available for use with XPress Stainless System and other stainless steel tubes on above ground 2nd-and 3rd-family gas pipelines, including applications where high levels of hydrogen sulphide make copper unsuitable.

#### TEMPERATURE & PRESSURE

**BLACK O-RING:** -35°C to 135°C up to 16 bar

**YELLOW O-RING:** -20°C to 70°C up to 1 bar inside and up to 5 bar outside

## PRESS CONNECTION SYSTEMS



### FRABO

With over 50 years of manufacturing experience, Frabo offers a wide range of press fittings in copper and carbon steel for different applications, both compatible with M Profile jaws, the press fitting technique provides easy and fast joints. Frabo press fittings have been designed to guarantee performance in the most testing conditions, resistant against pulling forces and torsional stresses, therefore providing a safe and long-lasting system. All press fittings from 12 to 54mm are equipped with SECURFRABO patented system which allows any un-pressed fitting to be detected during a leakage test.

#### COPPER - H2O SECURFRABO

Suitable for drinking water applications thanks to the high performance black O-Ring EPDM seal. All fittings are equipped with SECURFRABO patented leakpath detection.

**SIZE:** 12mm to 54mm

#### TEMPERATURE & PRESSURE

**BLACK O-RING:** -10°C to 110°C up to 16 bar

#### COPPER - XL SIZE

Ideal for commercial projects distributing all types of water (EPDM black O-ring). Especially useful in large civil and industrial installations and is suitable for drinking water applications.

**SIZE:** 66.7mm to 108mm

#### TEMPERATURE & PRESSURE

**BLACK O-RING:** -10°C to 110°C up to 16 bar

#### CARBON STEEL - SECURFRABO

The carbon-steel system (pipe & fittings) is corrosion resistant through zinc-plating treatment with high-performance EPDM O-ring. Value for money, lightness, practicality and speed of use make the carbon steel SECURFRABO the ideal solution in closed circuit installations. All fittings are equipped with SECURFRABO patented leakpath detection.

**SIZE:** 15mm to 54mm

#### TEMPERATURE & PRESSURE

**BLACK O-RING:** -10°C to 110°C up to 16 bar

#### CARBON STEEL - XL SIZE

The carbon-steel system (pipe & fittings) is corrosion resistant through zinc plating treatment with high-performance EPDM O-ring. The most useful areas of application include closed circuit systems in buildings or large civil and industrial works.

**SIZE:** 66.7mm to 108mm

#### TEMPERATURE & PRESSURE

**BLACK O-RING:** -10°C to 110°C up to 16 bar





# PLASTIC PIPE SYSTEMS

Smith Brothers stocks a variety of brand leading manufacturers, which offers the latest technology and some of the brands are exclusive to SBS.

Due to the wide range of stock, we can help support your project requirements along with our FORS accredited vehicles.

A vital statistics guide can be downloaded from [www.sbs.co.uk](http://www.sbs.co.uk) – a useful guide to help determine which products are best suited in different environments. However, final reliance on information lies with the client. Always consult with the manufacturer where necessary.



- ◆ EFFAST
- ◆ GF
- ◆ AQUATECHNIK
- ◆ MULTI-LAYER SYSTEMS
- ◆ PUSH-FIT
- ◆ MDPE TUBE & FITTINGS
- ◆ BARRIER PIPE PROTECTION
- ◆ PLASSON
- ◆ PRE-INSULATED PIPE

## EFFAST

Modern, plastic pressure pipe systems are a lightweight and durable alternative to pressure pipe & fitting systems, made from traditional materials and offer equivalent life cycles. The material has a wide range of benefits over traditional materials in commercial buildings especially where high pressure plumbing is required. Within any pressure piping system, it's vital that the temperature and pressure relationship along with thermal movement is controlled.

The Effast system has different material compounds to suit particular application situations with the range including PVC-U, ABS, PPH and Valves.

The range of pipe and fittings have different temperature ranges and jointing techniques, all of which carry WRAS approval and the relevant BSI Kitemark.

### PVC-U

The Effast PVC-U pipe and fittings range is a pressure system which has high chemical resistance and good flow characteristics, which make it a safe and secure choice for potable water & food products supply. The solvent welded pipe fittings are especially well-suited to industrial process applications where high pressure systems are required. It becomes a full bore system when used in conjunction with the range of PVC-U ball valves.



#### FEATURES

- Lightweight
- No specialist tooling required
- Smooth bore pipe reduces pressure loss
- High abrasion resistance
- Operating temperature from 0°C to +60°C subject to pressure requirements
- Solvent welded system
- Class 7 range of pressure pipes and fittings available
- Wide range of applications to transport fluids
- Chemical Resistant
- Available in Metric sizes 16 to 315mm and Imperial sizes ½" to 8"

### ABS

The Effast ABS (Acrylonitrile Butadiene Styrene) Pressure Pipe System, can tolerate temperatures as low as -40°C and has good flow characteristics.

This makes the system a safe and secure choice for chilled or potable water, for food and beverage applications in a commercial environment. Effast pressure pipe and fittings remain a full bore system when used in conjunction with the range of ABS ball valves.



#### FEATURES

- Lightweight
- Robust system at low temperatures down to -40°C
- Smooth bore pipe reduces pressure loss
- Operating temperature -40°C to +60°C subject to pressure requirements
- Solvent weld pipe fitting system
- Suitable for mains water and chilled water applications
- Class T range of pipes and fittings available



# EFFAST

## PPH

Effast PP-H pressure pipe system is lightweight with high impact strength and reliable heat fusion welding. The Polypropylene pipe fitting system offers good abrasion resistance and is widely used in industrial processing and commercial applications.

### FEATURES

- Suitable for socket fusion, butt fusion and electro fusion jointing
- Lightweight
- High abrasion resistance
- Good chemical resistance
- Operating temperature from -10°C to +95°C (short term +110°C) subject to pressure requirements
- Ideally suited to many industrial/processing applications



## VALVES

Effast provides a wide selection of valves across a range of materials including ABS, PVCu and Polypropylene. They are suited to a wide range of commercial and Industrial applications and are available electrically or pneumatically actuated if required.

The ball, check and butterfly valves are available in different sizes to fit a variety of applications, from shopping centres and supermarkets, to hotels, pharmaceuticals, factories and mines.

The Polypipe range of Effast Valves includes:

- Ball valve
- Butterfly valves
- ProFlow check valve
- Air release valve
- Pressure relief valve
- Diaphragm valve



# +GF+

GF products are manufactured and tested to the highest quality with strict quality control measures. With its own independent accredited test laboratory, GF meets all the relevant third party approvals while offering solutions for virtually all applications.

## PVC-U

PVC-U is well suited to environments where temperature range is from 0°C to +60°C. Ensuring highest possible thermal stability and chemical resistance, PVC-U systems stand up to the most demanding conditions, particularly where fluids such as acids, alkalis, bases and salts are transported. The universal solution covers all aspects of safety, efficiency and reliability required to build, maintain and operate industrial piping.

### APPLICATIONS

Water treatment, marine, chemical process industry, micro-electronics and power plants.

### FEATURES

- Low investment for tools and equipment
- Very good chemical and corrosion resistance
- Proven physiological harmlessness
- Range of PVC-U valves; ball, butterfly and diaphragm
- Pipe/fittings made from Bio-Attributed PVC-U, reducing CO<sub>2</sub> by up to 90%
- Innovative IR-Welded PVC-U available



- SIZE:** EN/ISO: 6 to 400mm  
BS Inch: 3/8" to 8"  
ASTM/ANSI: 1/2" to 24" ASTM SCH80
- CONNECTION:** Tangit gap filling solvent weld system (Tangit DTX or GF Dytex for aggressive chemicals)  
Tangit PVC-U Plus (a clean solution for solvent cement)  
IR-Welded (suitable for small sizes)
- TEMPERATURE:** 0°C to 60°C
- PRESSURE:** up to 16 bar (up to 160mm)

## PVC-C

PVC-C piping materials are suitable for high temperature environments with an operational range from 0° to 80°C. The excellent mechanical characteristics such as a high tensile strength, stiffness and impact strength are evident even at increased temperatures.

### APPLICATIONS

Chemical process industry, marine, building technology and microelectronics.

### FEATURES

- Very good mechanical characteristics, also at elevated temperatures
- Outstanding chemical resistance
- High burning resistance and self-extinguishing
- Range of PVC-C valves; ball, butterfly and diaphragm



- SIZE:** EN/ISO: 16 to 225mm  
ASTM/ANSI: 1/2" to 24" ASTM Sch 80.
- CONNECTION:** Tangit gap filling solvent cement  
Tangit PVC-C Plus (a clean solution for solvent cement)
- TEMPERATURE:** 0°C to 80°C
- PRESSURE:** up to 16 bar (up to 160mm)



### ABS

The outstanding characteristics of ABS is its flexibility allowing its application in a temperature range from -50°C to +60°C. The exceptionally high notched impact strength values, even at low temperatures, indicate the material's high robustness and tolerance to surface damage.

#### APPLICATIONS

Water treatment, food & beverage refrigeration, marine, building technology, industrial refrigeration applications and warehouse cooling.

#### FEATURES

- Low operational energy loss
- High impact strength even at low temperatures
- Halogen free
- Range of ABS valves; ball, butterfly and diaphragm

**SIZE:** EN/ISO: 20 to 225mm  
BS Inch: ½" to 4"

**CONNECTION:** Tangit gap filling  
Solvent cement

**TEMPERATURE:** -50°C to 60°C

**PRESSURE:** Class E = up to 15 bar  
Class D = up to 12 bar  
Up to 225 mm = up to 10 bar



### COOL-FIT 4.0

COOL-FIT 4.0 is the pre-insulated piping system for secondary cooling with brine, glycol, ethanol and chilled water. It is ideal for temperatures ranging from -50°C to 60°C. The system is cutting-edge technology that benefits fruit & vegetable processors, slaughter houses, breweries and supermarkets in particular. COOL-FIT 4.0 helps you to work with maximum efficiency and without disruption, while simultaneously reducing your maintenance and operating costs.

#### APPLICATIONS

Chilled water, boosted cold water, data centres, food industry and cold stores.

#### FEATURES

- 50% faster installation
- 30% higher energy efficiency
- 65% less weight
- 100% maintenance-free

**SIZE:** d32 – d450mm

**CONNECTION:** PN16 bar (d32 – d450)  
PN10 bar (d160 – d450)

**MATERIALS:** PE100 – GF HE foam - HDPE

**TEMPERATURE:** -50°C to 60°C



### COOL-FIT 2.0

COOL-FIT 2.0 is a completely pre-insulated plastic pipe system for secondary cooling and refrigeration systems operated with brine or glycol solutions. The system is based on impact resistant PE100 pipes and fittings, which are insulated with 20mm/40mm high energy efficient (HE) foam insulation in addition to a UV-resistant outer jacket which is both weather resistant and watertight. The inner surface of the PE pipe provides minimal pressure loss, while the low thermal conductivity of plastic and the insulation, ensure low energy and running costs for the lifetime of the product.

#### APPLICATIONS

Cold Storage, food & beverage production, supermarkets and process cooling systems.

#### FEATURES

- Fast connection, easy suspension
- Excellent insulating properties, low operational and energy costs
- No corrosion
- Low CO<sub>2</sub> emissions

**SIZE:** 16 - 450mm

**CONNECTION:** Electrofusion

**TEMPERATURE:** 0°C to 60°C

**PRESSURE:** up to 16 bar



### ECOFIT (PE)

A heavy duty piping system with excellent impact strength in all climatic conditions. Good chemical and abrasion resistance up to ambient process temperatures. Highly cost-efficient system assembled from a comprehensive product range, with the option of off-site pre-fabrication if required.

#### APPLICATIONS

Water treatment, energy, marine, cooling and chemical process industry

#### FEATURES

- UV and weather-resistant
- Outstanding abrasion resistance
- High impact strength
- Wide choice of jointing technologies

**TEMPERATURE:** -50°C to 60°C

**PRESSURE:** Up to 16 bar

**SDR 11:** 20 - 1200mm couple  
(2000mm branch saddles available)

**SDR 17:** 160 - 1200mm on couplers



### SANIPEX MT

Sanipex MT is GF Piping Systems' innovative solution for potable water and heating projects. The high-quality PE-RT multilayer composite pipes and the innovative dual layer PPSU fittings are jointed by an extremely secure grip union connection.

During jointing, the expansion of the pipe ensures excellent flow rates throughout the system. The joint is free of water pockets and offers market leading flow rates without any reduction within the internal cross-section. Sanipex MT connections are detachable and reusable, which brings enormous benefits when extending an installation.

The simple and easy-to-use tools help reduce assembly times. Sanipex MT is the ideal system for distribution lines, risers and connecting lines in private homes as well as in large buildings. Thanks to simple and handy tools, installation times are significantly reduced.

#### APPLICATIONS

A complete, secure system for heating, domestic hot water and drinking water distribution including space heating systems, domestic hot water systems and mains cold water services.

#### FEATURES

- Market leading flow rates
- Intelligent simple tooling
- Suitable for water applications
- Excellent range of fittings

**SIZE:** d16 - d63mm

**PRESSURE:** PN10 Bar at 20°C

**MATERIALS:** PE-RT/AL/PE-RT

**TEMPERATURE:** 0°C - 80°C

**EXPECTED LIFE SPAN:** 50 years



### PROGEF STANDARD (PP)

The highly resistant material offers numerous fields of application with outstanding weldability and low heat distortion. High stress fracture, pressure, abrasion, corrosion and temperature resistance are only some of the advantageous characteristic properties for a polypropylene system.

#### APPLICATIONS

Water treatment, chemical process industry and energy

#### FEATURES

- Very good abrasion and corrosion-resistance
- High thermal ageing and thermal forming resistance
- High impact strength
- Range of PP-H valves; ball, butterfly and diaphragm

**SIZE:** 16 to 500mm

**CONNECTION:** Butt Fusion/Socket Fusion

**TEMPERATURE:** 0°C to 80°C

**PRESSURE:** up to 10 bar







PROGEF PLUS (PP)

Cleaned and packed in specified processes, the silicone-free or oil-free PROGEF Plus system has a high pureness factor. The system is widely used in demanding applications in microelectronics or coating and surface treatment, where features such as an outstanding surface finish and excellent leach-out characteristics offer additional benefit. The components are double-bagged to ensure cleanliness and prevent contamination before installation.

APPLICATIONS

Microelectronics and coating/ surface treatment.

FEATURES

- High Pureness
- Double Bagged
- Silicon or oil free

TEMPERATURE: 0°C to 80°C

PRESSURE: Up to 10 bar

SIZE: 20 to 315mm

CONNECTION: Butt Fusion/Socket Fusion



PROGEF NATURAL (PP-R)

PROGEF Natural is the transparent, pigment-free polypropylene product range offering beneficial properties such as excellent clean, smooth surfaces, high chemical and temperature resistance along with the bead and crevice free jointing technologies. PROGEF Natural provides a cost-efficient solution for high purity applications.

APPLICATIONS

Microelectronics and chemical process industry

FEATURES

- Very good abrasion and corrosion-resistance
- Bead and Crevice Free weldability
- High impact strength

TEMPERATURE: 0°C to 80°C

PRESSURE: Up to 10 bar (up to 63mm)

SIZE: 20 to 110mm



AQUASYSTEM

Aquasystem piping system has been designed for hot and cold water, as well as heating applications. The integrated system simplifies pipe correct material selection by only offering Faser fibre barrier pipe, avoiding complications. Aquasystem meets the stringent requirements of the water sector while offering a cost effective solution. It is an ideal option for piping installations for schools, hospitals, hotels, office blocks and in fields of modular construction.

APPLICATIONS

Building technology, marine and hot & cold water installations

FEATURES

- Low expansion with fibre pipes
- Off-site fabrication
- Cost certainty
- Good chemical resistance
- Minimum pressure losses

MATERIALS: Polypropylene, brass

SIZE: 20 to 125mm

CONNECTION: Electrofusion & Socket Fusion

TEMPERATURE: 0°C to 95°C

PRESSURE: Up to 20 bar (at +20°C)



INSTAFLEX

Instaflex is a high tech polybutene system for installations in the building technology and marine sector. Major fields of application are hot & cold water, cooling systems and compressed air. The system offers complete solution packages for buildings ranging in size from single-family detached houses and apartment blocks to public/commercial buildings.

APPLICATIONS

Building technology, marine, industrial applications, hot & cold water installations, compressed air and cooling systems

FEATURES

MATERIALS: Polybutene, brass

SIZE: 16 to 315mm

CONNECTION: Electrofusion, Socket fusion, Butt fusion, Compression joint

TEMPERATURE: -10°C to +95°C

PRESSURE: Up to 16 bar



AQUATECHNIK



The Safety-Pol/Safety-Plus system by Aquatechnik has a unique flared tube-end jointing system, which provides a simple, yet secure, installation method for multi-layer pipes. The drinking water approved product has high insurance-backed warranties, giving the user total peace of mind when installing.

The Lloyds-registered system utilises an easy-to-use battery flaring tool, which automatically expands the end of the pipe in order to accept the fitting. This method, unlike other fitting systems, does not reduce the bore of the pipe/fitting, keeping available flow-rates at their optimum. This often means smaller pipe-sizes are needed compared to other installation technologies.

The hand-assembled & lockable fittings are fully demountable if required and rotation-adjustable, allowing installation flexibility whilst maintaining joint integrity. The Safety system is made up of Pe-X/ Aluminium/Pe-X pipe and PPS/PPSU fittings, which together form a complete solution, providing high thermo-mechanical resistance and long-term material stability and reliability, which is backed up by a 25-year warranty.

ADVANTAGES

- Secure, demountable, adjustable and re-useable fitting system
- High resistance against impacts
- Higher flow rates & lower pressure drop against other MLCP systems
- Fast, clean & simple installation process
- Modular & comprehensive fitting system allowing total flexibility
- Resistant to the possibility of corrosion & scaling
- Resistant to lime, cement and plaster
- Suitable for potable, heating and chilled water applications
- Also compatible with a wide range of fluid types, making it suitable for use in many industrial applications including compressed air installations with low oil content
- ISO approved for constant-temperature, hot-water and re-circulation



SIZE: 16 to 75mm

CONNECTION: Flared Mechanical Jointing System

TEMPERATURE: Up to 70°C (95°C peak)

PRESSURE: Up to 20 bar at 20°C  
Up to 10 bar at 95°C

FINISH: White Pipe/Pastel coloured fitting

LENGTHS: 4m Straight Lengths  
50m & 100m in coils  
25m & 50m class-O Pre-Insulated in Red & Blue from 16mm to 26mm



# MULTI-LAYER SYSTEMS



Multi-layer composite pipes (MLCP) consist of PERT, PEX and an aluminium layer that offers rigidity. The combination helps form retention and a solid oxygen barrier to prevent internal corrosion of heating system components. It is suitable for use in both the domestic and commercial markets and made to be suitable for water applications, including sanitary purposes.

## UPONOR

The MLC system is ideal for most applications including heating water, chilled water and for the hygienic supply of drinking water in both domestic and commercial water systems.

In the smaller pipe sizes (16-32mm) where the highest degree of flexibility is required. Uponor offers a unique Multilayer pipe, which is a composite pipe with a seamlessly extruded aluminium layer - SAC, Uni Pipe Plus. The unique process used to manufacture these pipes gives the installer a flexible multilayer pipe with the tightest bending possible, which can significantly reduce the number of fittings required for an installation.

S-press PLUS – Our secure system of connections offers many benefits to the installer including observation windows to review the connection once installed, a unique press indicator to ensure a secure and accurate connection every time and best in class flow characteristics to maintain system performance.



### FEATURES & BENEFITS

- Quick and easy to install
- Easily modelled into the optimum profile, meaning fewer connections required
- Ideal for use with manifold plumbing schemes
- Pipe form is stable when bent
- SAC pipes offer up to 40% smaller bending radius compared to conventional multilayer pipes

SAC: 16 - 32mm  
MLC: 12 - 110mm  
Pre-insulated MLC: 16 - 25mm

## HENCO

Henco provides a wide range of top-quality products, such as press and push fittings, manifolds and compression fittings suitable for drinking water. To support the ranges they also offer a comprehensive range of tools.

The Henco MLCP range is guaranteed to offer the quality and works together perfectly.

- SIZE OPTIONS:** 16mm to 90mm Straight Lengths  
12mm to 32mm Coils – Pre-Insulated or Naked
- CONNECTION:** Press, Push & Compression
- TEMPERATURE:** Up to 95°C
- PRESSURE:** Up to 16 bar (10 bar depending on pipe choice)
- PRE-INSULATED:** Coils – 10mm, 13mm and 20mm (Part L Complaint) in Red or Blue
- SYSTEM:** Type C - environmentally friendly Cross Linking process



## EMMETTI

For branch plumbing applications, the system includes high quality brass press and compression fittings, together with tooling and a full range of accessories. The pipe is also fully compatible with sanitary and heating manifolds for use in point-to-point installations using the patented Monoblocco fittings to make the secure connection.

The wide range of pipe sizes, fittings, accessories and various fastening options make the Emmeti system a complete and highly reliable solution for any project, with the option to extend the standard warranty up to 50 years.

- SIZE:** 16 to 75mm
- CONNECTION:** Press
- TEMPERATURE:** Up to 95°C
- PRESSURE:** Up to 10 bar
- FINISH:** White
- LENGTHS:** Coiled & Straight Lengths



# PUSH-FIT SYSTEMS



To cater for the domestic plumbing market, an extensive range of high quality, reliable and time saving plumbing fittings are available. Suitable for domestic hot and cold-water applications, these systems can help when installing water pipes in a new home, extending a system or repairing a leak. The push-fit fittings, valves and accessories can make the job easy.

## JG SPEEDFIT

Get fast and leak-tight connections every time, with RWC's JG Speedfit range easy to install push-fit plumbing and heating system. Using a unique blend of push-fit and multi-seal technology, JG Speedfit can be installed and demounted in seconds without the need for tools or hot works. RWC is suitable for hot and cold-water applications, as well as central heating systems.



### KEY BENEFITS

- High performance leakproof connections
- Install, demount and refit in seconds, without tools
- Safer and cleaner with no hot works, flux or glue
- Less labour-intensive, especially in tight spaces
- Non-toxic, resists corrosion and scale build-up
- Compatible with plastic or copper pipe

## HEP20

The plumbing system offers a comprehensive range of pipes and fittings in 10mm, 15mm, 22mm and 28mm nominal diameters. The system is suitable for domestic hot & cold water and central heating systems. They are fully compatible with plastic, MLCP and copper piping.

The Hep20 Wavin system creates a water-tight seal on any pipes when you use push-fit waste connectors, so no need to worry about leaks again. Plastic push-fit plumbing fittings are usually demountable, whereas copper fittings are not.

### KEY BENEFITS

- Plastic pipe means no scale build-up
- No corrosion and reduced risk of burst pipes
- Quieter in service
- Cooler to touch
- Less heat loss
- Highly flexible
- Comes off the coil straight (no memory)
- Easy to work with
- Hep key included with Wavin
- In4Sure joint recognition with demounting possibilities using the Hep key
- 50-year guarantee



### HEP KEY REQUIRED



# MDPE TUBE & FITTINGS



MDPE stands for Medium Polyethylene pipe (MDPE), which is a light flexible and durable piping system. MDPE is easy to install, ideal for carrying water including Potable Water and a variety of chemicals. The system can be both installed above or below ground and can be connected to both copper and plastic pipes (please ensure MDPE pipe inserts for plastic pipes).



### KEY BENEFITS

- Corrosion resistant
- Light weight
- Quick and easy to install
- Lower installation costs
- Longer lengths of pipe
- Can be installed using trenchless techniques
- Over 100 years' service life

|                        | Energy & Power | Gas           | Non Potable Water | Potable Water          |
|------------------------|----------------|---------------|-------------------|------------------------|
| Finish                 | Black          | Yellow        | Black             | Light Blue / Dark Blue |
| Size                   | 20mm - 1200mm  | 180mm - 630mm | 20mm - 1200mm     | 25mm - 180mm           |
| Max Operating Pressure | 16 bar         | 2 bar         | 16 bar            | 16 bar                 |
| Lengths                | 6m - 100m      | 6m - 12m      | 6m - 100m         | 6m, 12m, 50m, 100m     |

# BARRIER PIPE PROTECTION



Barrier pipe protection systems have been tried and tested by water companies and housebuilders for over 25 years, to safely transport drinking water through areas of contaminated land and sites, with potential future contamination concerns.

The comprehensive range available at SBS is stocked from 25mm up to 90mm and larger sizes are available upon request. Barrier pipes are a diverse range of fully approved fittings for different jointing methods to meet every customer's requirements. Developments in this range over the years ensures a complete service-to-mains PE barrier pipe and fittings system, ensuring any project can be completed, from trunk-mains to service connections. The range is approved to BS 8588, which is the British standard for barrier pipes and fittings, meeting the standards required for contractors, developers and water utilities with the reassurance that a safe and reliable solution is being installed.

Using Barrier Pipes, reduces the costs of land reclamation and chemical treatments. Meaning that the installation of Barrier pipes gives the adopting body, the peace of mind that there will be no ingress into the potable water (drinking water) pipeline of ground contaminants such as phenols, arsenic, mercury, etc...



### KEY BENEFITS

- Multi-Layer pipe construction
- Full barrier pipe system
- Combines the flexibility of polyethylene with the barrier properties of aluminium
- Easy to handle, flexible and lightweight
- No expensive soil sampling required
- Proven protection against all recognised brownfield contaminants
- Suitable for water applications
- Dedicated fittings
- Lightweight and flexible
- Excellent lifetime cost savings
- BS 8588 approval

# PLASSON



Plasson develop and manufacture fittings for connecting Water and Gas supply pipes, predominately PE but also for connecting other existing pipes. The company is ISO 9001 and 14001 certified with products meeting the various but vital standards making it suitable for water, barrier and gas applications.



- MECHANICAL:** 20-160mm fittings for mains water supply pipes
- PUSHFIT:** 20 – 63mm mains supply pipe to 'house' connections
- BARRIER:** The only fitting approved for connecting all leading Barrier pipe brands
- ELECTROFUSION:** 20mm to 1200mm fittings, for PE pipes SDR7.4 – SDR41
- MCP SYSTEM:** Specialist manifolds for multi OCC buildings water meter connection

# PRE-INSULATED PIPE



Smith Brothers are able to offer a range of pre-insulated pipes (single and dual/multiple pipe) for a variety of applications, even custom options for specific requirements. Pre-Insulated pipes are used for transporting hot or cold water between plant rooms and building applications. Flexenergy's range of pre-insulated pipe systems offer a safe, secure and efficient means of transporting hot and cooled liquids – whatever the application.



### KEY BENEFITS

- Flexible & easy to install
- Low heat loss
- Suitable for both heating and cooling applications
- Potable water certified
- Cost effective
- Long lifetime expectancy
- Sustainable product 100% recyclable

### APPLICATIONS

- Heating Inc. District Heating
- Potable Water
- Chilled Water
- Hot Water

# VALVES

Smith Brothers stock a range of market leading HVAC valve solutions which bring the ultimate performance and control along with high efficiency. By stocking the latest technology and extensive range of valves from industry leading manufacturers, customers have substantial choice. No matter how hostile the liquid/pressure or difficult the application, SBS can work with the appropriate manufacturer to source the solution.



- ◆ CRANE
- ◆ HATTERSLEY
- ◆ NABIC
- ◆ IMI HYDRONIC ENGINEERING
- ◆ CORE VALVES
- ◆ AALBERTS
- ◆ ALTECNIC
- ◆ ALBION
- ◆ RELIANCE
- ◆ BROEN
- ◆ STEAM VALVES
- ◆ RADIATOR VALVES

## CRANE

CRANE FLUID SYSTEMS

Crane Fluid Systems offer a variety of traditional valves, including ball, butterfly, check, gate & globe valves as well as a range of balancing solutions for constant & variable flow systems, including PICV and DPCV. Solutions for public health are available and include thermal circulation valves and pressure reducing valves, all with approvals demonstrating suitability towards drinking water applications.

The majority of the valves are available as BIM ready product components. Products are targeted at Building Services systems such as HVAC and Hot/Cold Water but also have applications across industrial processes. Approvals include drinking water suitability, Kitemark, ISO 9001 and European Pressure Equipment Directive.

|              |   |
|--------------|---|
| SIZE:        | 10mm to 1800mm (depending on product)   |
| CONNECTION:  | Threaded, compression, flanged, press-fit                                     |
| TEMPERATURE: | -10°C to 288°C (depending on product)   |
| PRESSURE:    | Up to 64 bar (dependent on product)   |
| FINISH:      | Bronze, Cast iron, Ductile iron, DZR brass, Brass, Malleable Iron, Cast steel |

For comparison code numbers of each valve please view the vital statistics section.



## HATTERSLEY

Hattersley

Hattersley offer a variety of balancing commissioning solutions - for constant & variable flow systems which includes a range of PICV's and DPCV's. There is also a range of general and public health valves including thermal circulation valves that can help to prevent Legionnaires' Disease. Hattersley is an approved manufacturer under various quality schemes, including the British Standard Institution (BSI) Kitemark, and is ISO 9001 accredited.

### PRODUCT RANGE

Ball, butterfly, Check, Gate, Globe, Press-Fit, Radiator, Strainers, TMV, Metering Station.

|              |   |
|--------------|---|
| SIZE:        | 15mm to 1800mm (depending on product)   |
| CONNECTION:  | Threaded, compression, flanged, press-fit                                     |
| TEMPERATURE: | -10°C to 288°C (depending on product)   |
| PRESSURE:    | Up to 64 bar (dependent on product)   |
| FINISH:      | Bronze, Cast iron, Ductile iron, DZR brass, Brass, Malleable Iron, Cast steel |

For comparison code numbers of each valve please view the vital statistics section.



## NABIC

NABIC™

NABIC manufacture in the UK a range of safety and pressure relief valves (PRV) along with control valves in gunmetal, for a wide variety of fluids including steam, hot water and air. The valves are designed and tested to BS EN ISO 4126-1, and are ideal for vented and unvented heating systems, hot water and steam boilers, compressed air systems, pump relief and bypass. Safety valves are WRAS approved with 5-year warranty.

|              |   |
|--------------|---|
| SIZE:        | ½" to 3"                                  |
| TEMPERATURE: | -20 to 195°C (depending on product)       |
| PRESSURE:    | 0.3 up to 12.5 bar (depending on product) |
| MATERIAL:    | Gunmetal                                  |
| CONNECTION:  | Screwed inlet & outlet                    |

For comparison code numbers of each valve please view the vital statistics section.





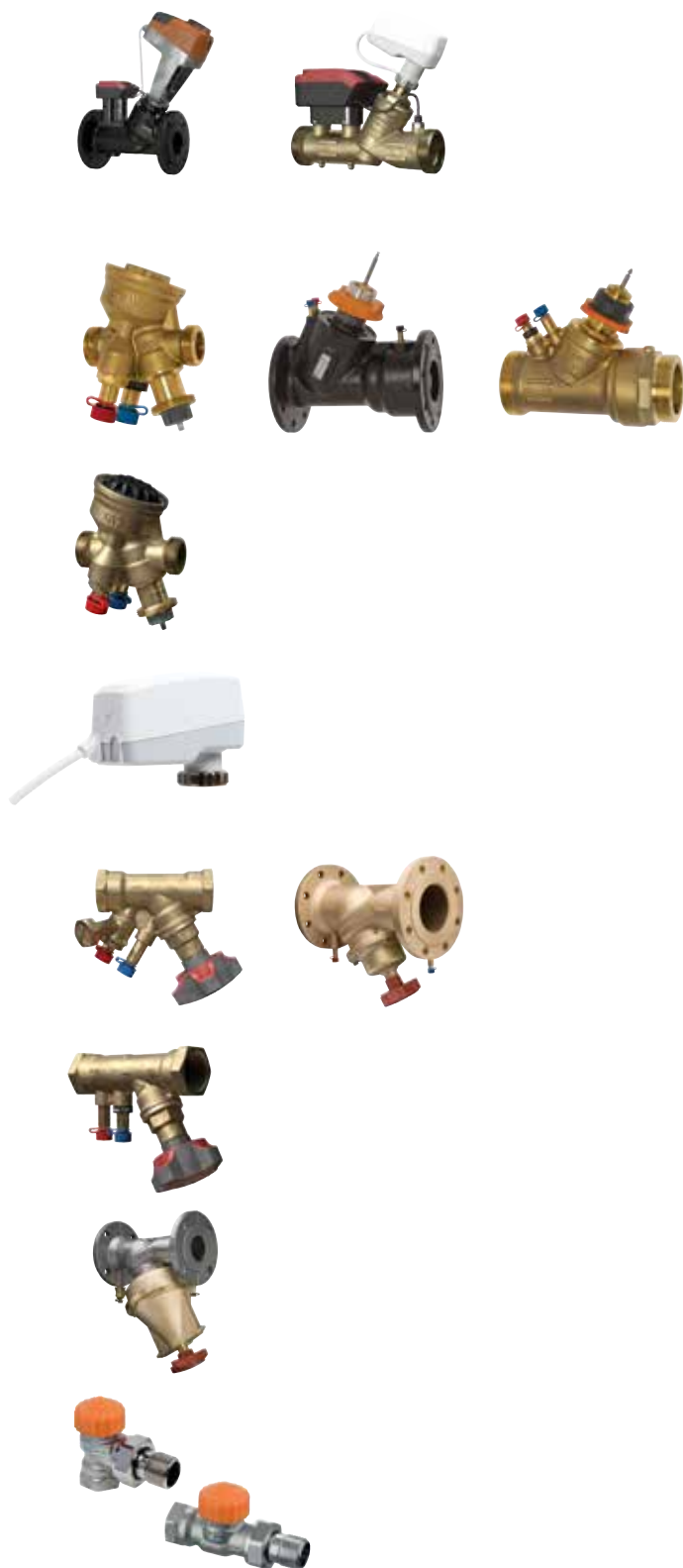
## IMI HYDRONIC ENGINEERING (IMI TA)



Founded in the same year as Smith Brothers in 1897, often providing market leading innovation on system balancing products. In the 1950's they created the first manual balancing valve and have continued to improve ever since. SBS are the preferred Distribution Partner for IMI Hydronic Engineering focusing on the IMI TA brand of valves. They have a large portfolio of products which SBS can support from stock across the network of branches.

### KEY PRODUCTS

- TA-Smart - 2-way control valve with uniquely shaped EQM characteristics with flow, temperature and power measurement capabilities
- TA-Modulator - Pressure Independent Balancing & Control Valves (PIB&CV) with unique EQM Characteristic
- TA-Compact P - Pressure Independent Balancing & Control Valves (PIB&CV) can cope with lowest flow rates in the market
- TA-Slider - Digitally configurable actuator range
- TA-STAD & TA-STAF - Variable Orifice Commissioning valves for the best in manual balancing and diagnostics
- TA-STAV - Fixed Orifice Commissioning valve
- TA-STAP - Differential Pressure Control Valve (DPCV)
- TA-Eclipse - Auto flow control



SBS also offer a range of IMI isolation, backflow prevention and filtration products as well as IMI Pneumatex pressurisation, separation and degassing equipment.

## CORE VALVES



The CORE range of valves offer quality cost saving alternatives to premium priced brands. All CORE products are designed and manufactured to deliver optimum performance and are accredited with the required industry approvals, including ATEX and EN331 and are suitable for drinking water applications.

### PRODUCT RANGE

In addition to ball valves, the CORE range is constantly expanding and aims to provide the following valve ranges:

Butterfly, Safety, Venturi, TMV, TRV & PRV valves coming soon.

|              |  |
|--------------|--|
| SIZE:        | 1/4" to 4"   |
| CONNECTION:  | Press-fit, Threaded, Compression                       |
| TEMPERATURE: | -20°C to 140°C   |
| PRESSURE:    | Up to 40 bar (dependent on size/operating temperature) |
| FINISH:      | Brass, DZR   |

For comparison code numbers of CORE valves please view the vital statistics section.



## PEGLER YORKSHIRE



Pegler Yorkshire has been a major force in valves and fittings for over 100 years and their commercial valves package for the HVAC market is built upon the unique strengths in design and manufacture accumulated over this period. Pegler Yorkshire has pioneered the market by introducing both press & push fit end connections, offering significant installed cost savings. They are dedicated to designing, developing and manufacturing products of the highest quality. Their products, where applicable, comply with the relevant British, European and International standards. Whatever the latest developments, they guarantee that the products will always meet the latest and highest standards.

### PRODUCT RANGE

Gate, commissioning, globe, check, butterfly, quarter turn ball valves, strainers, ballofix, thermal circulation valves.

|              |  |
|--------------|--|
| SIZE:        | 1/4" to 24"  |
| CONNECTION:  | Press-fit, push-fit, threaded, compression and flanged |
| TEMPERATURE: | -40°C to 198°C   |
| PRESSURE:    | Up to 40 bar (often dependent on size)                 |
| FINISH:      | Brass, ductile iron, cast iron, stainless, bronze, DZR |

For comparison code numbers of each valve please view the vital statistics section.



## ALTECNIC

**altecnic**  
CALEFFI group

Altecnic has built a reputation on supplying what installers require, while a dedicated technical team works on what they will need in the future. Development work by their European manufacturing owners in Caleffi constantly anticipates new regulations and market trends. They have the potential to meet every requirement for every application, while meeting relevant legislation and environmental standards. With more than thirty years of experience in meeting the needs of specifiers, stockists and installers, their products and services are chosen by trade merchants, original equipment manufacturers, plumbing and heating engineers and specifiers. The breadth and range of products, backed by relevant certification and approvals, mean the user can be confident in the product chosen.

### PRODUCT RANGE

TMVs, PRV's, Sealed Systems Kits, Ball Valves, Expansion Vessels, Backflow Prevention Devices, Radiator Valves, Dirt & Air Separation, Flow Regulation, Balancing Valves, Heat Interface Units

TEMPERATURE: Up to 110°C

PRESSURE: Up to 16 bar



## RELIANCE

**RWC**

Reliance valves specialise in water pressure, temperature and thermostatic mixing valves that protect and safeguard hot and cold water systems, creating safe and comfortable spaces where people live, work, learn and play.

Designed to give precise control over the delivery of water through a robust range of potable and non-potable plumbing products. From compression to BSP thread and push-fit, their water control valves come with a variety of end connections and are suitable for residential and commercial applications. An extensive range of combination and specialist valves are also available, which combine multiple functions into one unit, saving time and space on site.

### PRODUCT RANGE

TMV's, PRV's, RPZ, ball valves, thermal balancing valves, single and double check valves, combination valves, Tenant Valves and leak detection valves.

SIZE: 15mm to 22mm and ½" to 2"

CONNECTION: Threaded, compression, push-fit and SharkBite



## BROEN

**BROEN**  
VALVE TECHNOLOGIES

Broen manufactures a unique stainless press-fit ball valve which complements the Isotubi stainless press-fit system, not just visually but also in terms of its composition, having been formed from tube rather than cast.

SIZE: 15mm to 54mm

CONNECTION: Press-Fit

TEMPERATURE: -35°C to 135°C

PRESSURE: Up to 16 bar

MATERIAL: Stainless



## ALBION

**ALBION**

Albion Valves has been a trusted supplier to the UK's HVAC and industrial markets for over 40 years and their valves are designed and manufactured in accordance with the relevant industry standards.

Where appropriate, their valves carry product approvals, such as WRAS, EN331, EN161, ATEX, TMV2, TMV3 and API 607, ensuring they only supply reliable and quality products that deliver optimum performance..

### PRODUCT RANGE

Ball, Butterfly, Gate, Globe, Check, Press, Pressure Control, Solenoid, Public Health & Actuated Valves, Strainers & Drain Cocks, Hydraulics, Flexible Connectors and Fittings.

SIZE: ¼" to 24"

CONNECTION: Press-fit, Threaded, Compression and Flanged

TEMPERATURE: -25°C to 232°C

PRESSURE: Up to 40 bar (dependent on size/operating temperature)

FINISH: Brass, Gunmetal, Ductile Iron, Cast Iron, Stainless, Bronze, DZR

GUARANTEE: Up to 5 Years



## STEAM VALVES

**spirax sarco**

When it comes to steam and air pressure, the greatest priority is safety and then control, which is why SBS has chosen to work with market leading manufacturers offering the highest quality products to make sure our customers are never let down when it comes to performance.

### SPIRAX SARCO

The comprehensive product range covers the entire steam and condensate loop, from blow down valves and steam trap stations with 10 year warranties, to bespoke packaged systems and sustainable boiler houses. The company is recognised by BSI with ISO 9001 and 14001 for added credibility.

Quite simply, Spirax Sarco has a product for every part of your steam system.

SIZE: ¼" to 4"

CONNECTION: Screwed & socket weld, butt weld, flanged

TEMPERATURE: -150°C to 450°C

PRESSURE: 0.1 to 40 bar



## RADIATOR VALVES

**Aalberts** integrated piping systems

**IMI** Hydraulic Engineering

**CORE**

**ALBION**

**Danfoss**

To complement our radiator stock, SBS can provide high quality angle and straight manual & thermostatic radiator valves through the CORE range. Specifically designed to meet the requirements of both domestic and commercial markets where performance & reliability are paramount. Other brands are available such as Aalberts Integrated Pipe Systems (Pegler) IMI TA, Danfoss and Albion Valves.





# DRAINAGE

Smith Brothers stock a range of market-leading above-ground drainage and rainwater systems are available such as hdpe, cast iron, PVC-U, acoustic and pumped waste options.

As a terrain 'specialist' stockist, customers can rely on SBS to provide not only expertise, but also vast levels of soil and waste stock to support your project at every phase.



- ◆ TERRAIN
- ◆ CAST IRON DRAINAGE
- ◆ CPV
- ◆ SANIFLO
- ◆ MCALPINE
- ◆ POLYPIPE

## TERRAIN



Smith Brothers have joined forces with the UK's leading manufacturer of plastic piping systems, Polypipe Building Services, together offering outstanding service and the best products available for any project.

Polypipe Building Services understand the challenges modern day projects face, and by working closely with consultants and contractors, they remain the number one choice for engineered products and systems within commercial building services, bringing you household brands such as Terrain. Polypipe Building Services' trusted plastic drainage systems and designed solutions bear hallmarks of high quality construction and reliability in use and backed by the company's outstanding technical advice and customer support.

Specialists in commercial building services, Terrain have been delivering sustainable solutions to high rise residential, hospitals, schools, hotels and shopping centres for over 50 years.

### SOIL & WASTE

The system includes solvent-welded and push-fit options for soil and waste drainage, overflow and trap systems along with a comprehensive range of adaptors and accessories. Products are available in a range of colours to match all systems with system going up to 160mm (6") for the soil stacks.

- Wide range of solvent, push-fit soil and waste solutions
- Unrivalled installation options to match any project
- Quick and easy installation
- Lightweight and easy to handle
- High quality finish and colour to match all systems
- Suitable for all types of commercial and domestic installations

### FIRE TRAPS

Exceed building regs and guarantee up to four hours' fire compartmentalisation for drainage soil stacks with Terrain Firetraps, a comprehensive range of unique passive fire protection products for use with Terrain PVC Soil & Waste, Terrain FUZE and Terrain Q pipe systems.

### P.A.P.A AND PLEURA

Prevent positive air pressure transients in single stack drainage systems with Terrain P.A.P.A.® (positive air pressure attenuator) and the Pleura Vent System. It's the easy way to control soil stack systems in multistorey or high-rise developments.

### FUZE

Fuze is a high performance, modern drainage system which has been used on a wide range of prestigious commercial buildings. It's manufactured from high density polyethylene (HDPE) so has strong abrasion, chemical and temperature resistance.

### Q

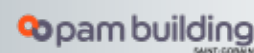
Terrain Q is a simple, reliable alternative to other traditional and noise reducing drainage systems. The system stands out for its high resistance to fire, rated B-s1, d0 according to the European standard EN 13501; making it ideal for multi-occupancy and tall building projects and for its excellent sound absorbing properties.



For jointing guidelines with the Terrain products go to the vital statistics section for extra assistance.



## CAST IRON DRAINAGE



Smith Brothers work with leading brands to offer cast iron drainage for below ground applications and bridge drainage which offers high performance whilst remaining lightweight. For internal or rainwater drainage, SBS can offer a total solution from roof outlet to below-ground drainage, to ensure optimum efficiency. The range can suit most project requirements consisting of cast iron soil and waste systems (including drainage pipes), floor drains, shower drainage and wet-room ranges provide a total solution whether it is connected to the plumbing fittings or linking with underground sewer systems. The cast iron system is non-combustible with high tensile strength and excellent noise attenuation. With fully certified products to EN 877, CE and Kitemarked along with BBA certification, quality is ensured backed up with technical support and warranties.

|           |  |
|-----------|--|
| SIZE:     | 50 to 300mm  |
| FINISH:   | Cast iron  |
| LENGTH:   | 3m   |
| MATERIAL: | Cast Iron (choice of ductile or stainless steel couplings) |

## ENSIGN

**Ensign**

Saint-Gobain PAM UK is the leading UK manufacturer of cast iron above and below ground drainage systems. Ensign meets the requirements of ISO 6594 offering individual cast iron drainage systems for above and below ground applications, and is tested and kitemark approved to the product standard BS EN 877 in the UK.

TEMPERATURE: Ability to operate at high temperatures - up to 95°C



## HARMER



The Harmer SML lightweight cast iron pipework system is dry-jointed, Agrément certified, and has a proven track record for above-ground drainage. With its comprehensive range of fittings and accessories, SML is the ideal soil and waste system which can also be used for rainwater installations.

- Pipes available in standard 3m lengths, in diameters of 50mm to 400mm



## CPV



FUSEAL® thermoplastic corrosive waste piping system ensures protection from hazardous liquids, providing secure transfer of waste chemicals. FUSEAL® is ideal for handling corrosive waste mixtures of acids, bases and solvents present in laboratories, industrial and food & beverage processing applications.

|              |  |
|--------------|--|
| TEMPERATURE: | High temperature, intermittent discharges up to 100°C, continuous up to 82°C |
| SIZE:        | 38mm to 457mm  |



## SANIFLO



Saniflo products offer a solution for unconventional situations where drainage is a problem. With a range of over 30 products including macerators, pumps and lifting stations all designed to work with small bore pipework that is easy to install and run to the nearest soil pipe. Whether it's a loo in the loft, a bath in the basement or even facilities for a café or bar, wherever conventional drainage is not possible, Saniflo probably has a product to help find a solution.

|           |  |
|-----------|--|
| SIZE:     | Is dependent on the unit                                   |
| FINISH:   | Cast iron  |
| LENGTH:   | 3m   |
| MATERIAL: | Cast Iron (choice of ductile or stainless steel couplings) |



## MCALPINE



McAlpine has an extensive range of bottle, tubular, bath, and shower traps which all have a multi-fit or universal outlet to suit 1 1/4" (32mm) to 2" (50mm) plastic, copper, or lead waste pipe. The company also has a large range of channel drains, floor gullies, WC connectors and air admittance valves.

McAlpine has been manufacturing in Glasgow since 1907 and are committed to the UK manufacturing industry being a certified Made in Britain.

|             |   |
|-------------|---|
| SIZE:       | 1 1/4" (32mm) to 2" (50mm) - other sizes available on different products and upon request |
| CONNECTION: | Multifit or Universal (compression)   |
| FINISH:     | Plastic (white) & chrome  |



## POLYPIPE



Polypipe offer a comprehensive choice of waste fittings and are recognised as one of the market leaders for the professional plumber with an extensive range which meet or exceed the latest performance legislation.

Their products offer flexibility and easy installation across the range.





# COMMERCIAL HEATING & PLANT

The range of brand leading manufacturers for heating equipment is vast. There are different solutions and efficiencies to match every requirements ranging from plant rooms, boiler houses and small applications.



- ◆ BOILERS
- ◆ WATER HEATERS/CYLINDERS/CALORIFIERS
- ◆ WILO
- ◆ PUMPS
- ◆ PRESSURISATION UNITS
- ◆ BOOSTER SETS
- ◆ DOSING POTS
- ◆ AIR & DIRT SEPARATORS
- ◆ MAGNETIC FILTERS
- ◆ FILTER POT
- ◆ METERING
- ◆ EXPANSION VESSELS
- ◆ WATER TREATMENT
- ◆ STELRAD
- ◆ RADIATORS & TOWEL RAILS
- ◆ HEATERS

## BOILERS



A boiler is a furnace that burns fuel such as gas, oil or LPG used for heating water. There are three main types being combi, system and heat only (for biomass please refer to the renewable section). SBS partner with several commercial boiler manufacturers making sure there is a unit to suit every application. Boilers need to meet both environmental and economical demands and have options for wall hanging or floor standing, which often depends on size range selected. Available kW range varies between model and manufacturer, but by dealing with quality brands all performance and ErP demands can be met.

### BOILER OPTIONS

- Gas
- Oil
- Gas/Oil
- Industrial
- CHP/Biomass (see renewable section)
- Electric



## WATER HEATERS/CYLINDERS/CALORIFIERS

There are a wide range of options available, to offer solutions for every application including; public buildings, commercial properties, construction sites, festivals and sporting events.

Following the change in ErP Regulations it has become extremely important to provide products capable of performing to the required level. Efficiency percentages and recovery rates for these products remain paramount, along with protection against legionella and easy installation as space is often at a premium. Smaller under sink and over sink instant boiler water options are also available, whether it be for domestic or industrial use. Size (litre) range varies between model and manufacturers, so performance demands can be met.



### WATER HEATERS

Water heaters are an efficient, safe and reliable way of heating water in domestic and commercial buildings. They take up a small amount of space, meaning that they are a practical choice for small properties.

### WATER CYLINDERS

Cylinders are used to store and supply hot water. There are different types depending on the needs of system and how the water is supplied to the cylinder, which is either gravity fed or mains fed.

### WATER CALORIFIERS

A calorifier is an indirect or direct electrically heated water vessel that provides hot water in a DHW system. A calorifier does not contain its own burner, but in the case of an indirect calorifier relies instead on an external source of heat, such as a boiler, heat pump or solar collector to heat the water.

### OPTIONS

- Direct (element only)
- In-Direct (element plus drawing heat from the heating system via a coil)
- Unvented
- Vented
- Gravity Fed
- Mains Fed
- Solar (see renewable section)



## WILO



Wilo UK Ltd have been based in the UK since 1985 and is a premium manufacturer of pumps and pump systems for building services, water management and industry.

From our main activity of selling pumps for heating, the organisation has grown into a solutions provider using smart solutions that bring together people, products and services.

### PUMPS FOR ALL APPLICATIONS

#### RECREATION

The areas that serve recreation, such as leisure parks, cinemas or sports stadiums, have strongly fluctuating demands for water supply and water disposal over time. Periodic peaks constitute a particular challenge for the pump systems. Wilo's flexible and comprehensive portfolio perfectly meets this need and has solutions for all tasks.



#### INDUSTRY

Alongside operational reliability; energy efficiency, material quality and the maintenance of standards have a particular role in industry. With the highest quality requirements for our products, Wilo systems offer high efficiency, long service life and operational reliability for various industrial applications.



#### COMMERCIAL, HEALTHCARE & EDUCATION

Office towers, universities, hospitals and hotel complexes encompass large buildings, primarily for commercial use. The growth of towns means increasing complexity in building management and new challenges in terms of technical connectivity. Wilo products offer the opportunity for connectivity and can always be integrated everywhere into existing building services.



#### TRANSPORTATION AND INFRASTRUCTURE

The hubs of any city's infrastructure, such as airports, railway stations or ports, constantly demand reliable sewage transport. Wilo solutions ensure simple and efficient sewage drainage with robust and reliable solid separation systems.



#### RESIDENTIAL

The living spaces within a town or city are characterised primarily by the need for amenities and individualisation. This means the most demanding requirements for selecting and operating heating and air conditioning systems. Drinking water applications must also meet the maximum hygiene standards. Wilo solutions can also be easily integrated into existing smart-living concepts.



## PUMPS



A pump is a mechanical device that transfers fluids from one location to another. The device lifts and moves fluids from low to high levels of pressure.

SBS deals with various brand manufacturers, and can provide a solution for any pumping requirement in various applications such as; domestic building, commercial building, fire protection, industrial, water supply and waste water. Either from stock or direct from the applicable manufacturer, ErP compliant pumps can be supplied.

Condensate removal pumps are listed the in air conditioning section.



#### PRODUCT RANGE

- Variable Speed & in-line Circulators (ErP compliant & suitable for water applications)
- In-line (including twin) & end suction centrifugal
- Multi-stage; horizontal, vertical, immersible, in-series
- Submersible & sewage

#### FEATURES (IF CORRECT PUMP IS CHOSEN)

- Simple installation
- Low energy consumption – complying with the latest ErP/EuP requirements
- Multiple pump settings
- Low noise level
- Minimal maintenance and long life
- Pumps to suit regardless of system pressures
- Pressure control and speed duty to suit
- Available for multiple systems including heat pumps and solar systems

To help convert new, old and different model pumps a conversion chart is available in vital statistics to help with replacements and new pumps.



## PRESSURISATION UNITS



A wide range of high-quality pressurisation units are available, which can provide a solution for replenishing water into sealed system heating and chilled water installations. There are units which can be suitable for small domestic/light commercial systems, large industrial high-temperature systems or district heating systems.



- DISPLAY: Digital or Dial (Analogue) Displays
- NUMBER OF PUMPS: Single or Double pump versions
- STYLE: Boxed (cabinet) or open
- SIZE: Available in small to large units

## BOOSTER SETS



High-rise buildings along with flow rate requirements, often mean booster sets are essential in some geographical regions. Along with the fact water authorities only guarantee a pressure of 1 bar at a simultaneous flow of 9 litres/min, buildings of three levels or more will often require a booster set. Solutions are available for all types of installation from domestic to large industrial systems. Booster sets are suitable for water applications for both hot and cold water. The model range varies from single pumps with constant speed settings to multiple pumps with variable speed and inverter controlled sets.





# DOSING POTS



Dosing pots are installed in a heating or cooling system to allow rapid introduction of water treatment safely, for the prevention of sludge, limescale and corrosion. The ideal location is where there is a high differential pressure between the flow and return pipework or heaters. The range has both mild steel and stainless steel material construction options, supplied fully assembled ready for installation on site. A non-return valve has been fitted for additional safety due to its anti-flash protection.

|              |  |
|--------------|--|
| SIZE:        | 3.5 - 50litre                          |
| TEMPERATURE: | -10°C to 120°C                         |
| PRESSURE:    | 0.5 to 14 bar                          |
| FINISH:      | Mild steel & stainless steel available |

With help sizing dosing pot required refer to the vital statistics section.



# MAGNETIC FILTERS



Magnetic filters can be installed to help prolong the life of the system using magnetic technology to help keep efficiencies high and to maintain optimum performance for both domestic & commercial environments. The purpose of a magnetic filter is to catch most of the sludge that circulates around heating and cooling systems. A wide range of products are available, even for the most demanding heavy duty industrial application with various connection options.

## FEATURES

- Protection from black iron oxide
- Collects large and micro-particles of sludge that build up in the boiler
- Conforms to the pressure equipment directive
- Easy draining/cleaning maintenance
- Helps to maintain optimum heating performance
- Inline, full-flow installation for heating and chilled systems
- Heavy-duty, high-performance magnetic filtration
- Powerful system cleaning and protection with neodymium magnets
- Individual magnet assemblies which can be lifted for ease of cleaning and maintenance – no need to remove and replace the filter lid for servicing
- Sight-glass for visual inspection of debris collection
- Helps to improve system efficiencies and performance, reducing maintenance and running costs, and lowering carbon emissions



# AIR & DIRT SEPARATORS



The range of separators available from SBS, are designed to automatically remove dirt and air from heating, cooling and process systems. These ensure optimum performance of your equipment at all times. They can be installed in all buildings including retrofit, to provide economic and environmental benefits. Installation can be done on any sizeable open or closed loop system, including chilled water systems, condenser water systems and process water systems.

## FEATURES

- Stainless steel internal element
- Designed and manufactured in accordance with Pressure equipment directive 97/23/EC, 1997
- Larger units available upon request

|              |  |
|--------------|--|
| SIZE:        | DN50 to DN300                              |
| CONNECTION:  | PN16 (others available upon request)       |
| TEMPERATURE: | Up to 110°C                                |
| PRESSURE:    | Up to 10 bar                               |
| FINISH:      | Carbon steel and stainless steel available |



# FILTER POT



The BSP Filter Pot is suitable for water applications Side Stream Filter which removes dirt and debris down to 0.5µm, along with neutralising bacteria with Antimicrobial Cartridge Filters and a rare earth magnetic grate. The units incorporates the functions of a Dosing Pot, Dirt and Air Separator, Magnetic Filtration and Fine Filtration Cartridge Filter all-in-one simple unit.

## FILTER POT MINI

|                    |                          |
|--------------------|--------------------------|
| PRESSURE:          | 10 bar                   |
| VOLUME:            | 90,000litre              |
| MAX TEMP:          | 110°C                    |
| DOSING CAPACITY:   | 5.5litre                 |
| MAGNET:            | Rare Earth Magnet Grate  |
| FINISH:            | Polished Stainless Steel |
| VALVES & FITTINGS: | Stainless Steel          |

## FILTER POT MIDI

|                    |                          |
|--------------------|--------------------------|
| PRESSURE:          | 16 bar                   |
| VOLUME:            | 375,000litre             |
| MAX TEMP:          | 110°C                    |
| DOSING CAPACITY:   | 24litre                  |
| MAGNET:            | Rare Earth Magnet Grate  |
| FINISH:            | Polished Stainless Steel |
| VALVES & FITTINGS: | Stainless Steel          |



# METERING

PLASSON

ITWVA TECHNOLOGY



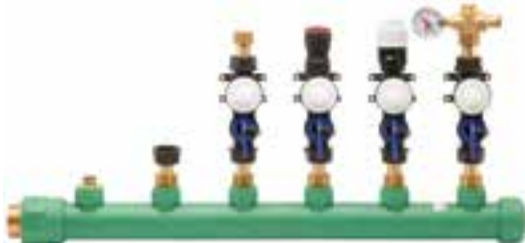
DMS

Reliance

Working with leading suppliers of metering products SBS can offer meters for the building services, process and agricultural markets along with a wide range of meters suitable for residential to hygienic applications.

## PRODUCT RANGE

Working with leading suppliers of metering products SBS can offer a wide range of meters for the domestic, commercial and industrial markets. They are available in single and three phase meters, which can have a direct connection or a CT operation with multiple communication outputs. The range can also include diaphragm, turbine and rotary meters. For gas installations, gas regulators and solenoid valves are available.



## APPLICATIONS

Water, Electricity, Gas, Energy, Steam, Oil, Compressed Air & Hygienic environments.

## TENANT VALVE

Combines several functions in one compact, self-contained unit to control and monitor water supply to multi-unit sites, such as flats or offices. Utilising a single cartridge design, the Tenant Valve Plus is quick & easy to install, reduces leakage potential and saves costs.

It incorporates a ball type isolating valve, also approved as a stop valve, pressure reducing valve, double check valve, dual reading pressure gauge/test point and a connection point for optional addition of a Class 'A' water meter.



# EXPANSION VESSELS

CORE

Flamco

The expansion vessel can be found in most pressurised systems, they contain air and water from the central heating system. The purpose of the vessel is to maintain the right level of pressure in the system. They can be used in heating and potable water applications and are manufactured with the highest-grade materials, to ensure long and reliable life.

|              |   |
|--------------|---|
| SIZE:        | 8mm (1/4") - 300mm (12")  |
| TEMPERATURE: | Up to 99°C  |
| PRESSURE:    | All pre-set at 1.5 bar<br>8 bar max up to 24litre<br>10 bar max 35 - 500litre |
| FINISH:      | Red epoxy paint, grey & white (potable water)                                 |



# WATER TREATMENT

The modern world has often meant we live in an era of aggravated water shortage. The easy access to quality water is limited due to increasing water pollution, exhausted rivers and overused groundwater all threatening our water consumption.

A range of equipment and chemical water treatments are available, from the simple to complex products for both domestic and commercial applications.

- **Water filters:** Filtration is one of the most widely used methods of water treatment, it is the process of removing undesirable elements from your water supply such as particulates, bad taste, odours and even specific trace elements. While a single filter will work in some situations, it is often necessary to use a combination of single, multiple and specialist filters to satisfy the needs of individual projects.
- **Scale inhibitors/reduction:** These are a low-cost answer to problems with hard scale. A complete choice of technologies (single & dual) to match your needs and budget. Products are available with either push-fit or compression fittings.
- **Reverse osmosis:** Available as a single unit form or part of a modular water treatment solution, the products can protect a single appliance or whole facility. Units available can remove 90 - 99% of all dissolved solids, 98% of all bacteria and fine suspended particles below 1 micron particle size.
- **Ultraviolet disinfection:** UV is a safe technology used for the purpose of disinfecting water without the use of chemicals. An effective solution that kills most waterborne viruses and bacteria. As water passes through the shell it is exposed to a high intensity UV light that destroys the DNA within the bacteria cells and viruses.
- **Water conditioner:** The system uses an ion exchange process to remove calcium and magnesium ions from the water supply, replacing them with sodium salts, which do not deposit scale.
- **Water softening:** Hard water can seriously damage central heating systems, pipework, boilers and other applications running off the system. This solution can prolong the life of the system while maximising energy efficiency.
- **Chlorine dioxide:** This chemical is an effective disinfectant and will remove a biofilm. Chlorine dioxide generators are used to accurately mix two chemicals together in a controlled environment. The dosing can be controlled manually or modulated automatically.

## EQUIPMENT WATER TREATMENT



BWT

CalMag

HYDROTEC

## CHEMICAL WATER TREATMENT



CORE

FERNOX

ADEY



# STELRAD



Stelrad offers one of the widest range of steel panel radiator styles & sizes in the UK and also has a comprehensive selection of designer products and towel radiators, not forgetting the range of low surface temperature radiators. With radiator heights up to 2500mm and width/lengths up to 3000mm, all size requirements can be met. Outputs are as low as 190 Watts (648 BTU/hr (Delta T50)) up to 6,276 Watts (20,591 BTU/hr (Delta T50)).

Elite and Compact products were one of the first radiator ranges in the UK market to have a ten year guarantee. All products conform to EN442, the European Standard for radiators, and are manufactured in ISO 9001 certified facilities. The products are pressure tested to 10 bar (8 bar for LST's) to assure weld integrity and a thorough leak testing regime, followed by a four stage inspection process. Every radiator undergoes a two stage painting process to give an exceptionally hard-wearing finish in RAL 9016 as standard. To complement the range, radiator valves are also stocked, which can be seen in the previous product area.

## ELITE (STEEL PANEL)

One of the slimmest double panel radiators on the market at just 77mm wide, offering a range of 223 models and providing extra sizing flexibility to cover a multitude of application requirements. Specifically designed accessories, such as floor standing brackets, ensure the Elite can be fitted anywhere. Symmetrical convectors allow radiator mounting either way up, a top bottom opposite end (TBOE) or a top bottom same end (TBSE) connection is offered as an important facility in commercial applications and to ensure greater efficiency with high definition pressings to ensure smooth edges. All tappings are aligned with quality nickel-plated plugs and vents, incorporating high quality EPDM 'O' rings.



### RANGE

- K1 – Single panel, Single convector
- K2 – Double panel, Double convector
- K3 – Triple panel, Triple convector
- P1 – Single panel
- P+ – Double panel, Single convector

## SOFTLINE

This series of radiators have curved top grilled & side panels and offers a mix between design and performance giving the best of both, with the range including Compact, Silhouette, Deco and Plan models. Vertical options are available should size of a room dictate a certain shape radiator is required.



### RANGE

Available in White RAL 9016 or Anthracite grey RAL 7016 from stock

## COMPACT (STEEL PANEL)

The Compact is one of the UK's best-selling and comprehensive range of compact radiators with integrated top grilles and side panels. With proven high performance award winning characteristics, it is ideal for every room and every application where space is at a premium. Available in a range of 225 models, the range provides extra sizing flexibility and covers a multitude of application requirements. The integrated top grille and side panels have been specifically designed to eradicate any movement, providing a tight, professional fit that will remain in place, even after storage, transit and installation. A range called Compact Vertex is also available to give an extra option when it comes to sizing.



### RANGE

- K1 – Single panel, Single convector
- K2 – Double panel, Double convector
- K3 – Triple panel, Triple convector
- P+ – Double panel, Single convector

# STELRAD



## DESIGNER

The range has both horizontal and vertical options to suit various tastes and property requirements. Colours and size vary greatly with a brief outline of the different options seen below:

- Planar** – Slim profile radiator which is often a favourite with architects after understating radiators
- Planar Heavy Duty** – A durable and hard-wearing heavy duty radiator. This offers sturdiness and style, with a sleek finish
- Compact with Style** – Combination of design and value presenting a stylish product
- Concord** – Constructed from horizontal or vertical tubes creating a flat radiator
- Classic Column** – Timeless steel column 'old' style classic radiator
- Swing** - A curved vertical design for a sleek stylish design



## LST STANDARD & i PLUS

Meeting NHS guidelines for 'safe hot water and surface temperature', they are also finished in antibacterial paint as standard making safety paramount in such challenging environments. The LST Standard gives you the option to specify your preferred controls and can be installed in domestic, commercial and public buildings running heating systems.

The i Plus model comes with a Danfoss RAS-D remote sensor designed specifically for commercial heating systems which can be pre-set to allow adjustment of room temperatures between 5°C and 26°C. Every LST radiator is supplied with flat panel outer casing which is totally reversible to allow piping flexibility. The casing is held by security fittings with a unique seam fixing bracket system, to prevent unauthorised access to the emitter accommodated inside. The emitter itself provides high outputs through convection for excellent heating performance. A range called LST Plus Vertical is also available to give an extra option when it comes to sizing.



### RANGE

- K1 – Single panel, Single convector
- K2 – Double panel, Double convector
- P+ – Double panel, Single convector

# RADIATORS & TOWEL RAILS



Along with Stelrad, SBS work with other manufacturers providing a range of LST, compact and towel rail radiators. The different products come with various features & benefits, however the most customary is the method of heat transfer via a radiator.

The range of radiators and towel rails has been developed significantly, giving many more options than ever before, to help find a solution for every application/environment.



# HEATERS

In partnership with brand leading manufacturers, an extensive range of heating equipment is available through SBS. With such focus on the energy sector, maximising control & performance, while minimising running costs is key within any heater. A small selection of the range available is highlighted below with various approvals supporting the products.

## UNIT HEATERS (FLOOR STANDING, CABINET AND OPEN)

Unit heaters can be installed in the widest variety of locations, from factories, to warehouses, to exhibition halls and showrooms. The two discharge options, downward or horizontal, meet all likely space configurations. Downward discharge is particularly suited to complex areas where obstacles might impede airflows from a horizontal unit. However, the horizontal discharge units with high adjustability, they are ideal where directional heating (e.g. along production lines) is required.

Most unit heaters can operate with low, medium or high pressure from hot water, steam, natural gas, oil or LPG. This means that most existing factory or commercial units need no major or expensive capital installation before an effective heating solution can be found.

### ADVANTAGES

- Increased comfort
- Extensive range
- Tried, tested and trusted over many years
- Simple to install
- Control flexibility
- Natural gas, oil or LPG fired options
- Ideal for most industrial and commercial applications with large range of heat outputs and burner options
- CE approved gas models available



## DESTRATIFICATION FANS

With any conventional air heating system, warm air will rise to roof level by natural convection. In high buildings such as factories, warehouses and sports centres, this can result in high temperature gradients and consequently increased energy usage. Destratification fans reverse the natural convection process, recirculating warm air back to working level providing a permanent reduction in roof space temperature and uniform temperature distribution.

### ADVANTAGES

- Ease of installation
- Low running costs
- Reliable in operation with minimum maintenance
- Extremely effective heat distribution
- Variety of paint finishes available upon request



# HEATERS

## RADIANT HEATERS

Easily installed and requiring minimal maintenance, these gas heaters provide clean, quiet and energy efficient heat. Ceiling mounted and aesthetically pleasing, these heaters are available in a variety of sizes and designs.

### ADVANTAGES

- Broad range of inputs and tube lengths to fit a variety of building sizes and floor plans
- Durable components help to provide long equipment life
- Ceiling mounting options
- Detailed installation, commissioning, operation and service manuals to assist in reducing installation and service time
- Deep-dish, parabolically-designed reflectors with end caps, to help maximise energy reflection & minimise heat loss by convection
- Reflectors can often be tilted or side reflectors can be added to concentrate heat where needed
- Quick fix couplings and hangers provide ease of installation
- Natural gas or LPG models available
- Unit can be CE design certified to meet industry standards



## AIR CURTAINS

An air curtain does not act as a physical barrier but is designed to retain air conditioned or heated air, reduce cooling or heating while allowing the use of an 'open door' policy and to keep smells and other contaminants out. Applications can be installed in retail premises, sales outlets, cold stores, busy main entrances, warehouse and reception areas. With any air curtain, it is essential that the 'jet' of air reaches the floor and covers the entire door width. An air curtain should therefore enhance comfort and save energy.

### ADVANTAGES

- Increased comfort
- Energy savings
- Tried, tested & trusted over many years
- Simple to install – plug & play
- Control flexibility



## TRENCH HEATING

Trench heating is very discreet, frees up floor space and does not obscure vision through any glazing. It also reduces the liability for accidental damage and requires minimal maintenance. However, if space beneath the floor is restricted or the floor is solid, low level floor-mounted perimeter heaters or runs of continuous above-floor perimeter heating may provide the answer.

Perimeter heating provides all the benefits of trench heating including; circulating & heating cool air from windows, minimal dimensions and it works well in situations where trench heating cannot be installed.





# AIR CONDITIONING & REFRIGERANT

With extensive ACR stocks, SBS are well placed to service your air conditioning project requirements with a wide variety of ancillaries to complement the product range. The business has specialist product managers in this field to help answer any technical questions, along with efficiency turning your enquiry into a formal quote. The range is supported by air conditioning and refrigeration ancillaries from pumps to refrigerant gas.

Enquiries: [rac@sbs.co.uk](mailto:rac@sbs.co.uk) Technical Support: [ac-tech@sbs.co.uk](mailto:ac-tech@sbs.co.uk)



- ◆ DAIKIN
- ◆ MIDEA
- ◆ ANCILLARIES
- ◆ REFRIGERANT



Regarded by many as a leader in the air conditioning field, Daikin's extensive portfolio of products can suit all HVAC applications. The manufacturer's air conditioning products are known for their reliability, efficiency and excellent design. They can provide users with integrated climate control solutions for domestic, commercial and industrial applications.

With dedicated Daikin experts for our air conditioning sales, along with vast stock levels, SBS can offer excellent service with high levels of product knowledge. Our in-house personnel can provide technical support to assist with design and system layout, including the Daikin software VRV Xpress which can produce a report giving schematics and technical information.

## SPLITS & SKY AIR

Daikin's Split and Sky Air range offers the most complete comfort and energy efficient solution for all kinds of domestic and small commercial spaces. It gives the user full control of heating, cooling, ventilation and air curtains. The range starts at 2kW and increases up to 25kW. There is a large range of indoor types including wall mounts, floor standing, ducted, cassettes and under ceiling units.

A Split is typically one outdoor to one indoor unit, but the range also covers multi-splits meaning one outdoor can serve multiple indoor units. There is also the larger twin, triple and double twin systems that use one outdoor to serve up to four indoors from a single remote controller. All of these systems use inverter technology which is used to regulate the indoor temperature continuously. Compared with a traditional system, it gives optimum comfort as well as reducing energy costs by around 30%. The Sky Air product range is optimised for top seasonal efficiency, for heating, cooling, ventilation and air curtains in shops, restaurants, banks and small offices. SBS hold a large stock of the Split and Sky Air range.

### FEATURES (SPLITS)

- Available in R410a and R32
- Capacity from 2-7kW
- Versatile range of indoor units – wall, floor, ducted, cassettes
- Multi split range available allowing up to 5 indoors piped to a single outdoor
- Reduced energy savings with the intelligent eye sensor
- Remote access control via the Wifi adapter
- Pipe runs up to 30m
- Cooling available down to -10°C ambient and heating down to -15°C (outside temperatures)
- Possible tax relief via ECA scheme



### FEATURES (SKYAIR)

- Available in R410a and R32
- Capacity from 7-25kW
- Available with single and 3 phase power supplies
- Also available as twin, triple and double twin applications
- Versatile range of indoor units – ducted, cassettes, wall, floor
- Option for Self Cleaning cassettes giving reduced running and maintenance costs
- Unique underceiling cassette with the FUA-A indoor
- Auto changeover feature as standard
- Systems suitable for replacement technology
- 3 types of outdoor options depending on application requirements
- Pipe runs up to 85m
- Cooling available down to -15°C ambient and heating down to -20°C (outside temperatures)
- Server room cooling possible using EDP setting on Seasonal Smart or Alpha outdoor.





## VRV 5

The Daikin VRV 5 Heat Recovery system ensures maximum comfort and efficiency while significantly reducing a building's environmental footprint. What's more its smart, compact and responsive design makes for flexible and easy installation in any commercial building.

### FEATURES

- Reduced CO2 equivalent thanks to the use of lower GWP R-32 refrigerant and lower refrigerant charge
- Single component refrigerant, easy to re-use and recycle
- Greatest sustainability over the entire lifecycle, thanks to market leading real-life seasonal efficiency
- "Free" heating through efficient 3-pipe heat recovery, transferring heat from areas requiring cooling to areas requiring heating
- Tackle small room applications without any additional measures, thanks to Shirodo Technology
- Specially designed indoor units for R-32, ensuring low sound and maximum efficiency
- Simultaneous cooling and heating for the perfect personal comfort of guests/tenants
- Like for like R-410A installation flexibility with piping lengths up to 165 metres and a total length of 1,000 metres



- Sound pressure down to 40 dB(A) thanks to 5 low sound steps
- ESP up to 78 Pa to allow ducting
- Wide operation range of up to +46°C in cooling and down to -20°C in heating

## CHILLERS

Daikin's range of air-cooled and water-cooled chillers are designed to suit every application, large or small, offering the ultimate in flexibility and control. The unique combination of advanced technology, experience and reliability make Daikin chillers the ideal choice. Daikin chillers have nominal cooling capacities of 5kW to 2,148kW (air-cooled) or 13kW to 2,500kW (water-cooled). There are many chiller options including models using inverter compressors and chillers that can provide free cooling. Most options are available with different efficiency and sound options to suit a particular site to meet noise or space restrictions.

The latest Daikin technology can achieve industry-leading efficiency along with optimum energy-saving for outstanding cost saving performance. Using the Daikin chiller software can produce a bespoke report for every application showing the output of the chiller at given conditions. It will also give full technical info including the specification and dimensional drawings of the chiller.

Also as part of the Applied product range Daikin can offer Fan Coil Units and Air Handling Units (AHUs).

### FEATURES

- Capacity range from 5 - 2,500kW
- Aircooled, watercooled and condenserless chillers available
- Various refrigerant types available
- Chillers options with Inverter compressors
- Free cooling chillers available
- Scroll, Screw and Swing compressors
- Multiple selection options dependent on efficiency and sound requirements
- Cooling and Heat Pump chillers available
- R410a, R32, R134a and R1234ze range



## VENTILATION

Daikin offers a range of options that enables control of fresh air into commercial and residential spaces. The VAM / VKM range of heat recovery ventilation products can efficiently deliver controlled fresh air to meet your design priorities.

### FEATURES

- VAM air flow from 150-2000m³/hr
- CO2 sensor to minimise running costs by only delivering actual requirements of fresh air
- Heater batteries available to pre-heat the ambient air for all year round



## CONTROLS

Whether you need complete control over your building management system, or want to integrate your Daikin units into third party management system, Daikin offers a complete portfolio of user-friendly solutions.

### FEATURES

- Interfaces available for Bacnet, Modbus, LON and KNX
- Smart energy monitoring with the DNSS system
- Mini building management system using the I-Touch Manager
- Central control of up to 512 indoors
- Web access as standard on the I-Touch Manager
- Recessed local controllers available with various finishes
- Tablet control possible using the Daikin Cloud



## SPARES

Genuine Daikin spares are available on quick turnaround with the only information needed being the make and model of the unit which requires the part, the rest can be done by Smith Brothers. Spares are available for VRV, chillers, split systems, multi, CVP, compressor spares, fan motors indoor and outdoor, fan guards, fan blades, thermistors, inverter boards, main power boards, four way valves, condensing unit coil's, PCB's, Daikin accessories, Altherma spares, wireless thermostats and controllers to only name a few.







Midea offer intelligent indoor climate control for most commercial applications. On the leading edge of digitalisation, they offer optimal systems of space heating, cooling, hot water and air purification.

Manufactured in China, Midea is becoming one of the world's fastest-growing companies, offering a wide range of products to serve the needs of day-to-day living fully. The company is known for being one of the top manufacturers of HVAC products, boasting an annual global sales output of over 52 million systems.

## SPLITS

Midea Split System has a wide range of residential and light commercial split systems which combine innovative technology with elegant design.

### AG ECO (WALL MOUNTS)

Midea's AG Eco wall mounted range is highly efficient (SEER A++) and ideal for heating and cooling spaces in homes or offices. Available from 2kW-8kW, the range has a unique design and the latest inverter technology for an easy and economical set-up and operation at an affordable price.

- Sleek and elegant design
- 3d air flow with vertical & horizontal swing
- Turbo function
- 'Follow me' sensitive cooling
- Self-cleaning outdoor unit
- Optional multi-function control board
- Wi-fi control



### i-CUBE BREEZELESS E (WALL MOUNT)

Midea's I-Cube Breezeless E has an effective rapid cooling and heating function as it heats or cools a room in just 10 minutes. The units are equipped with a UVC sterilisation module which uses ultraviolet light to kill bacteria and prevent mould growth.

- Rapid Cooling and Heating Modes
- i-Health – UV Lamp
- i-Eco Dashboard
- Optional Multi-Function Board
- Built in Wi-Fi



### BREEZELESS+ (WALL MOUNTS)

Midea's innovative BreezelessSS+ wall mounted range uses the world's first TwinFlap™ technology with 7,928 mini-hole matrix. The matrix softens the airflow so you can barely feel it, leaving you comfortably cool without any unpleasant blasts of cold air. Benefiting from an energy efficiency rating of A+++, the units have a 'boost mode' to cool your space in just 40 seconds.

- BreezelessSS+ Effect
- Side Outlet
- Self-Cleaning Outdoor Unit
- Rapid Cooling
- Economic Mode
- Filters and Self Cleaning



### VERTU PLUS (WALL MOUNT)

Available from 2.6kW to 4.0kW the Midea Vertu Plus wall mounted series achieves market leading energy efficiency with a SEER of 8.6 (A+++) and SCOP of 4.6 (A++). The stylish units, with attractive mirror finish change colour depending on the mode setting; trendy mode indicators light up blue when used for cooling and orange when used for heating.

- Leading Energy Efficiency
- Unique V-Shaped Design
- Smart & Intelligent Control
- Midea Proactive Pure
- 'Follow Me' Sensitive Cooling
- Wide Angle Air Flow
- Easy to Clean
- Wi-fi control



## CONSOLE UNITS

Simple, stylish, and compact Midea console units fit into any interior. The units are designed to be installed on the floor or lower wall depending on your requirements. The units have an easy-to-remove front panel which provides easy access to filters, refrigerant pipes and electrical connections.

- Flexible Installation
- Turbo Mode
- Anti-cold Air Function
- Low Ambient Cooling
- Auto Restart Function
- Louvre Position Memory



## DUCTED

With its compact design, the Midea A6 Ducted range can be easily mounted in a ceiling void in a commercial office or retail space and offers flexible control and easy maintenance.

- Flexible air intake position
- Built in drain pump
- Multi channel air flow distribution
- LED chassis mounted display
- Fresh air inlet
- Flexible control and easy maintenance



## COMPACT ROUND FLOW CASSETTE

The Midea Compact RoundFlow Cassette is the perfect solution for commercial, office or retail spaces. It features a 360° air outlet which provides even airflow circulation to cool or heat every corner of a room and keep a constant temperature.

- 360° Airflow Outlet
- Fresh Air
- Built-in Drain Pump
- LED Fascia Display
- Remote Signal



## BREEZELESS+ ROUNDFLOW CASSETTE

The super slim Midea BreezelessSS+ cassettes have low heights starting from just 205mm, allowing for easy installation in shallow ceilings. The new cassette allows optimum comfort to be achieved, tailored to each unique user's preference via various modes; Air Blast, Gentle Flow and Power Breezeless mode.

- BreezelessSS+ Effect
- 360° Airflow Outlet
- 'Follow Me' Sensitive Cooling
- Fresh Air Inlet & Drain Pump
- LED Fascia Display
- Independent vane control
- Super slim design
- Twin Combinations Remote Signal



## CEILING AND FLOOR

This stylish range of Midea units can be installed either horizontally on the ceiling or vertically against the wall. Perfect for spaces which do not have suspended ceilings the units feature '3D air flow', which supplies an even and comfortable airflow.

- Easy installation
- Auto swing and wide angle air flow
- Optimal Comfort



## MULTI SPLIT

The Multi Split series is the ideal solution for efficient 2, 3, 4 or 5 zone air conditioning with a single outdoor unit.

- Flexible installation
- Dedicated indoor units





## VRF

Midea offers high performance VRF outdoor units with heat pump and heat recovery technology. The variety of models bring high efficiency, high reliability cooling and heating to projects large and small. With 11 types and more than 100 models, Midea VRF indoor units can meet a variety of customer requirements in a wide range of locations including shopping centres, hospitals, office buildings, hotels and airports.

### MINI VRF

Available in capacity ranges from 7.2kW to 45kW Midea's Mini VRF range is slim and compact, resulting in significant savings on installation space. Perfect for commercial and residential applications such as small offices, apartments, and shops, up to 20 indoors can be connected to a single outdoor unit saving time, space, and money.

#### WIDE APPLICATION RANGE

- Wide range of indoor units
- Wide Operation Range: minus 15°C to 48°C.
- Long Pipe Length

#### EASY INSTALLATION AND SERVICE

- Easy installation
- Space saving design
- Auto Addressing



### V6R HEAT RECOVERY

Midea's V6R range is the industry's first 3 pipe Heat Recovery VRF with zonal leak detection to guarantee the system's safe and reliable operation. Available from 8HP to 54HP the exclusive range is extremely versatile and can meet the needs of small, medium, or large sized applications.

- Zonal Leak Detection
- Wide Capacity Range
- Flexible and easy to install
- Fresh Air Supply
- Multiple Port MS Boxes
- Domestic Hot Water and Underfloor Heating



### V6 HEAT PUMPS

Midea's V6 Heat Pump range is available from 8HP up to 32HP, which is the world's largest single VRF unit capacity. The highly efficient range has a space saving design and its EVI compressor significantly increases heating and cooling capacity under extreme conditions.

## Touch screen controllers & BMS interface

Midea has an extensive range of controllers, including touch screen modules, to suit all user requirements.



## HEAT PUMPS

M Thermal provides an energy efficient solution that delivers space heating and cooling and domestic hot water. It is a complete all-year-round, integrated heating system which can replace, or work in synergy with traditional gas or oil boilers.

### M THERMAL R32 MONOBLOC AIR TO WATER HEAT PUMP

- Full range from 4kW to 16kW
- High seasonal efficiency A+++ ErP Energy Rating
- Maximum sound power ≤60dB(A), rated sound power ≤58dB(A)
- Silent Chamber – only 35 Db(a) sound pressure level at 3 metres
- Maximum outlet water temperature – 65°C
- Continuous water supply temperature, 60°C even as low as -20°C
- Efficient heating capacity even when at -7°C air temperature
- Energy consumption data for running cost analysis
- DC inverter compressor, fan motor and pump to allow precise control
- Program upgrade via USB port on system PCB
- WiFi/App control as standard
- Advanced intuitive controls



## VENTILATION

Midea heat recovery ventilation ensures effective fresh air in any application. The exceptionally quiet units can greatly reduce energy losses and room temperature fluctuations caused by the ventilation process.

- Enhanced efficiency
- Low noise
- Flexible control
- Multiple modes



## DX INTERFACE KITS

The DX Interface is a control box which allows Midea VRF outdoor units to connect to third party equipment with a heating or cooling coil. The cooling/heating requirement can then be provided via the Midea outdoor units.

- High flexibility with capacity adjustment
- Flexible controls
- Led mounted display
- Flexible installation





## ANCILLARIES



To complement the air conditioning range, SBS stock air conditioning and refrigeration ancillaries to support our customers and offer a complete package. Teaming up with market leading and high quality brands such as Aspen, Lawton, Armaflex, DiversiTech along with our service levels, gives Smith Brothers a real competitive advantage in the market place.

The main range consists of copper, lagging, steel, mounting support, pumps and clips but stocks of trunking, refrigerant gas and electrical cable are also available to fulfil project needs.

### COPPER

Copper pipe for refrigeration and air conditioning, all meet PED and EN 12735 standards with our suppliers conforming to quality management system ISO 9001. The tube is designed specifically for refrigeration and air conditioning use and is accordingly cleaned, nitrogen-purged and capped. Please note that straight length copper above 2 1/8" is available in various gauges and lengths upon request on a 3 week lead time. Refrigeration fittings are degreased copper endfeed/endbrazed, manufactured to the latest ASME standards, and are specifically designed for copper refrigeration and air conditioning systems.

|           |                         |
|-----------|-------------------------|
| COIL:     | 3/16" to 7/8" 15m & 30m |
| FROM:     | 19 to 22 gauge          |
| STRAIGHT: | 3/8" to 4 1/8" 3m & 6m  |
| FROM:     | 11 to 21 gauge          |



### RLS

RLS & MaxiPro press fittings offer a simple, effective and economical method to create reliable copper tube connections, with the fittings designed and engineered to join copper tube in high-pressure HVAC and refrigeration systems. RLS press fittings are fully registered and listed to UL207 for pressures up to 700 PSI.

These fittings connect quickly and easily using an RLS-approved press tool and jaws, replacing the time-consuming practice of manually brazing joints. The pressing procedure is similar to the one used with water press fittings. RLS press fittings, however, were developed to withstand the high pressures found in HVAC/R systems. MaxiPro fittings can also be sourced and supplied.



### INSULATION

A full range of insulation is offered to suit all sizes of copper which can reduce energy losses along with preventing condensation, mould and bacteria. Lengths, bags and boxes are all offered with various thickness to suit all pipe size requirements.



## ANCILLARIES



### PUMPS

SBS offer a wide selection of pumps which continue to make the installer's life easier whilst offering the most reliable condensate removal pumps available.

As the range continues to expand finding a product to space, power and noise requirements is easier than ever with simply plug and play options available. There are many benefits to using a condensate removal pump over gravity, with four different types:

- Piston
- Peristaltic
- Centrifugal
- Diaphragm



To compare the pumps available refer to pump comparison tables in vital statistics section for more information.



### PIPE CLAMPS, FIXINGS & STEEL

A full range of clips such as BBJ's and cushion clamps are stocked in bag quantities across the full range of size dimensions. The vast steel range and fixings covers such items as; cantilever arms, cable tray, slotted channel, studding rod, G clamps, wedge anchors, nuts/bolts, zeds, washers etc.



### CHEMICALS

A wide range of cleaners and maintenance products are available in various forms from powder to concentrates, through to aerosols and odour control jelly's. The company also stock NSF approved products which may be required in certain situations or conditions. Smith Brothers branches all have access to a product selection chart to help ensure the product is fit for purpose whether it be professional heavy duty use or regular maintenance.



# ANCILLARIES



## MOUNTING

Mounting blocks for various loads and anti-vibration pads with normal or lightweight options. The support system is also available with strut which can be custom built to support any unit or load requirement. With the increasing need to mount equipment safely, especially when on a roof top, this system option offers a flexible solution for spreading load.



## PROTECTION & BRACKETS

Cages to protect and house outside units are available for both floor or wall mounted units. A range of brackets (some with built-in spirit level) with condensation trays for all size and weight options to support wall hung units are stocked.



## TRUNKING

Available in both 75mm, 105mm and 140mm sizes in ivory, white and black colour options. All fittings and components are manufactured to a high standard to give a professional finish. Also UV resistant, fire proof and offering protection against damage.



# ANCILLARIES



## ELECTRICAL

Often run through trunking a range of electrical accessories such as rotary isolators and switch fuses (both metal and plastic) are available for indoor or outdoor use. The cable has different thickness, length, colour and number of cores.



## CABLE

- THICKNESS: 0.75 to 4mm
- NUMBER: 2 to 5 core
- COLOUR: Black, Clear, Grey or White
- COIL LENGTH: 25 to 100 metres

## CONSUMABLES

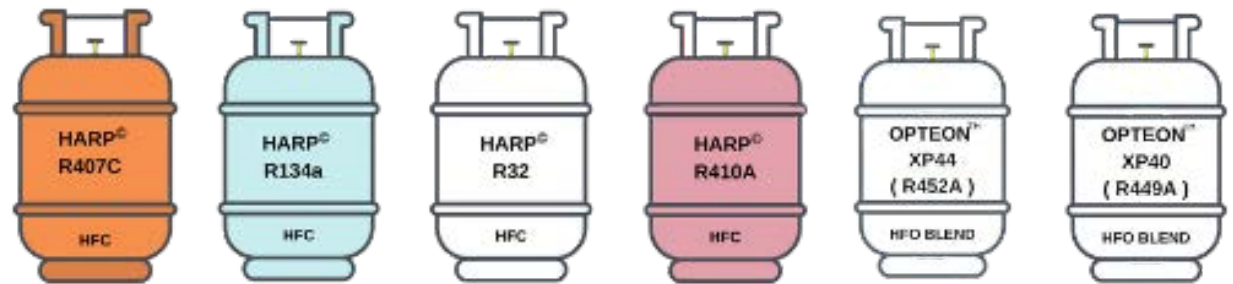
The usual stock of sundries is kept such as:

- Cable ties
- Flushing kits
- Mapp gas
- Portables
- Silicone sealants
- Fan motors
- Tape
- Braided hose



## GAS

All SBS gas cylinders are now rental FREE for a 12 month period. Providing the customer has an FGAS registration number we stock and can deliver various size bottles from stock. The monitoring of bottles is audited by the branches, with some offering a loan free period meaning their is no upfront deposit. Refilling of gas is not done on site but the empty bottles get sent off for refilling, we provide a full bottle so there is no delay.





# ANCILLARIES & CONSUMABLES

To complete every project Smith Brothers have a wide array of consumables to make sure the installers have everything they require to hand over the job on time. With different support options to hang or mount your equipment, SBS stock all possibilities along with appropriate insulation to meet specific guidelines for heat loss or fire ratings. Various brands of tools and jointing compounds are stocked depending on preference.



- ◆ KEE SAFETY
- ◆ BRACKETRY
- ◆ TOOLS
- ◆ SUPPORT SYSTEMS
- ◆ PIPE SUPPORT
- ◆ INSULATION
- ◆ JOINTING

## KEE SAFETY



Kee Safety are a provider of fall protection systems, guardrails and working at height safety equipment. The range has expanded from the original Kee Klamp products, to a portfolio of safety equipment, all designed to separate people from hazards.

### RANGE

- TUBULAR FITTINGS:** Kee Klamp, Kee Access & Kee Lite tubular fittings
- FALL PROTECTION:** Collective and personal fall protection systems such as, roof edge guardrail, step over platform, and portable anchor products skylight protection
- SAFE ACCESS SOLUTIONS:** Self closing safety gates offering protection for such areas like stairs, pallet loading areas and fall hazards
- STEEL TO STEEL FIXINGS:** BeamClamp & BoxBolt steel to steel connection products

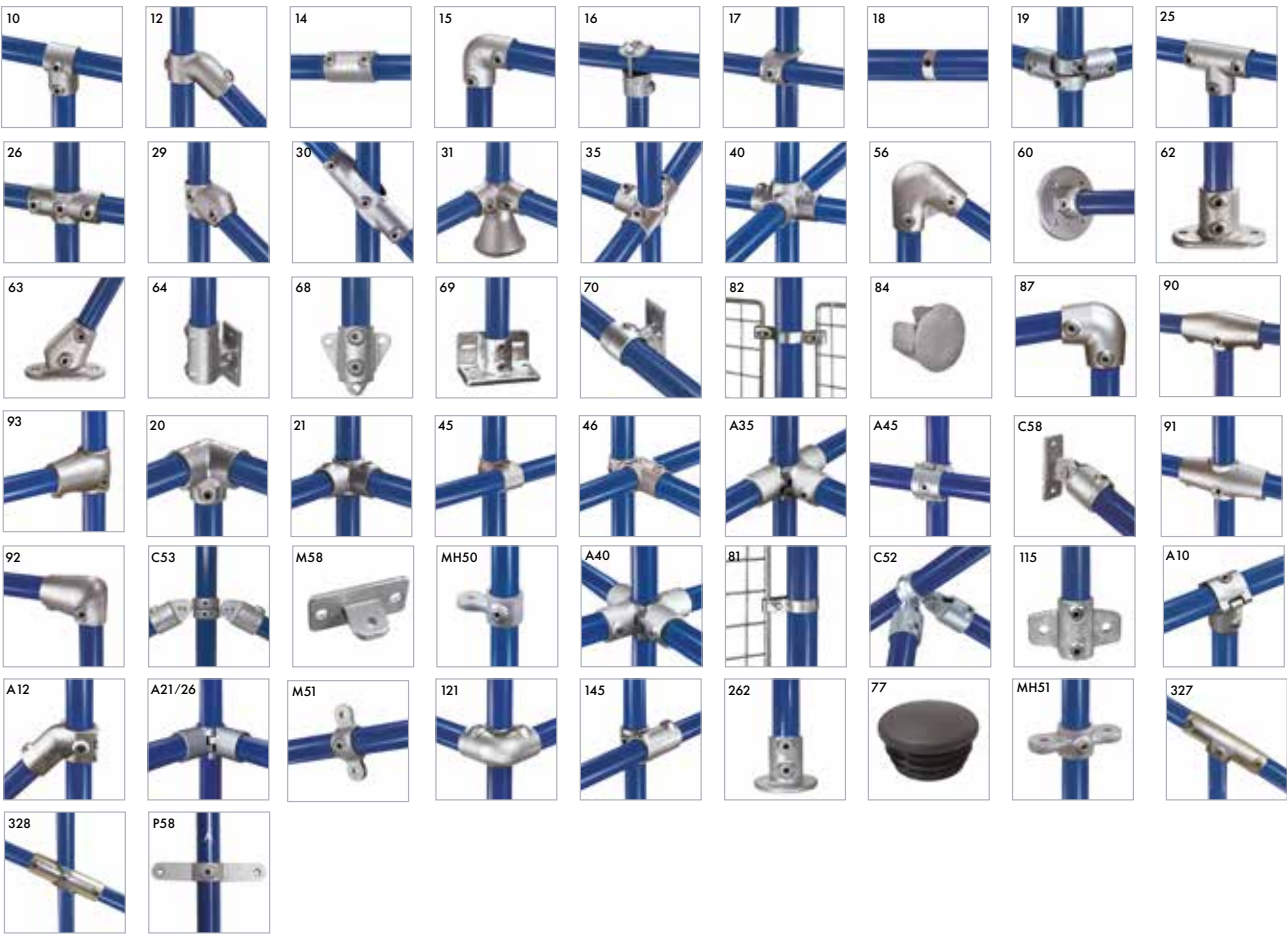
### TUBULAR FITTINGS

#### KEE KLAMP

Kee Klamp are tubular fittings that are galvanised iron castings manufactured to the requirement of BS EN 1562 & 1563. The tubing is slipped into the fitting and locked by a cup-ended socket set screw. A simple hexagon key is the only tool required to give a strong rigid joint. All components are produced in a range of sizes to suit steel tubing to BS EN 10255 (ISO 65) medium or heavy gauges and 17.5mm to 60.3mm outside diameter. Tube manufactured to other specifications can be used providing the steel is compatible with BS EN 10255 (ISO 65) and the wall thickness is not less than 3.2mm.

| KEE KLAMP SIZE | OUTSIDE DIAMETER | NOMINAL BORE |
|----------------|------------------|--------------|
| 3              | 17.5mm           | 10mm         |
| 4              | 21.3mm           | 15mm         |
| 5              | 26.9mm           | 20mm         |
| 6              | 33.7mm           | 25mm         |
| 7              | 42.4mm           | 32mm         |
| 8              | 48.3mm           | 40mm         |
| 9              | 60.3mm           | 50mm         |

- CONNECTION:** Allen key
- FINISH:** Galvanised



KEE SAFETY



KEE ACCESS

Kee Access is DDA compliant handrail where the components are designed to create safety handrailing that complies with the UK Disability Discrimination Act (DDA). With Kee Access, the hand rail only comes in tube size 7 with an upright tube size of 8.



KEE LITE

Tubular fittings made from high grade aluminium silicon magnesium alloy which is strong yet light and extremely durable even in harsh environments, offering a lighter weight flexible solution.

FALL PROTECTION

- KEE ANCHOR:** A modular dead weight anchor fall prevention system; Kee Anchor can be used in conjunction with horizontal safety lines and for rope access work
- KEE GUARD:** A free standing fall protection system that does not penetrate the roof membrane. KeeGuard is fully tested and meets or exceeds roof top safety requirements
- KEE DOME:** A free standing skylight fall protection system which does not penetrate the roof membrane, fits square and rectangular skylights. Complies to EN 14122: pt3
- KEE COVER:** Adaptable cover for roof lights on trapezoidal and standing seam roofs. The safety solution for skylight protections
- KEE STEP:** A range of modular step-over platforms providing safe access over obstacles on roofs and on the ground Vlevel, such as pipework, plant equipment, cable trays and air-conditioning ducting

SAFE ACCESS SOLUTIONS

- KEE GATE:** A portfolio of self closing safety gates for internal or external applications in rooftop or industrial manufacturing environments which complies with the latest version of the standard BS EN ISO 14122-3:2016

STEEL TO STEEL FIXINGS

- BEAM CLAMP:** An extensive range of clamping products designed for connecting steel to steel without the need to drill or weld on site
- BOXBOLT:** An approved blind cavity fixing for structural steelwork where access is restricted to one side only

BRACKETRY



Channel manufactured in accordance with BS6946:1988 available in 3 and 6 metre lengths in plain or slotted profile, back-to-back profile in both standard and light gauge material. Pre-galvanised finish, full end slots on all sections. All Bracketry manufactured in accordance with BS6946, 6mm thick Galvanised finish. Channel support system is fully certified in accordance with BSI guidelines.

- SIZE:** 6mm thick Galvanised finished
- LENGTHS:** 3m & 6m for plain and slotted channel (including back to back) in various thicknesses
- FINISH:** Pre-galvanised

CORE Range

|   |  |   |   |  |   |
|---|--|---|---|--|---|
| CORE Square Plate Washer<br>TS00M08 - M8<br>TS00M10 - M10<br>TS00M12 - M12<br><br>weight - 70grms   | TS01 - CORE 2 Hole Plate<br><br>weight - 145grms   | TS02 - CORE 3 Hole Plate<br><br>weight - 220grms  | TS03 - CORE 4 Hole Plate<br><br>weight - 285grms  | TS06 - CORE 'L' Bracket<br><br>weight - 225grms  | TS07 - CORE 'T' Bracket<br><br>weight - 345grms                             |
| TS11 - CORE 90 Degree Bracket,<br>2 Hole<br><br>weight - 148grms  | TS12 - CORE 90 Degree Bracket,<br>3 Hole<br><br>weight - 230grms   | TS14 - CORE 90 Degree Bracket,<br>4 Hole<br><br>weight - 310grms                                      | TS15 - CORE 90 Degree Bracket<br><br>weight - 420grms   | TS4521 - 41x21 CORE Window<br>Bracket c/w Screw<br><br>weight - 315grms  | TS45 - 41x41 CORE Window<br>Bracket c/w Screw<br><br>weight - 370grms       |
| TS4582 - 82x41 CORE Window<br>Bracket c/w Screw<br><br>weight - 470grms   | TS44 - CORE Beamclamp<br>41x41 Channel<br><br>weight - 430grms   | TS23 - 41x41 CORE Single<br>'Z' Bracket<br><br>weight - 205grms                                       | TS29 - 45 Degree CORE Obtuse<br>Angle Bracket<br><br>weight - 240grms   | GB31 - M10 CORE 'Z' Type<br>Beam Clamp (10° pitch)<br><br>weight - 155grms   | GB32 - 41x41 CORE Double<br>Channel Top Hat Bracket<br><br>weight - 420grms |
| TS48 - CORE Beamclamp<br><br>weight - 120grms   | TS37 - CORE Base Plate<br>Double Channel<br><br>weight - 1310grms  | GB39 - CORE 5 Hole Cross Plate<br><br>weight - 645grms  | TSDELTA - CORE Single Delta<br>Baseplate<br><br>weight - 1695grms   | TSDELTA2 - CORE Double Delta<br>Baseplate<br><br>weight - 1920grms   | TS25 - 41x21 CORE Channel<br>Top Hat Bracket<br><br>weight - 290grms        |
| TS28 - 41x41 CORE Channel Top<br>Hat Bracket<br><br>weight - 350grms  | TS26A - 41x82 CORE Double Strut<br>Top Hat Bracket<br><br>weight - 530grms   | GB42A41 - 41x41mm CORE<br>Full Internal Channel<br>Connector<br><br>weight - 352grms                  | TS38 - CORE Single Base Plate,<br>Double Fix<br><br>weight - 645grms  | TS39 - CORE Single Base Plate,<br>Single Fix<br><br>weight - 595grms   | GB46 - CORE Channel Tee Bracket<br><br>weight - 725grms                     |
| CORE Universal Cantilever Arm<br><br>TS40150 - 150mm<br>TS40300 - 300mm<br>TS40450 - 450mm<br>TS40600 - 600mm<br>TS40750 - 750mm<br>TS40900 - 900mm | CORE PVC Channel End Cap<br><br>CEC421 - 41x21 Black<br>CEC421W - 41x21 White<br>CEC441 - 41x41 Black<br>CEC441W - 41x41 White | CORE Channel Nut with No Spring<br><br>TSSNM06 - M6<br>TSSNM08 - M8<br>TSSNM10 - M10<br>TSSNM12 - M12 | CORE Channel Nut<br>with Short Spring<br><br>TSSNSM06 - M6 Short Spring<br>TSSNSM08 - M8 Short Spring<br>TSSNSM10 - M10 Short Spring<br>TSSNSM12 - M12 Short Spring | CORE Channel Nut<br>with Long Spring<br><br>TSSNLM06 - M6 Long Spring<br>TSSNLM08 - M8 Long Spring<br>TSSNLM10 - M10 Long Spring<br>TSSNLM12 - M12 Long Spring | TSPVCCS - CORE White PVC<br>Closure Strip<br>3 Metre Length<br>             |



# TOOLS



Through Rothenberger, Rems, Ridgid and CORE, your tool requirements can be met whether your pipes require cutting, joining, bending or cleaning. The extensive range has been designed specifically for plumbing and heating engineers. From mini press guns and pressure test pumps, to pipe cutters and wrenches, our world leading manufacturers make life easy for the pipe installation professional. A brief overview of the range can be seen below:

## PRODUCT RANGE

|   |   |
|---|---|
| *CUTTING:                                 | Pipeslice, tube cutters etc                                     |
| *HAND TOOLS:                              | Pliers, wrenches etc  |
| EXPANDING & EXTRACTING TOOLS:             | For different size tubes  |
| BENDING TOOLS:                            | Different type benders – Hydraulic, electrical, stand, hand etc |
| PRESS FITTING TOOLS:                      | Guns and jaws for different sizes & range                       |
| PIPE THREADING:                           | Different size machines with accessories available              |
| PIPE SAWING:                              | For all types of application                                    |
| *DRILLING:                                | Different drill bits available                                  |
| HOLE CUTTING:                             | Sets and individual obtainable                                  |
| GAS & WATER TESTING:                      | Manometers, gauges, all other accessories                       |
| PRESSURE & ELECTRONIC TESTING EQUIPMENT:  | Test kits, accessories  |
| PIPE FREEZING:                            | Both spray & kit with accompanying accessories                  |
| PIPE & DRAIN CLEANING AND INSPECTION KIT: | Both electrical & manual with accessories                       |
| SOLDERING & WELDING TOOLS:                | Sets & individual items   |
| GAS:                                      | Propane, Mapp-Gas etc.  |

\* Available within the CORE range



# SUPPORT SYSTEMS



The CORE mounting system provides a versatile option for distributing load and decreasing vibration, together with cable tray runs to keep everything safe and organised, in response to the growing requirement to mount plant equipment safely, particularly when doing so on a roof top. The non-penetrative system can support objects like duct, pipes, and cable ladder/tray in either bespoke or modular form depending on requirement, whether it be for service containment or mounting. Modern lightweight roofs are protected by the Core range thanks to its cost- and time-effective installation, better system aesthetics, and lack of roof top membrane damage, among other advantages. Walkways, step-over platforms, and roof edge protection have all grown quite popular as a result of health and safety standards. This group of products has been a valued addition to support installers of heavy plant equipment on roof top installations.



# PIPE SUPPORT



A comprehensive range of pipe support systems are available from stock and a brief overview is listed below:

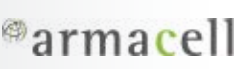
## PRODUCT RANGE

|                               |  |
|-------------------------------|--|
| CLIPS:                        | 6nb to 300nb lined, unlined, split bands, saddles                |
| MALLEABLE IRON:               | 6nb to 150nb single rings, school board clips, screw on brackets |
| BRASS:                        | 15mm to 108mm single rings, school board clips                   |
| PLASTIC:                      | Talon single & double wrap over clips, 15mm to 28mm              |
| SLOTTED CHANNEL & RAPID RAIL: | 41 x 41 x 1.6/2.5, 41 x 21 x 1.6/2.5, back-to-back (82 x 41)     |
| CHANNEL ACCESSORIES:          | Slide nuts, square plate washers, channel fittings               |
| PHENOLIC & WOODEN BLOCKS:     | Full range to suit steel, copper pipes                           |
| HOSES & TAP CONNECTORS:       | Braided, fan coil, gas, metallic                                 |

CORE can supply everything above, but phenolic and wooden blocks.



# INSULATION



Various thickness, slit, un-slit, self sealing and foil lagging available to maximise heat savings, noise reduction and pipe protection.

By only stocking quality lagging, such problems like condensation control, corrosion issues and mould/bacteria growth prevention can be overcome. Coils and straight lengths available with flexible options means that SBS have lagging to suit any pipework and temperature requirement.



# JOINTING



All forms of jointing and sealants available for tube and fittings regardless of substance passing through the pipework.

## PRODUCT RANGE

- Flux
- Hemp
- Stag
- Solder
- PTFE
- Glue
- Loctite
- Silicone
- Brushes
- Tape



For a jointing guide on the various products please refer to the vital statistics section.



Core values, quality products



Contact your local SBS branch for more information, or visit:



[www.sbscore.co.uk](http://www.sbscore.co.uk)

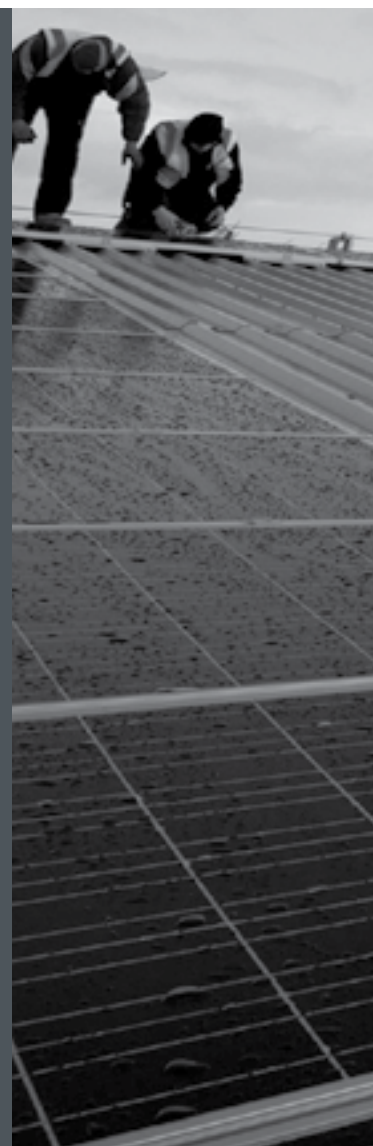


CORE by SBS





# RENEWABLES



Alternative energy sources and technology advances gives clients more choice than ever before. With constant changes in legislation and social responsibility, means demand can fluctuate.

However, SBS aims to work with a selection of providers to help fulfil project requirements from heat pumps to solar options, the choice is extensive.



- ◆ HEAT PUMPS
- ◆ BIOMASS BOILERS
- ◆ SOLAR
- ◆ CYLINDERS
- ◆ UNDERFLOOR HEATING (UFH)
- ◆ CHP
- ◆ RAINWATER HARVESTING

With a wide range of renewables and RHI extending across a wide range of products, the sector keeps growing. At Smith Brothers, our customers have access to our supply chain so design, technical support and after sales service can be offered through the manufacturers.

## HEAT PUMPS



Heat pumps are designed to move thermal energy opposite to the direction of spontaneous heat flow, by absorbing heat from a cold space and releasing it to a warmer one or vice-versa. A heat pump uses some amount of external power to accomplish the work of transferring energy from heat source to output.

### AIR SOURCE

Air source heat pumps use the heat in the ambient air, to provide efficient heating and hot water at air temperatures as low as -25°C. Installation can be indoors or outdoors and with the UK having mild winters, excellent performance levels can be reached. Another feature associated with the product is low installation costs and minimal space requirements.

### GROUND SOURCE

The earth has energy from solar radiation and rainfall, so a ground source heat pump extracts this energy either horizontally or vertically. Although more costly to install, higher efficiency is usually achieved, regardless of seasonal variations in temperature.

### AIR TO AIR (GAS ABSORPTION)

An all in one heating and cooling system which works in reverse to a refrigerator providing low cost heating. The extremely efficient process can produce five times more heat than the electrical energy it uses. The added benefit is that the process can be reversed in the warmer months to provide cooling air.



## BIOMASS BOILERS



Biomass means a fuel of organic material (usually wood or plant) of recent origin, rather than fossil fuel which has taken millions of years to develop. As these organic materials absorb carbon dioxide (CO<sub>2</sub>) during growing, they cancel out any CO<sub>2</sub> production during combustion.

The biomass market most commonly uses wood pellets, logs and other wood waste materials such as MDF, chipboard, plywood, timber, OSB, MFC sawdust and other woody biomass materials.

The system uses a feeder mechanism taking fuel combined with air, and transferring it from the hopper to the combustion chamber. Therefore achieving over 90% heat production.

If a company uses biomass boilers and also manage a replanting programme, CO<sub>2</sub> neutral can be achieved.

For industrial customers who can source waste wood, Talbot's biomass boilers are an excellent choice for low carbon, meaning the cost of heating will be low.



## SOLAR

Solar power is the conversion of sunlight into energy. The products available are from various brand leading manufacturers offering flat plate, vacuum tube (tubular), on-roof and in-roof options.

For convenience SBS can offer solar packs which come complete all on one pallet ready for installation.

### THERMAL

Solar thermal is thermal energy generated from solar energy, for use in the industrial, residential and commercial sectors. The heat can be used in all types of applications such as providing hot water or warming swimming pools. This system is often used alongside a solar cylinder to maximise heat transfer space requirements.

### PHOTOVOLTAIC SYSTEM (PV)

A PV system is designed to supply usable electric power by using the Sun as a power source.

Systems can be built in various configurations such as:

- Off-grid without battery (array-direct)
- Off-grid with battery storage for DC-only appliances
- Off-grid with battery storage for AC and DC appliances
- Grid-tie without battery
- Grid-tie with battery storage



## CYLINDERS



Although cylinders have been around for years, they have developed considerably and can now offer a renewable solution itself or alongside other renewable systems.

### SOLAR

Available in different sizes, vented, unvented or sealed system types are available and manufactured from copper to stainless steel. The cylinders aim for maximum heat transfer of solar energy into stored water. They are available as direct and indirect versions. Direct units have an immersion heater to meet any additional load, while indirect units use input from the householders' traditional heat source (boiler) to top-up water temperature to the required level.

### BUFFERS

A buffer tank is integrated into a system when additional volume of hot water is required to provide uninterrupted operation of a heat pump. The tank increases the volume of water a heat pump has to heat, allowing excess heat to be stored until it is required. They can be manufactured from copper or stainless steel, for use on both vented and unvented (sealed) systems of variable sizes.

### AIR SOURCE

Hot water storage cylinders are designed specifically for use with an air source heat pump, with a back up immersion heater used if and when required. With direct and indirect options of various sizes available, they are an efficient and environmentally friendly way of providing hot water. Certain models operate quietly below 40dB(A) and have a plug & play (no F-Gas qualifications needed to install, only G3) feature along with excellent CoP ratings.



## UNDERFLOOR HEATING (UFH)

Smith Brothers work with leading brands, enabling our customers to have access to the best systems available to meet any demands of a new build or retrofit project. Systems come in electric or wet.

Installing wet underfloor heating tends to incur lower running costs and can work well with other renewables systems. However, electric often finds itself placed in domestic bathroom applications but either option can be supplied through SBS.

For any project, if you send through your UFH requirements to your local SBS branch, they can generate a quote or get manufacturers involved should tech support be required.

### BENEFITS OF UNDERFLOOR HEATING

- Invisible, energy-efficient solution
- The cost of underfloor heating is significantly lower in the long term
- Pleasant radiant heat over a large area
- Can be optimally combined with renewable energy sources
- Reliable, proven products
- Underfloor heating can easily be retrofitted

### SHOULD I INSTALL A WET OR ELECTRIC UNDERFLOOR HEATING SYSTEM?

#### ELECTRIC

##### SMALLER AREAS:

Typical installation of electric UFH is in smaller areas (22m<sup>2</sup>), where it is not suitable for a wet system to be installed.

##### RENOVATION:

Electric underfloor heating system is perfect for renovation projects, as it does not alter the overall floor height.

##### MAINTENANCE COSTS:

An electric system is not connected to a boiler, so there is little maintenance going forward.

##### INSTALLATION COSTS:

The floor system itself can often be installed by a budding DIY'er, however an electrician is highly recommended to complete the wiring.

#### WET

##### LARGER AREAS:

To fully benefit from the energy efficiency, it is suggested installing it in areas beyond 22m<sup>2</sup>.

##### RENOVATION & NEW BUILD:

Wet systems tend to have a higher installation height, which makes them more suitable for new build projects. There are smaller diameter pipe options, which might be more suited for renovation projects.

##### MAINTENANCE COSTS:

There will be ongoing boiler service costs, which are offset by the energy efficiency of the system and reduced heating bills.

##### INSTALLATION COSTS:

Many manufacturers have approved installers to connect the system. The initial setup costs will often be offset in a medium/long term cost comparison.





## CHP

Combined heat and power (CHP) plants, take advantage of cogeneration to generate both electricity and usable heat, which ideally is closely located to the heat/power area requirement. The result is a very high primary energy efficiency of over 100%.

By comparison, conventional power stations such as a large-scale gas-fired plants will only achieve a primary energy efficiency of between 30 to 50% and lose the majority of the energy as waste heat. This waste heat will be used as heat energy to heat water, or as process heat for industrial operations. The electricity produced is used in the plant's own building or fed into the public utility grid in return for remuneration to the energy supplier.

Whether using a CHP plant to generate heat and power for one multi-family dwelling, an entire housing development, a commercial building or an industrial process, solutions are available for cost effective operation with natural gas or biogas, with various electrical and thermal outputs.



### FEATURES

- Extremely efficient, lowers operating costs and is a more sustainable operation
- Low CO<sub>2</sub> and NO<sub>x</sub> emissions – supports environmental legislations
- Remote monitoring and control – greater visibility
- Achieve even higher efficiencies
- Suitable for new build and existing buildings with year-round heat and electrical demands
- Flexible solution to sustainable heat and power
- Low noise and quiet operation models
- For single use or in conjunction with condensing boilers
- Versatile solution to energy-efficient, low carbon heat and power generation

## RAINWATER HARVESTING

The system works from utilising rainwater that is usually harvested from a building and can be used in both a domestic & commercial environments. Collection can be both above or below ground via a gravity fed system or pressurised, where needed. With filters and excess flow outputs, via one way valves installed on tanks/pipework, the system can be developed to limit the requirement for heavy maintenance costs. The manufacturers have retro-fit options where needed.



# Renewables at SBS

Leeds Solar Install



SBS Vehicle Fleet



As well as selling renewable products, Smith Brothers use renewable technology within our branches, to help reduce our carbon footprint and become more sustainable.



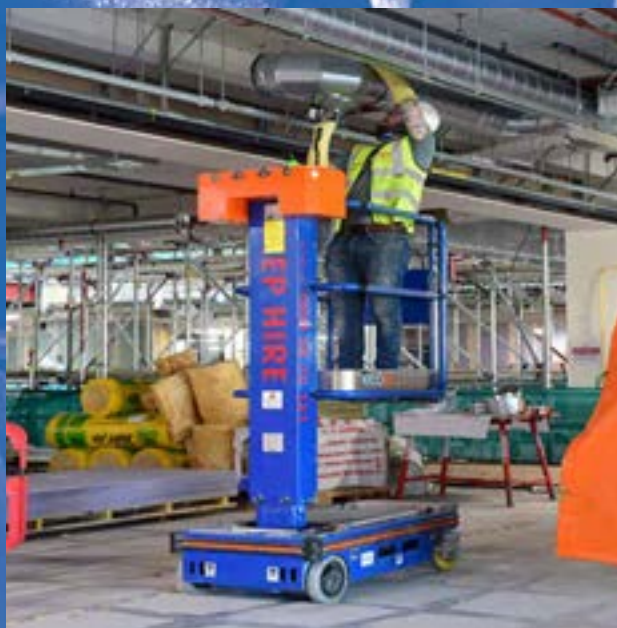
Rainham Branch Charger



Northampton Biomass Boiler



# TOOL HIRE



**TOOL & EQUIPMENT HIRE AVAILABLE  
AT COMPETITIVE PRICES  
ALL DELIVERED TO YOUR SITE**

**TO FIND OUT MORE 0844 892 1902  
SBS.HIRESTATION@VPPLC.CO.UK**



SMITH BROTHERS STORES LTD IN ASSOCIATION WITH MEP & BRANDON HIRE STATION

## TOOL HIRE

Smith Brothers have teamed up with MEP Hire, the leading provider of M&E tools. MEP specialise in supporting companies servicing the mechanical, electrical and plumbing industries. The partnership was developed for a sole purpose - to give our customers discounted hire rates while solving any tooling issues.

The discounted rates work on the basis that with 'group buying' through the SBS account, individuals can achieve greater discounts than would usually be available to them. MEP have access to the largest low level access fleet in Europe (covering Heights 1.5m to 5.1m) along with a national fleet of MEP mobile service engineers available to minimise customer downtime.

### THE BENEFITS OF HIRING THROUGH MEP:

- Largest press tool fleet within the UK
- One of the youngest hire fleets within the sector, continually updated
- Able to offer a comprehensive package of support, sales, hire and repair of HDPE installation equipment
- Including related ancillary items such as TIN 12 specification generators
- With a massive investment strategy, it enables them to grow the hire fleet within a specialist hire market
- Specific tooling specialists 'on hand' to tailor equipment to customer requirements

### HOW TO ORDER

#### TOOL HIRE ACCOUNT FORMS

Available to download via [www.sbs.co.uk](http://www.sbs.co.uk) or collect from any Smith Brothers representative.

#### PHONE

0844 892 1902 (Freephone)  
Monday to Friday: 07:30 to 17:00  
Saturday: 08:00 to 12:00

#### EMAIL

[sbs.hirestation@vpplc.com](mailto:sbs.hirestation@vpplc.com)

To speed up your order, it helps to have the following information to hand before you contact us:

- Details of the equipment you require
- The delivery address (including postcode)
- Contact phone number
- Credit/debit card details or your account number



# VITAL STATISTICS

A variety of important industry statistics to help with everyday questions and problems.

- ◆ PIPE SYSTEMS APPLICATION
- ◆ FLANGE CHARTS
- ◆ TUBE SIZE, WEIGHT & THICKNESS
- ◆ JOINTING GUIDE
- ◆ COMPARISON TABLES



**Please note:** As much information has been given and believed correct at time of publication, however it is only a guideline. Missing information was either not available or disclosed; confirm with manufacturers for full and accurate information as it is your responsibility any products meet the necessary requirements. Any reliance placed upon this information will be totally at the user's risk.

POTABLE WATER

| MANUFACTURER  | PRODUCT          | SIZE          | MAX PRESSURE (BAR)                  | TEMPERATURE (°C)                      | MATERIAL  | JOINTING                                   | WARRANTY (YEARS) |
|---------------|------------------|---------------|-------------------------------------|---------------------------------------|---|--|------------------|
| AALBERTS      | Henco            | 12 to 90mm    | 10                                  | Up to 95                              | MLCP = PEXc-Al-PEXc<br>PK = PVDF Fittings with S.Steel Cups<br>Brass = CW617N brass with S.Steel Cups | Press-Fit                                  | 10               |
|               | Tectite Classic  | 10 to 28mm    | 16                                  | -24 to 95                             | Brass   | Push-Fit                                   | 25               |
|               | Tectite 316      | 15 to 54mm    | 20 < 28mm<br>16 > 35mm              | -24 to 114 < 28mm<br>-24 to 90 > 35mm | Stainless Steel   | Push-Fit                                   | 25               |
|               | Tectite Pro      | 15 to 54mm    | 20 < 28mm<br>16 > 35mm              | -24 to 114 < 28mm<br>-24 to 90 > 35mm | Brass < 28mm<br>Gunmetal > 35mm   | Push-Fit                                   | 25               |
|               | Tectite Sprint   | 10 to 54mm    | 20                                  | -24 to 114                            | Copper  | Push-Fit                                   | 25               |
|               | Xpress Copper    | 15 to 108mm   | 16                                  | -20 to 110                            | Copper  | Press-Fit                                  | 25               |
|               | Xpress Stainless | 15 to 168mm   | 16                                  | -35 to 135                            | Stainless Steel   | Press-Fit                                  | 25               |
| AQUATECHNIK   | Safety-Pol       | 16 to 75mm    | 20 @ 20°C &<br>10 @ 95°C            | 0 to 70 (95 peak)                     | Pex-Al-Pex Multi-layer  | Flared Locking - Mechanical                | 25               |
| EMMETI        | Gerpex           | 16 to 75mm    | 10                                  | 0 to 95                               | Multi-layer   | Press-Fit                                  | 1                |
| FRABO         | Copper           | 12 to 108mm   | 16                                  | -10 to 110                            | Copper  | Press-Fit                                  | 30               |
| GEORG FISCHER | ABS BS Inch      | 3/8" to 8"    | 15                                  | -50 to 60                             | ABS   | Screwed, Solvent Weld                      | 1                |
|               | ABS Metric       | 16 to 315mm   | 16                                  | -50 to 60                             | ABS   | Screwed, Solvent Weld                      | 1                |
|               | PVCu BS Inch     | 3/8" to 8"    | 15                                  | 0 to 60                               | PVCu  | Screwed, Solvent Weld                      | 1                |
|               | PVC Metric       | 6 to 400mm    | 16                                  | 0 to 60                               | PVCu  | Screwed, Solvent Weld                      | 1                |
|               | Instaflex        | 16 to 225mm   | 16                                  | -10 to 95                             | PB  | Electrofusion, socket fusion & compression | 1                |
|               | ELGEF Plus       | 20 to 1200mm  | 16                                  | -40 to 65                             | PE 100  | Weld, Electrofusion                        | 1                |
|               | PVC-C            | 16 to 225mm   | 16                                  | 0 to 80                               | PVC-C   | Screwed, Solvent Weld                      | 1                |
|               | PROGEF Plus      | 20 to 315mm   | 10                                  | 0 to 80                               | PP  | Butt Fusion                                | 1                |
|               | Sanipex MT       | 16 to 63mm    | 10                                  | 0 to 80                               | PE-RT/Al/PE-RT  | Cone-Grip technology                       | 1                |
|               | Primofit         | 1/2" to 3"    | 16                                  | -20 to 40                             | Iron (EPDM seal)  | Compression                                | 1                |
| ISOTUBI       | Cool-Fit 2.0/4.0 | 32 to 450mm   | 16 (d32 to 450)<br>10 (d160 to 450) | -50 to 60                             | PE100/GF HE FOAM/HDPE   | Electrofusion                              | 1                |
|               | Numeppress       | 15 to 168.3mm | 16                                  | -20 to 110                            | Stainless Steel   | Press-Fit (EPDM)                           | 25               |

POTABLE WATER

| MANUFACTURER               | PRODUCT            | SIZE                     | MAX PRESSURE (BAR)       | TEMPERATURE (°C)  | MATERIAL              | JOINTING                | WARRANTY (YEARS) |
|----------------------------|--------------------|--------------------------|--------------------------|-------------------|-----------------------|-------------------------|------------------|
| PLASSON                    | Mechanical         | 20 to 160mm              | 16 @ 20°C                | -10 to 50         | Polypropylene         | Compression             | 1                |
|                            | Push-Fit           | 20 to 63mm               | 16 @ 20°C                | -10 to 50         | Polypropylene         | Push-Fit                | 1                |
|                            | Electro-Fusion     | 20 to 1200mm             | 25 @ 20°C                | -10 to 50         | Polypropylene         | Electrofusion           | 1                |
| POLYPIPE BUILDING SERVICES | Effast ABS         | 1/2" to 8"               | 15                       | -40 to 60         | ABS                   | Solvent Weld / Threaded | 1                |
|                            | Effast PVCu        | 1/2" to 8"               | 15                       | 0 to 60           | PVCu                  | Solvent Weld / Threaded | 1                |
|                            | Effast PVCu metric | 16 to 315mm              | 16                       | 0 to 60           | PVCu                  | Solvent Weld / Threaded | 1                |
| RWC                        | JG Speedfit        | 10 to 28mm               | 3                        | Up to 95          | PEX                   | Push-Fit                | 25               |
| UPONOR                     | MLCP               | 16 - 110mm               | 10                       | 0 to 70 (95 peak) | Multi-layer           | Press-Fit               | 25               |
| VICTAULIC                  | Stainless          | 2" to 12" or 50 to 300mm | 16                       | -34 to 110        | Ductile Iron Fittings | Grooved                 | 1                |
| VIEGA                      | Protipress         | 12 to 108mm              | 16                       | -5 to 110         | Copper & Gunmetal     | Press Connection        | 25               |
|                            | Sanpress Inox      | 15 to 108mm              | 16                       | -5 to 110         | Stainless Steel       | Press Connection        | 25               |
|                            | Sanpress           | 12 to 108mm              | 16                       | -5 to 110         | Gunmetal              | Press Connection        | 25               |
|                            | Smartpress         | 16 to 63mm               | 10                       | Up to 70          | Multi-layer           | Press Connection        | 25               |
| WAVIN                      | Hep2o              | 10 to 28mm               | 12 @ 20°C &<br>3 @ 114°C | -15 to 114        | Polybutelene          | Push-Fit                | 50               |

FIRE PROTECTION

| MANUFACTURER  | PRODUCT                       | SIZE                     | MAX PRESSURE (BAR)                                       | TEMPERATURE (°C) | MATERIAL              | JOINTING         | WARRANTY (YEARS) |
|---------------|-------------------------------|--------------------------|--|------------------|-----------------------|------------------|------------------|
| AALBERTS      | Xpress Sprinkler Stainless    | 22 to 108mm              | 16 (up to DN65)<br>12.5 (up to DN80)<br>10 up (to DN100) | -35 to 135       | Stainless Steel       | Press-Fit        | 25               |
|               | PowerPress                    | 1/2" to 2"               | 16   | -40 to 135       | Steel                 | Press-Fit        | 5                |
| CRANE         | Malleable Iron (Black & Galv) | 1/8" to 6"               | 25   | -20 to 300       | Malleable Iron        | Screwed          | 1                |
| GEORG FISCHER | Malleable Iron (Black & Galv) | 1/8" to 4"               | 25   | -20 to 300       | Malleable Iron        | Screwed          | 1                |
| ISOTUBI       | Numeppress                    | 15 to 168.3mm            | 16   | -20 to 110       | Stainless Steel       | Press-Fit (EPDM) | 25               |
| VICTAULIC     | Carbon Steel                  | 1" to 24" or 25 to 600mm | 24   | -34 to 110       | Ductile Iron Fittings | Grooved          | 1                |
| VIEGA         | Sanpress Inox                 | 15 to 108mm              | 16   | -5 to 110        | Stainless Steel       | Press Connection | 25               |
|               | Megapress                     | 1/2" to 4"               | 16   | -5 to 110        | Steel                 | Press Connection | 25               |
|               | Sanpress                      | 12 to 108mm              | 16   | -5 to 110        | Gunmetal              | Press Connection | 25               |
|               | Smartpress                    | 16 to 63mm               | 10   | Up to 70         | Multi-layer           | Press Connection | 25               |



HEATING

| MANUFACTURER  | PRODUCT          | SIZE                     | MAX PRESSURE (BAR)       | TEMPERATURE (°C)                      | MATERIAL  | JOINTING                                   | WARRANTY (YEARS) |
|---------------|------------------|--------------------------|--------------------------|---------------------------------------|---|--|------------------|
| AALBERTS      | Henco            | 12 to 90mm               | 10                       | Up to 95                              | MLCP = PEXc-Al-PEXc<br>PK = PVDF Fittings with S.Steel Cups<br>Brass = CW617N brass with S.Steel Cups | Press-Fit                                  | 10               |
|               | Tectite Classic  | 10 to 28mm               | 16                       | -24 to 95                             | Brass   | Push-Fit                                   | 25               |
|               | Tectite 316      | 15 to 54mm               | 20 < 28mm<br>16 > 35mm   | -24 to 114 < 28mm<br>-24 to 90 > 35mm | Stainless Steel   | Push-Fit                                   | 25               |
|               | Tectite Pro      | 15 to 54mm               | 20 < 28mm<br>16 > 35mm   | -24 to 114 < 28mm<br>-24 to 90 > 35mm | Brass < 28mm<br>Gunmetal > 35mm   | Push-Fit                                   | 25               |
|               | Tectite Sprint   | 10 to 54mm               | 20                       | -24 to 114                            | Copper  | Push-Fit                                   | 25               |
|               | Xpress Carbon    | 15 to 108mm              | 16                       | -35 to 135                            | Carbon Steel  | Press-Fit                                  | 10               |
|               | Xpress Copper    | 15 to 108mm              | 16                       | -20 to 110                            | Copper  | Press-Fit                                  | 25               |
|               | Xpress Stainless | 15 to 168mm              | 16                       | -35 to 135                            | Stainless Steel   | Press-Fit                                  | 25               |
|               | PowerPress       | 1/2" to 2"               | 16                       | -40 to 135                            | Steel   | Press-Fit                                  | 5                |
| AQUATECHNIK   | Safety-Pol       | 16 to 75mm               | 20 @ 20°C &<br>10 @ 95°C | 0 to 70 (95 peak)                     | Pex-Al-Pex Multi-layer  | Flared Locking - Mechanical                | 25               |
| EMMETI        | Gerpex           | 16 to 75mm               | 10                       | 0 to 95                               | Multi-layer   | Press-Fit                                  | 1                |
| FRABO         | Copper           | 12 to 108mm              | 16                       | -10 to 110                            | Copper  | Press-Fit                                  | 30               |
|               | Carbon           | 12 to 108mm              | 16                       | -10 to 110                            | Carbon Steel  | Press-Fit                                  | 10               |
| GEORG FISCHER | Aquasystem       | 20 to 125mm              | 20                       | 5 to 90                               | PP-R  | Socket fusion, butt weld, electrofusion    | 1                |
|               | Instaflex        | 16 to 225mm              | 16                       | -10 to 95                             | PB  | Electrofusion, socket fusion & compression | 1                |
|               | Sanipex MT       | 16 to 63mm               | 10                       | 0 to 80                               | PE-RT/Al/PE-RT  | Cone-Grip technology                       | 1                |
|               | Primofit         | 1/2" to 3"               | 16                       | -20 to 40                             | Iron (EPDM seal)  | Compression                                | 1                |
| ISOTUBI       | Numepress        | 15 to 168.3mm            | 16                       | -20 to 110                            | Stainless Steel   | Press-Fit (EPDM)                           | 25               |
| RWC           | JG Speedfit      | 10 to 28mm               | 3                        | Up to 95                              | PEX   | Push-Fit                                   | 50               |
| UPONOR        | MLCP             | 16 - 110mm               | 10                       | 0 to 80 (100 peak)                    | Multi-layer   | Press-Fit                                  | 25               |
| VICTAULIC     | Stainless        | 2" to 12" or 50 to 300mm | 16                       | -34 to 110                            | Ductile Iron Fittings   | Grooved                                    | 1                |
|               | Carbon Steel     | 1" to 24" or 25 to 600mm | 24                       | -34 to 110                            | Ductile Iron Fittings   | Grooved                                    | 1                |
| VIEGA         | Profipress       | 12 to 108mm              | 16                       | -5 to 110                             | Copper  | Press Connection                           | 5                |
|               | Profipress S     | 12 to 35mm               | 16                       | 0 to 140                              | Copper & Gunmetal   | Press Connection                           | 25               |
|               | Sanpress Inox    | 15 to 108mm              | 16                       | -5 to 110                             | Stainless Steel   | Press Connection                           | 25               |
|               | Smartpress       | 16 to 63mm               | 10                       | Up to 80                              | Multi-layer   | Press Connection                           | 25               |
|               | Megapress        | 1/2 " to 4"              | 10                       | -5 to 110                             | Steel   | Press Connection                           | 25               |
| WAVIN         | Hep2o            | 10 to 28mm               | 12 @ 20°C &<br>3 @ 114°C | -15 to 114                            | Polybutelene  | Push-Fit                                   | 50               |

GAS

| MANUFACTURER  | PRODUCT                       | SIZE                                  | MAX PRESSURE (BAR) | TEMPERATURE (°C) | MATERIAL          | JOINTING                  | WARRANTY (YEARS) |
|---------------|-------------------------------|---------------------------------------|--------------------|------------------|-------------------|---------------------------|------------------|
| AALBERTS      | Xpress Copper Gas             | 15 to 54mm                            | 5                  | -20 to 70        | Copper            | Press-Fit                 | 25               |
|               | Xpress Stainless Gas          | 15 to 108mm                           | 5                  | -20 to 70        | Stainless Steel   | Press-Fit                 | 25               |
| CRANE         | Malleable Iron (Black & Galv) | 1/8" to 6"                            | 25                 | -20 to 300       | Malleable Iron    | Screwed                   | 1                |
| GASTITE       | CSST                          | 15 to 50mm                            | 0.5 (BS EN15266)   | -15 to 95        | Stainless Steel   | Compression (Jacket-Lock) | Lifetime         |
| GFS           | CSST                          | 15 to 50mm                            | 0.5 (BS EN15266)   | -15 to 95        | Stainless Steel   | Compression               | 2                |
| GEORG FISCHER | ELGEF Plus                    | 20 to 315mm (Up to 800mm on couplers) | 10                 | -40 to 65        | PE 100            | Weld, Electrofusion       | 1                |
|               | Malleable Iron (Black & Galv) | 1/8" to 4"                            | 25                 | -20 to 300       | Malleable Iron    | Screwed                   | 1                |
|               | Primofit                      | 1/2" to 3"                            | 10                 | -20 to 60        | Iron              | Compression               | 1                |
|               |                               |                                       |                    |                  |                   |                           |                  |
| ISOTUBI       | Numepress Gas                 | 15 to 168.3mm                         | 5                  | -20 to 70        | Stainless Steel   | Press-Fit (HNBR)          | 25               |
| VIEGA         | Profipress G                  | 12 to 54mm                            | 5                  | -20 to 70        | Copper & Gunmetal | Press Connection          | 25               |
|               | Sanpress Inox G               | 15 to 108mm                           | 5                  | -20 to 70        | Stainless Steel   | Press Connection          | 25               |
|               | Megapress G                   | 1/2" to 2"                            | 5                  | -20 to 40        | Steel             | Press Connection          | 25               |

SOLAR SYSTEM

| MANUFACTURER | PRODUCT          | SIZE          | MAX PRESSURE (BAR) | TEMPERATURE (°C) | MATERIAL          | JOINTING         | WARRANTY (YEARS) |
|--------------|------------------|---------------|--------------------|------------------|-------------------|------------------|------------------|
| AALBERTS     | Xpress Carbon    | 15 to 108mm   | 16                 | -35 to 135       | Carbon Steel      | Press-Fit        | 10               |
|              | Xpress Copper    | 15 to 108mm   | 16                 | -20 to 110       | Copper            | Press-Fit        | 25               |
|              | Xpress Stainless | 15 to 168mm   | 16                 | -35 to 135       | Stainless Steel   | Press-Fit        | 25               |
| ISOTUBI      | Numepress        | 15 to 168.3mm | 16                 | -20 to 200       | Stainless Steel   | Press-Fit (FKM)  | 25               |
| VIEGA        | Profipress S     | 12 to 35mm    | 16                 | 0 to 140         | Copper & Gunmetal | Press Connection | 25               |
|              | Megapress S      | 1/2" to 4"    | 16                 | -5 to 140        | Steel             | Press Connection | 25               |

WASTE & DRAINAGE

| MANUFACTURER               | PRODUCT                      | SIZE          | MAX PRESSURE (BAR)                               | TEMPERATURE (°C) | MATERIAL | JOINTING                               | WARRANTY (YEARS) |
|----------------------------|------------------------------|---------------|--|------------------|----------|--|------------------|
| AALBERTS                   | Yorkshire ISR Waste Fittings | 35 to 54mm    | 0.35   | -10 to 30        | Bronze   | Solder Ring                            | 25               |
| GEORG FISCHER              | ELGEF Plus                   | 20 to 1200mm  | 16   | -40 to 65        | PE 100   | Weld, Electrofusion                    | 1                |
|                            | Fuseal                       | 1.1/2" to 18" | 3.4  | 0 to 100         | PP       | Mechanical, Electrofusion              | 1                |
| POLYPIPE BUILDING SERVICES | Effast ABS                   | 32 to 50mm    | n/a  | -20 to 80        | ABS      | Solvent Weld                           | 1                |
|                            | Terrain FUZE HDPE            | 40 to 315mm   | n/a  | -40 to 80        | HDPE     | Electrofusion and Butt-weld            | 1                |
|                            | Terrain Q                    | 40 to 200mm   | n/a  | -20 to 80        | PP       | Push-Fit                               | 1                |
|                            | Effast PVC                   | 32 to 250mm   | n/a  | 0 to 76          | PVC      | Solvent Weld/Push-Fit                  | 1                |
|                            | MecFlow                      | 32 to 160mm   | up to 39.2* depending on diameter & service life | 0 to 95          | PP-RCT   | Electrofusion, Butt-weld & Socket Weld | 1                |

CHEMICAL/PROCESS

| MANUFACTURER  | PRODUCT       | SIZE          | MAX PRESSURE (BAR) | TEMPERATURE (°C) | MATERIAL        | JOINTING                  | WARRANTY (YEARS) |
|---------------|---------------|---------------|--------------------|------------------|-----------------|---------------------------|------------------|
| GEORG FISCHER | ABS BS Inch   | 3/8" to 8"    | 16                 | -50 to 60        | ABS             | Screwed, Solvent Weld     | 1                |
|               | ABS Metric    | 16 to 315mm   | 16                 | -50 to 60        | ABS             | Screwed, Solvent Weld     | 1                |
|               | PVCu BS Inch  | 3/8" to 8"    | 15                 | 0 to 60          | PVCu            | Screwed, Solvent Weld     | 1                |
|               | PVC Metric    | 6 to 400mm    | 16                 | 0 to 60          | PVCu            | Screwed, Solvent Weld     | 1                |
|               | PVC-C         | 16 to 225mm   | 16                 | 0 to 80          | PVC-C           | Screwed, Solvent Weld     | 1                |
|               | PROGEF Plus   | 20 to 315mm   | 10                 | 0 to 80          | PP              | Butt Fusion               | 1                |
|               | Fuseal        | 1.1/2" to 18" | 3.4                | 0 to 100         | PP              | Mechanical, Electrofusion | 1                |
|               | SYGEF Plus    | 16 to 315mm   | 16                 | -20 to 140       | PVDF            | Weld                      | 1                |
| ISOTUBI       | Numeppress    | 15 to 168.3mm | 16                 | -20 to 110       | Stainless Steel | Press-Fit (EPDM)          | 25               |
| PLASSON       | Mechanical    | 20 to 160mm   | 16 @ 20°C          | -10 to 50        | Polypropylene   | Compression               | 1                |
|               | Push-Fit      | 20 to 63mm    | 16 @ 20°C          | -10 to 50        | Polypropylene   | Push-Fit                  | 1                |
|               | Electrofusion | 20 to 1200mm  | 25 @ 20°C          | -10 to 50        | Polypropylene   | Electrofusion             | 1                |

CHEMICAL/PROCESS

| MANUFACTURER               | PRODUCT              | SIZE                     | MAX PRESSURE (BAR) | TEMPERATURE (°C) | MATERIAL              | JOINTING  | WARRANTY (YEARS) |
|----------------------------|----------------------|--------------------------|--------------------|------------------|-----------------------|---|------------------|
| POLYPIPE BUILDING SERVICES | Effast Polypropylene | 20 to 110mm              | 10                 | -10 to 110       | PP-H                  | Electrofusion, Socket Fusion or Butt Fusion Welding | 1                |
| VICTAULIC                  | Carbon               | 1" to 24" or 25 to 600mm | 24                 | -34 to 110       | Ductile Iron Fittings | Grooved   | 1                |
|                            | Stainless            | 2" to 12" or 50 to 300mm | 16                 | -34 to 110       | Ductile Iron Fittings | Grooved   | 1                |
| VIEGA                      | Profipress           | 12 to 108mm              | 16                 | -5 to 110        | Copper & Gunmetal     | Press Connection                                    | 5                |
|                            | Profipress LF        | 12 to 108mm              | 16                 | -5 to 110        | Copper & Gunmetal     | Press Connection                                    | 5                |
|                            | Sanpress             | 12 to 108mm              | 16                 | -5 to 110        | Stainless Steel       | Press Connection                                    | 25               |
|                            | Sanpress Inox        | 15 to 108mm              | 16                 | -5 to 110        | Stainless Steel       | Press Connection                                    | 25               |
|                            | Sanpress Inox LF     | 15 to 108mm              | 16                 | -5 to 110        | Stainless Steel       | Press Connection                                    | 25               |
|                            | Megapress            | 1/2" to 4"               | 10                 | -5 to 110        | Steel                 | Press Connection                                    | 25               |
|                            | Megapress S          | 1/2" to 4"               | 16                 | -5 to 140        | Steel                 | Press Connection                                    | 25               |





CHILLED WATER

| MANUFACTURER  | PRODUCT          | SIZE          | MAX PRESSURE (BAR)                 | TEMPERATURE (°C)                      | MATERIAL  | JOINTING                                   | WARRANTY (YEARS) |
|---------------|------------------|---------------|------------------------------------|---------------------------------------|---|--|------------------|
| AALBERTS      | Henco            | 12 to 90mm    | 10                                 | Up to 95                              | MLCP = PEXc-Al-PEXc<br>PK = PVDF Fittings with S.Steel Cups<br>Brass = CW617N brass with S.Steel Cups | Press-Fit                                  | 10               |
|               | Tectite 316      | 15 to 54mm    | 20 < 28mm<br>16 > 35mm             | -24 to 114 < 28mm<br>-24 to 90 > 35mm | Stainless Steel   | Push-Fit                                   | 25               |
|               | Tectite Pro      | 15 to 54mm    | 20 < 28mm<br>16 > 35mm             | -24 to 114 < 28mm<br>-24 to 90 > 35mm | Brass < 28mm<br>Gunmetal > 35mm   | Push-Fit                                   | 25               |
|               | Tectite Sprint   | 10 to 54mm    | 20                                 | -24 to 114                            | Copper  | Push-Fit                                   | 25               |
|               | Xpress Carbon    | 15 to 108mm   | 16                                 | -35 to 135                            | Carbon Steel  | Press-Fit                                  | 10               |
|               | Xpress Copper    | 15 to 108mm   | 16                                 | -20 to 110                            | Copper  | Press-Fit                                  | 25               |
|               | Xpress Stainless | 15 to 168mm   | 16                                 | -35 to 135                            | Stainless Steel   | Press-Fit                                  | 25               |
|               | PowerPress       | 1/2" to 2"    | 16                                 | -40 to 135                            | Steel   | Press-Fit                                  | 5                |
| AQUATECHNIK   | Safety-Pol       | 16 to 75mm    | 20 @ 20°C &<br>10 @ 95°C           | 0 to 70 (95 peak)                     | Pex-Al-Pex Multi-layer  | Flared Locking - Mechanical                | 25               |
| EMMETI        | Gerpex           | 16 to 75mm    | 10                                 | 0 to 95                               | Multi-layer   | Press-Fit                                  | 1                |
| FRABO         | Copper           | 12 to 108mm   | 16                                 | -10 to 110                            | Copper  | Press-Fit                                  | 30               |
|               | Carbon           | 12 to 108mm   | 16                                 | -10 to 110                            | Carbon Steel  | Press-Fit                                  | 10               |
| GEORG FISCHER | ABS BS Inch      | 3/8" to 8"    | 16                                 | -50 to 60                             | ABS   | Screwed, Solvent Weld                      | 1                |
|               | ABS Metric       | 16 to 315mm   | 16                                 | -50 to 60                             | ABS   | Screwed, Solvent Weld                      | 1                |
|               | Aquasystem       | 20 to 125mm   | 20                                 | 5 to 90                               | PP-R  | Socket fusion, butt-weld, electrofusion    | 1                |
|               | Cool-Fit 2.0/4.0 | 32 to 450mm   | 16 (d32 to 450)<br>10 (d160 - 450) | -50 to 60                             | PE100/GF HE<br>FOAM/HDPE  | Electrofusion                              | 1                |
|               | Sanipex MT       | 16 to 63mm    | 10                                 | 0 to 80                               | PE-RT/Al/PE-RT  | Cone-Grip technology                       | 1                |
|               | ELGEF Plus       | 20 to 1200mm  | 16                                 | -40 to 65                             | PE 100  | Weld, Electrofusion                        | 1                |
|               | Instaflex        | 16 to 315mm   | 16                                 | -10 to 95                             | PB  | Electrofusion, socket fusion & compression | 1                |
| ISOTUBI       | Numepress        | 15 to 168.3mm | 16                                 | -20 to 110                            | Stainless Steel   | Press-Fit (EPDM)                           | 25               |

CHILLED WATER

| MANUFACTURER               | PRODUCT       | SIZE                     | MAX PRESSURE (BAR)       | TEMPERATURE (°C)  | MATERIAL              | JOINTING                | WARRANTY (YEARS) |
|----------------------------|---------------|--------------------------|--------------------------|-------------------|-----------------------|-------------------------|------------------|
| POLYPIPE BUILDING SERVICES | Effast ABS    | 1/2" to 8"               | 15                       | -40 to 60         | ABS                   | Solvent Weld / Threaded | 1                |
| RWC                        | JG Speedfit   | 10 to 28mm               | 12                       | 20                | PEX                   | Push-Fit                | 50               |
| UPONOR                     | MLCP          | 16 - 110mm               | 10                       | 0 to 70 (95 peak) | Multi-layer           | Press-Fit               | 25               |
| VICTAULIC                  | Stainless     | 2" to 12" or 50 to 300mm | 16                       | -34 to 110        | Ductile Iron Fittings | Grooved                 | 1                |
|                            | Carbon        | 1" to 24" or 25 to 600mm | 24                       | -34 to 110        | Ductile Iron Fittings | Grooved                 | 1                |
| VIEGA                      | Profipress    | 12 to 108mm              | 16                       | -5 to 110         | Copper & Gunmetal     | Press Connection        | 5                |
|                            | Sanpress Inox | 15 to 108mm              | 16                       | -5 to 110         | Stainless Steel       | Press Connection        | 25               |
|                            | Smartpress    | 16 to 63mm               | 10                       | 70                | Multi-layer           | Press Connection        | 25               |
|                            | Megapress     | 1/2 " to 4"              | 10                       | -5 to 110         | Steel                 | Press Connection        | 25               |
| WAVIN                      | Hep2o         | 10 to 28mm               | 12 @ 20°C &<br>3 @ 114°C | -15 to 114        | Polybutelene          | Push-Fit                | 50               |



HOT WATER SERVICES

| MANUFACTURER  | PRODUCT          | SIZE                     | MAX PRESSURE (BAR)       | TEMPERATURE (°C)                      | MATERIAL  | JOINTING                                   | WARRANTY (YEARS) |
|---------------|------------------|--------------------------|--------------------------|---------------------------------------|---|--|------------------|
| AALBERTS      | Henco            | 12 to 90mm               | 10                       | Up to 95                              | MLCP = PEXc-Al-PEXc<br>PK = PVDF Fittings with S.Steel Cups<br>Brass = CW617N brass with S.Steel Cups | Press-Fit                                  | 10               |
|               | Tectite Classic  | 10 to 28mm               | 16                       | -24 to 95                             | Brass   | Push-Fit                                   | 25               |
|               | Tectite 316      | 15 to 54mm               | 20 < 28mm<br>16 > 35mm   | -24 to 114 < 28mm<br>-24 to 90 > 35mm | Stainless Steel   | Push-Fit                                   | 25               |
|               | Tectite Pro      | 15 to 54mm               | 20 < 28mm<br>16 > 35mm   | -24 to 114 < 28mm<br>-24 to 90 > 35mm | Brass < 28mm<br>Gunmetal > 35mm   | Push-Fit                                   | 25               |
|               | Tectite Sprint   | 10 to 54mm               | 20                       | -24 to 114                            | Copper  | Push-Fit                                   | 25               |
|               | Xpress Copper    | 15 to 108mm              | 16                       | -20 to 110                            | Copper  | Press-Fit                                  | 25               |
|               | Xpress Stainless | 15 to 168mm              | 16                       | -35 to 135                            | Stainless Steel   | Press-Fit                                  | 25               |
|               |                  |                          |                          |                                       |   |  |                  |
| AQUATECHNIK   | Safety-Pol       | 16 to 75mm               | 20 @ 20°C &<br>10 @ 95°C | 0 to 70 (95 peak)                     | Pex-Al-Pex Multi-layer  | Flared Locking - Mechanical                | 25               |
| EMMETI        | Gerpex           | 16 to 75mm               | 10                       | 0 to 95                               | Multi-layer   | Press-Fit                                  | 1                |
| FRABO         | Copper           | 12 to 108mm              | 16                       | -10 to 110                            | Copper  | Press-Fit                                  | 30               |
| GEORG FISCHER | Aquasystem       | 20 to 125mm              | 20                       | 5 to 95                               | PP-R  | Socket fusion, butt weld, electrofusion    | 1                |
|               | Instaflex        | 16 to 315mm              | 16                       | -10 to 95                             | PB  | Electrofusion, socket fusion & compression | 1                |
|               | Primofit         | 1/2" to 3"               | 16                       | -20 to 40                             | Iron (EPDM seal)  | Compression                                | 1                |
|               | Sanipex MT       | 16 to 63mm               | 10                       | 0 to 80                               | PE-RT/Al/PE-RT  | Cone-Grip technology                       | 1                |
|               | PVC-C            | 16 to 225mm              | 16                       | 0 to 80                               | PVC-C   | Screwed, Solvent Weld                      | 1                |
| ISOTUBI       | Numepress        | 15 to 168.3mm            | 16                       | -20 to 110                            | Stainless Steel   | Press-Fit (EPDM)                           | 25               |
| RWC           | JG Speedfit      | 10 to 28mm               | 6                        | 95                                    | PEX   | Push-Fit                                   | 50               |
| UPONOR        | MLCP             | 16 - 110mm               | 10                       | 0 to 70 (95 peak)                     | Multi-layer   | Press-Fit                                  | 25               |
| VICTAULIC     | Stainless        | 2" to 12" or 50 to 300mm | 16                       | -34 to 110                            | Ductile Iron Fittings   | Grooved                                    | 1                |
| VIEGA         | Profipress       | 12 to 108mm              | 16                       | -5 to 110                             | Copper & Gunmetal   | Press Connection                           | 5                |
|               | Sanpress Inox    | 15 to 108mm              | 16                       | -5 to 110                             | Stainless Steel   | Press Connection                           | 25               |
|               | Smartpress       | 16 to 63mm               | 10                       | 70                                    | Multi-layer   | Press Connection                           | 25               |
| WAVIN         | Hep2o            | 10 to 28mm               | 12 @ 20°C &<br>3 @ 114°C | -15 to 114                            | Polybutelene  | Push-Fit                                   | 50               |

SBS SYSTEM

RECOMMENDATIONS

METAL

STAINLESS PRESS-FIT

METAL

COPPER & CARBON PRESS-FIT

PLASTIC

MULTI-LAYER FLARED COMPRESSION

COMPRESSED AIR

| MANUFACTURER  | PRODUCT                       | SIZE                     | MAX PRESSURE (BAR)       | TEMPERATURE (°C)  | MATERIAL               | JOINTING                                   | WARRANTY (YEARS) |
|---------------|-------------------------------|--------------------------|--------------------------|-------------------|------------------------|--|------------------|
| AALBERTS      | Xpress Copper                 | 15 to 108mm              | 16                       | -20 to 110        | Copper                 | Press-Fit                                  | 25               |
|               | Xpress Stainless              | 15 to 168mm              | 16                       | -35 to 135        | Stainless Steel        | Press-Fit                                  | 25               |
|               | PowerPress                    | 1/2" to 2"               | 16                       | -40 to 135        | Steel                  | Press-Fit                                  | 5                |
| AQUATECHNIK   | Safety-Pol                    | 16 to 75mm               | 20 @ 20°C &<br>10 @ 95°C | 0 to 70 (95 peak) | Pex-Al-Pex Multi-layer | Flared Locking - Mechanical                | 25               |
| CRANE         | Malleable Iron (Black & Galv) | 1/8" to 6"               | 25                       | -20 to 300        | Malleable Iron         | Screwed                                    | 1                |
| GEORG FISCHER | ABS BS Inch                   | 3/8" to 8"               | 16                       | -50 to 60         | ABS                    | Screwed, Solvent Weld                      | 1                |
|               | ELGEF Plus                    | 20 to 1200mm             | 16                       | -40 to 65         | PE 100                 | Weld, Electrofusion                        | 1                |
|               | Malleable Iron (Black & Galv) | 1/8" to 4"               | 25                       | -20 to 300        | Malleable Iron         | Screwed                                    | 1                |
|               | Instaflex                     | 16 to 315mm              | 16                       | -10 to 95         | PB                     | Electrofusion, socket fusion & compression | 1                |
|               | Primofit                      | 1/2" to 3"               | 10                       | -20 to 60         | Iron                   | Compression                                | 1                |
|               |                               |                          |                          |                   |                        |  |                  |
| ISOTUBI       | Numepress                     | 15 to 168.3mm            | 16                       | -20 to 200        | Stainless Steel        | Press-Fit (FKM)                            | 25               |
| RWC           | JG Compressed Air             | 3 to 28mm                | 10                       | -20 to 65         | Plastic & Brass        | Push-Fit                                   | 2                |
| VICTAULIC     | Stainless                     | 2" to 12" or 50 to 300mm | 16                       | -34 to 110        | Ductile Iron Fittings  | Grooved                                    | 1                |
|               | Carbon Steel                  | 1" to 24" or 25 to 600mm | 24                       | -34 to 110        | Ductile Iron Fittings  | Grooved                                    | 1                |
| VIEGA         | Profipress                    | 12 to 108mm              | 16                       | -5 to 110         | Copper & Gunmetal      | Press Connection                           | 5                |
|               | Sanpress                      | 12 to 108mm              | 16                       | -5 to 110         | Carbon Steel           | Press Connection                           | 25               |
|               | Sanpress LF                   | 12 to 108mm              | 16                       | -5 to 110         | Stainless Steel        | Press Connection                           | 25               |
|               | Sanpress Inox                 | 15 to 108mm              | 16                       | -5 to 110         | Carbon Steel           | Press Connection                           | 25               |
|               | Sanpress Inox LF              | 15 to 108mm              | 16                       | -5 to 110         | Stainless Steel        | Press Connection                           | 25               |
|               | Megapress                     | 1/2 " to 4"              | 10                       | -5 to 110         | Steel                  | Press Connection                           | 25               |

INSTALLATION EXAMPLES

ISOTUBI

STAINLESS

FRABO

CARBON

COPPER

AQUATECHNIK

MULTI-LAYER



INFORMATION BY APPLICATION

|      |  | TEMPERATURE RANGE (°C) |          | PRESSURE RANGE (BAR) |           |
|------|--|------------------------|----------|----------------------|-----------|
| CODE | NAME                                     | MIN (°C)               | MAX (°C) | MIN (BAR)            | MAX (BAR) |
| LTHW | Low Temperature Hot Water                | 40                     | 85       | 1                    | 16        |
| MTHW | Medium Temperature Hot Water             | 100                    | 120      | 1                    | 16        |
| HTHW | High Temperature Hot Water               | 121                    | 165      | 1                    | 16        |
| SS   | Steam Systems                            | 100                    | 200      | 0.5                  | 16        |
| CS   | Condensate Steam                         | 96                     | 120      | 1                    | 16        |
| DHWS | Domestic Hot Water Services              | 50                     | 70       | 1                    | 7         |
| MCWS | Mains Cold Water Services                | 7                      | 20       | 0.7                  | 5         |
| BCWS | Boosted Cold Water Services              | 7                      | 20       | 2                    | 16        |
| TCWS | Tank Fed Cold Water Supply               | 7                      | 20       | 0.2                  | 3         |
| CHW  | Chilled Water                            | 5                      | 18       | 1                    | 16        |
| CCW  | Condensate Chilled Water                 | 7                      | 20       | 0.1                  | 1         |
| HRW  | Harvested Rain Water                     | 7                      | 20       | 0.2                  | 10        |
| GWR  | Grey Water Recycling                     | 7                      | 20       | 0.2                  | 10        |
| PW   | Potable Water                            | 7                      | 69       | 1                    | 10        |
| R    | Refrigeration                            | -30                    | 140      | 1                    | 130       |
| FO   | Fuel Oils                                | 5                      | 90       | 0.2                  | 5         |
| FG   | Fuel Gas                                 | 5                      | 23       | 0.001                | 16        |
| MG   | Medical Gases                            | 5                      | 23       | 0.2                  | 11        |
| CA   | Compressed air                           | 7                      | 50       | 1                    | 16        |
| FD   | Fire Defence                             | 7                      | 20       | 2                    | 16        |
| AC   | Air Conditioning                         | -20                    | 140      | 1                    | 130       |
| HVAC | Heating Ventilation and Air Conditioning | -20                    | 165      | 1                    | 130       |

An example list of generic applications as defined by BESA and BMTFA Trade Association. These examples provide a useful set of application descriptions, together with their typical operating characteristics (pressure and temperature).

**Note:** Test pressures may be higher, please consult manufacturer data for final confirmation.

PIPE SUPPORT SYSTEMS

| Channel   | SBS Code   |
|---|------------|
| 41 x 21 x 1.6 CORE Light Slotted Channel x 3 Mtr            | TSS4213M   |
| 41 x 21 x 1.6 CORE Light Slotted Channel x 6 Mtr            | TSS4216M   |
| 41 x 41 x 1.6 CORE Light Slotted Channel x 3 Mtr            | TSS4413M   |
| 41 x 41 x 1.6 CORE Light Slotted Channel x 6 Mtr            | TSS4416M   |
| 41 x 21 x 2.5 CORE Heavy Slotted Channel x 3 Mtr            | TSS4223M   |
| 41 x 21 x 2.5 CORE Heavy Slotted Channel x 6 Mtr            | TSS4226M   |
| 41 x 41 x 2.5 CORE Heavy Slotted Channel x 3 Mtr            | TSS4423M   |
| 41 x 41 x 2.5 CORE Heavy Slotted Channel x 6 Mtr            | TSS4426M   |
| 82 x 41 x 2.5 CORE Slotted Back to Back Channel x 3 Mtr     | TSS8423MSL |
| 82 x 41 x 2.5 CORE Slotted Back to Back Channel x 6 Mtr     | TSS8426MSL |
| 82 x 41 x 2.5 CORE Heavy Plain Back to Back Channel x 6 Mtr | TSS8426M   |
| 41 x 41 x 2.5 CORE Heavy Plain Channel x 6 Mtr              | TSSP4426M  |

| End Cap                                  | SBS Code |
|--|----------|
| 41 x 21 CORE PVC Channel End Cap - Black | CEC421   |
| 41 x 21 CORE PVC Channel End Cap - White | CEC421W  |
| 41 x 41 CORE PVC Channel End Cap - Black | CEC441   |
| 41 x 41 CORE PVC Channel End Cap - White | CEC441W  |

| Channel Nuts                                | SBS Code |
|---|----------|
| M6 CORE Channel Slide Nut (No Spring)       | TSSNM06  |
| M8 CORE Channel Slide Nut (No Spring)       | TSSNM08  |
| M10 CORE Channel Slide Nut (No Spring)      | TSSNM10  |
| M12 CORE Channel Slide Nut (No Spring)      | TSSNM12  |
| M6 CORE Channel Nut c/w Short Spring        | TSSNSM06 |
| M8 CORE Channel Nut c/w Short Spring        | TSSNSM08 |
| M10 CORE Channel Slide Nut c/w Short Spring | TSSNSM10 |
| M12 CORE Channel Nut c/w Short Spring       | TSSNSM12 |
| M6 CORE Channel Nut c/w Long Spring         | TSSNLM06 |
| M8 CORE Channel Slide Nut c/w Long Spring   | TSSNLM08 |
| M10 CORE Channel Slide Nut c/w Long Spring  | TSSNLM10 |
| M12 CORE Channel Slide Nut c/w Long Spring  | TSSNLM12 |

| Square Plate Washers         | SBS Code |
|------------------------------|----------|
| M8 CORE Square Plate Washer  | TS00M08  |
| M10 CORE Square Plate Washer | TS00M10  |
| M12 CORE Square Plate Washer | TS00M12  |

| Hex Full Nuts    | SBS Code |
|------------------|----------|
| M8 CORE BZP Nut  | NM08     |
| M10 CORE BZP Nut | NM10     |
| M12 CORE BZP Nut | NM12     |
| M16 CORE BZP Nut | NM16     |
| M20 CORE BZP Nut | NM20     |
| M24 CORE BZP Nut | NM24     |

| Ball Hangers         | SBS Code |
|----------------------|----------|
| M10 CORE Ball Hanger | BHM10    |
| M12 CORE Ball Hanger | BHM12    |

| Drop-in Anchor | SBS Code |
|----------------|----------|
| M10 x 40mm     | WAM10    |
| M12 x 50mm     | WAM12    |

| Rod                               | SBS Code  |
|-----------------------------------|-----------|
| M6 CORE BZP Studrod (1MT Length)  | SRM061M   |
| M8 CORE BZP Studrod (1MT Length)  | SRM081M   |
| M10 CORE BZP Studrod (1MT Length) | SRM101M   |
| M12 CORE BZP Studrod (1MT Length) | SRM121M   |
| M6 CORE BZP Studrod (3MT Length)  | SRM063M   |
| M8 CORE BZP Studrod (3MT Length)  | SRM083M   |
| M10 CORE BZP Studrod (3MT Length) | SRM103M   |
| M12 CORE BZP Studrod (3MT Length) | SRM123M   |
| M10 x 25mm CORE BZP Pre-Cut Stud  | M1025PCS  |
| M10 x 40mm CORE BZP Pre-Cut Stud  | M1040PCS  |
| M10 X 50mm CORE BZP Pre Cut Stud  | M1050PCS  |
| M10 X 60mm CORE BZP Pre Cut Stud  | M1060PCS  |
| M10 X 80mm CORE BZP Pre Cut Stud  | M1080PCS  |
| M10 x 100mm CORE BZP Pre Cut Stud | M10100PCS |
| M10 X 150mm CORE BZP Pre Cut Stud | M10150PCS |
| M10 X 200mm CORE BZP Pre Cut Stud | M10200PCS |

| Rod Connector                           | SBS Code |
|---|----------|
| M8 CORE BZP Studrod Connector           | SCM8     |
| M10 CORE BZP Studrod Connector          | SCM10    |
| M12 CORE BZP Studrod Connector          | SCM12    |
| M16 CORE BZP Studrod Connector          | SCM16    |
| M8 Male x M10 Female Studding Connector | KSM9     |
| M10 Male x M8 Female Studding Adaptor   | KSM12    |
| M12 Male x M10 Female Stud Adaptor      | KSM4     |

| Rubber lined 2-piece pipe clips               | SBS Code |
|---|----------|
| 8nb Rubber Lined Clip M8/M10 (15-19mm)        | LC008    |
| 10nb Rubber Lined Clip M8/M10 (15-19mm)       | LC010    |
| 15nb Rubber Lined Clip M8/M10 (20-24mm)       | LC015    |
| 20nb Rubber Lined Clip M8/M10 (26-30mm)       | LC020    |
| 25nb Rubber Lined Clip M8/M10 (32-36mm)       | LC025    |
| 32nb Rubber Lined Clip M8/M10 (38-43mm)       | LC032    |
| 40nb Rubber Lined Clip M8/M10 (45-51mm)       | LC040    |
| 54mm OD Rubber Lined Clip M8/M10 (53-59mm)    | LC054    |
| 50nb Rubber Lined Clip M8/M10 (60-64mm)       | LC050    |
| 65nb Rubber Lined Clip M8/M10 (75-80mm)       | LC065    |
| 67mm OD Rubber Lined Clip M8/M10 (63-67mm)    | LC067    |
| 80nb Rubber Lined Clip M8/M10 (88-92mm)       | LC080    |
| 83mm OD Rubber Lined Clip M8/M10 (81-87mm)    | LC083    |
| 100mm OD Rubber Lined Clip (99-105mm)         | LC100OD  |
| 100nb Rubber Lined Clip M8/M10 (113-118mm)    | LC100    |
| 108mm OD Rubber-Lined Clip M8/M10 (107-112mm) | LC108    |
| 114mm OD Rubber Lined Clip M8/M10 (113-118mm) | LC114    |
| 125mm OD Rubber Lined Clip (125 - 130mm)      | LC125OD  |
| 125nb Rubber Lined Clip M8/M10 (136-140mm)    | LC125    |
| 150nb Rubber Lined Clip M8/M10 (159-166mm)    | LC150    |
| 200nb Rubber-Lined Clip M8/M10 (215-225mm)    | LC200    |
| 250nb Rubber-Lined Clip M10 (279-284mm)       | LC250    |

| Setting Tool                 | SBS Code |
|------------------------------|----------|
| 10mm Drop-in Anchore Setting | WAM10T   |
| 12mm Drop-in Anchore Setting | WAM12T   |

EN1092-1 (BS4504) PN6

| NOMINAL BORE | FLANGE DIAMETER (MM) | THICKNESS (MM) | BOLTS (MM) | NUMBER OF HOLES | P.C.D. (MM) |
|--------------|----------------------|----------------|------------|-----------------|-------------|
| 15           | 80                   | 12             | M10 x 45   | 4               | 55          |
| 20           | 90                   | 14             | M10 x 45   | 4               | 65          |
| 25           | 100                  | 14             | M10 x 45   | 4               | 75          |
| 32           | 120                  | 14             | M12 x 55   | 4               | 90          |
| 40           | 130                  | 14             | M12 x 55   | 4               | 100         |
| 50*          | 140                  | 14             | M12 x 55   | 4               | 110         |
| 65*          | 160                  | 14             | M12 x 55   | 4               | 130         |
| 80*          | 190                  | 16             | M16 x 60   | 4               | 150         |
| 100*         | 210                  | 16             | M16 x 60   | 4               | 170         |
| 125*         | 240                  | 18             | M16 x 65   | 8               | 200         |
| 150*         | 265                  | 18             | M16 x 65   | 8               | 225         |
| 200*         | 320                  | 20             | M16 x 70   | 8               | 280         |
| 250          | 375                  | 22             | M16 x 75   | 12              | 335         |
| 300          | 440                  | 22             | M20 x 75   | 12              | 395         |

\* CORE Flange Packs available

EN1092-1 (BS4504) PN10

| NOMINAL BORE | FLANGE DIAMETER (MM) | THICKNESS (MM) | BOLTS (MM) | NUMBER OF HOLES | P.C.D. (MM) |
|--------------|----------------------|----------------|------------|-----------------|-------------|
| 15           | 95                   | 14             | M12 x 55   | 4               | 65          |
| 20           | 105                  | 16             | M12 x 55   | 4               | 75          |
| 25           | 115                  | 16             | M12 x 55   | 4               | 85          |
| 32           | 140                  | 16             | M16 x 60   | 4               | 100         |
| 40           | 150                  | 16             | M16 x 60   | 4               | 110         |
| 50           | 165                  | 18             | M16 x 65   | 4               | 125         |
| 65           | 185                  | 18             | M16 x 65   | 4               | 145         |
| 80           | 200                  | 20             | M16 x 70   | 8               | 160         |
| 100          | 220                  | 20             | M16 x 70   | 8               | 180         |
| 125          | 250                  | 22             | M16 x 70   | 8               | 210         |
| 150          | 285                  | 22             | M20 x 70   | 8               | 240         |
| 200          | 340                  | 24             | M20 x 80   | 8               | 295         |
| 250          | 395                  | 26             | M20 x 80   | 12              | 350         |
| 300          | 445                  | 26             | M20 x 80   | 12              | 400         |

EN1092-1 (BS4504) PN16

| NOMINAL BORE | FLANGE DIAMETER (MM) | THICKNESS (MM) | BOLTS (MM) | NUMBER OF HOLES | P.C.D. (MM) |
|--------------|----------------------|----------------|------------|-----------------|-------------|
| 15           | 95                   | 14             | M12 x 55   | 4               | 65          |
| 20           | 105                  | 16             | M12 x 55   | 4               | 75          |
| 25           | 115                  | 16             | M12 x 55   | 4               | 85          |
| 32           | 140                  | 16             | M16 x 60   | 4               | 100         |
| 40           | 150                  | 16             | M16 x 60   | 4               | 110         |
| 50*          | 165                  | 18             | M16 x 65   | 4               | 125         |
| 65*          | 185                  | 18             | M16 x 65   | 4               | 145         |
| 80*          | 200                  | 20             | M16 x 70   | 8               | 160         |
| 100*         | 220                  | 20             | M16 x 70   | 8               | 180         |
| 125*         | 250                  | 22             | M16 x 70   | 8               | 210         |
| 150*         | 285                  | 22             | M20 x 70   | 8               | 240         |
| 200*         | 340                  | 24             | M20 x 80   | 12              | 295         |
| 250          | 405                  | 26             | M24 x 90   | 12              | 355         |
| 300          | 460                  | 28             | M24 x 90   | 12              | 410         |

\* CORE Flange Packs available

EN1092-1 (BS4504) PN25

| NOMINAL BORE | FLANGE DIAMETER (MM) | THICKNESS (MM) | BOLTS (MM) | NUMBER OF HOLES | P.C.D. (MM) |
|--------------|----------------------|----------------|------------|-----------------|-------------|
| 15           | 95                   | 16             | M12 x 55   | 4               | 65          |
| 20           | 105                  | 18             | M12 x 60   | 4               | 75          |
| 25           | 115                  | 18             | M12 x 60   | 4               | 85          |
| 32           | 140                  | 18             | M16 x 65   | 4               | 100         |
| 40           | 150                  | 18             | M16 x 65   | 4               | 110         |
| 50           | 165                  | 20             | M16 x 70   | 4               | 125         |
| 65           | 185                  | 22             | M16 x 75   | 8               | 145         |
| 80           | 200                  | 24             | M16 x 80   | 8               | 160         |
| 100          | 235                  | 24             | M20 x 80   | 8               | 190         |
| 125          | 270                  | 26             | M24 x 85   | 8               | 220         |
| 150          | 300                  | 28             | M24 x 90   | 8               | 250         |
| 200          | 360                  | 32             | M24 x 100  | 12              | 310         |
| 250          | 425                  | 40             | M27 x 120  | 12              | 370         |
| 300          | 485                  | 48             | M27 x 140  | 16              | 430         |



EN1092-1 (BS4504) PN40

| NOMINAL BORE | FLANGE DIAMETER (MM) | THICKNESS (MM) | BOLTS (MM) | NUMBER OF HOLES | P.C.D. (MM) |
|--------------|----------------------|----------------|------------|-----------------|-------------|
| 15           | 95                   | 14             | M12 x 55   | 4               | 65          |
| 20           | 105                  | 18             | M12 x 60   | 4               | 75          |
| 25           | 115                  | 18             | M12 x 60   | 4               | 85          |
| 32           | 140                  | 18             | M16 x 65   | 4               | 100         |
| 40           | 150                  | 18             | M16 x 65   | 4               | 110         |
| 50           | 165                  | 20             | M16 x 70   | 4               | 125         |
| 65           | 185                  | 22             | M16 x 75   | 8               | 145         |
| 80           | 200                  | 24             | M16 x 80   | 8               | 160         |
| 100          | 235                  | 24             | M20 x 80   | 8               | 190         |
| 125          | 270                  | 26             | M24 x 85   | 8               | 220         |
| 150          | 300                  | 28             | M24 x 90   | 8               | 250         |
| 200          | 375                  | 32             | M27 x 100  | 12              | 320         |
| 250          | 450                  | 40             | M30 x 120  | 12              | 385         |
| 300          | 515                  | 48             | M30 x 140  | 16              | 450         |

EN1092-1 (BS4504) PN64

| NOMINAL BORE | FLANGE DIAMETER (MM) | THICKNESS (MM) | BOLTS (MM) | NUMBER OF HOLES | P.C.D. (MM) |
|--------------|----------------------|----------------|------------|-----------------|-------------|
| 15           | 105                  | 20             | M12 x 65   | 4               | 75          |
| 20           | 130                  | 22             | M16 x 75   | 4               | 90          |
| 25           | 140                  | 24             | M16 x 80   | 4               | 100         |
| 32           | 155                  | 24             | M20 x 80   | 4               | 110         |
| 40           | 170                  | 26             | M20 x 85   | 4               | 125         |
| 50           | 180                  | 26             | M20 x 85   | 4               | 135         |
| 65           | 205                  | 26             | M20 x 85   | 8               | 160         |
| 80           | 215                  | 30             | M20 x 90   | 8               | 170         |
| 100          | 250                  | 32             | M24 x 95   | 8               | 200         |
| 125          | 295                  | 34             | M27 x 110  | 8               | 240         |
| 150          | 345                  | 36             | M30 x 120  | 8               | 280         |
| 200          | 415                  | 46             | M33 x 130  | 12              | 345         |
| 250          | 470                  | 54             | M33 x 140  | 12              | 400         |
| 300          | 530                  | 62             | M33 x 160  | 16              | 460         |

BS10 TABLE D

| NOMINAL BORE | FLANGE DIAMETER (MM) | THICKNESS (MM) | BOLTS (MM) | NUMBER OF HOLES | P.C.D. (MM) |
|--------------|----------------------|----------------|------------|-----------------|-------------|
| 15           | 95                   | 5              | M12 x 40   | 4               | 67          |
| 20           | 102                  | 5              | M12 x 40   | 4               | 73          |
| 25           | 114                  | 5              | M12 x 40   | 4               | 83          |
| 32           | 121                  | 6              | M12 x 40   | 4               | 87          |
| 40           | 133                  | 6              | M12 x 40   | 4               | 98          |
| 50           | 152                  | 8              | M16 x 45   | 4               | 114         |
| 65           | 165                  | 8              | M16 x 45   | 4               | 127         |
| 80           | 184                  | 10             | M16 x 50   | 4               | 146         |
| 100          | 216                  | 10             | M16 x 50   | 4               | 178         |
| 125          | 254                  | 13             | M16 x 55   | 8               | 210         |
| 150          | 279                  | 13             | M16 x 55   | 8               | 235         |
| 200          | 337                  | 13             | M16 x 55   | 8               | 292         |
| 250          | 406                  | 16             | M20 x 60   | 8               | 356         |
| 300          | 457                  | 20             | M20 x 65   | 12              | 406         |

BS10 TABLE E

| NOMINAL BORE | FLANGE DIAMETER (MM) | THICKNESS (MM) | BOLTS (MM) | NUMBER OF HOLES | P.C.D. (MM) |
|--------------|----------------------|----------------|------------|-----------------|-------------|
| 15           | 95                   | 6              | M12 x 40   | 4               | 67          |
| 20           | 102                  | 6              | M12 x 40   | 4               | 73          |
| 25           | 114                  | 7              | M12 x 40   | 4               | 83          |
| 32           | 121                  | 8              | M12 x 40   | 4               | 87          |
| 40           | 133                  | 9              | M12 x 45   | 4               | 98          |
| 50           | 152                  | 10             | M16 x 50   | 4               | 114         |
| 65           | 165                  | 10             | M16 x 50   | 4               | 127         |
| 80           | 184                  | 11             | M16 x 50   | 4               | 146         |
| 100          | 216                  | 13             | M16 x 55   | 8               | 178         |
| 125          | 254                  | 14             | M16 x 60   | 8               | 210         |
| 150          | 279                  | 18             | M20 x 65   | 8               | 235         |
| 200          | 337                  | 19             | M20 x 70   | 8               | 292         |
| 250          | 406                  | 22             | M20 x 75   | 12              | 356         |
| 300          | 457                  | 25             | M22 x 80   | 12              | 406         |

BS10 TABLE F

| NOMINAL BORE | FLANGE DIAMETER (MM) | THICKNESS (MM) | BOLTS (MM) | NUMBER OF HOLES | P.C.D. (MM) |
|--------------|----------------------|----------------|------------|-----------------|-------------|
| 15           | 95                   | 10             | M12 x 45   | 4               | 67          |
| 20           | 102                  | 10             | M12 x 45   | 4               | 73          |
| 25           | 121                  | 10             | M16 x 50   | 4               | 87          |
| 32           | 133                  | 13             | M16 x 55   | 4               | 98          |
| 40           | 140                  | 13             | M16 x 55   | 4               | 105         |
| 50           | 165                  | 16             | M16 x 60   | 4               | 127         |
| 65           | 184                  | 16             | M16 x 60   | 8               | 146         |
| 80           | 203                  | 16             | M16 x 60   | 8               | 165         |
| 100          | 229                  | 19             | M16 x 70   | 8               | 191         |
| 125          | 279                  | 22             | M20 x 75   | 8               | 235         |
| 150          | 305                  | 22             | M20 x 75   | 12              | 260         |
| 200          | 368                  | 25             | M20 x 80   | 12              | 324         |
| 250          | 432                  | 29             | M22 x 90   | 12              | 381         |
| 300          | 489                  | 32             | M22 x 100  | 16              | 438         |

BS10 TABLE H

| NOMINAL BORE | FLANGE DIAMETER (MM) | THICKNESS (MM) | BOLTS (MM) | NUMBER OF HOLES | P.C.D. (MM) |
|--------------|----------------------|----------------|------------|-----------------|-------------|
| 15           | 114                  | 13             | M16 x 55   | 4               | 83          |
| 20           | 114                  | 13             | M16 x 55   | 4               | 83          |
| 25           | 121                  | 14             | M16 x 60   | 4               | 87          |
| 32           | 133                  | 18             | M16 x 65   | 4               | 98          |
| 40           | 140                  | 18             | M16 x 65   | 4               | 105         |
| 50           | 165                  | 19             | M16 x 70   | 4               | 127         |
| 65           | 184                  | 19             | M16 x 70   | 8               | 146         |
| 80           | 203                  | 22             | M16 x 75   | 8               | 165         |
| 100          | 229                  | 25             | M20 x 80   | 8               | 191         |
| 125          | 279                  | 29             | M20 x 90   | 8               | 235         |
| 150          | 305                  | 29             | M20 x 90   | 12              | 260         |
| 200          | 368                  | 32             | M20 x 90   | 12              | 324         |
| 250          | 432                  | 35             | M22 x 100  | 12              | 381         |
| 300          | 489                  | 41             | M22 x 110  | 16              | 438         |

ANSI B16.5 (BS1560) ASA150

| NOMINAL BORE | FLANGE DIAMETER (MM) | THICKNESS (MM) | BOLTS (MM) | NUMBER OF HOLES | P.C.D. (MM) |
|--------------|----------------------|----------------|------------|-----------------|-------------|
| 15           | 89                   | 11             | M12 x 45   | 4               | 60          |
| 20           | 95                   | 13             | M12 x 50   | 4               | 70          |
| 25           | 108                  | 14             | M12 x 50   | 4               | 79          |
| 32           | 117                  | 16             | M12 x 55   | 4               | 89          |
| 40           | 127                  | 17             | M12 x 60   | 4               | 98          |
| 50           | 152                  | 19             | M16 x 70   | 4               | 121         |
| 65           | 178                  | 22             | M16 x 75   | 4               | 140         |
| 80           | 191                  | 24             | M16 x 80   | 4               | 152         |
| 100          | 229                  | 24             | M16 x 80   | 8               | 191         |
| 125          | 254                  | 24             | M20 x 80   | 8               | 216         |
| 150          | 279                  | 25             | M20 x 80   | 8               | 241         |
| 200          | 343                  | 29             | M20 x 90   | 8               | 298         |
| 250          | 406                  | 30             | M24 x 90   | 12              | 362         |
| 300          | 483                  | 32             | M24 x 95   | 12              | 432         |

ANSI B16.5 (BS1560) ASA300

| NOMINAL BORE | FLANGE DIAMETER (MM) | THICKNESS (MM) | BOLTS (MM) | NUMBER OF HOLES | P.C.D. (MM) |
|--------------|----------------------|----------------|------------|-----------------|-------------|
| 15           | 95                   | 14             | M12 x 45   | 4               | 67          |
| 20           | 117                  | 16             | M16 x 50   | 4               | 83          |
| 25           | 124                  | 18             | M16 x 50   | 4               | 89          |
| 32           | 133                  | 19             | M16 x 55   | 4               | 98          |
| 40           | 156                  | 21             | M20 x 60   | 4               | 114         |
| 50           | 165                  | 22             | M16 x 70   | 8               | 127         |
| 65           | 191                  | 25             | M20 x 75   | 8               | 149         |
| 80           | 210                  | 29             | M20 x 80   | 8               | 168         |
| 100          | 254                  | 32             | M20 x 80   | 8               | 200         |
| 125          | 279                  | 35             | M20 x 80   | 8               | 235         |
| 150          | 318                  | 37             | M20 x 80   | 12              | 270         |
| 200          | 381                  | 41             | M24 x 90   | 12              | 330         |
| 250          | 445                  | 48             | M27 x 90   | 16              | 387         |
| 300          | 521                  | 51             | M30 x 95   | 16              | 451         |



STEEL TUBE WALL THICKNESS (MM)

| NOMINAL BORE<br>(IN) | OUTSIDE<br>DIAMETER<br>(MM) | SCHEDULE |      |      |       |       |           |       |       |          |       |       |       |       |       |       |
|----------------------|-----------------------------|----------|------|------|-------|-------|-----------|-------|-------|----------|-------|-------|-------|-------|-------|-------|
|                      |                             | 5S       | 10S  | 10   | 20    | 30    | STD & 40S | 40    | 60    | XS & 80S | 80    | 100   | 120   | 140   | 160   | XXS   |
|                      | 10.3                        |          | 1.24 |      |       |       | 1.73      | 1.73  |       | 2.41     | 2.41  |       |       |       |       |       |
| ¼                    | 13.7                        |          | 1.65 |      |       |       | 2.24      | 2.24  |       | 3.02     | 3.02  |       |       |       |       |       |
|                      | 17.1                        |          | 1.65 |      |       |       | 2.31      | 2.31  |       | 3.20     | 3.20  |       |       |       |       |       |
| ½                    | 21.3                        | 1.65     | 2.11 |      |       |       | 2.77      | 2.77  |       | 3.73     | 3.73  |       |       |       | 4.78  | 7.47  |
| ¾                    | 26.7                        | 1.65     | 2.11 |      |       |       | 2.87      | 2.87  |       | 3.91     | 3.91  |       |       |       | 5.56  | 7.82  |
| 1                    | 33.4                        | 1.65     | 2.77 |      |       |       | 3.38      | 3.38  |       | 4.55     | 4.55  |       |       |       | 6.35  | 9.09  |
| 1 ¼                  | 42.2                        | 1.65     | 2.77 |      |       |       | 3.56      | 3.56  |       | 4.85     | 4.85  |       |       |       | 6.35  | 9.70  |
| 1 ½                  | 48.3                        | 1.65     | 2.77 |      |       |       | 3.68      | 3.68  |       | 5.08     | 5.08  |       |       |       | 7.14  | 10.16 |
| 2                    | 60.3                        | 1.65     | 2.77 |      |       |       | 3.91      | 3.91  |       | 5.54     | 5.54  |       |       |       | 8.74  | 11.07 |
| 2 ½                  | 73                          | 2.11     | 3.05 |      |       |       | 5.16      | 5.16  |       | 7.01     | 7.01  |       |       |       | 9.52  | 14.02 |
| 3                    | 88.9                        | 2.11     | 3.05 |      |       |       | 5.49      | 5.49  |       | 7.62     | 7.62  |       |       |       | 11.13 | 15.24 |
| 4                    | 114.3                       | 2.11     | 3.05 |      |       |       | 6.02      | 6.02  |       | 8.56     | 8.56  |       | 11.13 |       | 13.49 | 17.12 |
| 5                    | 141.3                       | 2.77     | 3.40 |      |       |       | 6.55      | 6.55  |       | 9.52     | 9.52  | 12.70 |       |       | 15.88 | 19.05 |
| 6                    | 168.3                       | 2.77     | 3.40 |      |       |       | 7.11      | 7.11  |       | 10.97    | 10.97 |       | 14.27 |       | 18.26 | 21.95 |
| 8                    | 219.1                       | 2.77     | 3.76 |      | 6.35  | 7.04  | 8.18      | 8.18  | 10.31 | 12.70    | 12.70 | 15.09 | 18.26 | 20.62 | 23.01 | 22.22 |
| 10                   | 273                         | 3.40     | 4.19 |      | 6.35  | 7.80  | 9.27      | 9.27  | 12.70 | 12.70    | 15.09 | 18.26 | 21.44 | 25.40 | 28.58 | 25.40 |
| 12                   | 323.9                       | 3.96     | 4.57 |      | 6.35  | 8.38  | 9.52      | 10.31 | 14.27 | 12.70    | 17.47 | 21.44 | 25.40 | 28.38 | 33.34 | 25.40 |
| 14                   | 355.6                       | 3.96     | 4.78 | 6.35 | 7.92  | 9.52  | 9.52      | 11.13 | 15.09 | 12.70    | 19.05 | 23.82 | 27.79 | 31.75 | 35.71 |       |
| 16                   | 406.4                       | 4.19     | 4.78 | 6.35 | 7.92  | 9.52  | 9.52      | 11.13 | 15.09 | 12.70    | 21.44 | 26.19 | 30.96 | 36.52 | 40.49 |       |
| 18                   | 457.2                       | 4.19     | 4.78 | 6.35 | 7.92  | 11.13 | 9.52      | 14.27 | 19.05 | 12.70    | 23.82 | 29.36 | 34.92 | 39.69 | 45.24 |       |
| 20                   | 508                         | 4.78     | 5.54 | 6.35 | 9.52  | 12.70 | 9.52      | 15.09 | 20.62 | 12.70    | 26.19 | 32.54 | 38.10 | 44.45 | 50.01 |       |
| 22                   | 558.8                       | 4.78     | 5.54 | 6.35 | 9.52  | 12.70 | 9.52      | 15.88 | 22.22 | 12.70    | 28.58 | 34.92 | 41.28 | 47.62 | 53.98 |       |
| 24                   | 609.6                       | 5.54     | 6.35 | 6.35 | 9.52  | 14.27 | 9.52      | 17.48 | 24.61 | 12.70    | 30.96 | 38.89 | 46.02 | 52.39 | 59.54 |       |
| 26                   | 660.4                       |          |      | 7.92 | 12.70 |       | 9.52      |       |       | 12.70    |       |       |       |       |       |       |
| 28                   | 711.2                       |          |      | 7.92 | 12.70 | 15.88 | 9.52      |       |       | 12.70    |       |       |       |       |       |       |
| 30                   | 762.8                       | 6.35     | 7.92 | 7.92 | 12.70 | 15.88 | 9.52      |       |       | 12.70    |       |       |       |       |       |       |
| 32                   | 812.8                       |          |      | 7.92 | 12.70 | 15.88 | 9.52      | 17.48 |       | 12.70    |       |       |       |       |       |       |
| 34                   | 863.6                       |          |      | 7.92 | 12.70 | 15.88 | 9.52      | 17.48 |       | 12.70    |       |       |       |       |       |       |
| 36                   | 914.4                       |          |      | 7.92 | 12.70 | 15.88 | 9.52      | 19.05 |       | 12.70    |       |       |       |       |       |       |

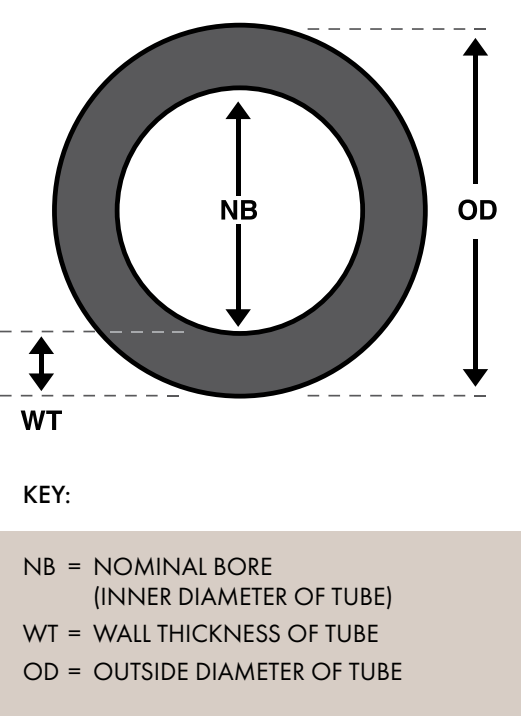
BS EN 10255 & 10217-1 (BS1387) TUBE SIZE

| NOMINAL BORE |          | OUTSIDE DIAMETER |          | MEDIUM WALL THICKNESS |          | HEAVY WALL THICKNESS |          |
|--------------|----------|------------------|----------|-----------------------|----------|----------------------|----------|
| (MM)         | (INCHES) | (MM)             | (INCHES) | (MM)                  | (INCHES) | (MM)                 | (INCHES) |
| 6            |          | 10.2             | 0.405    | 2.0                   | 0.082    |                      |          |
| 8            | ¼        | 13.5             | 0.540    | 2.35                  | 0.092    | 2.9                  | 0.116    |
| 10           |          | 17.2             | 0.675    | 2.35                  | 0.092    | 2.9                  | 0.116    |
| 15           | ½        | 21.3             | 0.840    | 2.65                  | 0.104    | 3.25                 | 0.128    |
| 20           | ¾        | 26.9             | 1.050    | 2.65                  | 0.104    | 3.25                 | 0.128    |
| 25           | 1        | 33.7             | 1.315    | 3.25                  | 0.128    | 4.05                 | 0.16     |
| 32           | 1 ¼      | 42.4             | 1.660    | 3.25                  | 0.128    | 4.05                 | 0.16     |
| 40           | 1 ½      | 48.3             | 1.900    | 3.25                  | 0.128    | 4.05                 | 0.16     |
| 50           | 2        | 60.3             | 2.375    | 3.65                  | 0.144    | 4.5                  | 0.176    |
| 65           | 2 ½      | 76.1             | 3.000    | 3.65                  | 0.144    | 4.5                  | 0.176    |
| 80           | 3        | 88.9             | 3.500    | 4.05                  | 0.16     | 4.85                 | 0.192    |
| 100          | 4        | 114.3            | 4.500    | 4.5                   | 0.176    | 5.4                  | 0.212    |
| 125          | 5        | 139.7            | 5.500    | 4.85                  | 0.192    | 5.4                  | 0.212    |
| 150          | 6        | 165.1            | 6.500    | 4.85                  | 0.192    | 5.4                  | 0.212    |

BS EN 10255 & 10217-1 (BS1387) TUBE WEIGHTS

| NOMINAL BORE |          | MEDIUM         |                   | HEAVY              |                | SCHEDULE          |                    |
|--------------|----------|----------------|-------------------|--------------------|----------------|-------------------|--------------------|
| (MM)         | (INCHES) | KG'S PER METRE | METRE'S PER TONNE | LENGTH'S PER TONNE | KG'S PER METRE | METRE'S PER TONNE | LENGTH'S PER TONNE |
| 8            | ¼        | 0.645          | 1550              | 238.5              |                |                   |                    |
| 10           |          | 0.845          | 1183              | 182.0              |                |                   |                    |
| 15           | ½        | 1.220          | 820               | 126.2              | 1.449          | 690               | 106.2              |
| 20           | ¾        | 1.570          | 637               | 98.0               | 1.880          | 532               | 81.8               |
| 25           | 1        | 2.427          | 412               | 63.4               | 2.959          | 338               | 52.0               |
| 32           | 1 ¼      | 3.135          | 319               | 49.1               | 3.831          | 261               | 40.2               |
| 40           | 1 ½      | 3.610          | 277               | 42.6               | 4.425          | 226               | 34.8               |
| 50           | 2        | 5.102          | 196               | 30.2               | 6.250          | 160               | 24.6               |
| 65           | 2 ½      | 6.536          | 153               | 23.5               | 8.065          | 124               | 19.1               |
| 80           | 3        | 8.547          | 117               | 18.0               | 10.526         | 95                | 14.6               |
| 100          | 4        | 12.500         | 80                | 12.3               | 14.706         | 68                | 10.5               |
| 125          | 5        | 17.241         | 58                | 8.9                | 18.519         | 54                | 8.3                |
| 150          | 6        | 20.408         | 49                | 7.5                | 21.739         | 46                | 7.1                |

TUBE SIZING EXPLAINED



WEIGHT OF MILD STEEL TUBE

**OD (mm) - WT (mm) x WT(mm) ÷ 40.5 = Kg/Metre**

Example;  
8" nb Schedule 20 API 5L seamless tube has an OD of 219.10mm and a WT of 6.35mm, therefore:  
219.10 - 6.35 x 6.35 ÷ 40.5 = 33.36 Kg/Metre

CALCULATION OF OUTSIDE DIAMETER

**OD CALCULATION = NB + (2 X WT)**

BUTTERFLY VALVES - SET BOLTS

| SEMI-LUGGED   |            |                 | FULLY-LUGGED  |            |                 |
|---------------|------------|-----------------|---------------|------------|-----------------|
| SIZE (INCHES) | BOLTS (MM) | NUMBER OF HOLES | SIZE (INCHES) | BOLTS (MM) | NUMBER OF HOLES |
| 2             | M16 x 105  | 4               | 2             | M16 x 35   | 8               |
| 2 ½           | M16 x 105  | 4               | 2 ½           | M16 x 35   | 8               |
| 3             | M16 x 105  | 4               | 3             | M16 x 35   | 16              |
| 4             | M16 x 115  | 8               | 4             | M16 x 40   | 16              |
| 5             | M16 x 115  | 8               | 5             | M16 x 40   | 16              |
| 6             | M20 x 120  | 8               | 6             | M20 x 50   | 16              |
| 8             | M20 x 140  | 8               | 8             | M20 x 50   | 16              |
| 10            | M24 x 155  | 12              | 10            | M24 x 55   | 24              |
| 12            | M24 x 170  | 12              | 12            | M24 x 60   | 24              |



MECHANICAL PROPERTIES OF COPPER TUBE TO EN 1057

| TEMPERATURE    | NOM. DIA. (OUTSIDE) | MPA* | MINIMUM ELONGATION | HARDNESS** |
|----------------|---------------------|------|--------------------|------------|
| R220 Annealed  | 6 to 54mm           | 220  | 40%                | 40 to 70   |
| R250 Half Hard | 6 to 66.7mm         | 250  | 30% #              | 75 to 100  |
| R250 Half Hard | 6 to 159mm          | 250  | 20% #              | 75 to 100  |
| R290 Hard      | 6 to 267mm          | 290  | 3%                 | 100 min    |

# Note: Elongations for half hard tubes depend on the ratio of outside diameter to wall thickness  
\* MPa: Minimum tensile strength  
\*\* Hardness HV/5 indicative

COPPER TUBE EN 1057 - TYPE Y (BS 2871)

| SIZE/OUTSIDE DIAMETER | NOMINAL WALL THICKNESS | MAX. WORKING PRESSURES* |             |                 |
|-----------------------|------------------------|-------------------------|-------------|-----------------|
|                       |                        | HALF HARD (R250)        | HARD (R290) | ANNEALED (R220) |
|                       |                        | (BAR†)                  | (BAR†)      | (BAR†)          |
| (MM)                  | (MM)                   | (BAR†)                  | (BAR†)      | (BAR†)          |
| 6                     | 0.8                    | 188                     | 223         | 144             |
| 8                     | 0.8                    | 136                     | 161         | 105             |
| 10                    | 0.8                    | 106                     | 126         | 82              |
| 12                    | 0.8                    | 87                      | 104         | 67              |
| 15                    | 1.0                    | 87                      | 104         | 67              |
| 18                    | 1.0                    | 72                      | 85          | 55              |
| 22                    | 1.2                    | 69                      | 84          | 53              |
| 28                    | 1.2                    | 55                      | 65          | 42              |
| 35                    | 1.5                    | 54                      | 65          | 41              |
| 42                    | 1.5                    | 45                      | 54          | 34              |
| 54                    | 2.0                    | 47                      | 56          | 36              |
| 66.7                  | 2.0                    | 37                      | 45          | 28              |
| 76.1                  | 2.0                    | 33                      | 39          | 25              |
| 108                   | 2.5                    | 29                      | 34          | 22              |

\* Based on designated temperature 65°C  
† 1 bar = 0.1N/mm² = 10<sup>5</sup> N/m²

Usage: Underground works and heavy duty requirements including hot and cold water supply, gas reticulation, sanitary plumbing, heating and general engineering.

ADDED TOUGHNESS & DURABILITY

COPPER TUBE EN 1057 - TYPE X (BS 2871)

| SIZE/OUTSIDE DIAMETER | NOMINAL WALL THICKNESS | MAX. WORKING PRESSURES* |             |                 |
|-----------------------|------------------------|-------------------------|-------------|-----------------|
|                       |                        | HALF HARD (R250)        | HARD (R290) | ANNEALED (R220) |
|                       |                        | (BAR†)                  | (BAR†)      | (BAR†)          |
| (MM)                  | (MM)                   | (BAR†)                  | (BAR†)      | (BAR†)          |
| 6                     | 0.6                    | 133                     | 161         | 102             |
| 8                     | 0.6                    | 97                      | 118         | 75              |
| 10                    | 0.6                    | 77                      | 93          | 59              |
| 12                    | 0.6                    | 63                      | 76          | 48              |
| 15                    | 0.7                    | 58                      | 71          | 45              |
| 18                    | 0.8                    | 56                      | 67          | 43              |
| 22                    | 0.9                    | 51                      | 62          | 39              |
| 28                    | 0.9                    | 40                      | 48          | 31              |
| 35                    | 1.2                    | 42                      | 51          | 33              |
| 42                    | 1.2                    | 35                      | 43          | 27              |
| 54                    | 1.2                    | 27                      | 33          | 21              |
| 66.7                  | 1.2                    | 20                      | 27          | 17              |
| 76.1                  | 1.5                    | 24                      | 29          | 18              |
| 108                   | 1.5                    | 17                      | 20          | 13              |
| 133                   | 1.5                    | 14                      | 17          | 10              |
| 159                   | 2.0                    | 15                      | 18          | 12              |

\* Based on designated temperature 65°C  
† 1 bar = 0.1N/mm² = 10<sup>5</sup> N/m²

Usage: Underground works and heavy duty requirements including hot and cold water supply, gas reticulation, sanitary plumbing, heating and general engineering.

ADDED TOUGHNESS & DURABILITY



JOINTING GUIDE

| PRODUCT                      | KEY INFORMATION   | POTABLE WATER | NON-POTABLE WATER | COMPRESSED AIR | NATURAL & TOWN GAS | LPG (GAS) | OIL & PETROL | STEAM |
|------------------------------|---|---------------|-------------------|----------------|--------------------|-----------|--------------|-------|
| CORE White                   | up to 150°C<br>up to 7bar   |               | ◆                 | ◆              | ◆                  |           |              | ◆     |
| Stag White Universal         | 260°C   | ◆             | ◆                 | ◆              | ◆                  | ◆         | ◆            | ◆     |
| Stag A                       | up to 1/2" &<br>-40°C to 400°C  |               | ◆                 | ◆              | ◆                  |           | ◆            | ◆     |
| Stag B                       | 1/2" to 1.1/2" &<br>-40°C to 650°C  |               | ◆                 | ◆              | ◆                  |           | ◆            | ◆     |
| Stag Plasti-Coil x10G        | -40°C to 150°C<br>up to 10 bar  |               | ◆                 | ◆              | ◆                  |           | ◆            | ◆     |
| CORE PTFE (white)            | -200°C to 260°C<br>up to 30 bar   | ◆             | ◆                 |                |                    |           |              |       |
| CORE PTFE (yellow)           | -200°C to 260°C<br>up to 100 bar  |               | ◆                 |                | ◆                  | ◆         | ◆            |       |
| Rocol Gasseal                | -20°C to 125°C  |               |                   |                | ◆                  | ◆         |              |       |
| Yorkshire Traditional Flux   |   |               | ◆                 |                | ◆                  |           |              |       |
| Lawton Flux                  | 65°C to 300°C   | ◆             | ◆                 |                | ◆                  |           |              |       |
| Powerflow Flux               |   | ◆             | ◆                 |                |                    |           |              |       |
| CORE Solder Wire (Leaded)    |   |               | ◆                 |                |                    |           |              |       |
| CORE Solder Wire (Lead-Free) |   | ◆             | ◆                 |                |                    |           |              |       |
| Loctite 55                   | 150°C   |               | ◆                 | ◆              | ◆                  | ◆         | ◆            |       |
| CORE Thread Sealant          | -50°C to 150°C<br>up to 24 bar  | ◆             | ◆                 |                | ◆                  | ◆         |              | ◆     |
| Jet-Lube V-2 Plus            | -45°C to 260°C,<br>up to 680 bar liquids & 137 bar gases (taper/taper only) | ◆             | ◆                 | ◆              | ◆                  |           | ◆            |       |
| Hemp                         | 135°C   | ◆             | ◆                 | ◆              |                    |           |              | ◆     |
| La-co Slic-tite              | -45°C to 260°C, up to 680 bar liquids & 204 bar gases                       | ◆             | ◆                 | ◆              | ◆                  | ◆         | ◆            | ◆     |
| La-co Flux                   |   | ◆             | ◆                 |                |                    |           |              |       |

PIPE JOINTING METHODS AND SURFACE PREP

JOINTING EXAMPLES

MECHANICAL



ELECTROFUSION



BUTT-FUSION

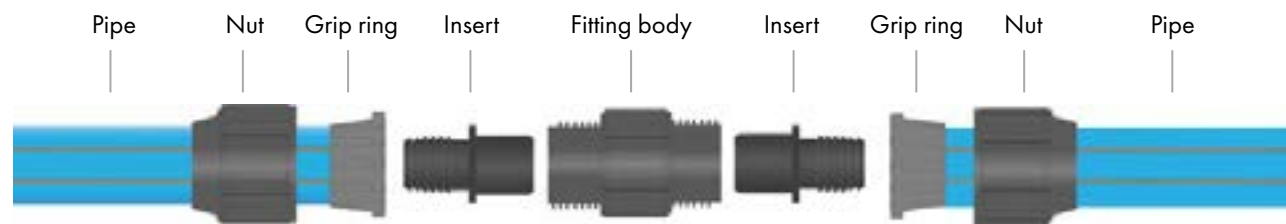


| PIPE DIAMETER (MM) | MECHANICAL COMPRESSION | ELECTROFUSION  | BUTT-FUSION |
|--------------------|------------------------|----------------|-------------|
|                    | SDR 11                 | SDR 11, SDR 17 | SDR 11      |
| 25                 | ◆ *                    |                |             |
| 32                 | ◆ *                    |                |             |
| 63                 | ◆ *                    |                |             |
| 90                 |                        | ◆ **           | ◆ **        |
| 110                |                        | ◆ **           | ◆ **        |
| 125                |                        | ◆ **           | ◆ **        |
| 160                |                        | ◆ **           | ◆ **        |
| 180                |                        | ◆ **           | ◆ **        |

\* No pipe surface preparation required. Ensure the pipe outer surface is clean and free from damage  
\*\* Pipe surface preparation mandatory



## MECHANICAL



Ensure the pipe is cut square and is damage free. Re-round if necessary. Slide the nut and grip ring on the pipe.



Using a rubber mallet, gently tap the insert fully into the pipe end.



Push the pipe with the insert fully into the body of the fitting.



Slide the grip ring so it is flush with the pipe insert.



Hand tighten the nut onto the body of the fitting.



Repeat steps 1 to 5 for the second pipe to be joined.



Using C ring wrenches fully tighten the nuts onto the body of the fitting.



The joint is complete. Carry out a water industry approved joint pressure test to check for leak-tightness. There is no requirement to wrap the finished joint.

## ELECTROFUSION

Pipe preparation is mandatory before carrying out an electrofusion joint. A 2-pass pipe surface preparation process is required for jointing.



Ensure the pipe surface is clean and free from damage. Re-round if necessary. Measure and mark the fitting insertion depth on the pipe.

**First pass**

Select the correct size tooling and 'domino' spot cutting blade and carry out the first pass of the pipe surface preparation.



Rotate the tool anti-clockwise to remove the outer PE and aluminium layers up to the fitting insertion depth mark.

**Second pass**

Select the standard pipe preparation blade to carry out the second pass of the pipe surface preparation.



Rotate the tool continuously in an anti-clockwise direction. This will remove a continuous layer of polyethylene swarf. Please keep the environment clean, by removing all pipe shavings and offcuts and dispose of them responsibly.



Place the fitting on the pipe end as shown. To avoid contamination, keep the fitting in its packaging until you are ready to insert the second pipe.



Repeat the pipe surface preparation for the second pipe to be joined and fully insert into the fitting.



Fit alignment clamps and follow industry best practice to fuse the fitting. There is no requirement to wrap the finished joint.

**Important note**

The pipe's prepared surface should be equal to the socket insertion depth.

DO NOT scrape beyond the fitting's socket insertion depth.

BUTT-FUSION

Pipe preparation is mandatory before carrying out a butt-fusion joint. A 2-pass pipe surface preparation process is required for jointing.

BUTT-FUSION PREPARATION

This table provides measurements to enable correct pipe preparation prior to butt-fusion welding.

| PIPE DIAMETER<br>(MM) | SKIN REMOVED<br>TOLERANCE<br>±1MM | EXPOSED CORE PIPE<br>LENGTH AFTER TRIM<br>±1MM | FINAL BEAD WIDTH<br>TOLERANCE<br>MIN - MAX |
|-----------------------|-----------------------------------|--|--|
| 90                    | 11                                | 7  | 8 - 18                                     |
| 110                   | 11                                | 7  | 9 - 16                                     |
| 125                   | 13                                | 8  | 9 - 16                                     |
| 160                   | 14                                | 9  | 9 - 16                                     |
| 180                   | 15                                | 10   | 7 - 17                                     |



Ensure the pipe surface is clean and free from damage. Re-round if necessary. Mark the minimum pipe preparation distance using a butt-fusion gauge.



**First pass**  
Select the correct size tooling and 'domino' spot cutting blade and carry out the first pass of the pipe surface preparation.



Rotate the tool anti-clockwise, to remove the outer PE and aluminium layers up to depth mark.



**Second pass**  
Select the standard pipe preparation blade to carry out the second pass of the pipe surface preparation.



Rotate the tool continuously in an anti-clockwise direction. This will remove a continuous layer of polyethylene swarf. Please keep the environment clean, by removing all pipe shavings and offcuts and dispose of them responsibly.



Check the correct pipe surface distance using a butt-fusion gauge. Prepare the second pipe following steps 1 to 5.



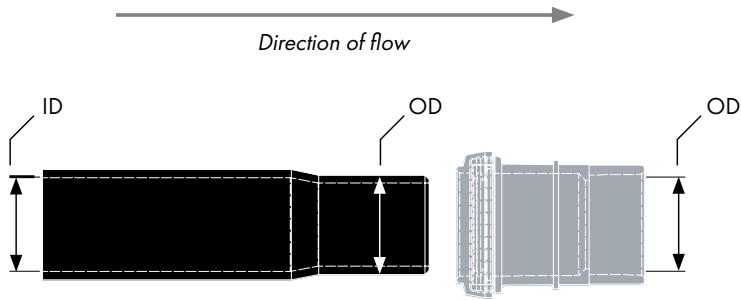
Follow the water industry standard butt-fusion procedure. Program the butt-fusion unit with the correct pipe parameters.



Finished joint. Remove the external bead and perform a bend back test to assess the joint quality. There is no requirement to wrap the finished joint.

TERRAIN JOINTING GUIDE

A useful reference for connecting from different pipe materials products to Terrain Drainage products.



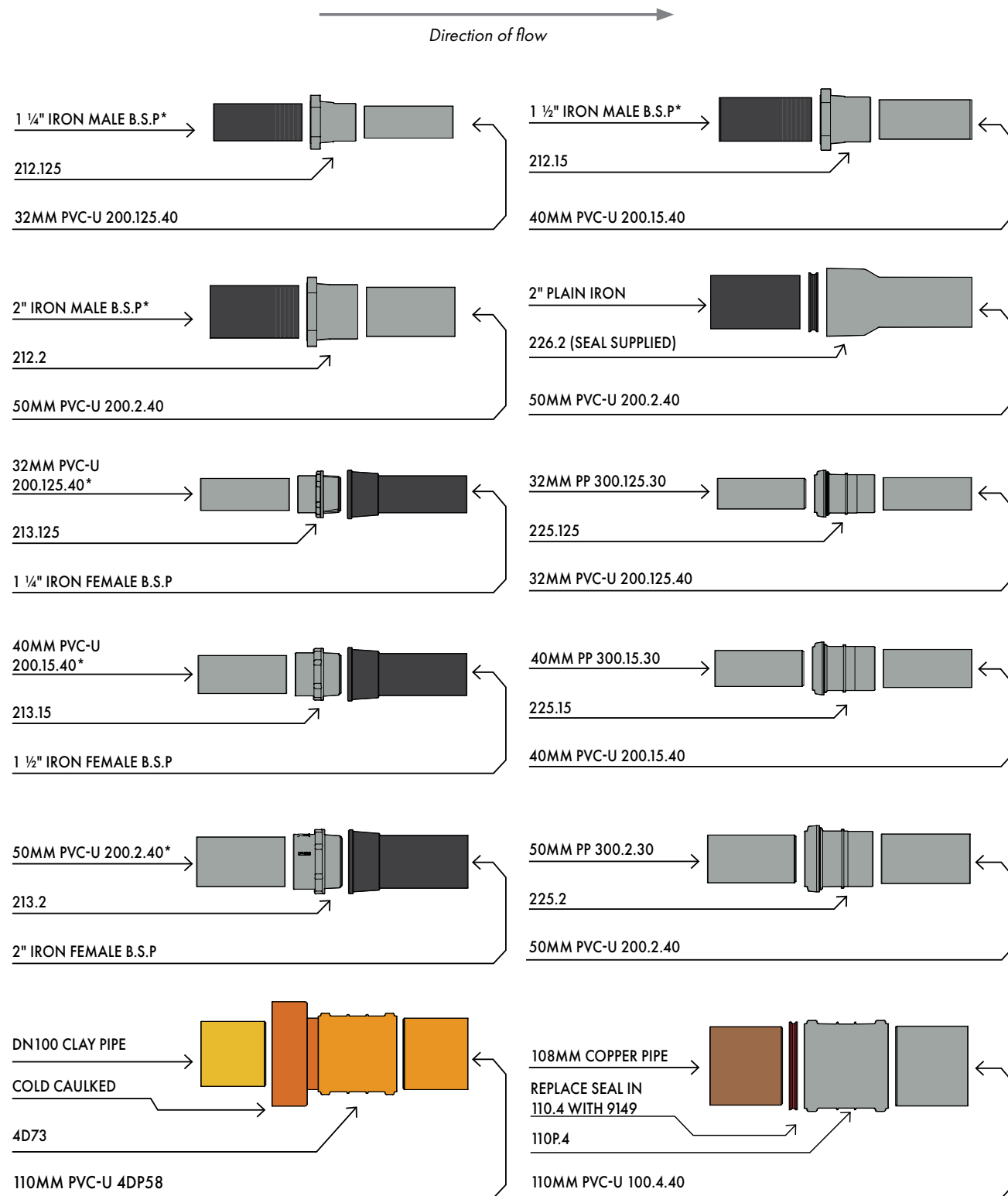
OD & ID OF DIFFERENT MATERIALS

| OD          | 1 ¼" | 1 ½"   | 2"   | 3"   | 4"    | 6"    |
|-------------|------|--------|------|------|-------|-------|
| PVC-u       | 36mm | 43mm   | 56mm | 82mm | 110mm | 160mm |
| PP          | 35mm | 41mm   | 54mm |      |       |       |
| FUZE (HDPE) | 40mm | 50mm   | 56mm | 75mm | 110mm | 160mm |
| Terrain Q   | 40mm |        | 50mm |      | 110mm | 160mm |
| Iron        | 42mm | 47.8mm | 60mm |      |       |       |
| Copper      | 35mm | 42mm   | 54mm |      | 108mm |       |
| Clay        |      |        |      |      | 100mm |       |
| Vulcathene  |      | 48mm   | 60mm | 89mm | 114mm |       |
| Cast Iron   |      |        |      |      | 112mm |       |
| Chrome      | 32mm |        |      |      |       |       |

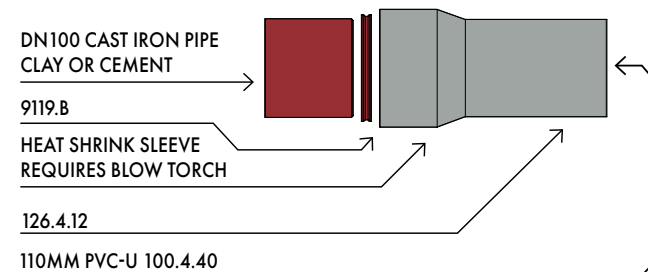
| ID          | 1 ¼" | 1 ½" | 2"     | 3"   | 4"    | 6"    |
|-------------|------|------|--------|------|-------|-------|
| PVC-u       | 32mm | 39mm | 52mm   | 76mm | 104mm | 154mm |
| PP          | 31mm | 37mm | 50mm   |      |       |       |
| FUZE (HDPE) | 34mm | 44mm | 49.5mm | 69mm | 101mm | 148mm |
| Terrain Q   | 36mm |      | 46mm   |      | 104mm | 153mm |
| Iron        | 32mm | 38mm | 50mm   |      |       |       |
| Copper      | 32mm | 39mm | 51mm   |      | 104mm |       |
| Clay        |      |      |        |      | 76mm  |       |
| Vulcathene  |      | 38mm | 51mm   | 75mm | 102mm |       |
| Cast Iron   |      |      |        |      | 98mm  |       |
| Chrome      | 28mm |      |        |      |       |       |



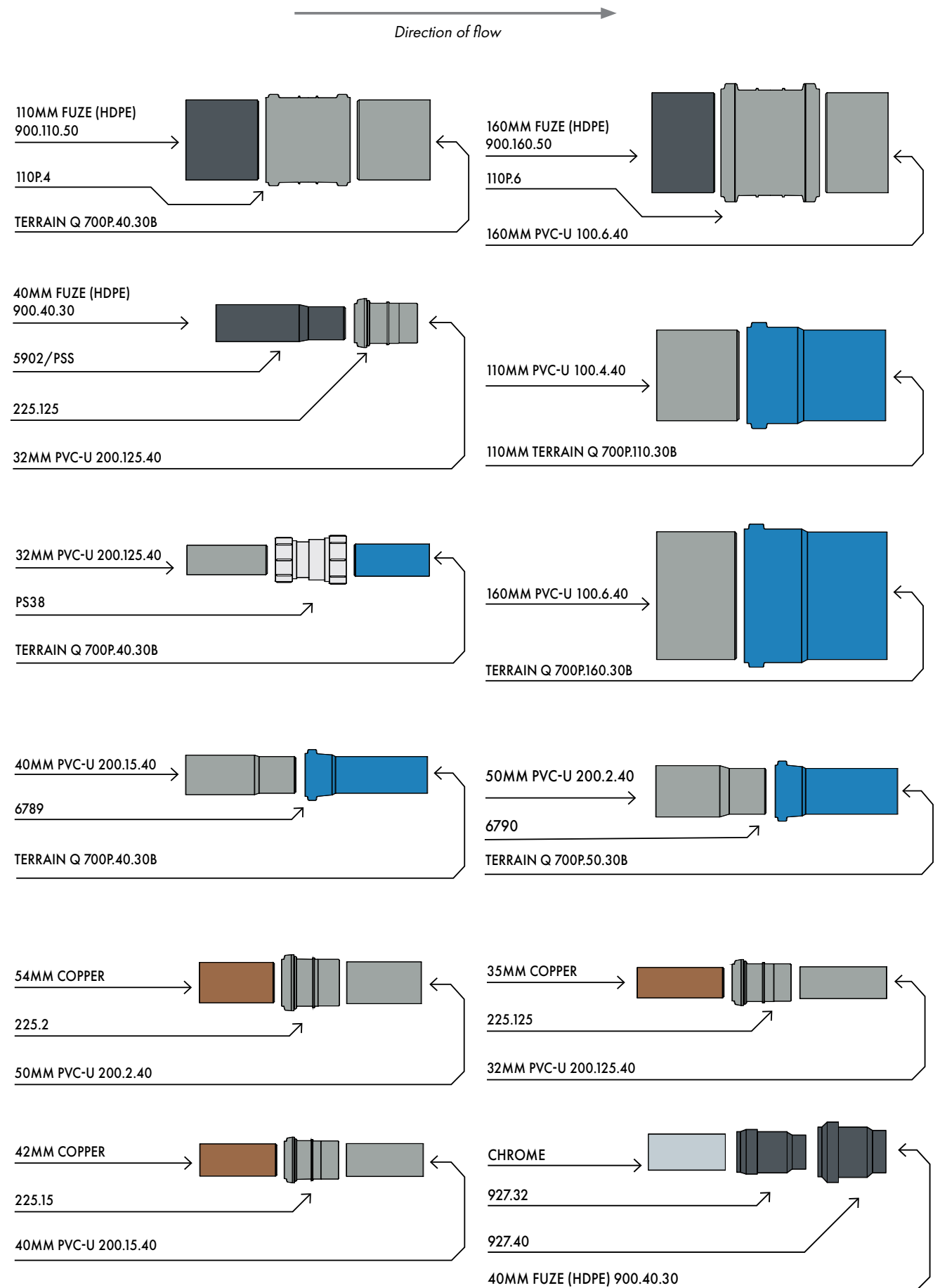
## TERRAIN JOINTING GUIDE



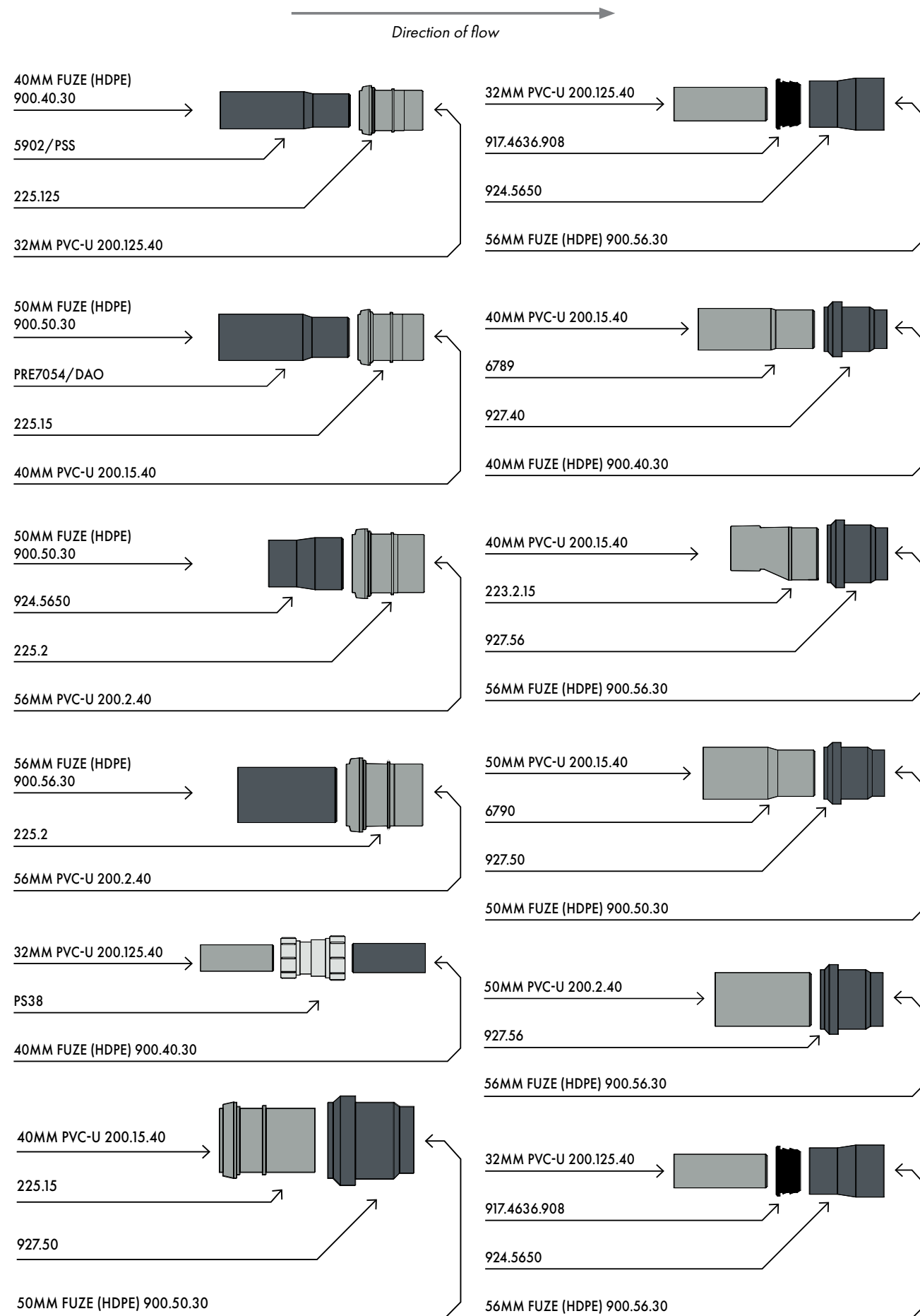
\* Use PTFE on threads



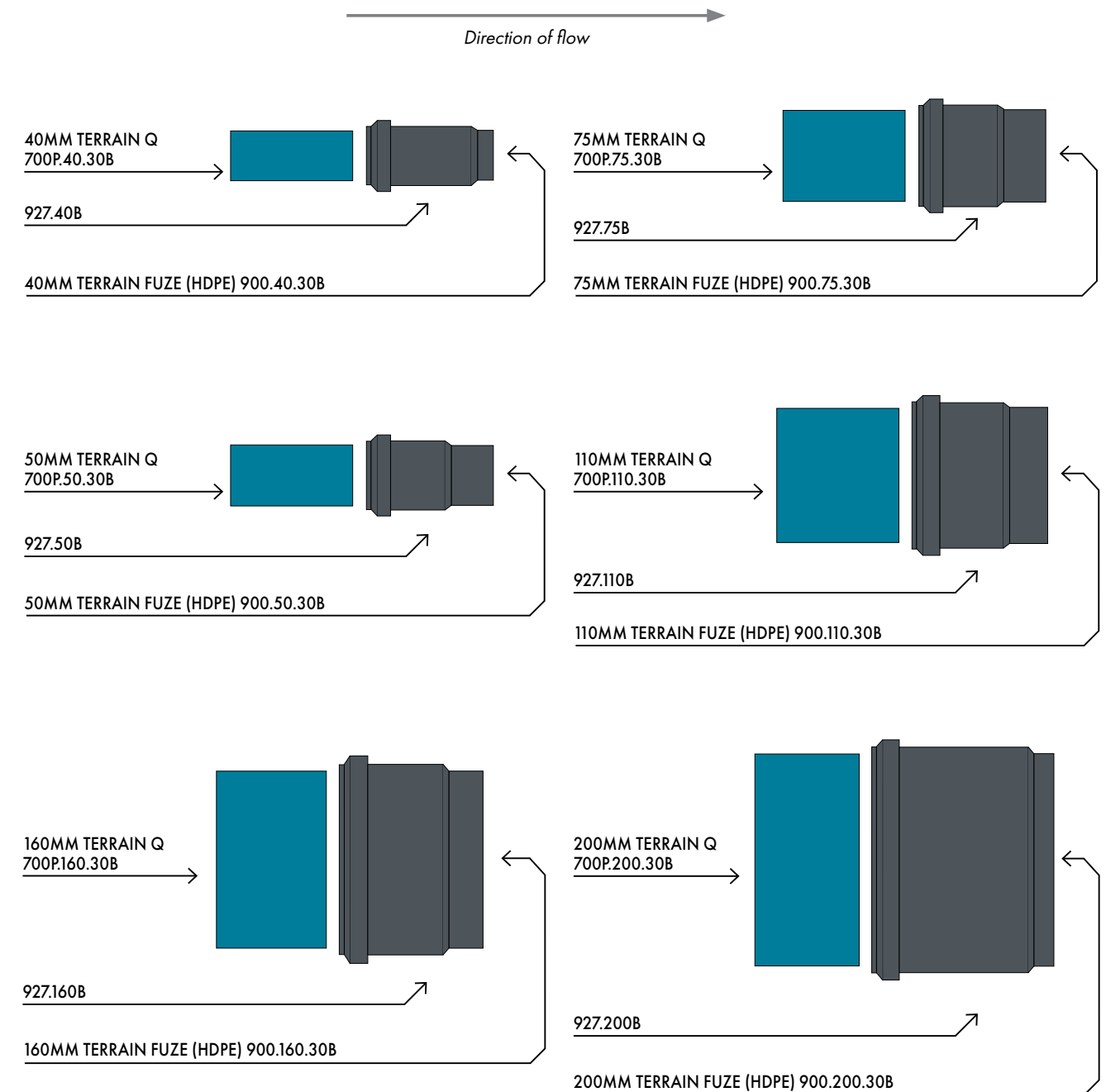
## TERRAIN JOINTING GUIDE



## TERRAIN JOINTING GUIDE



## TERRAIN JOINTING GUIDE



NOTE: Pipes to be chamfered and lubricated when being used with ring seal, use 9136.250L Silicone grease.

REFERENCES: 1. Terrain Soil and Waste Product Installation 2. BSEN12056 Gravity drainage systems inside buildings Sanitary pipework, layout and calculation.

If in doubt ask Terrain technical on 01622 795200 or [commercial.technical@polypipe.com](mailto:commercial.technical@polypipe.com)



MALLEABLE

| PRESSURE (BAR) |      |     |                 | SERVICE TEMPERATURE (°C) |      |     |                         |
|----------------|------|-----|-----------------|--------------------------|------|-----|-------------------------|
| 25             |      |     |                 | -20 TO 120               |      |     |                         |
| 20             |      |     |                 | -20 TO 320               |      |     |                         |
| CRANE          | GF   | SBS | DESCRIPTION     | CRANE                    | GF   | SBS | DESCRIPTION             |
| 140            | 241  | 140 | Bush            | 185                      | 300  | 185 | Cap                     |
| 144            | 280  | 144 | Hex Nipple      | 191                      | 3    |     | Male Bend               |
| 145            | 245  | 145 | Red Hex Nipple  | 192                      | 1a   | 192 | M&F Bend S/R            |
|                | 290  |     | Beaded Plug     |                          | 1    |     | M&F Bend L/R            |
| 147            | 291  | 147 | Hollow Plug     | 193                      | 2a   | 193 | Bend S/R                |
| 148            | 291S | 148 | Solid Plug      |                          | 2    |     | Bend L/R                |
| 149            | 596  | 149 | C/Sunk Plug     | 197                      | 132  |     | Twin Elbow              |
| 150            | 312  | 150 | Backnut         |                          | 40   |     | M&F 45 Bend             |
| 151            | 90   | 151 | Elbow           | 199                      | 131  | 199 | Sweep Tee               |
| 152            | 92   | 152 | M&F Elbow       | 213                      | 60   |     | Return Bend             |
|                | 94   |     | Male Elbow      | 241                      | 330  |     | Union Flat Seat         |
| 155            | 120  | 155 | 45 Elbow        | 256                      | 340  | 256 | Union Cone Seat         |
| 156            | 121  | 156 | 45 M&F Elbow    | 257                      | 341  | 257 | M&F Union Cone Seat     |
| 161            | 130  | 161 | Tee             | 261                      | 96   |     | Union Elbow             |
| 163            |      |     | M&F Tee         | 262                      | 98   |     | M&F Union Elbow         |
| 171            | 180  |     | Cross           | 271                      | 342  | 271 | Union (BR-IR)           |
| 176            | 270  |     | Socket-Parallel | 272                      |      |     | M&F Union (BR-IR)       |
| 177            |      |     | Socket-Taper    | 276                      |      |     | Union Elbow (BR-IR)     |
| 179            | 240  |     | Con Socket      |                          |      |     | M&F Union Elbow (BR-IR) |
|                | 246  |     | M&F Socket      | 289                      | 342a | 289 | Union (BR-BR) (Navy)    |
| 180            | 260  |     | ECC Socket      | 290                      | 346  |     | Mac Union               |

CSST

|                   | SIZE          | GASTITE     | GF5          | TRACPIPE              |
|-------------------|---------------|-------------|--------------|-----------------------|
| Coupling          | DN15          | GTC015      | GFSC015      | TPC015                |
|                   | DN20          | GTC020      | GFSC020      | TPC022                |
|                   | DN25          | GTC025      | GFSC025      | TPC028                |
|                   | DN32          | GTC032      | GFSC032      | TPC032                |
|                   | DN40          | GTC040      | GFSC040      | TPC040                |
|                   | DN50          | GTC050      | GFSC050      | TPC050                |
| Adadptor to BSP   | DN15 x 1/2"   | GTMA015     | GF5MA015     | TPAF015               |
|                   | DN20 x 3/4"   | GTMA020     | GF5MA020     | TPAF022               |
|                   | DN25 x 1"     | GTMA025     | GF5MA025     | TPAF028               |
|                   | DN32 x 1 1/4" | GTMA032     | GF5MA032     | TPAF032               |
|                   | DN40 x 1 1/2" | GTMA040     | GF5MA040     | TPAF040               |
| Adaptor to Copper | DN15 x 15mm   | GTCCU015    | GFSCCU015    | TPCCU015015           |
|                   | DN20 x 15mm   | GTCCU020015 | GFSCCU020015 | TPCCU022015           |
|                   | DN20 x 22mm   | GTCCU020022 | GFSCCU020022 | TPCCU022022           |
|                   | DN25 x 22mm   | GTCCU025022 | GFSCCU025022 | TPCCU028022           |
|                   | DN25 x 28mm   | GTCCU025028 | GFSCCU025028 | TPCCU028028           |
|                   | DN32 x 22mm   | GTCCU032022 | GFSCCU032022 | TPCCU032022           |
|                   | DN32 x 35mm   | GTCCU032035 | GFSCCU032035 | TPCCU032035           |
| CSST Coil (75Mtr) | 15mm x 75mtr  | GT015075    | GFSPM015075  | TP015075              |
|                   | 20mm x 75mtr  | GT020075    | GFSPM020075  | TP022075 (DN22)       |
|                   | 25mm x 75mtr  | GT025075    | GFSPM025075  | TP028090 (DN28 x 90m) |
|                   | 32mm x 75mtr  | GT032075    | GFSPM032075  | TP032075              |
|                   | 40mm x 75mtr  | GT040075    | GFSPM040075  | TP040075              |

VALVES

| VALVE  | ALBION          | HATTERSELY       | CRANE            | IMI-TA          |
|--|-----------------|------------------|------------------|-----------------|
| Ball (BSP)                                     | SBS750          | H100             | D171 / D171A     | 421500008       |
| Ball (Comp)                                    | SBS800          | H100C            | D171AC           | 421500024       |
| Check (Swing)                                  | SBS138          | H47              | D138             | 433500003       |
| Commissioning Set<br>(below 2" – Screwed)      | FC (or) SBS931  | H1732            | D931             |                 |
| Commissioning Set<br>(above 2" – Flanged PN16) | SBS921 + SBS900 | HM733DR + HM2000 | DM941 (complete) | 521810 + 521769 |
| Double Reg. (BSP)                              | FC (or) SBS921  | H1432            | D921             | 528506          |
| Double Reg. (PN16)                             | SBS921          | HM733DR          | DM921            | 521814          |
| Gate (L/S)                                     | SBS237 / 237A   | H33XLS           | D237             |                 |
| Gate (PN16)                                    | SBS63           | HM541            | FM63             | 42250026        |
| Gate (screwed)                                 | SBS151          | H33X             | D151             | 51060           |
| Globe  | SBS151          | H13              | D151             |                 |
| Butterfly Valve (Water)                        | SBS624          | H970             | F628             | 424500372       |
| Butterfly Valve (Gas)                          | SBS614          | H971             | F614             |                 |
| Metering Station                               | FC901 or SBS901 | HM2000           | DM900            | 521761 + 521769 |
| Y-Strainer (screwed)                           | SBS297          | H807 / H817      | D297 / D298      | 432500003       |
| Y-Strainer (Flanged)                           | SBS276          | H822             | FM276            | 432500362       |

SAFETY VALVES

| FLUID      | APPLICATION             | NABIC      | ALBION | CORE |
|------------|-------------------------|------------|--------|------|
| Hot Water  | Vented System           | 542        | 642    | 642  |
|            | Unvented Heating System | 500        |        |      |
|            | Unvented Supply System  | 500T       |        |      |
| Cold Water | Pump Relief             | 542L       | 642    | 642  |
|            | Pipeline                |            |        |      |
|            | Vessel Protection       |            |        |      |
| Hot Water  | Boiler                  | 500        | 642    | 642  |
|            | Pipeline                |            |        |      |
|            | Vessel Protection       |            |        |      |
| Air        | Compressor              | 500<br>542 | 642    | 642  |
|            | Pipeline                |            |        |      |
|            | Receiver Protection     |            |        |      |

CORE BALL & BUTTERFLY VALVES

|            | CORE 171A<br>(DZR Brass) | CORE 171AC<br>(DZR Brass) | CORE 750<br>(Brass) | CORE 800<br>(Brass) | CORE 171AP<br>(DZR Brass) | CORE 140<br>(Lugged PN16 Lever) |
|------------|--------------------------|---------------------------|---------------------|---------------------|---------------------------|---------------------------------|
| Albion     | ART 50                   | ART 59                    | ART 40              | ART 89              | ART 55PRS                 | ART 135                         |
| Crane      | D171A                    | D171AC                    | N/A                 | N/A                 | D171A.PF                  | F624                            |
| Hattersley | 100                      | 100C                      | N/A                 | N/A                 | 100.PF                    | 970W                            |
| Oventrop   | 107 90 Optibal           | N/A                       | 10760               | N/A                 | 10771                     | 104 82                          |
| BOSS       | 965S                     | N/A                       | 966S                | 968S                | N/A                       | 16LSE                           |
| Jet        | N/A                      | N/A                       | BBV21               | BBV24               | N/A                       | 624                             |
| Pegler     | PB550                    | PB350                     | PB700               | PB300               | PS500                     | V905                            |
| Herz       | 21900X                   | 21904X                    | N/A                 | N/A                 | N/A                       | HV-BF-FLL                       |



CORE 171A



CORE 171AC



CORE 750



CORE 800



CORE 171AP



CORE 140

CORE INHIBITOR DOSAGE CALCULATOR

DOSING ADVICE FOR ALL CHEMICALS (EXCEPT GLYCOL)

1. Take the combined kW output of the Boilers/Chillers.
2. For a heating system, multiply the kW output by 12 to give an estimated system volume in litres, then multiply by 0.40%. e.g. for a 500kW heating system: Multiply 500 x 12 = 6,000 litres x 0.40% = 24. Therefore, ADD 24 litres of CORE Inhibitor.
3. For a chilled/cooling system, multiply the kW output by 15 to give an estimated system volume in litres, then multiply by 0.40%. e.g. for a 250kW chilled system: Multiply 250 x 15 = 3,750 litres x 0.40% = 15. Therefore, ADD 15 litres of CORE Inhibitor.

DOSING ADVICE (WITH GLYCOL)

The concentration of CORE Glycol Anti-Freeze can be adjusted for lower levels of freeze protection, reducing the freezing point of water in direct proportion to its concentration within the system:

- **25% concentration provides protection down to -11°C**

• 2.5L of Glycol Anti-Freeze & 7.5L of water for every 10L of system water
- **30% concentration provides protection down to -14°C**

• 3.0L of Glycol Anti-Freeze & 7.0L of water for every 10L of system water
- **35% concentration provides protection down to -17°C**

• 3.5L of Glycol Anti-Freeze & 6.5L of water for every 10L of system water
- **40% concentration provides protection down to -22°C**

• 4.0L of Glycol Anti-Freeze & 6.0L of water for every 10L of system water

PLEASE NOTE: Minimum dose for full corrosion protection is 25% concentration.



PUMP REPLACEMENT GUIDE

|                                 | WILO                               |                                    |             | GRUNDFOS           |        |          |             | LOWARA                    |                          |                        | DAB                                 |   |            |
|---------------------------------|------------------------------------|------------------------------------|-------------|--------------------|--------|----------|-------------|---------------------------|--------------------------|------------------------|-------------------------------------|---|------------|
|                                 | PRODUCT                            | LENGTH                             | SBS CODE    | PRODUCT            | LENGTH | SBS CODE |             | PRODUCT                   | LENGTH                   | SBS CODE               | PRODUCT                             | LENGTH                                  | SBS CODE   |
| Small circulators               | Yonos PICO 15/1-4                  | 130mm                              | WILO4215511 | UPS3 15-50/65      | 130mm  | N/A      |             | Ecocirc S 15-4/130        | 130mm                    | LOW60BOL1000           | Evosta 3 40/130 1/2"                | 130mm                                   | N/A        |
|                                 | Yonos PICO 25/1-5-130              | 130mm                              | WILO4215522 | UPS3 15-50/65      | 130mm  | N/A      |             | Ecocirc M 25-6/130        | 130mm                    | LOW60BOL1011           | Evosta 3 60/130 1"                  | 130mm                                   | DD60193271 |
|                                 | Yonos PICO 25/1-6                  | 180mm                              | WILO4215515 | N/A                | N/A    | N/A      |             | Ecocirc M 25-6/180        | 180mm                    | LOW60BOL1017           | Evosta 3 60/180 1"                  | 180mm                                   | N/A        |
|                                 | Yonos PICO 25/1-6-130              | 130mm                              | WILO4215516 | N/A                | N/A    | N/A      |             | Ecocirc M 25-6/130        | 130mm                    | LOW60BOL1011           | Evosta 3 60/130 1"                  | 130mm                                   | DD60193271 |
|                                 | Yonos PICO 25/1-8-130              | 130mm                              | WILO4215518 | N/A                | N/A    | N/A      |             | N/A                       | N/A                      | N/A                    | N/A                                 | N/A                                     | N/A        |
|                                 | Yonos PICO 25/1-8-180              | 180mm                              | WILO4215517 | N/A                | N/A    | N/A      |             | N/A                       | N/A                      | N/A                    | N/A                                 | N/A                                     | N/A        |
| Medium circulators              | Yonos MAXO 25/0.5-12 PN10          | 180mm                              | WILO2120641 | Magna1 25-100      | 180mm  | N/A      |             | Ecocirc XL 25-100         | 180mm                    | N/A                    | Evoplus 110/180 M                   | 180mm                                   | DD60150941 |
|                                 | Yonos MAXO 25/0.5-7 PN10           | 180mm                              | WILO2120639 | Magna1 25-80       | 180mm  | N/A      |             | Ecocirc XL 25-80          | 180mm                    | LOWE503010AA           | Evoplus 80/180 M                    | 180mm                                   | DD60150940 |
|                                 | Yonos MAXO 30/0.5-10 PN10          | 180mm                              | WILO2120643 | Magna1 32-100      | 180mm  | N/A      |             | Ecocirc XL 32-100         | 180mm                    | LOWE503040AA           | Evoplus 110/180 XM                  | 180mm                                   | DD60150945 |
|                                 | Yonos MAXO 30/0.5-12 PN10          | 180mm                              | WILO2120644 | Magna1 32-120 F    | 220mm  | N/A      |             | Ecocirc XL D 32-120F      | 220mm                    | N/A                    | N/A                                 | N/A                                     | N/A        |
|                                 | Yonos MAXO 30/0.5-7 PN10           | 180mm                              | WILO2120642 | Magna1 32-80       | 180mm  | N/A      |             | Ecocirc XL 32-80          | 180mm                    | LOWE503050AA           | Evoplus 80/180 XM                   | 180mm                                   | DD60150944 |
|                                 | Yonos MAXO 40/0.5-12 PN6/10        | 250mm                              | WILO2120647 | Magna1 40-120 F    | 250mm  | N/A      |             | Ecocirc XL 40-120 F       | 250mm                    | LOWE503100AA           | Evoplus B 120/250.40 M              | 250mm                                   | DD60150967 |
|                                 | Yonos MAXO 40/0.5-4 PN6/10         | 220mm                              | WILO2120645 | Magna1 40-40 F     | 220mm  | N/A      |             | Ecocirc XL 40-80 F        | 220mm                    | LOWE501130AA           | Evoplus B 40/220.40 M               | 220mm                                   | DD60150963 |
|                                 | Yonos MAXO 40/0.5-8 PN6/10         | 220mm                              | WILO2120646 | Magna1 40-80 F     | 220mm  | N/A      |             | Ecocirc XL 40-80 F        | 220mm                    | LOWE501130AA           | Evoplus B 80/220.40 M               | 220mm                                   | DD60150965 |
|                                 | Yonos MAXO 50/0.5-12 PN6/10        | 280mm                              | WILO2120651 | Magna1 50-120 F    | 280mm  | N/A      |             | Ecocirc XL 50-120 F       | 280mm                    | LOWE503130AA           | Evoplus B 120/280.50 M              | 280mm                                   | DD60150974 |
|                                 | Yonos MAXO 50/0.5-8 PN6/10         | 240mm                              | WILO2120649 | Magna1 50-80 F     | 240mm  | N/A      |             | Ecocirc XL 50-80 F        | 240mm                    | N/A                    | Evoplus B 80/240.50 M               | 240mm                                   | DD60150972 |
|                                 | Yonos MAXO 50/0.5-9 PN6/10         | 280mm                              | WILO2120650 | Magna1 50-100 F    | 280mm  | N/A      |             | Ecocirc XL 50-100 F       | 280mm                    | LOWE501150AA           | Evoplus B 100/280.50 M              | 280mm                                   | DD60150973 |
|                                 | Yonos MAXO-D 32/0.5-7 PN6/10       | 220mm                              | WILO2160585 | Magna1 D 32-80 F   | 220mm  | N/A      |             | Ecocirc XL D 32-80 F      | 220mm                    | LOWE502030AA           | Evoplus D 80/220.32 M               | 220mm                                   | DD60150956 |
|                                 | Yonos MAXO-D 40/0.5-8 PN6/10       | 220mm                              | WILO2120664 | Magna1 D 40-80 F   | 220mm  | N/A      |             | Ecocirc XL D 40-80 F      | 220mm                    | LOWE501170AA           | Evoplus D 80/220.40 M               | 220mm                                   | DD60151003 |
|                                 | Yonos MAXO-D 50/0.5-9 PN6/10       | 280mm                              | WILO2120667 | Magna1 D 50-100 F  | 280mm  | N/A      |             | Ecocirc XL D 50-120 F     | 280mm                    | LOWE503450AA           | Evoplus D 120/280.50 M              | 280mm                                   | DD60151012 |
|                                 | Yonos MAXO-D 65/0.5-12 PN6/10      | 340mm                              | WILO2120670 | Magna1 D 65-120 F  | 340mm  | N/A      |             | Ecocirc XL D 65-120 F     | 340mm                    | LOWE503470AA           | Evoplus D 120/340.65 M              | 340mm                                   | DD60151019 |
|                                 | Stratos MAXO 25/0.5-8 PN10         | 180mm                              | WILO2164569 | Magna3 25-80       | 180mm  | N/A      |             | Ecocirc XL plus 25-80     | 180mm                    | LOWE503210AA           | Evoplus 80/180 M                    | 180mm                                   | DD60150940 |
|                                 | Stratos MAXO 30/0.5-12 PN10        | 180mm                              | WILO2164576 | Magna3 32-120      | 180mm  | N/A      |             | Ecocirc XL plus N 32-120  | 220mm                    | LOWE510110AA           | Evoplus 110/180 XM                  | 180mm                                   | DD60150945 |
|                                 | Stratos MAXO 40/0.5-12 PN6/10      | 250mm                              | WILO2164584 | Magna3 40-120F     | 250mm  | N/A      |             | Ecocirc XL plus 40-120 F  | 250mm                    | LOWE503300AA           | Evoplus B 120/250.40 M              | 250mm                                   | DD60150967 |
|                                 | Stratos MAXO 40/0.5-16 PN6/10      | 250mm                              | WILO2164585 | Magna3 40-180F     | 250mm  | N/A      |             | Ecocirc XL plus 40-180 F  | 250mm                    | LOWE501220AA           | Evoplus B 180/250.40 M              | 250mm                                   | DD60150969 |
|                                 | Stratos MAXO 40/0.5-8 PN6/10       | 220mm                              | WILO2164583 | Magna3 40-80F      | 220mm  | N/A      |             | Ecocirc XL plus 40-80 F   | 220mm                    | LOWE501330AA           | Evoplus B 80/220.40 M               | 220mm                                   | DD60150965 |
|                                 | Stratos MAXO 50/0.5-12 PN6/10      | 280mm                              | WILO2164589 | Magna3 50-120F     | 280mm  | N/A      |             | Ecocirc XL plus 50-120 F  | 280mm                    | LOWE503330AA           | Evoplus B 120/280.50 M              | 280mm                                   | DD60150974 |
|                                 | Stratos MAXO 50/0.5-16 PN6/10      | 340mm                              | WILO2164591 | Magna3 50-180F     | 280mm  | N/A      |             | Ecocirc XL plus 50-180 F  | 280mm                    | LOWE501240AA           | Evoplus B 180/280.50 M              | 280mm                                   | DD60150976 |
|                                 | Stratos MAXO 65/0.5-12 PN6/10      | 340mm                              | WILO2164594 | Magna3 65-120F     | 340mm  | N/A      |             | Ecocirc XL plus 65-120 F  | 340mm                    | LOWE503350AA           | Evoplus B 120/340.65 M              | 340mm                                   | DD60150981 |
|                                 | Stratos MAXO-D 30/0.5-10 PN10      | 180mm                              | WILO2164646 | Magna3 D 32-100 F  | 220mm  | N/A      |             | Ecocirc XL plus 32-100 F  | 220mm                    | LOWE502040AA           | Evoplus D 110/220.32 M              | 220mm                                   | DD60150957 |
|                                 | Stratos MAXO-D 30/0.5-6 PN10       | 180mm                              | WILO2164645 | N/A                | N/A    | N/A      |             | N/A                       | N/A                      | N/A                    | N/A                                 | N/A                                     | N/A        |
|                                 | Stratos MAXO-D 32/0.5-12 PN6/10    | 220mm                              | WILO2164648 | Magna3 D 32-120F   | 220mm  | N/A      |             | Ecocirc XL D 32-100 F     | 220mm                    | LOWE502040AA           | Evoplus D 110/220.32 M              | 220mm                                   | DD60150957 |
|                                 | Stratos MAXO-D 32/0.5-8 PN6/10     | 220mm                              | WILO2164647 | Magna3 D 32-80F    | 220mm  | N/A      |             | Ecocirc XL D 32-80 F      | 220mm                    | LOWE502030AA           | Evoplus D 80/220.32 M               | 220mm                                   | DD60150956 |
|                                 | Stratos MAXO-D 40/0.5-12 PN6/10    | 250mm                              | WILO2164650 | Magna3 D 40-120F   | 250mm  | N/A      |             | Ecocirc XL 40-120 F       | 250mm                    | LOWE503100AA           | Evoplus D 120/250.40 M              | 250mm                                   | DD60151005 |
|                                 | Stratos MAXO-D 40/0.5-16 PN6/10    | 250mm                              | WILO2164651 | Magna3 D 40-180F   | 250mm  | N/A      |             | Ecocirc XL 40-180 F       | 250mm                    | LOWE501280AA           | Evoplus D 180/250.40 M              | 250mm                                   | DD60151007 |
|                                 | Stratos MAXO-D 40/0.5-8 PN6/10     | 220mm                              | WILO2164649 | Magna3 D 40-80F    | 220mm  | N/A      |             | Ecocirc XL plus D 40-80 F | 220mm                    | LOWE501370AA           | Evoplus D 80/220.40 M               | 220mm                                   | DD60151003 |
|                                 | Stratos MAXO-D 50/0.5-12 PN6/10    | 280mm                              | WILO2164655 | Magna3 D 50-120F   | 280mm  | N/A      |             | Ecocirc XL D 50-120 F     | 280mm                    | LOWE503450AA           | Evoplus D 120/280.50 M              | 280mm                                   | DD60151012 |
| Secondary hot water             | Yonos MAXO-Z 25/0.5-7 PN10         | 180mm                              | WILO2175538 | N/A                | N/A    | N/A      |             | N/A                       | N/A                      | N/A                    | N/A                                 | N/A                                     | N/A        |
|                                 | Stratos MAXO-Z 25/0.5-12 PN10      | 180mm                              | WILO2164668 | N/A                | N/A    | N/A      |             | N/A                       | N/A                      | N/A                    | N/A                                 | N/A                                     | N/A        |
|                                 | Stratos MAXO 25/0.5-6 PN10         | 180mm                              | WILO2164666 | Magna3 25-60       | 180mm  | N/A      |             | Ecocirc XL plus 25-60     | 180mm                    | LOW605009175           | Evoplus SAN 60/180 M                | 180mm                                   | DD60151145 |
|                                 | Stratos MAXO-Z 30/0.5-12 PN10      | 180mm                              | WILO2164671 | N/A                | N/A    | N/A      |             | N/A                       | N/A                      | N/A                    | N/A                                 | N/A                                     | N/A        |
| Fixed speed secondary hot water | SB5 230V 1PH                       | 130mm                              | WILO4035477 | ALPHA1 25-40 N 130 | 130mm  | N/A      |             | Ecocirc S 15-4/130        | 130mm                    | LOW60BOL1000           | Evosta2 40-70/130 1 1/2"            | 130mm                                   | N/A        |
|                                 | SB30 230V 1PH                      | 130mm                              | WILO4035479 | ALPHA1 25-80 N 130 | 130mm  | N/A      |             | Ecocirc L 25-8/130        | 130mm                    | LOW60BOL1012           | N/A                                 | N/A                                     | N/A        |
|                                 | SB60 230V 1PH                      | 130mm                              | WILO4035483 | N/A                | N/A    | N/A      |             | Ecocirc L 25-8/130        | 130mm                    | LOW60BOL1012           | N/A                                 | N/A                                     | N/A        |
| Pressurisation units            | Comfort P135 pressurisation unit   | N/A                                | WILO2819492 | N/A                | N/A    | N/A      | UNION TABLE |                           |                          |                        |                                     |   |            |
|                                 | Comfort P230WM pressurisation unit | N/A                                | WILO2819502 | N/A                | N/A    | N/A      |             | SBS CODE                  | DESCRIPTION              | SBS CODE               | DESCRIPTION                         |   |            |
|                                 | Comfort P235 pressurisation unit   | N/A                                | WILO2819495 | N/A                | N/A    | N/A      |             | GR529997                  | 3/4" BSP Brass Union Set | WILO2815099            | Wilо Union Kit 1.1/2" x 1" (Bronze) |   |            |
| Submersible pump                | Wilо-Drain TMW 32/8                | N/A                                | WILO4048413 | N/A                | N/A    | N/A      |             | GR509971                  | 1.1/4" BSP Brass Union   | WILO4090808            | Wilо RS Union Kit (1/2" x 1")       |   |            |
|                                 | Union kits                         | Union kit 1"x 0.75"(Bronze) 1 pair | N/A         | WILO2815097        | N/A    | N/A      |             | N/A                       | GR509922                 | 1.1/4" Union Set       | PU025                               | 1" Brass Pump Union x 1.1/2" (singular) |            |
| Union kit 1.5"x 1"(Bronze)      |                                    | N/A                                | WILO2815099 | N/A                | N/A    | N/A      |             | N/A                       | GR529998                 | 1" BSP Brass Union Set | GR529821                            | 1.1/4" BSP Union Set                    |            |
| BMS module                      | Connect module for Yonos MAXO      | N/A                                | WILO2210108 | N/A                | N/A    | N/A      |             | GR529922                  | 1" BSP Iron Union Set    |                        |                                     |   |            |

CONDENSATE PUMPS

| TYPE OF PUMP                   | BRAND        | PRODUCT                      | SBS PRODUCT CODE | MAX FLOW RATE (Ltr/PH) | NOISE LEVEL (DBA) | DISCHARGE HEAD (M) | TANK CAPACITY (Ltrs) | CONNECTION  | FLECTION LIGHTS | LXWXH (MM)  | IP RATING | SUCTION        | WATER TEMP (°C) | PH> |
|--------------------------------|--------------|------------------------------|------------------|------------------------|-------------------|--------------------|----------------------|-------------|-----------------|-------------|-----------|----------------|-----------------|-----|
| MINI PUMP (230v)               | Sauermann    | Si-30                        | ACSI30           | 20                     | 20                | 10                 | N/A                  | N/A         | N/A             | 66x44x60    | N/A       | 3              | N/A             | N/A |
|                                | Aspen        | Mini Orange                  | MINIORANGE       | 12                     | 21                | 10                 | N/A                  | N/A         | N/A             | 116x39x51   | N/A       | 2              | N/A             | N/A |
|                                |              | Silent Orange                | SORANGE          | 12                     | 19                | 6                  | N/A                  | N/A         | N/A             | 80x39x34    | N/A       | 2              | N/A             | N/A |
|                                |              | Mini Aqua                    | MINIAQUA         | 12                     | 21                | 10                 | N/A                  | N/A         | N/A             | 183x28x28   | N/A       | 2              | N/A             | N/A |
|                                | Diversitech  | Little Giant Condensate Pump | ACEC1            | 10                     | 21                | 10                 | N/A                  | N/A         | N/A             | 58x46x104   | N/A       | reservior      | N/A             | N/A |
|                                |              | Wispa-Q mini                 | ACWHISPA-Q-MINI  | 16                     | 21                | 6                  | N/A                  | N/A         | N/A             | N/A         | N/A       | reservior      | N/A             | N/A |
|                                | Siccom       | Mini Flowatch 2              | ACDE05LC4400     | 15                     | 20.2              | 10                 | N/A                  | N/A         | N/A             | 82x24x48    | N/A       | 2              | N/A             | N/A |
|                                |              | Flowatch 2 comfort           | ACMF2URK         | 15                     | 20                | 10                 | N/A                  | N/A         | N/A             | 82x24x48    | N/A       | 2              | N/A             | N/A |
| MINI/MAXI PUMP (230v)          | Blue Diamond | Microblue                    | N/A              | 5                      | N/A               | 5                  | N/A                  | N/A         | N/A             | 150x37x40   | N/A       | 2              | N/A             | N/A |
|                                |              | MiniBlue                     | ACXR87504        | 8                      | 21                | 8                  | N/A                  | N/A         | N/A             | 138x58x67   | N/A       | 5              | N/A             | N/A |
|                                | Sauermann    | Si-33                        | ACSI33           | 30                     | 34                | 13                 | N/A                  | N/A         | N/A             | 66x44x60    | N/A       | 3.3            | N/A             | N/A |
|                                | Aspen        | Maxi Orange                  | ACFP2210         | 35                     | 35                | 15                 | N/A                  | N/A         | N/A             | 122x44x66   | N/A       | 2              | N/A             | N/A |
|                                | Diversitech  | Ec-400 (lg)                  | ACWC400          | 14                     | 58                | 12                 | N/A                  | N/A         | N/A             | 110x35x45   | N/A       | N/A            | N/A             | N/A |
|                                | Siccom       | Maxi Eco                     | ACDE40LCC300     | 40                     | 23                | 10                 | N/A                  | N/A         | N/A             | 90x32x42    | N/A       | 2              | N/A             | N/A |
|                                | Blue Diamond | MaxiBlue                     | ACXR87701        | 14                     | 21                | 8                  | N/A                  | N/A         | N/A             | 158x58x67   | N/A       | 8              | N/A             | N/A |
|                                |              |                              |                  |                        |                   |                    |                      |             |                 |             |           |                |                 |     |
| MINI INSIDE WALL MOUNT         | Sauermann    | Si-20                        | ACSI20           | 20                     | 22                | 10                 | N/A                  | N/A         | N/A             | 136x38x38   | N/A       | 2              | N/A             | N/A |
|                                |              | Omega Pack                   | ACOMEGAPACK      | 14                     | 22                | 10                 | N/A                  | N/A         | N/A             | 326x58x65   | N/A       | N/A            | N/A             | N/A |
|                                | Aspen        | Mini Aqua                    | MINIAQUA         | 12                     | 21                | 10                 | N/A                  | N/A         | N/A             | 183x28x28   | N/A       | 2              | N/A             | N/A |
|                                |              | Blanc                        | MINIBLANC        | 12                     | 21                | 10                 | N/A                  | N/A         | N/A             | 182x55x115  | N/A       | N/A            | N/A             | N/A |
|                                | Siccom       | Eco-Line                     | ACDE05SCC600     | 13.2                   | 25                | 10                 | N/A                  | N/A         | N/A             | 90x32x42    | N/A       | N/A            | N/A             | N/A |
|                                | Blue Diamond | Microblue                    | N/A              | 5                      | N/A               | 5                  | N/A                  | N/A         | N/A             | 150x37x40   | N/A       | 2              | N/A             | N/A |
|                                |              |                              |                  |                        |                   |                    |                      |             |                 |             |           |                |                 |     |
|                                |              |                              |                  |                        |                   |                    |                      |             |                 |             |           |                |                 |     |
| PUMPS IN TRUNKING (230v)       | Sauermann    | Delta Pack Pump in trunking  | ACDELTAWHITE     | 20                     | 22                | 10                 | N/A                  | N/A         | N/A             | N/A         | ipx4      | reservior      | N/A             | N/A |
|                                | Aspen        | Silent+ Lime                 | SMINILIME        | 12                     | 20                | 10                 | N/A                  | N/A         | N/A             | N/A         | ip24      | reservior      | N/A             | N/A |
|                                |              | Maxi Lime Silent             | ACFP2215         | 35                     | 35                | 15                 | N/A                  | N/A         | N/A             | N/A         | ip24      | N/A            | N/A             | N/A |
|                                | Diversitech  | Wispa Q Trunk                | ACWHISPA-Q-TRUN  | 33                     | 21                | 8                  | N/A                  | N/A         | N/A             | N/A         | N/A       | reservior/tank | N/A             | N/A |
|                                |              | Ec-1 Kit                     | ACEC1KIT         | 10                     | 21                | 10                 | N/A                  | N/A         | N/A             | N/A         | ip30      | reservior      | N/A             | N/A |
|                                | Siccom       | Flow Watch Design            | ACDE05LC9460     | 15                     | 20.2              | 10                 | N/A                  | N/A         | N/A             | N/A         | ip63      | reservior(2m)  | N/A             | N/A |
|                                |              | Flow Watch Vision            | ACDE05LCB900     | 15                     | N/A               | 10                 | N/A                  | N/A         | N/A             | N/A         | ipx3      | N/A            | N/A             | N/A |
|                                | Blue Diamond | MicroBlue/Kit                | ACXR87507        | 5                      | 17                | 5                  | N/A                  | N/A         | N/A             | N/A         | N/A       | 2 meters       | N/A             | N/A |
| MINI TANK PUMPS (230v)         | Sauermann    | Si-60                        | ACSI60           | 30                     | 54                | 13                 | 0.37                 | N/A         | N/A             | 168x90x88   | N/A       | N/A            | N/A             | N/A |
|                                | Aspen        | Mini Tank                    | MINITANK         | 35                     | 35                | 15                 | 0.24                 | N/A         | N/A             | 210x89x69   | N/A       | N/A            | N/A             | N/A |
|                                | Siccom       | Sunny                        | ACDE05NCC090     | 19                     | 20.2              | 10                 | 0.7                  | N/A         | N/A             | 186x110x100 | N/A       | N/A            | N/A             | N/A |
|                                | Blue Diamond | Mini Tank                    | N/A              | 35                     | 35                | 15                 | 0.24                 | N/A         | N/A             | 210x89x69   | N/A       | N/A            | N/A             | N/A |
| 0.5<1+ 1ltr TANK PUMPS (230v)  | Sauermann    | Si-1805                      | ACSI1805         | 500                    | 47                | 5.4                | 0.5                  | Wired       | No              | 195X130X132 | ip20      | N/A            | 65              | 3,4 |
|                                | Aspen        | Max HiFlow                   | HIFLOWMAX        | 550                    | 44                | 5                  | 1.7                  | Plug n Play | No              | 285x144x134 | ip24      | N/A            | 40              | N/A |
|                                | Diversitech  | Redbox 1L-S                  | N/A              | 280                    | 44                | 5.1                | 1                    | Plug n Play | Yes             | 300x150x120 | ip20      | N/A            | N/A             | N/A |
|                                |              | PH-1L                        | ACPH1L           | 270                    | 43                | 6                  | 1                    | Wired       | No              | 220x134x122 | N/A       | N/A            | N/A             | N/A |
|                                |              | Whispa-Q 1L                  | ACWHISPA-Q-1L    | 14                     | 12                | 6                  | 1                    | Wired       | No              | 170x81x127  | N/A       | N/A            | N/A             | N/A |
|                                |              | Vcmx-20s (1.4)               | ACVCMX20S        | 284                    | 58                | 4.8                | 1.4                  | Wired       | No              | 260x122x165 | N/A       | N/A            | N/A             | N/A |
|                                | Siccom       | Flow Watch Tank              | ACDE13QCZA700    | 788                    | 45                | 5.5                | 1.3                  | Wired       | No              | 280x130x135 | ip20      | N/A            | 60              | 2,5 |
|                                |              | EcoTank 1.2                  | ACDE12QCC610     | 300                    | 45                | 4.6                | 1.2                  | Plug n Play | No              | 280x130x129 | ip24      | N/A            | 40              | 2,5 |
| 1.7< 2+ 1ltr TANK PUMPS (230v) | Sauermann    | Si-83                        | N/A              | 500                    | 45                | 5.4                | 2                    | Plug n Play | No              | 287x146x129 | ip44      | N/A            | 50              | N/A |
|                                |              | Si-82                        | ACSI82           | 500                    | 45                | 5                  | 2                    | Plug n Play | No              | 279x130x175 | ip20      | N/A            | 65              | N/A |
|                                | Aspen        | Max HiFlow                   | HIFLOWMAX        | 550                    | 44                | 5                  | 1.7                  | Plug n Play | No              | 280x130x129 | ip24      | N/A            | 40              | 2,2 |
|                                | Diversitech  | PH-2L                        | ACPH2L           | 300                    | 60                | 4.8                | 2                    | Wired       | No              | 290x130x180 | ip20      | N/A            | N/A             | N/A |
|                                |              | Whispa-Q 2L                  | ACWHISPA-1-2L    | 14                     | 12                | 6                  | 2                    | Wired       | No              | 250x135x165 | N/A       | N/A            | N/A             | N/A |
|                                |              | Redbox 2L-S                  | N/A              | 280                    | 44                | 5.1                | 2                    | Plug n Play | Yes             | 300x150x170 | ip20      | N/A            | N/A             | N/A |
|                                |              | Vcma20s                      | ACVCMAX20S       | 294                    | 58-62             | 4.3                | 1.9                  | Wired       | No              | 288x127x178 | N/A       | N/A            | N/A             | 2,8 |
|                                | Siccom       | Ecotank 2.5                  | ACDE25QCC620     | 400                    | 45                | 6                  | 2.5                  | Plug n Play | No              | 280x130x159 | ip24      | N/A            | 40              | 2,5 |
| Replacement Pump               | Sauermann    | Si-10                        | ACSI10UNIVERSAL  | 20                     | 22                | 10                 | N/A                  | N/A         | N/A             | 96x44x76    | ipx4      | N/A            | N/A             | N/A |
|                                |              | Si-2052                      | ACSI2052         | 100                    | 30                | 9                  | N/A                  | N/A         | N/A             | 112x91x91   | ipx4      | N/A            | N/A             | N/A |
|                                | Aspen        | Lime (replacement)           | MINILIMERE       | 12                     | 20                | 10                 | N/A                  | N/A         | N/A             | 96x44x76    | ip24      | N/A            | N/A             | N/A |
|                                | Diversitech  | EC-1 Trunk                   | ACEC1K           | 10                     | 21                | N/A                | N/A                  | N/A         | N/A             | 46x38x84    | ip20      | N/A            | N/A             | N/A |
| Peristaltic Pumps              |              | Whispa Q Trunk               | ACWHISPA-Q-TRUN  | 33                     | 21                | 8                  | N/A                  | N/A         | N/A             | 550x106x52  | N/A       | N/A            | N/A             | N/A |
|                                | Sauermann    | PE 5000                      | ACPE5000         | 6                      | 30                | 12                 | N/A                  | N/A         | N/A             | 109x110x91  | ip65      | N/A            | N/A             | N/A |
|                                |              | PE 5100                      | ACPE5100         | 6                      | 30                | 12                 | N/A                  | N/A         | N/A             | 109x110x91  | ip65      | N/A            | N/A             | N/A |
|                                |              | PE 5200                      | ACPE5200         | 6                      | 30                | 12                 | N/A                  | N/A         | N/A             | 109x110x91  | ip65      | N/A            | N/A             | N/A |
|                                | Aspen        | Standard                     | STANDARDMK2      | 6.5                    | 47                | 12                 | N/A                  | N/A         | N/A             | 135x77x115  | ip21      | 3m             | N/A             | N/A |
|                                |              | Universal                    | UNIVERSALMK2     | 6.5                    | 47                | 12                 | N/A                  | N/A         | N/A             | 135x77x115  | ip21      | N/A            | N/A             | N/A |
|                                |              | Mech                         | N/A              | 6.5                    | 47                | 12                 | N/A                  | N/A         | N/A             | 160x83x145  | ip21      | N/A            | N/A             | N/A |

ADVANTAGES IN AC INSTALLATIONS

- Fast & simple installation
- Avoids structural alterations & obstacles
- Place an AC unit where you want, not where you have to
- Avoids pipe blockages from drawn in dust
- No leaking pipe joints
- Recycle your waste water

Condensate Pumps = Installation Flexibility



Gravity Drainage = Limited Installation



Information above sourced from ASPEN



## TERMS & CONDITIONS OF SALE

### 1. DEFINITIONS:

- "the Company" means Smith Brothers Stores Ltd. We operate the website [www.sbs.co.uk](http://www.sbs.co.uk) & [www.sbsonline.net](http://www.sbsonline.net).
- "the Purchaser" means the person, firm or company placing an order on the Company.
- "Quotation" means any Quotation or terms given by the Company including any prices listed on the Company website.

### 2. ORDERS:

No orders placed by the Purchaser arising as a result of a Quotation, Terms or otherwise will be considered as binding on the Company unless that order has been acknowledged by the Company in writing.

### 3. EFFECT OF CONDITIONS:

All orders accepted by the Company will be subject to the Conditions of Sale set out herein. The Company is not willing to contact otherwise than on these Conditions and unless otherwise expressly agreed in writing these Conditions shall apply to all contracts made between the Company and the Purchaser and any documents emanating from the Purchaser which contain printed or standard Conditions which have been or shall be sent by the Purchaser and received by the Company on the understanding that they appear on the Purchasers documents because they are printed thereon will have no legal effect whatsoever and the Purchaser waives any right which he otherwise might have to rely on such conditions.

### 4. VALIDITY OF OFFER:

- Any prices and/or discounts quoted by the Company, whether verbally or written, will be considered to have a validity of not exceeding 30 days unless otherwise agreed by the Company in writing.
- If the Purchaser intends to place an order with the Company subject to the terms of a nominated or other sub-contract the prices and terms in the tender will not be binding on the Company unless the Purchaser has fully disclosed to the Company such items and conditions of the said sub-contract and that the Company has acknowledged the same in writing.
- If the Purchaser intends that the price for the goods should be paid to the Company by a third party (i.e. a Finance Company or similar institution) it must state on the order that it has received written confirmation from the third party that it will make payment to the Company in accordance with the terms of Clause 8 hereof and if it fails to do so, the Purchaser will be bound to make such payments.
- When using our website please follow the onscreen prompts to place an order. Each order is an offer by the Purchaser to buy the goods specified in the order (Goods) subject to these Terms.
- The Company's order process allows the Purchaser to check and amend any errors before submitting an order. The Purchaser is responsible for ensuring that the order and any specification submitted is complete and accurate.

### 5. PRICES:

Unless otherwise agreed in writing the price to be paid will be deemed to have been stated in

the Quotation provided that the Quotation is accepted within 30 days of issue and delivery is effected within a further 14 days. Otherwise, the Company may, at its discretion, vary the price by addition upwards to reflect market conditions, labour, material and transportation costs. All prices exclude VAT unless otherwise stated.

### 6. ERRORS:

The Company sells a large number of Goods through the website. It is always possible that, despite our reasonable efforts, some of the Goods on our site may be incorrectly priced or a product may have been removed from the site but the website is not updated. If the Company discovers an error with the Goods the Purchaser has ordered the Company will contact the Purchaser in writing to inform of this error and if it is a pricing error the Company will give the Purchaser the option of continuing to purchase the Goods at the correct price or cancelling the order.

The Company will not process the order until we have your instructions. If the Company is unable to contact you using the contact details you provided during the order process, the Company will treat the order as cancelled and notify the Purchaser writing. If the Company mistakenly accept and process your order where a pricing error is obvious and unmistakable and could reasonably have been recognised by you as a mispricing, the Company may cancel supply of the Goods and refund any sums the Purchaser has paid.

The Company reserves the right to amend the specification of the Goods if any approval against the goods is removed or required by any applicable statutory or regulatory requirement.

### 7. SPECIFICATIONS:

Whilst all descriptions, specifications, drawings and illustrations are supplied in good faith they are only intended for guidance purposes and the Company will accept no responsibility whatsoever for any errors, omissions, loss or damage from the Purchasers reliance on such descriptions, drawings and illustrations. Further, the Company reserves the right to amend such descriptions, specifications, drawings and illustrations without notice.

The Company provides no warranty, and it shall not be implied, whether through any description or otherwise, that any Goods conform to or are suitable for any specific purpose, unless written confirmation of such a warranty as to suitability of the goods for purpose addresses specific goods and the Purchaser.

The Company may recommend to the Purchaser, specific Goods. These recommendations are based solely upon the information received by the Company from the Purchaser. Therefore, any recommendations by the Company to the Purchaser in relation to any Goods shall be provided only as an opinion, and shall not be construed as an express or implied warranty as to any recommendation given, unless written confirmation of a warranty to that effect is provided by the Company to the Purchaser and the Purchaser is referred to the clause immediately preceding this. The suitability of specific goods for use is ultimately the decision of the Purchaser based solely upon the knowledge of the Purchaser.

### 8. DELIVERY:

- Delivery periods are given in good faith and are based from the date of receipt of order. Whilst we will make every reasonable effort to meet delivery requirements we will not be liable for any failure to do so, nor for any consequential

loss of any kind arising from late delivery.

- Deliveries will be made to the destination specified on your order provided this is clearly indicated.
- Unless otherwise agreed the cost of carriage will be chargeable to the Purchaser. Where the Purchaser requests the Company to deliver goods within a timescale which is shorter than that covered by the Company's quoted delivery costs then the Company reserves the right to vary the price by addition upwards to reflect additional costs incurred.
- Unless otherwise agreed the off loading and safe storage of delivered goods are the sole responsibility of the Purchaser. Where the Purchaser requests the Company to provide off-loading facilities then such facilities will be deemed to be chargeable to reflect the additional costs incurred.
- After delivery the goods are expressly held by the Purchaser at his own risk. The Purchaser undertakes, following delivery to maintain the goods in the pre-delivery condition and to insure the goods to their full value and against all risks until such time as payment and the title passes.
- The Company reserves the right to levy additional charges against the Purchaser, to cover storage, fire insurance or other costs incurred by us, in the event that the goods are held beyond reasonable period of time or should forward instructions to be withheld.
- Time of delivery is not of the essence.

### 9. TERMS OF PAYMENT:

- Unless otherwise agreed in writing, and only for approved accounts, all goods will be invoiced on despatch for payment at the end of month following the date of invoice.
- Where an approved account is not established or where the total order value, excluding delivery, is less than £50.00 then, at its discretion, the Company may seek payment prior to delivery using a debit card or credit card. We accept the majority of debit and credit cards, a full list is available upon request.
- Time for payment shall be of the essence of the contract without prejudice to any other rights of the Company. If the Purchaser fails to pay the invoice on the due date, the Company reserves the right to claim interest, compensation and reasonable costs under the Late Payment of Commercial Debts (Interest) Act 1998 (Act) (whether before or after judgement). Any reference to the Act is also a reference to any amendment, modification or re-enactment of it. If for any reason the Act does not apply interest shall be payable on overdue amounts on a daily basis at 8% per annum over the base rate quoted from time to time but at 8% a year for any period when that base rate is below 0% by the National Westminster Bank plc and reimburse to the Company all costs and expenses, including legal costs, in the collection of any overdue amount.

### 10. PASSING OF PROPERTY AND RISK:

The risk in the Goods shall pass to the Purchaser on completion of delivery. Title to the Goods shall not pass to the Purchaser until the Company has received payment in full (in cash or cleared funds) for:

- the Goods; and

- any other Goods that the Company has supplied to the Purchaser in respect of which payment has become due. Until title to the Goods has passed to the Purchaser, the Purchaser shall:
  - hold the Goods on a fiduciary basis as bailee for the Company;
  - store the Goods separately from all other goods held by the purchaser so that they remain readily identifiable as the Company's property;
- not remove, deface or obscure any identifying mark or packaging relating to the Company;
- maintain the Goods in satisfactory condition and keep them insured against all risks for their full price from the date of delivery;
- maintain the Goods in satisfactory condition and keep them insured against all risks for their full price from the date of delivery;
- notify the Company immediately if it becomes subject to the service of a Statutory Demand or any other action involved in the insolvency of the Purchaser; and
- give the Company such information relating to the Goods as the Company may require from time to time.
- the Purchaser may resell or use the Goods in the ordinary course of its business
- if before title to the Goods passes to the Purchaser:
  - the Purchaser's financial position deteriorates to such an extent that in the Company's opinion the Purchaser's capability to adequately fulfil its obligations under the Contract has been placed in jeopardy: or
  - the Purchaser is served with a Statutory Demand or any other action involved in the insolvency of the Purchaser, or the Company reasonably believes that any such event is about to happen and notifies the Purchaser accordingly then provided that the Goods have not been resold then, without limiting any other right or remedy, the Company may have:
    - the Purchaser's right to resell the Goods or use them in the ordinary course of its business ceases immediately; and
    - the Company may at any time:
      - require the Purchaser to deliver up all Goods in its possession that have not been resold, or irrevocably incorporated into another product;
      - if the Purchaser fails to do so promptly, enter any premises of the Purchaser or of any third party where the Goods are stored in order to recover them.

### 11. LOSS AND DAMAGE IN TRANSIT:

- It is the responsibility of the Purchaser to examine the Goods immediately on arrival and any shortage or damage be reported to us and to the carriers within 3 days of receipt.
- Non delivery of Goods must be reported to us within 10 days of the despatch dates given on the advice note.
- The Purchaser will be liable to indemnify the Company for any loss it suffers where

it is unable to claim against the carriers by reason of non-fulfilment of these Conditions.

### 12. RETURNED GOODS:

Any Goods returned to the Company for any reason other than faulty condition will only be accepted with the prior written agreement of the Company.

Where such agreement exists then the Purchaser will be responsible for the cost of safe packing and delivery of Goods including adequate insurance against damage and loss.

Where such Goods are returned to the Company by agreement and provided that the Goods are received in a condition which is consistent with the condition on despatch then a credit will be issued to the value of the returned Goods less any restocking charge of not less than 15% of the invoice value of the Goods subsequently returned.

### 13. FITNESS FOR PURPOSE:

The Purchaser is solely responsible for suitability of the Goods for which they are bought and is reliant upon his own skill and judgement in this respect.

### 14. REPRESENTATION:

Any statements or claims made by the Company, its representatives, distributors and agents either prior to or during the course of executing a contract between the Purchaser and the Company are superseded by the Conditions herein and as such they are not material.

### 15. GUARANTEE:

- The Company extends to the Purchaser the terms of warranty, guarantee and conditions that it has, in turn received from the manufacturer. Provided that all amounts due in accordance with clause 9 hereof have been received by the Company.
- All guarantees and warranties are subject to the equipment having been stored, installed, commissioned and maintained in accordance with good practice and the manufacturer's recommendations.
- To facilitate prompt replacement of any item or component we will despatch parts at the Purchaser's request on a chargeable basis. When the defective item is returned to us and provided that the fault has been verified under the terms of the guarantee then the invoice will be credited or cancelled. Where no such item or component is subsequently returned within a reasonable period then the Company reserves the right to seek payment for the goods supplied.
- The Company explicitly excludes any labour, consequential or other costs associated with the replacement of Goods, items or components under the terms of the guarantee.

### 16. EXCLUSION OF LIABILITY:

- The Company's total liability arising under or in connection with this agreement, whether arising in contract, tort (including negligence) or restitution, or for breach of statutory duty or misrepresentation, or otherwise, shall in all circumstances be limited to the lesser of the Price attributable to that Contract or £5,000.
- Nothing in this agreement shall limit or exclude the liability of either party for:
  - death or personal injury resulting from negligence;

- fraud or fraudulent misrepresentation;
- breach of the terms implied by section 12 of the Sale of Goods Act 1979.
- Without prejudice to Clause 16(b), the Company shall not under any circumstances whatever be liable to the Purchaser, whether in contract, tort (including negligence) or restitution, or for breach of statutory duty or misrepresentation, or otherwise, for any:
  - loss of profit;
  - loss of goodwill;
  - loss of business;
  - loss of business opportunity;
  - loss of anticipated saving;
  - loss or corruption of data or information; or
  - special, indirect or consequential damage.
  - suffered by the other party that arises under or in connection with this agreement.
- The Purchaser shall be responsible for ensuring that all Goods subsequently installed on the Purchaser's premises or elsewhere do not contravene existing laws and regulations and are approved by the Purchaser's insurers.

### 17. FORCE MAJEURE:

Any delay or failure of performance in executing our obligations shall not be determined as a fault or give rise to any claim for lock-outs, restriction of supplies, breakdown of plant or machinery, shortage of labour, war, riots, civil unrest or any other circumstances reasonably beyond our control.

### 18. SEVERANCE:

If any provision or part-provision of these conditions is or becomes invalid, illegal or unenforceable, it shall be deemed modified to the minimum extent necessary to make it valid, legal and enforceable. If that modification is not possible, the relevant provision or part-provision shall be deemed deleted. Any modification to, or deletion of, a provision or part-provision under this clause 18 shall not affect the validity and enforceability of the rest of the conditions.

### 19. ENTIRE AGREEMENT:

- These conditions and the Quotation constitute the entire agreement between the parties, and supersedes and extinguishes all previous agreements, promises, assurances, warranties, representations and understandings between them, whether written or oral, relating to its subject matter.
- Each party acknowledges that under these conditions it does not rely on, and shall have no remedies for, any statement, representation, assurance or warranty (whether made innocently or negligently) that is not set out in this agreement.
- Each party agrees that it shall have no claim for innocent or negligent misrepresentation or negligent misstatement based on any statement in these conditions.

### 20. VARIATION:

No variation of these conditions shall be effective unless it is in writing.

### 21. LAW AND JURISDICTION:

These Conditions shall be subject to English & Scottish Law and the exclusive jurisdiction of the English and Scottish Courts.

## TERMS &amp; CONDITIONS OF PURCHASE

## 1. DEFINITIONS:

- 1.1) In these Conditions the following definitions apply:
- 1.2) "Affiliate" means any entity that directly or indirectly Controls, is Controlled by or is under common Control with, another entity;
- 1.3) "Bribery Laws" means the Bribery Act 2010 and associated guidance published by the Secretary of State for Justice under the Bribery Act 2010 and all other applicable UK legislation, statutory instruments and regulations in relation to bribery or corruption and any similar or equivalent legislation in any other relevant jurisdiction;
- 1.4) "Business Day" means a day other than a Saturday, Sunday or bank or public holiday when banks generally are open for non-automated business in England;
- 1.5) "Customer" means Smith Brothers Stores Limited (registered number: 00962846) whose registered office is at Unit V2 Winchester Avenue, Blaby Industrial Park, Leicester, Leicestershire, England, LE8 4GZ (VAT No: 317 4596 84);
- 1.6) "Conditions" means the Customer's terms and conditions of purchase set out in this document as amended from time to time in accordance with clause 25.1;
- 1.7) "Confidential Information" means any commercial, financial or technical information, information relating to the Deliverables, plans, know-how or trade secrets which is obviously confidential or has been identified as such, or which is developed by the Customer in performing its obligations under, or otherwise pursuant to the Contract;
- 1.8) "Contract" means the agreement between the Supplier and the Customer for the sale and purchase of the Deliverables in accordance and incorporating these Conditions and the Order;
- 1.9) "Control" means the beneficial ownership of more than 50% of the issued share capital of a company or the legal power to direct or cause the direction of the management of the company;
- 1.10) "Deliverables" means the Goods or Services (or any part of them) as set out in the Order;
- 1.11) "Force Majeure" means an event or sequence of events beyond any party's reasonable control (after exercise of reasonable care to put in place robust back-up and disaster recovery arrangements) preventing or delaying it from performing its obligations under the Contract including an act of God, fire, flood, lightning, earthquake or other natural disaster, war, riot or civil unrest, strike, lockout or boycott or other industrial action except strikes or other industrial disputes involving the Supplier's or its suppliers' workforce;
- 1.12) "Goods" means the goods and related accessories, spare parts and documentation and other physical material set out in the Order to be supplied by the Supplier to the Customer;
- 1.13) "Intellectual Property Rights" means copyright, patents, know-how, trade secrets, trade marks, trade names, design rights, rights in get-up, rights in goodwill, rights in confidential information, rights to sue for passing off, domain names and all similar rights and, in each case: 1.13.1) whether registered or not; 1.13.2) including any applications to protect or register such rights; 1.13.3) including all renewals and extensions of such rights or applications; 1.13.4) whether vested, contingent or future; 1.13.5) to which the relevant party is or may be entitled; and 1.13.6) in whichever part of the world existing;
- 1.14) "Location" means the address for delivery of the Goods and performance of the Services as set out in the Order;
- 1.15) "Modern Slavery Policy" means the Customer's anti-slavery and human trafficking policy in force and notified to the Supplier from time to time;
- 1.16) "Order" means the Customer's order for the Deliverables as set out in the Customer's order form;
- 1.17) "Price" has the meaning given in clause 4.1;
- 1.18) "Regulatory Requirements" means in relation to any jurisdiction where the Goods and/or Services are

- intended to be marketed and/or supplied and/or sold, all applicable laws, enactments, orders, regulations and other instruments relating to the Goods and/or Services (including the design, manufacture, packaging, labelling, storage, handling, marketing, sale, import, export and/or delivery of the Goods and/or performance of the Services) together with all relevant regulations, codes of practice and guidance imposed by any governmental, regulatory or trade body from time to time;
- 1.19) "Supplier" means the person or firm from whom the Customer purchases the Deliverables and whose details are set out in the Order;
- 1.20) "Services" means the services set out in the Order or understood by the parties to be included in the Services and to be supplied by the Supplier to the Customer;
- 1.21) "Specification" means the description or specification of the Deliverables, including any related plans and drawings, that is agreed by the Customer and the Supplier; and
- 1.22) "VAT" means value added tax under the Value Added Taxes Act 1994 or any other similar sale or fiscal tax applying to the sale of the Deliverables.

## 2. INTERPRETATION:

In these Conditions, unless the context otherwise requires:

- 2.1) a reference to the Contract includes these Conditions, the Order, and their respective schedules, appendices and annexes (if any);
- 2.2) any clause, schedule or other headings in these Conditions are included for convenience only and shall have no effect on the interpretation of these Conditions;
- 2.3) a reference to a 'party' means either the Supplier or the Customer and includes that party's personal representatives, successors and permitted assigns;
- 2.4) a reference to a 'person' includes a natural person, corporate or unincorporated body (in each case whether or not having separate legal personality) and that person's personal representatives, successors and permitted assigns;
- 2.5) a reference to a 'company' includes any company, corporation or other body corporate, wherever and however incorporated or established;
- 2.6) a reference to a gender includes each other gender;
- 2.7) words in the singular include the plural and vice versa;
- 2.8) any words that follow 'include', 'includes', 'including', 'in particular' or any similar words and expressions shall be construed as illustrative only and shall not limit the sense of any word, phrase, term, definition or description preceding those words;
- 2.9) a reference to 'writing' or 'written' includes any method of reproducing words in a legible and non-transitory form ([excluding email] [includes email]);
- 2.10) a reference to legislation is a reference to that legislation as amended, extended, re enacted or consolidated from time to time A reference to a statute or statutory provision includes any subordinate legislation made under that statute or statutory provision, as amended or re-enacted;
- 2.11) a reference to any English action, remedy, method of judicial proceeding, court, official, legal document, legal status, legal doctrine, legal concept or thing shall, in respect of any jurisdiction other than England, be deemed to include a reference to that which most nearly approximates to the English equivalent in that jurisdiction.

## 3. APPLICATION OF THESE CONDITIONS:

- 3.1) These Conditions apply to and form part of the Contract between the Supplier and the Customer. They supersede any previously issued terms and conditions of purchase or supply and are to the exclusion of any other terms that the Supplier seeks to impose or incorporate, or which are implied by trade, custom, practice or course of dealing.
- 3.2) No terms or conditions endorsed on, delivered with, or contained in the Supplier's quotation, sales conditions, confirmation of order, specification, delivery note, invoice or other document shall form part of the Contract except to the extent that the Customer otherwise agrees in writing.
- 3.3) No variation of these Conditions or to an Order or to

the Contract, shall be binding unless expressly agreed in writing and executed by a duly authorised signatory on behalf of the Customer.

- 3.4) Each Order by the Customer to the Supplier shall be an offer to purchase Deliverables subject to and in accordance with these Conditions.
- 3.5) An Order may be amended by the Customer at any time before the Supplier performs a material part of the Order. An Order shall lapse unless accepted by the Supplier before the expiry of 14 days after the date of the Order. If the Supplier is unable to accept an Order, it shall notify the Customer promptly.
- 3.6) Acceptance of an Order by the Supplier shall take place when it is expressly accepted or by any other conduct of the Supplier which the Customer reasonably considers is consistent with acceptance of the Order at which point the Contract shall come into existence.

## 4. PRICE:

- 4.1) The price for the Deliverables shall be as set out in the Order or, in default of such provision, shall be calculated in accordance with the Supplier's scale of charges as confirmed by the Supplier in writing and received and acknowledged by the Customer before the date the Order is made ("Price"). No increase in the Price may be made after the Order is placed.
- 4.2) The Price includes packaging, insurance, carriage of the Goods, delivery, unloading, unpacking.
- 4.3) No extra charges shall be effective unless agreed in writing with the Customer.

## 5. PAYMENT:

- 5.1) The Supplier shall invoice the Customer for:
- 5.1.1) Goods no sooner than completion of delivery of the Goods or, if later, the Customer's acceptance of the Goods; and
- 5.1.2) Services no sooner than completion of performance of the Services or, if later, the Customer's acceptance of the Services.
- 5.1.3) The Supplier shall ensure that the invoice includes the date of the Order, the invoice number, the Customer's order number, the Supplier's VAT registration number and any supporting documentation that the Customer may reasonably require.
- 5.2) The Customer shall pay each correctly rendered invoice of the Supplier within 60 days following the end of the calendar month of receipt. Payment shall be made to the bank account nominated in writing by the Supplier.
- 5.3) VAT shall be charged by the Supplier and paid by the Customer at the then applicable rate.
- 5.4) The Customer may at any time, without limiting any of its other rights or remedies, set off liability of the Supplier to the Customer against any liability of the Customer to the Supplier.

## 6. CANCELLATION:

- 6.1) The Customer shall have the right to cancel the Order for the Deliverables or for any part of the Deliverables which have not yet been, in the case of Goods, delivered to and in the case of Services, performed for, the Customer.
- 6.2) In relation to any Order cancelled or part-cancelled under clause 6.1, the Customer shall pay:
- 6.2.1) in respect of any Goods, for that part of the Price that relates to the Goods which at the time of cancellation have been delivered to the Customer; and
- 6.2.2) in respect of any Services, such part of the Price that relates to the Services as is proportionate to the part of the Services that has been performed by the Supplier.

## 7. DELIVERY AND PERFORMANCE:

- 7.1) The Goods shall be delivered by the Supplier to the Location and at the time and on the date specified in the Order. Where no time for delivery is specified in the Order, then delivery of the goods shall take place during the Customer's normal business hours, or as instructed by the Customer. The Goods shall be deemed delivered by the Supplier only on completion of unloading of the Goods at the Location. The Supplier shall ensure that the Goods are properly packed and secured in such manner as to enable them to reach their destination in good condition;

- 7.2) The Services shall be performed by the Supplier at the Location and at the time and on the date specified in the Order. The Services shall be deemed performed by the Supplier only on completion of the performance of the Services at the Location.
- 7.3) The Deliverables shall not be delivered by or performed in instalments unless otherwise agreed in writing by the Customer. Where it is agreed that the Goods are to be delivered by instalments, they may be invoiced and paid for separately. However, failure by the Supplier to deliver any one instalment on time or at all, or any defect in an instalment shall entitle the Customer to terminate the Contract in whole or part.
- 7.4) Each delivery or performance of the Deliverables shall be accompanied by a delivery note stating:
- 7.4.1) the date of the Order and Order number;
- 7.4.2) the relevant Customer and Supplier details;
- 7.4.3) if Goods, the product numbers and type and quantity of Goods in the consignment;
- 7.4.4) if Services, the category, type and quantity of Services performed;
- 7.4.5) any special instructions, handling and other requests; and
- 7.4.6) in the case of Goods, whether any packaging material is to be returned, in which case the Customer shall, after the Goods are unpacked, make them available for collection by the Supplier at the Supplier's expense.
- 7.5) Time of delivery or performance (as the case may be) is of the essence. If the Supplier fails to deliver any of the Goods or perform any of the Services by the date specified in the Order, the Customer shall (without prejudice to its other rights and remedies and whether or not it has accepted the Goods and/or the Services) be entitled at the Customer's sole discretion
- 7.5.1) to terminate the Contract in whole or in part;
- 7.5.2) refuse any late delivery or subsequent delivery of the Goods or performance of the Services that the Supplier attempts to make;
- 7.5.3) to purchase the same or similar Deliverables from a supplier other than the Supplier;
- 7.5.4) to recover damages from the Supplier in respect of all costs, claims, losses, damages, liabilities and expenses incurred by the Customer as a result of the Supplier's failure, including the amount by which the price payable by the Customer to acquire those Deliverables from another supplier exceeds the price payable under the Contract and any loss of profit; and
- 7.5.5) all or any of the foregoing.
- 7.6) If the Customer fails to accept delivery of the Goods on the date or within the period set out in the Order, the Supplier shall store and insure the Goods pending delivery at the Supplier's expense.

## 8. ACCEPTANCE, REJECTION AND INSPECTION:

- 8.1) The Customer shall not have accepted, or be deemed to have accepted, the Deliverables until the Acceptance Conditions are fulfilled.
- 8.2) The "Acceptance Conditions" are that:
- 8.2.1) for Goods, the Goods have been delivered to and unloaded at the Location;
- 8.2.2) for Services, the Services have been performed at the Location;
- 8.2.3) the Customer has notified the Supplier in writing that the Deliverables have been delivered or performed (as the case may be) in full compliance with the terms and conditions of the Contract; and
- 8.2.4) for Goods, the Customer has had a reasonable time to inspect them following delivery or, if later, a reasonable time has passed after latent defects in the Goods become apparent.
- 8.3) The Customer shall be entitled to reject any Deliverables which are not in full compliance with the terms and conditions of the Contract. Any acceptance of defective, late or incomplete Deliverables or any payment made in respect thereof, shall not constitute a waiver of any of the Customer's rights and remedies, including its right to reject. If the Goods are rejected due to the volume of the Goods exceeding the tolerances (if any) specified in the Order, the Supplier shall promptly and at its own cost

arrange for redelivery of the correct volume.

- 8.4) Any rejected Goods may be returned to the Supplier by the Customer at the Supplier's cost and risk. The Supplier shall pay to the Customer a reasonable charge for storing and returning any of the Goods over-delivered or rejected.
- 8.5) The Customer may require acceptance tests to be performed or to be carried out, at the Customer's option, either by the Customer or the Supplier, and the results of the tests shall be made available to the Customer.
- 8.6) The Customer may inspect and test the Deliverables during performance or during manufacture or processing prior to despatch, and the Supplier shall provide the Customer with all facilities reasonably required in that regard. If the inspection or testing indicates that the Goods do not, or are unlikely to, conform to the Contract, the Supplier shall immediately take such remedial action as is necessary and at its expense to ensure compliance prior to delivery. The Supplier shall remain fully responsible for the Goods despite any such inspection or testing and any such inspection or testing shall not reduce or otherwise effect the Supplier's obligations under the Contract.
- 8.7) The Customer may conduct further inspections and test after the Supplier has carried out its remedial actions
- 8.8) Any inspection or testing of the Deliverables shall not be deemed to be acceptance of the Deliverables or a waiver of any of the Customer's rights and remedies, including its right to reject.
- 8.9) The rights of the Customer in this clause 8 are without prejudice to the Customer's rights under clause 10

## 9. TITLE AND RISK:

- 9.1) Risk in the Goods shall pass to the Customer upon delivery in accordance with clause 7.1 and when the Customer has accepted the Goods as conforming in every respect with the Contract.
- 9.2) Title to the Goods shall pass to the Customer on the sooner of payment by the Customer for the Goods or delivery of the Goods to the Customer.
- 9.3) The passing of title shall not prejudice any other of the Customer's rights and remedies, including its right to reject.
- 9.4) Neither the Supplier nor any other person shall have a lien on, right of stoppage in transit or other rights in or to any Goods title to which have vested in the Customer or any specifications or materials of the Customer, and the Supplier shall ensure that relevant third parties accept the exclusion of such lien and rights.
- 9.5) The Supplier warrants and represents that it:
- 9.5.1) has at the time the Contract is made full, clear and unencumbered title to the Goods, and the full, clear and unencumbered right to sell and deliver them to the Customer; and
- 9.5.2) shall hold such title and right to enable it to ensure that the Customer shall acquire a valid, unqualified title to the Goods and shall enjoy quiet possession of them.

## 10. WARRANTIES:

- 10.1) The Supplier warrants, undertakes and represents that the Deliverables shall:
- 10.1.1) conform to any sample, their description, to the Specification and to the quality, quantity, description and other particulars stated in the Order;
- 10.1.2) be free from defects in design, material and workmanship and remain so for 12 months after delivery;
- 10.1.3) comply with all applicable laws, standards, Regulatory Requirements and best industry practice relating to manufacture. Labelling, packaging, storage, handling and delivery of Goods;
- 10.1.4) if Goods, be of satisfactory quality within the meaning of the Sale of Goods Act 1979 as amended; and
- 10.1.5) if Services, be supplied with reasonable care and skill within the meaning of the Supply of Goods and Services Act 1982, Part II, section 13; and
- 10.1.6) be fit for purpose and for any purpose held out by the Supplier and for any purpose as required to

meet the Customer's needs, made known to the Supplier by the Customer expressly or by implication, and in this respect the Customer relies on the Supplier's skill and Judgment

- 10.2) To the extent that the Supplier has designed or will design the Goods, the Supplier warrants, undertakes and represents that in:
- 10.2.1) carrying out such design;
- 10.2.2) selecting materials and components in relation to the Goods; and
- 10.2.3) ensuring that the Goods will meet any performance requirements specified in the Specification or which may be inferred from the Order or the description of the Goods, it has exercised and shall continue to exercise all the reasonable skill, care and diligence to be expected of a competent, qualified, professional designer of the relevant discipline with experience of carrying out designs in connection with projects of a similar size, complexity and nature to the project for which the Goods are intended.
- 10.3) The Supplier agrees that the approval by the Customer of any design or Specification provided by the Supplier shall not relieve the Supplier of any of its obligations under this clause 10.
- 10.4) The Supplier warrants that it understands the Customer's business and needs.
- 10.5) To the extent that the Deliverables do not comply with clause 10.1 or clause 10.2, the Customer may (without prejudice to its other rights and remedies and whether or not it has accepted the Goods and/or the Services) at the Customer's sole discretion:
- 10.5.1) terminate the Contract in whole or in part;
- 10.5.2) reject such Deliverables (in whole or in part) and return them to the Supplier at the Supplier's own risk and expense;
- 10.5.3) require the Supplier promptly, at its own expense, to remove (including making good any damage caused in doing so), remedy, repair, replace, correct, re-perform or full refund the price of any such Deliverables;
- 10.5.4) recover damages from the Supplier in respect of all costs, claims, losses, damages, liabilities and expenses incurred by the Customer which are in any way attributable to the Supplier's failure to carry out its obligations under the Contract, including any costs incurred by the Customer to acquire those Deliverables from another supplier and any loss of profit; and
- 10.5.5) refuse to accept any subsequent delivery of the Goods which the Supplier attempts to make;
- 10.5.6) all or any of the foregoing.
- 10.6) The provisions of these Conditions shall apply to any Deliverables that are remedied, repaired, replaced, corrected or re-performed with effect from the date of the delivery or performance of the remedied, repaired, replaced, corrected or re-performed Deliverables.
- 10.7) The Customer's rights under these Conditions are in addition to, and do not exclude or modify, any rights and remedies implied under statute or by common law.
- 10.8) The Customer shall be entitled to exercise its rights under this clause 10 regardless of whether the Deliverables have been accepted under the Acceptance Conditions and notwithstanding that the Deliverables were not rejected following their initial inspection under clause 8.3.
- 10.9) The Supplier shall ensure that at all times it has and maintains all the licences, permissions, authorisations, consents and permits that it needs to carry out its obligations under the Contract.

## 11. ANTI-BRIBERY:

- 11.1) For the purposes of this clause 11 the expressions "adequate procedures" and "associated with" shall be construed in accordance with the Bribery Act 2010 and legislation or guidance published under it.
- 11.2) The Supplier shall comply with applicable Bribery Laws including ensuring that it has in place adequate procedures to prevent bribery and ensure that:
- 11.2.1) all of its personnel;
- 11.2.2) all others associated with the Supplier; and
- 11.2.3) all of the Supplier's sub-contractors and suppliers; involved in performing the Contract so comply.



- 11.3) Without limitation to clause 11.2 the Supplier shall not make or receive any bribe (as defined in the Bribery Act 2010) or other improper payment, nor shall it allow any such bribe or payment to be made or received on its behalf, either in the United Kingdom or elsewhere, and shall implement and maintain adequate procedures to ensure that such bribes or payments are not made or received directly or indirectly on its behalf.
- 11.4) The Supplier shall immediately notify the Customer as soon as it becomes aware of a breach or possible breach of any of the requirements in this clause 11.

## 12. ANTI-SLAVERY:

- 12.1) The Supplier undertakes, warrants and represents that:
- 12.1.1) neither the Supplier nor any of its officers, employees, agents or subcontractors has:
- (a) committed an offence under the Modern Slavery Act 2015 (an "MSA Offence"); or
- (b) been notified that it is subject to an investigation relating to an alleged MSA Offence or prosecution under the Modern Slavery Act 2015; or
- (c) is aware of any circumstances within its supply chain that could give rise to an investigation relating to an alleged MSA Offence or prosecution under the Modern Slavery Act 2015;
- 12.1.2) it shall comply with the Modern Slavery Act 2015 and the Modern Slavery Policy;
- 12.1.3) its responses to the Customer's modern slavery and human trafficking due diligence questionnaire are complete and accurate; and
- 12.1.4) it shall notify the Customer immediately in writing if it becomes aware or has reason to believe that it, or any of its officers, employees, agents or subcontractors have breached or potentially breached any of the Supplier's obligations under clause 12.1. Such notice shall set out full details of the circumstances concerning the breach or potential breach of the Supplier's obligations.
- 12.2) Any breach of clause 12.1 by the Supplier shall be deemed a material breach of the Contract and shall entitle the Customer to terminate the Contract with immediate effect.

## 13. INDEMNITY AND INSURANCE:

- 13.1) The Supplier shall indemnify and keep indemnified and hold harmless, the Customer from and against any losses, damages, liability, costs (including legal fees) and expenses suffered or incurred, whether directly or indirectly, or consequential losses, loss of profit, loss of reputation and all interest , penalties and legal costs (calculated on a full indemnity basis) and all other reasonable professional costs and expenses suffered or incurred by the Customer as a result of or in connection with,
- 13.1.1).any claim made against the Customer by a third party arising out of or in connection with the supply of the Goods, to the extent that such claim arises out of breach, negligent performance or failure or delay in performance of the Contract by the Supplier, its employees, agents or sub contractors
- 13.1.2) any claim made against the Customer for actual or alleged infringement of a third party's intellectual property rights arising out of or in connection with the supply or use of the Goods, to the extent that the claim is attributable to the acts or omissions of the Supplier, its employees, agents or sub contractors ;
- 13.1.3) any claim made against the Customer by a third party for death, personal injury or damage to property arising out of or in connection with defects in Goods, to the extent that the defects are attributable to the acts or omissions of the Supplier, its employees , agents or sub contractors ;
- 13.2) This Clause 13 shall survive termination of the Contract.
- 13.3) The Supplier shall maintain, with reputable insurers incorporated in the United Kingdom, adequate professional indemnity, product liability and public liability insurance to cover the Supplier's liabilities under the Contract and insurance of the Deliverables and any of the Customer's materials in the Supplier's possession against the usual risks, including accident, fire and theft, for their full replacement value until the risk in them passes to the Customer. On request, the Supplier shall supply so far as is reasonable evidence of the

maintenance of the insurance and all of its terms from time to time applicable. The Supplier shall on request assign to the Customer the benefit of such insurance.

## 14. LIMITATION OF LIABILITY:

- 14.1) The extent of the parties' liability under or in connection with the Contract (regardless of whether such liability arises in tort, contract or in any other way and whether or not caused by negligence or misrepresentation) shall be as set out in this clause 14.
- 14.2) Subject to clauses 14.5 and 14.6, the Customer's total liability shall not exceed the Price.
- 14.3) Subject to clauses 14.5 and 14.6, the Customer shall not be liable for consequential, indirect or special losses.
- 14.4) Subject to clauses 14.5 and 14.6, the Customer shall not be liable for any of the following (whether direct or indirect):
- 14.4.1) loss of profit;
- 14.4.2) loss of data;
- 14.4.3) loss of use;
- 14.4.4) loss of production;
- 14.4.5) loss of contract;
- 14.4.6) loss of opportunity;
- 14.4.7) loss of savings, discount or rebate (whether actual or anticipated);
- 14.4.8) harm to reputation or loss of goodwill.
- 14.5) The limitations of liability set out in clauses 14.2 to 14.4 shall not apply in respect of any indemnities given by either party under the Contract.
- 14.6) Notwithstanding any other provision of the Contract, the liability of the parties shall not be limited in any way in respect of the following:
- 14.6.1) death or personal injury caused by negligence;
- 14.6.2) fraud or fraudulent misrepresentation; and
- 14.6.3) any other losses which cannot be excluded or limited by applicable law.

## 15. INTELLECTUAL PROPERTY RIGHTS:

- 15.1) All specifications provided by the Customer and all Intellectual Property Rights in the Deliverables made or performed in accordance with such specifications shall vest in and remain at all times the property of the Customer and such specifications may only be used by the Supplier as necessary to perform the Contract. The Supplier assigns (or shall procure the assignment) to the Customer absolutely, with full title guarantee, all rights, title and interest in any such Intellectual Property Rights, and the Supplier shall do all such things and sign all documents necessary in the Customer's opinion to so vest all such Intellectual Property Rights in the Customer, and to enable the Customer to defend and enforce such Intellectual Property Rights, and the Supplier shall at the Customer's request waive or procure a waiver of applicable moral rights.
- 15.2) The Supplier shall indemnify the Customer from and against any losses, damages, liability, costs (including legal fees) and expenses incurred by the Customer as a result of or in connection with any action, demand or claim that use or possession of any of the Intellectual Property Rights, infringes the Intellectual Property Rights of any third party ("Supplier IPR Claim").
- 15.3) If any Supplier IPR Claim is made or is reasonably likely to be made against the Customer, the Supplier shall promptly and at its own expense either:
- 15.3.1) procure for the Customer the right to continue using and possessing the relevant Intellectual Property Rights; or
- 15.3.2) modify or replace the infringing part of the Intellectual Property Rights and without adversely affecting the functionality of the Intellectual Property Rights as set out in the Contract so as to avoid the infringement or alleged infringement, provided that if, having used reasonable endeavours, neither of the above can be accomplished on reasonable terms, the Supplier shall (without prejudice to the indemnity above) refund the price paid by the Customer in respect of the affected Intellectual Property Rights.

## 16. CONFIDENTIAL INFORMATION:

- 16.1) The Supplier shall keep confidential all Confidential Information of the Customer and of any Affiliate of the Customer and shall only use the same as required to perform the Contract. The provisions of this clause shall not apply to:

- 16.1.1) any information which was in the public domain at the date of the Contract;
- 16.1.2) any information which comes into the public domain subsequently other than as a consequence of any breach of the Contract or any related agreement;
- 16.1.3) any information which is independently developed by the Supplier without using information supplied by the Customer or by any Affiliate of the Customer; or
- 16.1.4) any disclosure required by law or a regulatory authority or otherwise by the provisions of the Contract.
- 16.2) The Supplier shall not make any public announcement or disclose any information regarding the Contract, except to the extent required by law or regulatory authority.
- 16.3) This Clause 16 shall survive termination of the Contract

## 17. FORCE MAJEURE:

- 17.1) A party shall not be liable if delayed in or prevented from performing its obligations due to Force Majeure, provided that it:
- 17.1.1) promptly notifies the other of the Force Majeure event and its expected duration; and
- 17.1.2) uses best endeavours to minimise the effects of that event.
- 17.2) If, due to Force Majeure, a party:
- 17.2.1) is or shall be unable to perform a material obligation; or
- 17.2.2) is delayed in or prevented from performing its obligations for a continuous period exceeding 14 days or for a total of more than 60 days in any consecutive period of 60 days;
- the other party may, within 60 days, terminate the Contract on immediate notice.

## 18. TERMINATION:

- 18.1) The Customer may terminate the Contract or any other contract which it has with the Supplier at any time with immediate effect by giving notice in writing to the Supplier if:
- 18.1.1) the Supplier commits a material breach of the Contract and such breach is not remediable;
- 18.1.2) the Supplier commits a material breach of the Contract which is not remedied within 14 days of receiving written notice of such breach;
- 18.1.3) the Supplier has failed to pay any amount due under the Contract on the due date and such amount remains unpaid within 60 days after the Customer has given notification that the payment is overdue; or
- 18.1.4) any consent, licence or authorisation held by the Supplier is revoked or modified such that the Supplier is no longer able to comply with its obligations under the Contract or receive any benefit to which it is entitled.
- 18.2) The Customer may terminate the Contract at any time with immediate effect by giving notice in writing to the Supplier if the Supplier:
- 18.2.1) stops carrying on all or a significant part of its business, or indicates in any way that it intends to do so;
- 18.2.2) is unable to pay its debts either within the meaning of section 123 of the Insolvency Act 1986 or if the Customer reasonably believes that to be the case;
- 18.2.3) becomes the subject of a company voluntary arrangement under the Insolvency Act 1986;
- 18.2.4) has a receiver, manager, administrator or administrative receiver appointed over all or any part of its undertaking, assets or income;
- 18.2.5) has a resolution passed for its winding up;
- 18.2.6) has a petition presented to any court for its winding up or an application is made for an administration order, or any winding-up or administration order is made against it;
- 18.2.7) is subject to any procedure for the taking control of its goods that is not withdrawn or discharged within seven days of that procedure being commenced;
- 18.2.8) has a freezing order made against it;
- 18.2.9) is subject to any recovery or attempted recovery of items supplied to it by a supplier retaining title in those items;
- 18.2.10) is subject to any events or circumstances analogous to those in clauses 18.2.1 to 18.2.9 in any jurisdiction;

- 18.2.11) takes any steps in anticipation of, or has no realistic prospect of avoiding, any of the events or procedures described in clauses 18.2.1 to 18.2.10 including for the avoidance of doubt, but not limited to, giving notice for the convening of any meeting of creditors, issuing an application at court or filing any notice at court, receiving any demand for repayment of lending facilities, or passing any board resolution authorising any steps to be taken to enter into an insolvency process.
- 18.3) The Customer may terminate the Contract at any time by giving not less than four weeks' notice in writing to the Supplier if the Supplier undergoes a change of Control or if it is realistically anticipated that it shall undergo a change of Control within two months.
- 18.4) If the Supplier becomes aware that any event has occurred, or circumstances exist, which may entitle the Customer to terminate the Contract under this clause 18, it shall immediately notify the Customer in writing.
- 18.5) Termination or expiry of the Contract shall not affect any accrued rights and liabilities of the Customer at any time up to the date of termination.

## 19. DISPUTE RESOLUTION:

- 19.1) Any dispute arising between the parties out of or in connection with the Contract shall be dealt with in accordance with the provisions of this clause 19.
- 19.2) The dispute resolution process may be initiated at any time by either party serving a notice in writing on the other party that a dispute has arisen. The notice shall include reasonable information as to the nature of the dispute.
- 19.3) The parties shall use all reasonable endeavours to reach a negotiated resolution through the following procedures:
- 19.3.1) Within seven days of service of the notice, nominated representatives of the parties shall meet to discuss the dispute and attempt to resolve it.
- 19.3.2) If the dispute has not been resolved within seven days of the first meeting of the parties' nominated representatives, then the matter shall be referred to the parties' Finance Directors (or persons of equivalent seniority). The Finance Directors (or equivalent) shall meet within seven days to discuss the dispute and attempt to resolve it.
- 19.4) The specific format for the resolution of the dispute under clause 19.3.1 and, if necessary, clause 19.3.2 shall be left to the reasonable discretion of the parties.
- 19.5) If the dispute has not been resolved within 14 days of the first meeting of the Finance Directors (or equivalent) under clause 19.3.2 then the matter may be referred to mediation in accordance with the London Court of International Arbitration Mediation Rules.
- 19.6) Either party may issue formal legal proceedings at any time whether or not the steps referred to in clauses 19.3 and 19.5 have been completed.

## 20. NOTICES:

- 20.1) Any notice given by a party under these Conditions shall:
- 20.1.1) be in writing and in English;
- 20.1.2) be signed by, or on behalf of, the party giving it (except for notices sent by email); and
- 20.1.3) be sent to the relevant party at the address set out in the Contract.
- 20.2) Notices may be given, and are deemed received:
- 20.2.1) by hand: on receipt of a signature at the time of delivery;
- 20.2.2) by Royal Mail Recorded Signed For post: at 9.00 am on the Business Day after posting;
- 20.2.3) by Royal Mail International Tracked & Signed post: at 9.00 am on the fourth Business Day after posting; and
- 20.3) Any change to the contact details of a party as set out in the Contract shall be notified to the other party in accordance with clause 20.1 and shall be effective:
- 20.3.1) on the date specified in the notice as being the date of such change; or
- 20.3.2) if no date is so specified, five Business Days after the notice is deemed to be received.
- 20.4) All references to time are to the local time at the place of deemed receipt.

- 20.5) This clause does not apply to notices given in legal proceedings or arbitration.

## 21. CUMULATIVE REMEDIES:

- 21.1) The rights and remedies provided in the Contract for the Customer only are cumulative and not exclusive of any rights and remedies provided by law.

## 22. TIME:

- 22.1) Unless stated otherwise, time is of the essence for any date or period specified in the Contract in relation to the Supplier's obligations only.

## 23. FURTHER ASSURANCE:

- 23.1) The Supplier shall at the request of the Customer, and at the Supplier's own cost, do all acts and execute all documents which are necessary to give full effect to the Contract.

## 24. ENTIRE AGREEMENT:

- 24.1) The parties agree that the Contract constitutes the entire agreement between them and supersedes all previous agreements, understandings and arrangements between them, whether in writing or oral in respect of its subject matter.
- 24.2) Each party acknowledges that it has not entered into the Contract in reliance on, and shall have no remedies in respect of, any representation or warranty that is not expressly set out in the Contract. No party shall have any claim for innocent or negligent misrepresentation on the basis of any statement in the Contract.
- 24.3) Nothing in these Conditions purports to limit or exclude any liability for fraud.

## 25. VARIATION:

- 25.1) Except as set out in these Conditions, no variation of the Contract including the introduction of any additional terms and conditions, shall be valid or effective unless it is agreed in writing, refers to the Contract and these Conditions and is duly signed or executed by, or on behalf of, the Customer.

## 26. ASSIGNMENT:

- 26.1) The Supplier may not assign, subcontract or encumber any right or obligation under the Contract, in whole or in part, without the Customer's prior written consent which it may withhold or delay at its absolute discretion.
- 26.2) Notwithstanding clause 26.1, the Supplier may perform any of its obligations and exercise any of its rights granted under the Contract through any Affiliate provided that it gives the Customer prior written notice of such sub-contracting or assignment including the identity of the relevant Affiliate. The Supplier acknowledges and agrees that any act or omission of its Affiliate in relation to the Supplier's rights or obligations under the Contract shall be deemed to be an act or omission of the Supplier itself.

## 27. SET OFF:

- 27.1) The Customer shall be entitled to set-off under the Contract any liability which it has or any sums which it owes to the Supplier under the Contract or under any other contract which the Customer has with the Supplier.
- 27.2) The Supplier shall pay all sums that it owes to the Customer under the Contract without any set-off, counterclaim, deduction or withholding of any kind, save as may be required by law.

## 28. NO PARTNERSHIP OR AGENCY:

- 28.1) The parties are independent persons and are not partners, principal and agent or employer and employee and the Contract does not establish any joint venture, trust, fiduciary or other relationship between them, other than the contractual relationship expressly provided for in it. None of the parties shall have, nor shall represent that they have, any authority to make any commitments on the other party's behalf.

## 29. EQUITABLE RELIEF:

- 29.1) The Supplier recognises that any breach or threatened breach of the Contract may cause the Customer irreparable harm for which damages may not be an adequate remedy. Accordingly, in addition to any other

remedies and damages available to the Customer, the Supplier acknowledges and agrees that the Customer is entitled to the remedies of specific performance, injunction and other equitable relief without proof of special damages.

## 30. SEVERANCE:

- 30.1) If any provision of the Contract (or part of any provision) is or becomes illegal, invalid or unenforceable, the legality, validity and enforceability of any other provision of the Contract shall not be affected.
- 30.2) If any provision of the Contract (or part of any provision) is or becomes illegal, invalid or unenforceable but would be legal, valid and enforceable if some part of it was deleted or modified, the provision or part-provision in question shall apply with such deletions or modifications as may be necessary to make the provision legal, valid and enforceable. In the event of such deletion or modification, the parties shall negotiate in good faith in order to agree the terms of a mutually acceptable alternative provision.

## 31. WAIVER:

- 31.1) No failure, delay or omission by the Customer in exercising any right, power or remedy provided by law or under the Contract shall operate as a waiver of that right, power or remedy, nor shall it preclude or restrict any future exercise of that or any other right, power or remedy.
- 31.2) No single or partial exercise of any right, power or remedy provided by law or under the Contract by the Customer shall prevent any future exercise of it or the exercise of any other right, power or remedy by the Customer.
- 31.3) A waiver of any term, provision, condition or breach of the Contract by the Customer shall only be effective if given in writing and signed by the Customer, and then only in the instance and for the purpose for which it is given.

## 32. COMPLIANCE WITH LAW:

- 32.1) The Supplier shall comply with all laws, enactments, regulations, regulatory policies, guidelines and industry codes applicable to it and shall maintain such authorisations and all other approvals, permits and authorities as are required from time to time to perform its obligations under or in connection with the Contract.

## 33. CONFLICTS WITHIN CONTRACT:

- 33.1) If there is a conflict between the terms contained in the Conditions and the terms of the Order, schedules, appendices or annexes to the Contract, the terms of the Conditions shall prevail.

## 34. COSTS AND EXPENSES:

- 34.1) The Supplier shall pay its own costs and expenses incurred in connection with the negotiation, preparation, signature and performance of the Contract (and any documents referred to in it).

## 35. THIRD PARTY RIGHTS:

- 35.1) Except as expressly provided for in clause 35.2, a person who is not a party to the Contract shall not have any rights under the Contracts (Rights of Third Parties) Act 1999 to enforce any of the provisions of the Contract.
- 35.2) Any Affiliate of the Customer shall be entitled under the Contracts (Rights of Third Parties) Act 1999 to enforce any of the provisions of the Contract. The consent of any such Affiliate is not required in order to rescind or vary the Contract or any provision of it.

## 36. GOVERNING LAW:

- 36.1) The Contract and any dispute or claim arising out of, or in connection with, it, its subject matter or formation (including non-contractual disputes or claims) shall be governed by, and construed in accordance with, the laws of England and Wales.

## 37. JURISDICTION:

- 37.1) The parties irrevocably agree that the courts of England and Wales shall have exclusive jurisdiction to settle any dispute or claim arising out of, or in connection with, the Contract, its subject matter or formation (including non-contractual disputes or claims).

# SBS APPROVALS, ASSOCIATIONS AND PARTNERSHIPS

Smith Brothers Stores are constantly looking for ways to improve our operation. One way we do this is by teaming up with reputable industry accreditation organisations to ensure our business promotes the best industry practice.

Accreditations are often external organisations that set standards for a business to adhere to, whether this be an activity or to hold and retain a certain status.



Smith Brothers are ISO 9001 certified. ISO 9001 is the world's most recognised quality management system standard, established by the International Organisation for Standardization (ISO). ISO 9001 helps organisations implement clear, repeatable processes to maintain a quality service for their customers every time.

SBS have an internal taskforce dedicated to maintaining this key accreditation as we continue down the path of self improvement.



SBS are a BESA affiliate member. As a trade body and membership organisation, BESA helps members and their customers specify and deliver better building engineering services within a better-built environment. BESA also provides a wide range of support services, from training courses and advice to sharing best practices and opportunities to network and secure new business. Their wider group also provide essential business services to help companies operate smoothly.



The BMTFA (British Metals Tubes and Fittings Association) is a Trade Association proud to represent the interests of its members involved in manufacturing and distributing metal tubes and fittings in the UK. They aim to provide a dedicated, representative voice for the metal tubes and fittings industry. By engaging with partners and stakeholders on behalf of their members, they aim to ensure that the industry works as effectively as possible in the interests of our members and their customers. SBS Managing Director Steve Smith is a volunteer BMTFA panellist, offering his knowledge and expertise to support the wider industry.



Silver FORS accreditation is awarded to operators who maintain their Bronze accreditation and are able to demonstrate that all driver licence and endorsements are verified through a service that directly accesses the DVLA data. All vehicles over 3.5 tonnes must be equipped with a left turn audible warning system and are fitted with blind spot minimisation devices.



SBS complies with the Direct Vision Standard (DVS) certification, which requires operators of lorries over 12 tonnes of weight, to obtain a permit to enter or operate in Greater London. The DVS measures how much an HGV driver can see through their cab windows, indicating the level of risk to vulnerable road users, such as people walking and cycling near the vehicle. Accreditation Direct Vision Standard for HGV's is part of the Mayor of London's Vision Zero plan to eliminate all deaths and severe injuries on London's transport network by 2041.



Worksafe has since grown into a leader in first aid instructor training with approximately 2,500 instructors, 500+ approved providers and over 175,000 students taught. This accreditation provides our instructors with quality assurance, support, and up-to-date advice on first aid, fire and manual handling compliance, allowing SBS to have the confidence of being workplace compliant while being quality assured by industry specialists. We have trained staff at all locations who can control any first aid emergency, understand how to react to different scenarios and proceed with the best solution.



The Institution of Occupational Safety and Health is the world's charted body for safety and health professionals. They were formed in 1945 and have since grown into a leader in the health and safety profession. They aim to transform the world of work, making it safer and healthier every day. After a rigorous application process, which involved demonstrating extensive health & safety (H&S) knowledge, experience and qualifications. Our H&S team was approved to deliver the market-leading course, IOSH Managing Safely.

# INDUSTRY CERTIFICATIONS

SBS are committed to making sure our stock range offers quality products which meet the latest accreditations and industry guidelines where applicable. Many of the products stocked and supplied come with both U.K. specific and European specific approvals.

Although many products have particular certifications, this may only indicate part of the range comes with the 'approval', for complete accuracy. Always check the product with an SBS representative.



The NSF REG4 certification scheme for the UK market allows plumbing products and materials that are in contact with drinking water to demonstrate compliance with the UK's Water Supply (Water Fittings) regulations and byelaws. The certification was developed as a streamlined way for plumbing product manufacturers and materials suppliers to demonstrate conformance to UK regulations and gain timely access to the UK market.



WRAS (Water Regulations Advisory Scheme) Approval is the best way to demonstrate compliance as it is granted directly by representatives of the water suppliers and is therefore accepted by every water supplier in the UK. Lookout for this logo when dealing with potable/drinking water applications.



The CE marking indicates that the manufacturer has met the minimum legal requirements for their products in regard to health and safety under European Directives. CE marking is not, therefore, intended to be a quality mark.



Nebosh is an ISO 45001:2018 accredited organisation. ISO 45001 crosses geographic, political, economic, commercial and social boundaries, setting a single benchmark for the management of occupational health and safety.



The United Kingdom Accreditation Service (UKAS) is the sole National Accreditation Body for the United Kingdom. UKAS is recognised by government, to assess against internationally agreed standards, organisations that provide certification, testing, inspection and calibration services. Accreditation by UKAS demonstrates the competence, impartiality and performance capability of these evaluators. UKAS is appointed as the National Accreditation Body by the Accreditation Regulations 2009 (S.I. No 2009/3155) and Schedule 33 of the Product Safety and Metrology etc. (Amendment etc.) (EU Exit) Regulations 2019 (S.I. 2019/696).



The Lloyds Register (LR) promotes conformance with standards within pipeline services and solutions. Enhancing productivity, identifying and reducing risks associated with each phase of the pipeline lifecycle, reducing failures, unplanned shutdowns and costs and demonstrating regulatory compliance. Ultimately, LR helps you safeguard your revenue stream, whilst protecting the environment, lives, assets and your reputation.



The BBA is a market-leading UKAS-accredited product certification body [No.0113] to BS EN ISO/IEC 17065:2012, testing laboratory [No.0357] to BS EN ISO/IEC 17025:2017, management systems certification body [No.0113] to BS EN ISO/IEC 17021:2015 and inspection body [No.4345] to BS EN ISO/IEC 17020:2012 within the UK, setting the standard for excellence within the construction industry for products and systems and offering technical expertise and independent third party certification.



This logo is associated with products which meet set criteria. Manufacturers with the BSI Kitemark are in an elite club along some of the world's best companies and brands, currently just over 2,500 BSI Kitemark licences are held around the world. Each BSI Kitemark Licensee is subject to a programme of ongoing surveillance. This includes routine testing of the product or service, assessment of production quality controls and, where appropriate, mystery shopping.

## OTHER EUROPEAN APPROVALS:





## Service &amp; Value since 1897

**sbsonline.net | sbs.co.uk**

# Online Customer Portal

[www.sbsonline.net](http://www.sbsonline.net)



## FRUSTRATED WHEN YOUR COMMERCIAL HVAC MERCHANT CLOSES FOR BUSINESS AT 5PM?

Customers at SBS can now view their accounts & process orders anytime, anywhere, 24/7!



### Portal Features

- View stock online (*including live branch stock*)
- Account management (*view, print and download documents*)
- Place orders outside of business hours
- See test certs, POD's and other external documents online



### Now Available

- Process orders online for next day delivery or same day collection
- View live depot stock information for availability



### Sign up today!

- Existing SBS customers can sign up today, simply scan the QR code below



[www.sbsonline.net/login](http://www.sbsonline.net/login)

[www.sbs.co.uk](http://www.sbs.co.uk)

[www.sbsonline.net](http://www.sbsonline.net)



Smith Brothers Stores Ltd



@sbs1897

Staff | Stock | Service

# SOCIAL MEDIA

Keep up to date with the latest Smith Brothers news via our LinkedIn, Twitter, YouTube, our App and Online.



### ONLINE 'SBSONLINE.NET'

See product stocking status online along with a plethora of other information.



### ONLINE 'SBS.CO.UK'

Always get the latest information, literature and developments via our website.



### LINKEDIN 'SMITH BROTHERS STORES LTD'

Get inside information regarding branches, company development and operational improvements.



### TWITTER '@SBS1897'

Keep up to date on a day-to-day basis with the company.



### YOUTUBE '@SBS1897'

Official company media, along with product videos, are available on this platform.



### NEWSLETTER

Sign up to our external newsletter via our website and get the latest information and offers.



### APP 'SMITH BROTHERS STORES'

Call Us, Find Us, Contact Us and even book an appointment with an SBS representative. Available through Google Play and Apple Store.

