

WHITESPEED

Technical Data



WHITESPEED is the new, totally flexible plumbing system from Davant Products, the result of considerable investment in research and development, WHITESPEED is tailor made for the professional plumbing and heating installer who wants a high quality system that is simple to fit, durable in use, yet competitively priced.

High level of specification

Manufactured in accordance with the highest European Quality Standards, including BS EN ISO 9002, the WHITESPEED polybutylene pipe and fittings system conforms to BS7291 Parts 1 and 2.

Comprehensive range

The system offers a comprehensive choice of pipe and fittings in 10mm, 15mm, 22mm and 28mm sizes, suitable for all hot and cold plumbing and central heating systems. It can be used in both sealed and open vented systems and has been designed to withstand constant pressure at high temperatures. The combination of low thermal conductivity and high corrosion resistance makes it ideal for use in central heating systems.

Easy to handle and fit

The WHITESPEED polybutylene system offers the installer major advantages. The flexible nature of the pipe allows a cabling option, which speeds up pipework routing significantly. It will also cable through joists easily, thus dispensing with the time consuming task of pipe bending and joint compressing in confined areas. WHITESPEED piping is so flexible that it can be bent to 8 times its diameter without the need for a joint.

Few tools are needed to complete even the most complex pipework systems. Joints are push-fit for simplicity and speed of installation. Nothing could be more simple, cleaner or safer. WHITESPEED strongly recommends the use of lubricants which reduces installation time and ensures a perfect joint, first time, every time.

Using WHITESPEED with other pipe and fittings

The WHITESPEED polybutylene system is extremely versatile



Kitemark™ Certificate

This is to certify that:

Plumb Fast Co., Ltd.
Floor 11, Sanhyomukun B/D
87 Nonhyeon-ro
Seochon-gu
Seoul
06775
Republic of Korea

Holds Certificate Number: KM 52006

In respect of:

BS 7291 Parts 1 & 2
Thermoplastic pipes and associated fittings for hot and cold water for domestic purposes and heating installations in buildings

This issues the right and licence to use the Kitemark in accordance with the Kitemark Terms and Conditions governing the use of the Kitemark, as may be updated from time to time by BSI Assurance UK Ltd (the "Conditions"). All defined terms in this Certificate shall have the same meaning as in the Conditions.

The use of the Kitemark is authorized in respect of the Product(s) detailed on this Certificate provided at or from the above address.

For and on behalf of BSI: 
Shahn Berhom, Group Product Certification Director

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Joining

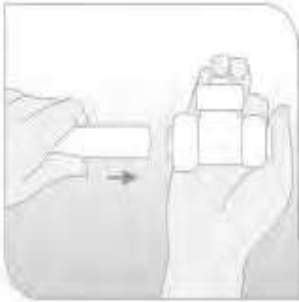


Use only purpose designed pipe cutters and cut the pipe squarely. Ensure the pipe is free from burrs and scratches.

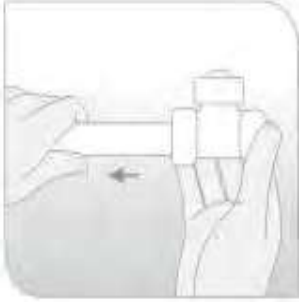
Do not use a hacksaw.



Always use the correct pipe insert.



Ensure all cap nuts are hand tightened. Visually check the internal components. Make the correct insertion depth by observing the chevron markings on the pipe. Push the pipe firmly and horizontally into the fitting. A secure joint has been made when the correct insertion marking is reached.

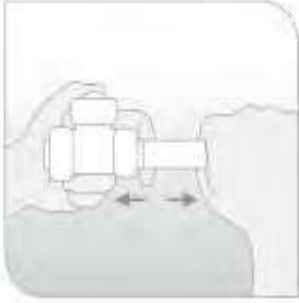


After checking the correct insertion depth has been achieved, pull back on the pipe firmly to ensure the grab ring engages correctly.

Dismantling



Ensure that the system is depressurized. Hold the pipe firmly and push the pipe inward toward the joint. Place the demounting tool against the collet.



Press the demounting tool against the collet and then pull the pipe releasing it from the joint.

Do not pull the pipe prior to applying the correct inward pressure on the collet.



If the pipe is damaged (grab ring mark) while dismantling the fitting, then cut the pipe behind the grab ring mark to ensure the piece of pipe with the initial insertion is not reused.

Advantages and
Physical Properties & Guidelines

- Applications
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·Connecting to Compression Fittings
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Installation Codes and Product Guidelines

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INTRODUCTION

Installation Codes and Product Guidelines

Product Guarantees

Technical Helpline

WHITESPEED PB offers you a complete and flexible plumbing and heating system manufactured in a BS EN ISO 9002 approved facility. WHITESPEED PB pipe and fittings are both manufactured from the same raw material, therefore offering uniform expansion and contraction, with an extensive range of both pipe and fittings available in 10, 15, 16, 20, 22, 25 & 28mm.

WHITESPEED PB fittings house an 'O' ring, spacer washer and grab ring and employ a simple push-fit technique for joining the fitting to the pipe. It is suitable for both sealed and open vented heating systems. With its low thermal conductivity and high resistance to corrosion, WHITESPEED PB offers you the ideal product for all domestic water supplies and central heating applications.

Manufactured to BS 7291 Part 1 and 2 Class S and awarded BSI Kitemark License No. KM52006 for Thermoplastic hot and cold pipe and fittings produced in polybutylene.

AFFILIATIONS

The Institute of Plumbing, Scottish & Northern Ireland Plumbing

Employers Federation

CERTIFICATIONS

BS 7291 Part 1 and 2 Class S

BS EN ISO 9002 Registered Company

ADVANTAGES

WHITESPEED PB offers you a quick and simple push-fit installation, with our "straight" coiled pipes of 50m and 100m eliminating the need for several joints on continuous runs. The flexible properties of polybutylene require fewer fittings to complete the job; installation time can be reduced by as much as 40%. The pipe is much easier to install than copper due to its flexibility, allowing the installer to cable through joists and around obstructions with ease, even the fittings can be rotated under pressure. Blowtorches, solders and tools are no longer required to make a watertight joint.

The high impact resistance of polybutylene, due to its flexible properties, means that it is not easily damaged by impact or accidental crushing, resulting in less wastage.

WHITESPEED PB has higher heat retention than copper, (insulation is still recommended) resulting in pipes being cooler to the touch.

WHITESPEED PB pipes and fittings have low thermal conductivity which means that condensation on cold water pipes is greatly reduced having the added benefit of a higher resistance to the pipes freezing.

Using WHITESPEED PB pipe and fittings as opposed to copper results in less mechanical noise through the pipework, eliminating the hammer effect, thus, giving a much quieter operating system.

WHITESPEED PB pipe and fittings have little monetary scrap value keeping theft from the site of installation to a minimum.

WHITESPEED PB pipe and fittings are completely non-toxic offering the safest possible system to guard against water contamination.

WHITESPEED PB pipe and fittings are also completely de-mountable aiding the plumber during installation.

Product physical properties and guidelines

TEMPERATURE		PRESSURE	PSI
20°C		12 Bar	174
65°C		6 Bar	87
82°C		3.5 Bar	51
Properties	Unit	Test Method	PF PB pipe
Melt Flow Rate	g/10min	ASTM D 1238	0..5
Density	G/cm	ASTM D 1505	0.920
Tensile Strength	Kg/cm3	ASTM D 638	175
at Yield			
Tensile Strength	Kg/cm3	ASTM D 638	400
at Break			
Elongation at Break	%	ASTM D 638	330
Tensile Modulus	Kg/cm3	JIS K 7113	4000
Izod Impact	Kg/cm/cm	ASTM D 256	No Break
Strength			
Shore Hardness	D Scale	ASTM D 2240	60
Melting Point	°C	DSC	127
Vicat Softening	°C	JIS K 7206	119
Point			
Brittleness Temp	°C	JIS K 7216	-18 Lower than
Coefficient Of Expansion	Cm/cm/°C	ASTM D 696	1.3 x104
Thermal Conductivity	Kcal/mhr° C°	ASTM C 177	0.33

APPLICATIONS

WHITESPEED PB pipe and fittings offer excellent performance for long term pressure at high temperatures, coupled with its low thermal conductivity and high resistance to corrosion, making it the ideal product for central heating systems.

WHITESPEED PB pipe and fittings are also suitable for the installation of indirect and direct mains fed cold water services, vented and unvented hot water systems. WHITESPEEDPB barrier pipe is highly recommended for use in Underfloor Heating Systems making the complete range of WHITESPEED PB pipe and fittings one of the most versatile products available to the plumbing installer to date.

WHITESPEED PB pipe and fittings can even be installed into caravans and boats where flexibility, low weight and resistance to freezing make them the most versatile products to use.

HANDLING

Care should be taken when handling all polybutylene products especially pipe, avoid dragging along the ground, rubbing against rough surfaces like walls and concrete floors which could reduce the wall thickness of the pipe. When feeding pipe through holes in brickwork and walls always cover the end of the pipe with tape to avoid debris entering the pipe, this will also help in avoiding damage to the joining surface. Care should also be taken to avoid crushing the pipe walls during bending and the wall of the pipe being punctured by sharp objects.

STORAGE

WHITESPEED PB pipe and fittings should always be stored in their protective wrapper, away from sources of ultra violet light, for example direct sunlight. Where installation is unavoidable in areas of direct sunlight and sources of artificial ultra violet light always install the pipework into ducting. When storage of pipe is required for any length of time do not exceed 1.5metre stack heights for coils and 1 metre stack heights for straight lengths.

PAINTING

WHITESPEED PB pipe and fittings can be painted using normal household paints; however solvent based products and cellulose paints should not be used. Surfaces to be painted should be free from all deposits of silicone and grease compounds.

When required, re-painting may be achieved by gently rubbing down with wet and dry using a grade no coarser than 400, hot air guns and chemical based paint strippers should never be used on any polybutylene products.

CABLING

WHITESPEED PB pipes flexibility enables the installer to thread the pipe through concealed and inaccessible spaces with minimal or no disruption to the surrounding building resulting in major savings to installation time. The flexibility of WHITESPEED PB pipe means that pipework can be threaded through dry wall systems, studded partitions and cabled through holes drilled into joists. There are restrictions as to where joists can be drilled and notched, these restrictions can be found in the Building Regulations Approved Document A and BS 6700: 1997.

As a general guide:
Holes in roof and floor joists should be no greater than 0.25 times the overall depth.
Holes drilled into the joist should be drilled at the neutral axis and should not be less than 3 diameters (centre to centre) apart.
Holes should be spaced between 0.25 and 0.4 times the span from the support.
Notches in roof and floor joists should be no deeper than 0.125 times the depth of the joist.
Notches in roof and floor joists should under no circumstance be cut any closer to the support than 0.07 of the span and no further away than 0.25 times the span.

Installation Instructions
CONNECTING TO METRIC SIZE COPPER

WHITESPEED PB fittings are suitable for use with all metric sized copper tube manufactured to BS2871.
The copper tube should be cut using a plumber's pipe cutter, remove all sharp edges to avoid damaging the O-ring when inserting into the WHITESPEED PB fitting.

CONNECTING TO METRIC SIZE COMPRESSION FITTINGS
WHITESPEED PB pipe can be used with compression fittings manufactured to BS864. A WHITESPEED stainless steel insert must always be inserted into the WHITESPEED PB pipe before compressing the joint. The olive must be within the length of the support sleeve and PTFE tape over the olive will ensure a watertight seal is achieved.

CONNECTING TO A HEATING APPLIANCE
When connecting to any heating appliance you must ensure that at least 2 metres of copper pipe is firstly connected to the heating appliance on both the flow out and the return before connecting to WHITESPEED PB pipe. Care should be taken to ensure that the heating appliance has the appropriate thermostatic cut out controls to ensure that operating temperatures do not exceed the pressure and temperature limits for Class S thermoplastic pipe.

BENDING THE PIPE
WHITESPEED PB pipe's immense flexibility enables the installer, by clipping the pipe into place, to cold form bends up to 8 times the pipes diameter, in many cases dispensing with the need to make elbow connections, again reducing installation time.

CLIPPING
WHITESPEED PB pipe as with all polybutylene pipe is not self supporting like copper, it is therefore recommended that polybutylene pipe be supported as set out in BS5955: Part 8:1990.

RECOMMENDED CLIPPING DISTANCES

NORMAL DIAMETER	HORIZONTAL RUNS	VERTICAL RUNS
10mm	0.3m	0.5m
15mm	0.3m	0.5m
16mm	0.4m	0.6m
20mm	0.5m	0.8m
22mm	0.5m	0.8m
25mm	0.5m	0.8m
28mm	0.8m	1.0m

Installation Instructions
LAYING INTO CONCRETE AND MASONRY

WHITESPEED PB pipe and fittings can be laid into concrete and masonry provided that they are installed into conduit pipe and junction boxes.
This is to ensure that access to the pipe and fittings can take place should the need arise to carry out any maintenance.
Insulation is also recommended to protect against frost and heat loss.
Please check recommendations as outlined in Byelaw 58.
SYSTEM TESTING
A full scale systems check should be carried out in accordance with BS6700: 1997 and Water Supply Regulations 1999.
When the installation is complete the system should be filled and flushed out, refill the system slowly to avoid any air locks.
WHITESPEED PB blanking caps and stop ends are particularly useful to plug all outlets prior to system testing taking place.
We recommend that the system be subjected to a hydraulic pressure test for 30 minutes at 10-bar minimum then reducing to 5-bar for a further 30 minutes. When testing be sure that pressures used do not exceed manufacturer's levels for boilers, cylinders and pumps.
Any drop off in pressure over this period should be investigated and any leakages within the system must be repaired or replaced.

CORROSION INHIBITORS
It is recommended that a corrosion inhibitor be used at all times.
WHITESPEED PB pipe and fittings are in no way affected by the anti-corrosion properties found in compounds such as Sentinel and Fernox.
All heating circuits should be protected by an appropriate inhibitor as oxygen may enter the system through a variety of points such as pumps, header tanks and valves.
WHITESPEED PB barrier pipe has the added advantage of an oxygen barrier incorporated into the pipe to greatly reduce the ingress of oxygen through the pipe wall.
It is therefore highly recommended that barrier pipe be used along with an inhibitor on all sealed heating systems.
General Precautions

ELECTRICAL INSTALLATIONS
WHITESPEED PB pipe as with all plastic products is non-conductive and should not be used to provide an earth return.

Where WHITESPEED PB pipe is used to replace a section of existing copper pipe that was previously earthed, electrical continuity should be reinstated by affixing a section of earth cable between the ends of the copper pipe secured to the metal using clamps or clips. No requirements are however needed to bond the pipe work to earth on new installations where no metal pipe is installed.
However all electrical requirements for heaters, cylinders and pumps etc. should be taken into account. If in any doubt consult a qualified electrician.

RODENTS
In this day and age it is highly unlikely for properties to be infested with rodents. However, if rodents are present in large numbers and no steps towards extermination have been carried out, it is possible that damage to electrical and plumbing materials, including WHITESPEED PB, could occur.

CHLORINE
The WHITESPEED PB range of pipe and fittings are suitable for carrying normal levels of chlorine found in domestic water supply systems.
It is however not suitable for carrying large quantities, for example, water circulation of swimming pools that use large concentrations of chlorine. Short-term exposure of chlorine used for disinfecting will have no adverse effect on the system provided the maximum permitted level of 5ppm is not exceeded.

GASES, FUEL AND FUEL OILS
WHITESPEED PB pipe and fittings are not suitable for the transportation of gases, steam and compressed air; it is also not suitable for the transportation of fuel oils including petroleum.

INSTALLATION CODES AND PRODUCT GUIDELINES
The guides and standards below should be followed during design and installation when using WHITESPEED PB pipe and fittings.
BS 6700:1997. Specification for design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages.
WSR:1999. Water Supply Regulations 1999.
WIA:1991. Water Industry Act 1991.
BS 5955 Part 8:1990. Specification for the installation of thermoplastic pipe and fittings for use in domestic hot and cold water services, and heating systems.

BS8000. Workmanship on building sites Part 15: 1990 code of practice for hot and cold water services.
BS 5499: 1990. Specification for forced circulation hot water central heating systems for domestic premises.
The Institute of Plumbing's. - Plumbing Engineering Services Design Guide.
Guide to the use of plastic pipework. TR11, HVCA, 1992.
Mechanical and electrical standard specification for heating, hot and cold water installations for dwellings.
Published by the former PSA.

PRODUCT GUARANTEE
25 Year Product Guarantee.
WHITESPEED PB pipe and fittings are guaranteed for 25 years against defects in materials or manufacture from date of purchase.
This guarantee only applies if the system is installed to the recommendations within this Technical and Installation guide, and is used in a normal domestic operation.

TECHNICAL HELPLINE
For further information please contact our Technical Helpline on:
Tel. 01531 630068
Email: info@davant.co.uk