



Plastic Pipe Systems for Gas, Water & Wastewater Applications

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Plastic pipes and fittings product selector

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Radius Systems ~ The Smart Choice for your New Plastic Pipe System

Welcome to the March 2009 edition of our plastic pipe system product selector, a guide which covers your requirements for gas, water and wastewater applications.

We have prepared this guide to help you identify and select the right products for your new plastic piping system. Here you will find quality engineered products, designed with ease of installation in mind as a result of our long term, customer led product development programmes.

If you find that you need additional information to help you make the right choices for your new system, then please call our Customer Services team who will be pleased to help you, or visit our website where you will find a range of brochures and

datasheets which contain more detailed technical information on our products.

Whatever your plastic piping needs, you can trust Radius Systems to provide you with the right products, when you need them and where you want them. Our service doesn't stop here, if you need help installing your new pipeline, we can organise getting you trained so that you have the skills and confidence to install a reliable system.

Above all, we would like you to know that you can talk to us and that our commitment to you is to be flexible and help wherever we can, so that you get the most from your new investment.



Contact Information

To enquire about products, availability, delivery and pricing information please contact us at one of our offices and we will be pleased to help you.

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Radius Systems accepts no responsibility arising out of the information supplied which is given in good faith. It remains at all times, the responsibility of the customer to ensure that the pipe system selected is suitable for the particular application intended.

Polyethylene pipe systems

Technical information

If you would like detailed information on our products, we have included Technical datasheets on our website which you can download. Please visit www.radius-systems.com or if you would like us to fax or post you specific information then please contact us.

The datasheets cover the following topics:

Gas

- Properties of Polyethylene
- Standards
- Pipe Selection
- Pipe Installation
- Pipe Jointing
- Pressure testing for new installations
- Flow Stopping Polyethylene Pipes
- Guidance on Working with Imperial PE pipes

Water

- Batch Numbering
- Hydraulic Flow
- PE Pipe Volume
- Spangler 'Iowa' Long Term Deflection
- PE Pipe Bends and Bending
- Maximum Towing Loads
- PE Pipe Bracket Spacing
- Anchorage and Thrust Blocks
- Thrust Block Worked Equation
- Temperature De-rating
- Electrofusion Jointing
- Butt Fusion Jointing
- Flange Connections
- As-dug Pipe Embedment
- Testing & Commissioning of PE pipe

Polyethylene (PE)

Polyethylene (PE) has a number of significant advantages over the traditional materials such as steel or ductile iron. These include lower weight, freedom from corrosion, ease of welding and the ability to coil long lengths of pipe.

The early growth in the gas and water businesses was built on providing systems in the familiar yellow (for gas) and light blue or black (for water) medium density polyethylene (MDPE or PE80) material for lower pressure applications. More recently with the development of high performance polyethylene materials pipe applications operating pressures have significantly increased – particularly in the larger diameters (up to 7 bar for gas and 16 bar for water). The higher pressure pipe systems are manufactured from a high performance polyethylene (HPPE or PE 100).

Joining Techniques & Systems

There are two accepted methods of joining PE pipes, butt fusion and electrofusion.

Electrofusion uses socket style fittings which have integral heating elements. Couplers are used to join pipes and saddle fittings are used to connect service pipes. Inside each electrofusion fitting there is a resistive heating element connected to terminals on the external surface of the fitting.

A controlled voltage is supplied via a generator/control box to the fittings terminal connections. As electrical power flows through the element, the wire heats melting the surrounding polymer and welding the fitting to the pipe wall. Scraping of the area to be welded is required to remove the oxidized surface of the pipe.

Electrofusion jointing procedure



1. The pipe is scraped to remove any contamination which may affect the quality of the joint



2. The coupler is inserted to the end of the single or movable pipe



3. The second pipe is scraped and inserted in the coupler



4. The pipe joint is clamped into position ready to be fused



5. Connect the electrofusion box leads to the terminals on the coupler and commence fusion process.

Polyethylene pipe systems

Technical Information

Polyethylene (PE)

Butt Fusion is typically used to join pipe of diameter 90mm and above. The ends of the pipe to be joined are brought together in a butt fusion machine, the ends are trimmed to ensure that they are square and free from contamination. A thermostatically controlled heater is then introduced between the two pipe faces and a controlled pressure is exerted to push the pipes onto the heater's non stick surface. After a predetermined time, the heater plate is removed and the pipes are brought together again under pressure and held whilst cooling. The butt fusion process produces a bead both internally and externally which can be removed using a proprietary debearing tool. In addition examination of the bead also provides an accurate quality control check for joint integrity.

Most of the butt fusion welding undertaken in the UK is done using fully automatic butt fusion equipment. These butt fusion machines should be programmed with the welding parameters detailed in the appropriate gas and water specifications.

Please contact us for further detailed information on electrofusion and butt fusion procedures and for details of our range of practical skills based training courses

Health & safety

The health and safety of operatives and individuals involved in the processing, handling, jointing, installation, testing and use of polyethylene pipe systems is at all times of paramount importance to

Butt fusion procedure



1. Position the pipe ends within the butt fusion machine leaving a gap for the trimmer to be inserted



2. Bring the pipe together to check for gaps between the pipe ends



3. The trimmer tool is then inserted to remove any contaminants. Remove the ribbon of shavings formed



4. Bring the pipes together and check for mismatch, pipe slippage and visible gaps



5. The heater plate is positioned between the ends of pipe until a bead has formed



6. The heater plate is removed and the 2 pipe ends are brought back together. The joint is then left to cool.

Radius Systems. In order to achieve and maintain these objectives, good working practices are essential. The guidelines for the use of polyethylene pipes and fittings as published by the Foundation for Water Research in the WRC manual for polyethylene pipe systems for water supply applications, the British Plastics Federation, the manufacturers of jointing machinery and by Radius Systems, should always be strictly adhered to.

Hydraulic flow of PE pipe

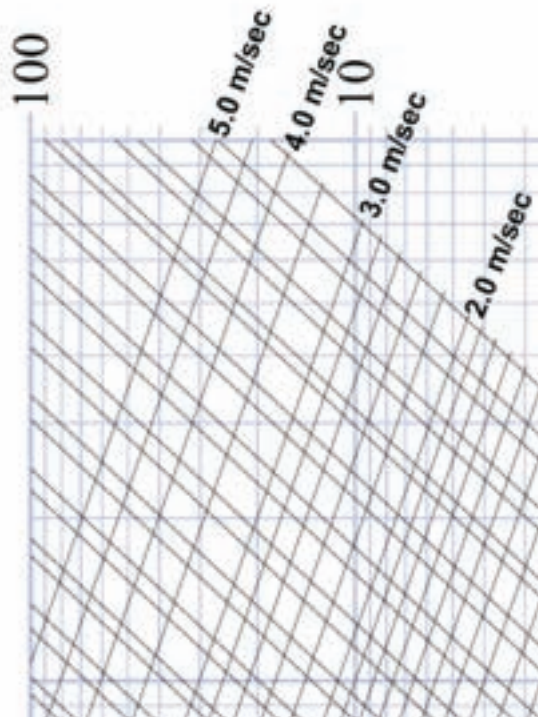
In any water pipeline a certain amount of the pressure head will be lost due to the effects of friction of the water against the internal pipe wall.

The hydraulically smooth bore of Radius Systems' PE pipe gives excellent flow characteristics, which are usually retained through its

operational life. The hydraulic frictional coefficient normally used in the design of continuous straight PE pipelines working under pressure is based on the Colebrook White formula for water at 10°C using a hydraulic roughness factor K of 0.003mm. Based on the Colebrook White formula, Radius Systems has constructed a hydraulic chart to assist in the correct sizing of PE pipelines (chart 1).

Hydraulic flow chart for water applications

Chart 1



Polyethylene pipe systems

Technical Information

Polyethylene (PE)

Standard Dimension Ratio (SDR)

The wall thickness of polyethylene pipe is usually stated as a ratio of the nominal outside diameter. This ratio is known as the Standard Diameter Ratio (SDR) and bears direct correlation with the pressure ratings.

$$\text{SDR} = \frac{\text{Nominal Outside Diameter}}{\text{Minimum Wall Thickness}}$$

For gas applications, more specialist calculations are required, as detailed for example in IGE/TD/3 edition 4 Code of Practice.

Pressure Rating

The pressure rating of polyethylene pipes is generally referred to in "bar" where 1 bar equals 14.7 psig.

Coefficient of Expansion

PE has a coefficient of linear expansion of approximately 1.5×10^{-4} per degree Celcius, which is an order of magnitude greater than exists in metal pipelines and this characteristic must be carefully considered in the design of the pipeline and during installation. The coefficient of circumferential

expansion is approximately one half the linear value and seldom presents any problems in the system design except where large diameter compression fittings are proposed.

Corrosion Resistance

For all practical purposes PE is chemically inert within its normal temperature range of use. It does not rot, rust, pit, corrode or lose wall thickness through chemical or electric reaction with the surrounding soil. It does not normally support the growth of, nor is affected by algae, bacteria or fungi.

Chemical Effects

PE has good resistance to a wide range of chemicals. The main concern is the effect of certain chemicals, which may exist in contaminated ground, some of which may have a harmful effect upon the pipe material. In general terms the most common harmful chemicals can be grouped into oxidizers, Cracking agents and certain solvents as shown in table 1.

The effect of specific chemicals on polyethylene pipe is considered in the ISO specification, ISO DP 10358.

Table 1

Group	Generalised examples	Effects on PE
Oxidisers	Very strong acids	Degradation
Cracking agents	Detergents	No degradation but under high temperatures, accelerates cracking under stress in brittle manner
Solvents	Hydrocarbons such as petrols and oils	No degradation but may be absorbed into pipe wall causing reduction in hoop stress

Where water pipelines are to be laid in environments where concentrations of such chemicals may prevail (e.g. garage forecourts, within certain processing works, etc) then Radius Systems Puriton pipe system should be used. Puriton is a composite pipe which protects drinking water in contaminated land.

Handling and storage

Care must be taken when loading and unloading polyethylene pipe

and fittings, especially when dealing with coiled pipes as they contain a considerable amount of stored energy. Pipe and fittings shall be loaded, unloaded and stored in compliance with your own companies' instructions and risk assessment procedures in the UK.



Polyethylene pipe systems

Specification

Radius Systems' polyethylene pipes and fittings are manufactured in our own factories with full accreditation to ISO 9001 quality control systems for use in the supply of gas, potable and non potable water.

Water pipe systems

Application	Material	Colour	Nominal size range	Specification
Service pipes for below ground use for potable water	PE 80 (MDPE)	Light blue	20mm to 63mm	BSEN 12201 Part 2
Pipes for below ground use for potable water	PE 100 (HPPE)	Dark blue	90mm to 1000mm	BSEN 12201 Part 2
ProFuse pipe for below ground use for potable and non potable water	PE 100 (HPPE) ProFuse	Dark blue with brown stripes	75mm to 630mm	WRc WIS 4-32-17
Puriton barrier pipe for below ground use for conveying potable water in brownfield / contaminated sites	PE 80 (MDPE) and aluminium	Light blue with brown stripes	25mm to 180mm	WIS 4-32-19 WRAS
Pipes for above ground use for potable and non potable water, sewerage and industrial applications. For below ground use for all non potable water and sewerage applications	PE 100 (HPPE)	Black	90mm to 1000mm	BSEN 12201 Part 2
General purpose polyethylene pipe for below ground use for all non potable water applications	PE 80	Black	90mm to 630mm	DIN 8074/8075 (1987)
Electrofusion fittings for use with PE 80 and PE 100 water pipes	PE 100 (HPPE)	Black	20mm to 630mm	BSEN 12201 Part 3
Spigot fittings for butt fusion or electrofusion jointing	PE 100 (HPPE)	Black Dark blue	63mm to 630mm	BSEN 12201 Part 3

Gas pipe systems

Application	Material	Colour	Nominal size range	Specification
Pipes suitable for natural gas, and certain other manufactured fuel gases	PE 100 ProFuse	Yellow with brown stripes	75 to 630mm	GIS:PL2:2
Pipes suitable for natural gas, liquid petroleum (LPG) and certain other manufactured fuel gases	PE 80	Yellow	16 to 315mm	GIS:PL2:2 BS EN1555
Pipes suitable for natural gas, liquid petroleum (LPG) and certain other manufactured fuel gases	PE 100	Orange	63 to 500mm	PL2 - Part 8 BS EN1555
Electrofusion fittings for use with PE 80 and PE 100 gas pipes	PE 80	Yellow	16 to 630mm	PL2 - Part 4 BS EN1555
Spigot fittings for electrofusion and butt fusion jointing	PE 80	Yellow	20 to 630mm	PL2 - Part 6 BS EN1555

Pressure rating - Pipe

Pipe	Material	Colour	Pressure (Bar)
Gas	PE 80	Yellow	Up to 5.5
Gas	PE 100	Orange	Up to 10
Potable water	PE 80	Light blue	Up to 12.5
Potable water & Industrial use	PE 100	Dark blue Black	Up to 16

Pressure rating - Fittings

Fittings	Material	Colour	Pressure (Bar)
Gas - Electrofusion joints	PE 80	Yellow	Up to 5.5 BS EN1555
Gas - Electrofusion joints	PE 100	Black	Up to 10 BS EN1555
Gas - Butt fusion / spigot joint	PE 80	Yellow	Up to 5.5 BS EN1555
Gas - Butt fusion / spigot joint	PE 100	Black	Up to 10 BS EN1555
Water - Electrofusion joints	PE 100	Black	Up to 16 BS EN1555
Water - Butt fusion / spigot joint	PE 100 PE 100 ProFuse	Dark blue Black	Up to 16 BS EN1555

Polyethylene pipe systems

Health & Safety

The material

Polyethylene is chemically unreactive and generally regarded as biologically inert. It is not classified as a dangerous product (EC).

Ingestion

Ingestion of polyethylene in any form should be avoided.

Inhalation

Inhalation of PE dust can irritate the respiratory system. Wherever possible, when cutting or scraping PE pipes operatives should work in the open air or well ventilated areas. In normal ambient temperatures, PE does not release harmful fumes.

Physical contact

Polyethylene is not regarded as a skin irritant. When cutting or scraping PE pipes or fittings, PE dust particles may cause eye irritation and it is recommended that protective eyewear be used.

Fire hazards

Polyethylene burns but is not classified as flammable. It has a flash point of 360°C approx. Above 300°C, PE will degrade to produce small amounts of various hydrocarbons and aldehydes.

Avoid the accumulation of PE dust particles as they could give a potential risk of dust explosion. All electrical equipment in the area should be carefully sited and earthed.

In the event of fire involving PE materials, apply water in a spread jet. Dry chemical, foam and carbon dioxide can also be used.

The environment

Polyethylene is not considered dangerous to the environment.

Disposal of waste material

Surplus or waste polyethylene material can be reprocessed into new pipes or other products. Alternatively, it can be used as landfill or incinerated, dependent on local regulations. Proper combustion does not require special exhaust control technology.

First Aid

The following are recommendations for immediate first aid to be applied in the event of an accident involving polyethylene products. However, qualified medical attention should be obtained as soon as practically possible.

Ingestion

Wash mouth out with clean water.?

Inhalation

Move affected person into fresh air situation. If in distress, apply oxygen or artificial respiration.

Eye Injury

If PE particles enter the eye, immediately flood with water, repeating as necessary.

Burns

If molten PE comes into contact with the skin, cool the affected area immediately by flooding with clean cold water. Do Not remove the PE material from the skin – seek medical attention as quickly as possible even for the smallest burn.

Product information

Coils

The standard coil size available to order is 100m. Other lengths available on request. To order 50m coils, remove C from the end of the product code and replace with L. For 150m, add L to the product code for 100m.

Coils may be subject to a surcharge on carriage / crane offload.

Straight pipe

For some product ranges, 6m and 12m lengths are sold as standard. To order 12 metre lengths, remove the digit 6 from the end of the product code and replace it with 12. Other lengths are available to order.

PE 80 (MDPE) and PE 100 (HDPE / HPPE) pipe

Radius Systems PE 80 and PE 100 blue and black polyethylene pipes are available in sizes 20mm to 1200mm in a wide range of pressure ratings. Please contact us for further details.



Polyethylene pipe systems

Polyethylene pipe wall thicknesses

Pipe dimensions for gas and water applications

Nominal O/D	Maximum O/D	Maximum Straight Pipe Ovality mm	SDR 9		SDR 11	
			Min. mm	Max. mm	Min. mm	Max. mm
20	20.3	1.2	2.3	2.7	2	2.3
25	25.3	1.2	3.0	3.4	2.3	2.7
32	32.3	1.3	3.6	4.1	3.0	3.4
40	40.4	1.4	4.5	5.1	3.7	4.2
50	50.4	1.4	5.6	6.3	4.6	5.2
55	55.4	1.4	-	-	5.1	5.8
63	63.4	1.5	7.1	8.0	5.8	6.5
75	75.5	1.6	8.4	9.4	6.8	7.6
90	90.6	1.8	10.1	11.3	8.2	9.2
110	110.7	2.2	12.3	13.7	10.0	11.1
125	125.8	2.5	14.1	15.6	11.4	12.7
140	140.9	2.8	15.7	17.4	12.7	14.1
160	161.0	3.2	17.9	19.8	14.6	16.2
180	181.1	3.6	20.1	22.3	16.4	18.2
200	201.2	4.0	22.4	24.8	18.2	20.2
225	226.4	4.5	25.2	27.9	20.5	22.7
250	251.5	5.0	27.9	30.8	22.7	25.1
280	281.7	9.8	31.3	34.6	25.4	28.1
315	316.9	11.1	35.2	38.9	28.6	31.6
355	357.2	12.5	39.7	43.8	32.2	35.6
400	402.4	14.0	44.7	49.3	36.3	40.1
450	452.7	15.6	50.3	55.5	40.9	45.1
500	503.0	17.5	55.8	61.5	45.4	50.1
560	563.4	19.6	-	-	50.8	56.0
630	633.8	22.1	-	-	57.2	63.1
710	716.4	-	-	-	-	-

SDR 17		SDR 17.6		SDR 21		SDR 26	
Min. mm	Max. mm	Min. mm	Max. mm	Min. mm	Max. mm	Min. mm	Max. mm
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
2.0	2.3	-	-	-	-	-	-
2.4	2.8	-	-	2	2.3	-	-
3.0	3.4	-	-	2.4	2.8	2.0	2.3
-	-	-	-	-	-	-	-
3.8	4.3	-	-	3.0	3.4	2.5	2.9
4.5	5.1	-	-	3.6	4.1	2.9	3.3
5.4	6.1	5.2	5.9	4.3	4.9	3.5	4.0
6.6	7.4	-	-	5.3	6.0	4.2	4.8
7.4	8.3	7.1	8.0	6.0	6.7	4.8	5.4
8.3	9.3	8.0	8.9	6.7	7.5	5.4	6.1
9.5	10.6	-	-	7.7	8.6	6.2	7.0
10.7	11.9	10.3	11.5	8.6	9.6	6.9	7.7
11.9	13.2	-	-	9.6	10.7	7.7	8.6
13.4	14.9	-	-	10.8	12.0	8.6	9.6
14.8	16.4	-	-	11.9	13.2	9.6	10.7
16.6	18.4	-	-	13.4	14.9	10.7	11.9
18.7	20.7	-	-	15.0	16.6	12.1	13.5
21.1	23.4	-	-	16.9	18.7	13.6	15.1
23.7	26.2	-	-	19.1	21.2	15.3	17.0
26.7	29.5	-	-	21.5	23.8	17.2	19.1
29.7	32.8	-	-	23.9	26.4	19.1	21.2
33.2	36.7	-	-	26.7	29.5	21.4	23.7
37.4	41.3	-	-	30.0	33.1	24.1	26.7
42.1	46.5	-	-	33.9	37.4	27.2	30.1

Polyethylene pipe systems

Pipe

Gas pipe

PE 80 medium density yellow pipe

For below ground low pressure gas systems

- Coiled pipe sizes: 20mm to 180mm
- Straight pipe sizes: 63mm to 180mm



Nominal size O/D mm	SDR Rating	MOP ¹ bar	Product Code Based on 6m length	Product Code Based on 100m coil
20	9	5.5	20G6	20GC
25	11	5.5	25G6	25GC
32	11	5.5	32G6	32GC
40	11	5.5	-	40GC
55	11	5.5	55G6	55GC
63	11	5.5	63G6	63GC
75	11	5.5	-	75GC
90	17.6	3	90G76	90G7C
90	11	5.5	90G6	90GC
125	17.6	3	125G76	125G7C
125	11	5.5	125G6	125GC
140	17.6	3	140G6	140GC
180	17.6	3	180G76	180G7C
180	11	4.7	180G6	180GC

PE 80 gas pipe available in diameters above 180mm subject to minimum run quantity.

¹ Maximum operating pressure based on UK code of practice, may vary for other countries & standards.

PE 100 high performance orange pipe

For below ground high pressure gas systems

- Coiled pipe sizes: 63mm to 180m
- Straight pipe sizes: 90mm to 500mm



Nominal size O/D mm	SDR Rating	MOP ¹ bar	Product Code Based on 6m length	Product Code Based on 100m coil
63	11	7	63T6	63T6
90	11	7	90T6	90T6
125	11	7	125T6	125T6
180	11	7	180T6	180T6
250	11	7	250T6	-
315	11	7	315T6	-
355	11	7	355T6	-
400	11	7	400T6	-
450	11	7	450T6	-
500	11	7	500T6	-

¹ Maximum operating pressure based on UK code of practice, may vary for other countries & standards.

Polyethylene pipe systems

Pipe

Gas pipe

PE 100 high performance ProFuse pipe

For below ground low pressure gas systems

- Straight pipe sizes: 75mm to 630mm

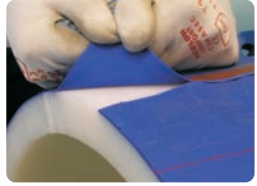


Nominal size O/D mm	SDR Rating	MOP ¹ bar	Product Code Based on 6m length	Product Code Based on 100m coil
75	21	2	75Y6	75YC
90	21	2	90Y6	90YC
110	21	2	110Y6	110YC
125	21	2	125Y6	125YC
140	21	2	140Y6	140YC
180	21	2	180Y6	-
250	21	2	250Y6	-
280	21	2	280Y6	-
315	21	2	315Y6	-
355	21	2	355Y6	-
400	21	2	400Y6	-
450	21	2	450Y6	-
500	21	2	500Y6	-
630	21	2	630Y6	-

We advise that you use the ProFuse PET tool which has been specifically designed for the removal of the ProFuse pipe skin. Using other instruments to remove the skin may damage the pipe and affect the performance of the pipe system.

ProFuse Pipe Exposure Tools (PETs)

Our PET tool has been specifically designed for the removal of the ProFuse skin when preparing the pipe for electrofusion or butt fusion jointing. Only one tool required for all pipe sizes.



Plastic Pipe Exposure Tool

Designed for the safe and routine removal of ProFuse skin, the Plastic PET comprises a site robust plastic body and a plunger with hardened steel blade.



Description	Product Code
Plastic ProFuse Pipe Exposure Tool	PET004

Please call our Customer Services team to order your PET tool.

Polyethylene pipe systems

Pipe

Water pipe

PVC-O blue pipe

For below and above ground irrigation systems

- Straight pipe sizes: 110mm to 200mm



Nominal size O/D mm	MOP ¹ bar	Wall Thickness Min mm	Wall Thickness Max mm	Pipe Length (incl. socket) m	Product Code
110	16	4.9	5.5	6	110PVO
160	16	7.0	7.8	6	160PVO
200	16	8.8	9.8	6	200PVO

General purpose polyethylene pipe (GPPE) - DIN pipe

GPPE (black) is available in sizes 90mm to 630mm for non potable water applications. This pipe is manufactured to DIN 8074/8075 (1987) dimensions and pressure requirements. If you would like details of availability and prices, please contact our Customer Services Department.



¹ Maximum operating pressure

PE 100 high performance black pipe

Below ground for non potable water & sewerage

Above ground for sewerage & industrial use and potable water



- Coiled pipe sizes: 90mm to 180mm
- Straight pipe sizes: 90mm to 630mm

Nominal size mm	SDR Rating	MOP ¹ bar	Product Code Based on 6m length	Product Code Based on 100m coil
90	17	10	90N76	90N7C
90	11	16	90N6	90NC
110	17	10	110N76	110N7C
110	11	16	110N6	110NC
125	17	10	125N76	125N7C
125	11	16	125N6	125NC
160	17	10	160N76	160N7C
160	11	16	160N6	160NC
180	17	10	180N76	180N7C
180	11	16	180N6	180NC
200	17	10	200N76	-
200	11	16	200N6	-
225	17	10	225N76	-
225	11	16	225N6	-
250	17	10	250N76	-
250	11	16	250N6	-
280	17	10	280N76	-
280	11	16	280N6	-
315	17	10	315N76	-
315	11	16	315N6	-
355	17	10	355N76	-
355	11	16	355N6	-
400	17	10	400N76	-
400	11	16	400N6	-
450	17	10	450N76	-
450	11	16	450N6	-
500	17	10	500N76	-
500	11	16	500N6	-
560	17	10	560N76	-
560	11	16	560N6	-
630	17	10	630N76	-
630	11	16	630N6	-

¹ Maximum operating pressure

Polyethylene pipe systems

Pipe

Water pipe

PE 80 medium density light blue pipe

Below ground for potable water

- Coiled pipe sizes: 20mm to 63mm
- Straight pipe sizes: 63mm



Nominal size O/D mm	SDR Rating	MOP ¹ bar	Product Code Based on 6m length	Product Code Based on 100m coil
20	9	12.5	-	20MC
25	11	12.5	-	25MC
32	11	12.5	-	32MC
50	11	12.5	-	50MC
63	11	12.5	63M6	63MC

PE 100 high performance dark blue pipe

Below ground for potable water

- Coiled pipe sizes: 90mm to 180mm
- Straight pipe sizes: 90mm to 630mm



Nominal size O/D mm	SDR Rating	MOP ¹ bar	Product Code Based on 6m length	Product Code Based on 100m coil
90	17	10	90H76	90H7C
90	11	16	90H6	90HC
110	17	10	110H76	110H7C
110	11	16	110H6	110HC
125	17	10	125H76	125H7C
125	11	16	125H6	125HC
140	17	10	140H76	140H7C
160	17	10	160H76	160H7C
160	11	16	160H6	160HC
180	17	10	180H76	180H7C
180	11	16	180H6	180HC
200	17	10	200H76	-
200	11	16	200H6	-
225	17	10	225H76	-
225	11	16	225H6	-
250	17	10	250H76	-
250	11	16	250H6	-
280	17	10	280H76	-
280	11	16	280H6	-
315	17	10	315H76	-
315	11	16	315H6	-
355	17	10	355H76	-
355	11	16	355H6	-
400	17	10	400H76	-
400	11	16	400H6	-
450	17	10	450H76	-
450	11	16	450H6	-
500	17	10	500H76	-
500	11	16	500H6	-
560	17	10	560H76	-
560	11	16	560H6	-
630	17	10	630H76	-
630	11	16	630H6	-

¹ Maximum operating pressure

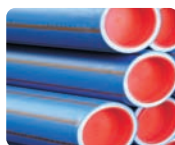
Polyethylene pipe systems

Water pipe

PE 100 high performance ProFuse pipe

Below ground for potable water^(a)

- Coiled pipe sizes: 75mm to 180mm
- Straight pipe sizes: 75mm to 630mm



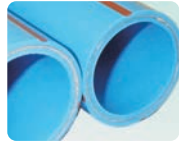
Nominal size O/D mm	SDR Rating	MOP ¹ bar	Product Code Based on 6m length	Product Code Based on 100m coil
75	17	10	75PR76	75PR7C
90	17	10	90PR76	90PR7C
90	11	16	90PR6	90PRC
110	17	10	110PR76	110PR7C
110	11	16	110PR6	110PRC
125	17	10	125PR76	125PR7C
125	11	16	125PR6	125PRC
160	17	10	160PR76	160PR7C
160	11	16	160PR6	160PRC
180	17	10	180PR76	180PR7C
180	11	16	180PR6	180PRC
225	17	10	225PR76	-
225	11	16	225PR6	-
250	17	10	250PR76	-
250	11	16	250PR6	-
315	17	10	315PR76	-
315	11	16	315PR6	-
355	17	10	355PR76	-
355	11	16	355PR6	-
400	17	10	400PR76	-
400	11	16	400PR6	-
450	17	10	450PR76	-
450	11	16	450PR6	-
500	17	10	500PR76	-
500	11	16	500PR6	-
560	17	10	560PR76	-
560	11	16	560PR6	-
630	17	10	630PR76	-
630	11	16	630PR6	-

^(a) ProFuse pipe can be manufactured in different colours for other applications. Please contact Radius Systems for further details.

¹ Maximum operating pressure

Puriton barrier pipe

Below ground use for the conveyance of potable water in contaminated land



- Coiled pipe sizes: 25mm to 180mm
- Straight pipe sizes: 63mm to 180mm

Nominal size O/D mm	SDR Rating	Product Code Based on 6m length	Product Code Based on 50m coil
25	11	25PU6	25PUL
32	11	32PU6	32PUL
63	11	63PU6	63PUL
90	11	90PU6	90PUL
110	11	110PU6	110PUL
180	17	180PU6	180PUL

In order to guarantee the barrier properties of our pipe system, only Radius Systems approved Puriton fittings should be used with our Puriton pipe

Polyethylene pipe systems

Fittings

Puriton fittings

25 and 32mm fittings

Couplers



Size	Product Code	Pack Quantity
25mm	25PU01	1
32mm	32PU01	1

Transition couplers



Size	Product Code	Pack Quantity
25mm x $\frac{3}{4}$ " MBSP	25PU06	1
32mm x 1" MBSP	32PU06	1

Equal tees



Size	Product Code	Pack Quantity
25mm	25PU24E	1
32mm	32PU24E	1

90° elbows



Size	Product Code	Pack Quantity
25mm	25PU12E	1
32mm	32PU12E	1

63 to 180mm Redman fittings

Couplers



Size mm	Product Code	Pack Quantity
63	63PU01	1
90	90PU01	1
110	110PU01	1
180	180PU01	1

Flange adaptors



Size mm	Product Code	Pack Quantity
63 x DN50 ²	63PU50A	1
63 x DN80 ²	63PU80A	1
90 x DN80 ²	90PU80A	1
110 x DN100 ²	110PU100A	1
180 x DN 150 ²	180PU150A	1

Equal tees



Size mm	Product Code	Pack Quantity
63	63PU24E	1
90	90PU24E	1
110	110PU24E	1
180	180PU24E	1

² BS4504 NP16. Flanges are supplied with EPDM sealing gasket. Bolt sets are not supplied

Polyethylene pipe systems

Puriton fittings

63 to 110mm Redman fittings

Flange branch tees



Size mm	Product Code	Pack Quantity
63 x DN80 ²	63PU25P	1
90 x DN80 ²	90PU25P	1
110 x DN80 ²	110PU25P	1
180 x DN80 ²	180PU25P	1
180 x DN100 ²	180PU26P	1

Elbows



Size mm	Product Code	Pack Quantity
63 x 90°	63PU12E	1
90 x 90°	90PU12E	1
110 x 90°	110PU12E	1
180 x 90°	180PU12E	1
63 x 45°	63PU21E	1
90 x 45°	90PU21E	1
110 x 45°	110PU21E	1
180 x 45°	180PU21E	1

Reducers



Size mm	Product Code	Pack Quantity
90 x 63	90PU06	1
110 x 90	110PU06	1

Adapters



Size	Product Code	Pack Quantity
63mm x 1 1/2" FBSP / 2" MBSP	63PU06	1

Repair couplers



Size mm	Product Code	Pack Quantity
63	63PU02	1
90	90PU02	1
110	110PU02	1
180	180PU02	1

Polyethylene pipe systems

Puriton fittings

63 to 110mm Redman fittings

Hydrant duckfoot bends



Size mm	Product Code	Pack Quantity
63 x DN80 ²	63PUHBK	1
90 x DN80 ²	90PUHBK	1
110 x DN80 ²	110PUHBK	1
180 x DN80 ²	180PUHBK	1

Tapping tees



Size mm	Product Code	Pack Quantity
63 x 25	63PU13	1
90 x 25	90PU13	1
110 x 25	110PU13	1
180 x 25	180PU13	1
63 x 32	63PU14	1
90 x 32	90PU14	1
110 x 32	110PU14	1
180 x 32	180PU14	1

² BS4504 NP16. Flanges are supplied with EPDM sealing gasket. Bolt sets are not supplied

Puriton jointing equipment and ancillaries

Description	Product code
Hydraulic pump	PU002
5 litre oil container	PU001
$\frac{3}{8}$ A/F hexagonal T key	PU003
Deburring tool (for all pipe sizes)	PU004
25mm pipe rerounding & deburring tool	PU006
32mm pipe rerounding & deburring tool	PU007
Marker tape for buried pipe (365m x 150mm)	PU005

Polyethylene pipe systems

7 bar gas fittings

The fittings in this section have been specifically tested for use with our PE 100 7 bar orange pipe. The electrofusion and spigot end fittings are supplied in either PE 80 yellow or PE 100 black material.

For electrofusion and butt fusion fittings compatible with all other gas pipes, please refer to the next sections from page 38 onwards.**

Couplers



Size mm	Product Code	Voltage
63	63GT01	40
90	90GT01	40
125	125GT01	40
180	180GT01	40
250	250GT01	40
315	315GT01	80

Elbows 90°



Size mm	Product Code	Voltage
63	63GT12E	40
90	90GT12E	40
125	125GT12E	40
180	180GT12E	40

**These fittings can also be supplied for use at pressures up to 10bar in accordance with EN1555, please contact us for details

Elbows 45°



Size mm	Product Code	Voltage
63	63GT21E	40
90	90GT21E	40
125	125GT21E	40
180	180GT21E	40

Reducers



Size mm	Product Code	Voltage
90 x 63	90GT06	40
125 x 63	125GT066	40
125 x 90	125GT06	40
180 x 125	180GT06	40
250 x 180	250GT06	40
315 x 250	315GT06	80

Tapping tees 63mm outlet



Size mm	Product Code	Voltage
63	63GT15	40
90	90GT15	40
125	125GT15	40
180	180GT15	40
250 / 315	250GT15	40

7 bar fittings above 315mm available on request. Please contact our Customer Services department for details

Polyethylene pipe systems

7 bar gas fittings

Equal tees



Size mm	Product Code	Voltage
63	63GT24E	40
90	90GT24E	40
125	125GT24E	40
180	180GT24E	40

End caps



Size mm	Product Code	Voltage
63	63GT62	40
90	90GT62	40
125	125GT62	40
180	180GT62	40

Swept bends



90° bend

Size mm	Product Code
180	180GT90
250	250GT90
315	315GT90

Swept bends

45° bend



Size mm	Product Code
180	180GT45
250	250GT45
315	315GT45

22 ?° bend

Size mm	Product Code
180	180GT22
250	250GT22
315	315GT22

11 ?° bend

Size mm	Product Code
180	180GT11
250	250GT11
315	315GT11

7 bar fittings above 315mm available on request.
Please contact our Customer Services department for details

Polyethylene pipe systems

Electrofusion fittings

The fittings in this section are suitable for low pressure gas applications and potable and non potable water distribution. Electrofusion and spigot end fittings for gas networks are supplied either in PE 80 yellow or PE 100 black material.

Couplers



Size mm	Control box requirements		Yellow PE 80 Black PE 100 Gas	Black PE 100 All purpose Water
	Gas	Water	Product code	Product code
20	40V	40V	20G01	20B01
25	40V	40V	25G01	25B01
32	40V	40V	32G01	32B01
40	40V	40V	40G01	40B01
55	40V	40V	55G01	-
63	40V	40V	63G01	63B01
75	40V	40V	75G01	75B01
90	40V	40V	90G01	90B01
110	40V	40V	110G01	110B01
125	40V	40V	125G01	125B01
140	40V	40V	140G01	140B01
160	-	40V	-	160B01
180	40V	40V	180G01	180B01
200	-	40V	-	200B01
225	40V	40V	-	225B01
250	40V	40V	250G01	250B01
280	40V	40V	280G01	280B01
315	40V	40V	315G01	315B01
355	80V	80V	355G01	355B01
400	80V	80V	400G01	400B01
450 ³	80V	80V	450G01	450B01
500 ³	80V	80V	500G01	500B01
560 ³	-	80V	-	560B01
630 ^{3,4}	80V	80V	630G01	630B01
710 ^{3,4}	-	80V	-	710B01

³ A compatible control box is required for these fittings. Such boxes will carry a sticker to indicate that they have been designed for use in welding these fittings. Operatives involved in the installation of large diameter Easigrip couplers need to complete a training course before making their first installation. Please contact your Regional Sales Manager for further details.



⁴ Please contact Radius Systems for details of current approved suppliers of installation equipment

Equal tees



Size mm	Yellow PE 80 Gas Product code	Black PE 100 All purpose Water Product code	Voltage
20	20G24E	20B24E	40V
25	25G24E	25B24E	40V
32	32G24E	32B24E	40V
40	40G24E	40B24E	40V
63	63G24E	63B24E	40V
75	75G24E	75B24E	40V
90	90G24E	90B24E	40V
110	110G24E	110B24E	40V
125	125G24E	125B24E	40V
140	140G24E	-	40V
160	-	160B24E	40V
180	180G24E	180B24E	40V

Black equal tees

In order to operate at up to 16 bar working pressure, the spigot branch **MUST** be jointed using Radius Systems (16 bar) electrofusion couplers. The spigot branch can be jointed by electrofusion or butt fusion for working pressures up to 12 bar.

Reduced tees

Size mm	Dark blue PE 100 Water	Pressure Bar	Voltage
160 x 90	16090H24E	16	40V
180 x 90	18090H24E	16	40V

Polyethylene pipe systems

Electrofusion fittings

Unifit tapping tees for gas

32mm and 63mm outlets



The Radius Systems Unifit range of tapping tees provides a flexible approach to reducing the number of tapping tees required to accommodate installations over the whole range of pipe diameters and wall thicknesses. The Unifit tapping tees are available in PE 80 yellow for gas distribution and PE 100 black for all water applications.

Size	Outlet size mm	Yellow PE 80 Gas Product code	Voltage
40mm	32	40G14	40v
55mm	32	55G14	40V
63mm & 2"	32	63G14	40V
75mm	32	75G14	40V
90mm & 3"	32	90G14	40V
110 - 140mm & 4"	32	125G14	40V
160 - 213mm & 6"	32	180G14	40V
8"	32	8G14	40V
225 - 280mm	32	250G14	40V
315 - 400mm	32	315G14	40V
450 to 500mm	32	450G14	40V
63mm & 2"	63	63G15	40V
75mm	63	75G15	40V
90mm & 3"	63	90G15	40V
110mm	63	110G15	40V
125mm & 4"	63	125G15	40V
140 - 180mm & 6"	63	180G15	40V
213 - 250mm & 8"	63	250G15	40V
268 - 315mm	63	315G15	40V
355 - 469mm	63	400G15	40V
500mm	63	500G15	40V

Unifit tapping tees for water
32mm and 63mm outlets



Size	Outlet size mm	Black PE 100 All Purpose Water Product code	Voltage
63mm	32	63B14	40V
75mm	32	75B14	40V
90mm	32	90B14	40V
110 - 140mm	32	110B14	40V
160 - 180mm	32	160B14	40V
200 - 250mm	32	200B14	40V
280 - 355mm	32	280B14	40V
400 - 500mm	32	400B14	40V
63mm	63	63B15	40V
90mm	63	90B15	40V
110 - 125mm	63	110B15	40V
140mm	63	140B15	40V
160 - 180mm	63	160B15	40V
200mm	63	200B15	40V
225 - 280mm	63	225B15	40V
315 - 355mm	63	315B15	40V
400 - 450mm	63	400B15	40V

Polyethylene pipe systems

Electrofusion fittings

QuickTee

20mm and 25mm outlets



The new QuickTee from Radius Systems is a technologically advanced electrofusion fitting developed to bring substantial time and cost savings in both gas and water service connection operations.

- Single welding operation
- Ready-to-weld outlet
- Integrated clamping mechanism
- Fewer joints in the system
- Less risk of leakages
- Unifit range rated bases

Size	Outlet size mm	Yellow PE 80 Product code	Voltage
63mm	20	63G12QT	40v
75mm	20	75G12QT	40V
90mm	20	90G12QT	40V
110mm - 140mm	20	110G12QT	40V
160mm - 180mm	20	160G12QT	40V
63mm	25	63G13QT	40V
75mm	25	75G13QT	40V
90mm	25	90G13QT	40V
110mm - 140mm	25	110G13QT	40V
160mm - 180mm	25	160G13QT	40V

Size	Outlet size mm	Black PE 80 Product code	Voltage
63mm	20	63B12QT	40v
75mm	20	75B12QT	40V
90mm	20	90B12QT	40V
110mm - 140mm	20	110B12QT	40V
160mm - 180mm	20	160B12QT	40V
63mm	25	63B13QT	40V
75mm	25	75B13QT	40V
90mm	25	90B13QT	40V
110mm - 140mm	25	110B13QT	40V
160mm - 180mm	25	160B13QT	40V

Purge & Bypass Tee

32mm & 63mm outlets

The new Purge & Bypass tee from Radius Systems is an innovative solution to making a safe, quick and easy connection for purge and pressure points and temporary bypass loops for polyethylene pressure pipes.

- Factory fabrication
- Unifit range rated bases
- Small in size
- No heat / non sparking closure caps
- No 'snatch' operation required



Size	Outlet size mm	Yellow PE 80 Gas Product code	Voltage
40mm	32	40G14PT	40v
55mm	32	55G14PT	40V
63mm & 2"	32	63G14PT	40V
75mm	32	75G14PT	40V
90mm & 3"	32	90G14PT	40V
110mm - 140mm & 4"	32	125G14PT	40V
160mm - 213mm & 6"	32	160G14PT	40V
8"	32	8G14PT	40V
225mm - 280mm	32	225G14PT	40V
315mm - 400mm	32	315G14PT	40V
450mm - 500mm	32	450G14PT	40V

Tooling for Purge & Bypass Tee

A reusable thread adaptor is required to adapt existing purge pipes, pressure points and bypass equipment to this new tapping tee. Our reusable adaptor converts the thread on the tapping tee outlet into a female BSP thread form.

Description	Product code
32mm x 1" BSP-F adaptor	01G14PT
Tee key	03G14PT

Please contact us for details of the full range, including 63mm sizes, and for instructions in the use of product.

Polyethylene pipe systems

Electrofusion fittings



Underclamp tapping tees

The Radius Systems underclamp tapping tees have been designed for under pressure service connection for gas and water pipe systems. Simple and easy to install, the fitting incorporates its own integral cutter and no loading equipment is required as wrap around clamps are already fitted on the tapping tees.

Size mm	Outlet size mm	Black PE 100 All purpose Water Product code	Voltage
40	20	40B12U	40V
50	20	50B12U	40V
63	20	63B12U	40V
75	20	75B12U	40V
90	20	90B12U	40V
110	20	110B12U	40V
160	20	160B12U	40V
40	25	40B13U	40V
50	25	50B13U	40V
63	25	63B13U	40V
75	25	75B13U	40V
90	25	90B13U	40V
110	25	110B13U	40V
160	25	160B13U	40V
40	32	40B14U	40V
50	32	50B14U	40V
63	32	63B14U	40V
75	32	75B14U	40V
90	32	90B14U	40V
110	32	110B14U	40V
160	32	160B14U	40V

Elbows 45°



Size mm	Yellow PE 80 Gas Product code	Black PE 100 All purpose Water Product code	Voltage
63	63G21E	63B21E	40V
75	75G21E	75B21E	40V
90	90G21E	90B21E	40V
110	110G21E	110B21E	40V
125	125G21E	125B21E	40V
160	-	160B21E	40V
180	180G21E	180B21E	40V

Elbows 90°



Size mm	Yellow PE 80 Gas Product code	Black PE 100 All purpose Water Product code	Voltage
20	20G12E	-	40v
25	25G12E	25B12E	40V
32	32G12E	32B12E	40V
40	40G12E	40B12E	40V
63	63G12E	63B12E	40V
75	75G12E	75B12E	40V
90	90G12E	90B12E	40V
110	110G12E	110B12E	40V
125	125G12E	125B12E	40V
160	-	160B12E	40V
180	180G12E	180B12E	40V

Polyethylene pipe systems

Electrofusion fittings

End caps



Size mm	Yellow PE 80 Gas Product code	Black PE 100 All purpose Water Product code	Voltage
20	20G62	20B62	40V
25	25G62	25B62	40V
32	32G62	32B62	40V
40	40G62	40B62	40V
55	55G62	-	40V
63	63G62	63B62	40V
75	75G62	-	40V
90	90G62	90B62	40V
110	110G62	110B62	40V
125	125G62	125B62	40V
140 ⁵	140G62	-	40V
160	-	160B62	40V
180	180G62	180B62	40V
200	-	200B62	40V

⁵ These fittings are supplied in kit form

Reducers



Size mm	Yellow PE 80 Gas Product code	Black PE 100 All purpose Water Product code	Voltage
25 x 20	25G06	25B06	40V
32 x 20	32G066	32B066	40V
32 x 25	32G06	32B06	40V
40 x 32	40G06	40B06	40V
63 x 32	63G0666	63B0666	40V
63 x 40	63G066	63B066	40V
63 x 55	63G06666	-	40V
75 x 63	75G06	-	40V
90 x 63	90G066	90B066	40V
90 x 75	90G06	90B06	40V
110 x 63	110G066	110B066	40V
110 x 90	110G06	110B06	40V
125 x 63	125G066	125B066	40V
125 x 90	125G06	125B06	40
125 x 110	125G0666	-	40V
140 x 125 ⁵	140G06	-	40V
180 x 125	180G06	180B06	40V
180 x 140	180G066	-	40V
250 x 180	250G06	250B06	40V
280 x 250 ⁵	280G06	-	40V
315 x 250	315G06	315B06	80V
315 x 280	315B066	315B066 ⁵	40V
$\frac{3}{4}$ x 20	34G0666	-	40V
$\frac{3}{4}$ x 25	34G066	-	40V
$\frac{3}{4}$ x 32	34G06	-	40V
1" x 32	1G06	-	40V
2" x 63	2G06	-	40V
3" x 90	3G06	-	40V
4" x 125	4G06	-	40V
6" x 180	6G06	-	40V

Polyethylene pipe systems

Electrofusion fittings

Branch saddles - flanged outlet



Size mm	Yellow PE 80 Gas Product code	Black PE 100 All purpose Water Product code
125 x DN80	125G18	-
180 x DN 100	180G19	-

Branch saddles

UPLUS has been set up as a specialist service by Radius Systems in the UK & Ireland to help take care of the more complicated tasks. Services include installation of branch saddles and completing live gas connections in full compliance with industry legislative and health & safety requirements.

We are the first supplier in the gas industry to be accredited under the **Gas Industry Registration Scheme (GIRS)** to fit under pressure branch saddles and we also offer our services to the water industry.

If you would like more information and prices for our services, please call us on **+44 (0)1773 582312**.



Branch saddle connections - 90mm to 250mm outlets

Size mm	Outlet type	Pressure Rating	
		Gas bar	Water bar
90 x 90mm	Flanged or spigot	6	12.5
110 x 90mm	Flanged or spigot	6	12.5
125 x 90mm	Flanged or spigot	6	12.5
160 x 90mm	Flanged or spigot	6	12.5
160 x 110mm	Flanged or spigot	6	12.5

Branch saddles

Branch saddle connections - 90mm to 250mm outlets (cont/...)

Size mm	Outlet type	Pressure Rating Gas bar	Water bar
180 x 90mm	Flange or spigot	6	12.5
180 x 110mm	Flange or spigot	6	12.5
180 x 125mm	Flange or spigot	6	12.5
200 x 90mm	Flange or spigot	6	12.5
225 x 90mm	Flange or spigot	6	12.5
225 x 100mm	Flange or spigot	6	12.5
250 x 90mm	Flange or spigot	7	16
250 x 100mm	Flange	6	12.5
250 x 150mm	Flange	4	16
250 x 200mm	Flange	6	12.5
280 x 90mm	Flange or spigot	7	16
315 x 90mm	Flange or spigot	7	16
315 x 150mm	Flange	4	16
315 x 250mm	Flange	6	12.5
355 x 90mm	Flange or spigot	7	16
355 x 150mm	Flange	2	N/A
355 x 250mm	Flange	6	12.5
400 x 90mm	Flange or spigot	7	16
400 x 150mm	Flange	2	N/A
400 x 250mm	Flange	6	12.5
450 x 90mm	Flange or spigot	7	16
450 x 150mm	Flange	2	NA
450 x 250mm	Flange	6	8
500 x 90mm	Flange or spigot	7	16
500 x 150mm	Flange	2	N/A
500 x 250mm	Flange	6	8
560 x 90mm	Flange or spigot	7	16
630 x 90mm	Flange or spigot	N/A	16
630 x 150mm	Flange	2	N/A

Hydrant bend packs

PE 100 dark blue and ProFuse material

Size mm	Content	Product code
90 x DN80	1 x 90mm duckfoot bend 2 x 90mm electrofusion couplers 1 x 90mm bolt located flanged NP 16 riser	90HBK
110 x DN80	1 x 90mm duckfoot bend 1 x 90mm electrofusion coupler 1 x 90mm bolt located flanged NP 16 riser 1 x 110 x 90mm electrofusion reducer	110HBK
125 x DN80	1 x 90mm duckfoot bend 1 x 90mm electrofusion coupler 1 x 90mm bolt located flanged NP 16 riser 1 x 125 x 90mm electrofusion reducer	125HBK
160 x DN80	1 x 90mm duckfoot bend 2 x 90mm electrofusion coupler 1 x 90mm bolt located flanged NP 16 riser 1 x 160 x 90mm spigot reducer 1 x 160mm electrofusion coupler	160HBK
180 x DN80	1 x 90mm duckfoot bend 2 x 90mm electrofusion coupler 1 x 90mm bolt located flanged NP 16 riser 1 x 180 x 90mm spigot reducer 1 x 180mm electrofusion coupler	180HBK

All hydrant packs are suitable for operations up to 16 bar

All hydrant packs are supplied with Rilsan coated backing plate, nuts, bolts washers and gaskets. Please advise the material required for the riser section (PE 100 dark blue or ProFuse).



Polyethylene pipe systems

Electrofusion fittings

Hydrant tee packs

PE 100 dark blue and ProFuse material

Size mm	Content	Product code
90 x DN80	1 x 90mm electrofusion tee 1 x 90mm electrofusion couplers 1 x 90mm bolt located flanged NP 16 riser	90HTK
110 x DN80	1 x 110mm electrofusion tee 1 x 90mm bolt located flanged NP 16 riser 1 x 110 x 90mm electrofusion reducer	110HTK
125 x DN80	1 x 125mm electrofusion tee 1 x 90mm bolt located flanged NP 16 riser 1 x 125 x 90mm electrofusion reducer	125HTK
160 x DN80	1 x 160mm electrofusion tee 1 x 90mm bolt located flanged NP 16 riser 1 x 160 x 90mm spigot reducer 1 x 90mm electrofusion coupler	160HTK
180 x DN80	1 x 180 x 180 x 90mm electrofusion tee 1 x 90mm bolt located flanged NP 16 riser 1 x 180 electrofusion coupler	180HTK

All hydrant packs are suitable for operations up to 16 bar

All hydrant packs are supplied with Rilsan coated backing plate, nuts, bolts washers and gaskets. Please advise the material required for the riser section (PE 100 dark blue or ProFuse).



PE 100 fittings for electrofusion or butt fusion jointing

Flange adaptor kits ⁶



Size mm	Yellow PE 80 SDR 11 Gas Product code	Black PE 100 SDR 11 All purpose Water Product code
63 x DN50	6350FAK	-
63 x DN80	6380FAK	FA68
90 x DN80	9080FAK	FA98
90 x DN100	9010FAK	FA910
110 x DN100	110G80A	FA1110
125 x DN100	12510FAK	FA1210
160 x DN150	-	FA1615
180 x DN150	18015FAK	FA1815

⁶ Supplied with NP16 (BS4504) flange

Polyethylene pipe systems

PE 100 fittings for electrofusion or butt fusion jointing

PE 100 ProFuse gas flange adaptors ⁶



Size mm	PE 100 ProFuse Gas Product code
250 x DN200	250Y88P
250 x DN250	250Y80P
315 x DN250	315Y88P
315 x DN300	315Y80P
355 x DN300	355Y80P
355 x DN400	355Y08P
400 x DN400	400Y80P
400 x DN450	400Y08P
450 x DN400	450Y88P
450 x DN450	450Y80P
500 x DN450	500Y88P
500 x DN500	500Y80P

⁶ Supplied with NP16 (BS4504) flange

PE 100 Flange adaptors (ProFuse, Black and Dark Blue materials)

The Radius Systems Flanges provide full end load performance at operating pressures of up to 16 bar across the range. Easy to install, the Radius Systems flange design provides size-for-size through bore connections to corresponding PN16 metal fittings from diameters 90mm through to 630mm without temporary pipe bore reduction.

PE 100 flange adaptors ⁶



Size mm	Black SDR 11 All Purpose Water Product code	ProFuse SDR 11 Water Product code
90 x DN80	90N80P	90PR77
110 x DN100	110N80P	110PR78
125 x DN100	125N80P	125PR79
160 x DN150	160N80P	160PR80
180 x DN150	180N80P	180PR80
200 x DN200	200N80P	200PR81
225 x DN200	225N80P	225PR81
250 x DN250	250N80P	250PR82
315 x DN300	315N80P	315PR83
355 x DN350	355N80P	355PR84
400 x DN400	400N80P	400PR85
450 x DN450	450N80P	450PR85
500 x DN500	500N80P	500PR86
560 x DN600	560N80P	560PR88
630 x DN600	630N80P	630PR88

PE 100 dark blue flange adaptors are also available in the above size range at the same prices. Please contact Radius Systems for further details.



Polyethylene pipe systems

PE 100 fittings for electrofusion or butt fusion jointing

PE 100 flange adaptors ⁶



Size mm	Black SDR 17 All Purpose Water Product Code	ProFuse SDR 17 Water Product Code
90 x DN80	90N780P	90PR777
110 x DN100	110N780P	110PR778
125 x DN100	125N780P	125PR779
160 x DN150	160N780P	160PR780
180 x DN150	180N780P	180PR780
200 x DN200	200N780P	200PR781
225 x DN200	225N780P	225PR781
250 x DN250	250N780P	250PR782
315 x DN300	315N780P	315PR783
355 x DN350	355N780P	355PR784
400 x DN400	400N780P	400PR785
450 x DN450	450N780P	450PR785
500 x DN500	500N780P	500PR786
560 x DN600	560N780P	560PR788
630 x DN600	630N780P	630PR788

PE 100 dark blue flange adaptors are also available in the above size range at the same prices. Please contact Radius Systems for further details.



⁶ Supplied with NP16 (BS4504) flange

PE 100 Special Flanges 6



Size mm	Black SDR 11 All Purpose Water Product Code	ProFuse SDR 11 Water Product Code
250 x DN200	250N81	250PR81
315 x DN250	315N82	315PR82
355 x DN300	355N83	355PR83
400 x DN350	400N84	400PR84
450 x DN400	450N85	450PR85
500 x DN450	500N86	500PR86
560 x DN500	560N87	560PR87

Size mm	Black SDR 17 All Purpose Water Product Code	ProFuse SDR 17 Water Product Code
250 x DN200	250N781	250PR781
315 x DN250	315N782	315PR782
355 x DN300	355N783	355PR783
400 x DN350	400N784	400PR784
450 x DN400	450N785	450PR785
500 x DN450	500N787	500PR786
560 x DN500	560N787	560PR787

PE 100 dark blue flange adaptors are also available in the above size range at the same prices. Please contact Radius Systems for further details.



Polyethylene pipe systems

PE 100 fittings for electrofusion or butt fusion jointing

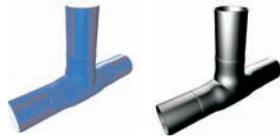
PE 100 ProFUSE gas equal tees ⁷



Size mm	PE 100 ProFUSE Gas Product code
250	250G24P
315	315G24P
355	355G24P
400	400G24P
450	450G24P
500	500G24P
630	630G24P

⁷ Pipped fittings are supplied either in spigot or electrofusion pipped format

PE 100 equal tees 7



Size mm	Black SDR 11 All Purpose Water Product code	ProFuse SDR 11 Water Product code
90	90N24P	90PR24P
110	110N24P	110PR24P
125	125N24P	125PR24P
160	160N24P	160PR24P
180	180N24P	180PR24P
200	200N24P	200PR24P
225	225N24P	225PR24P
250	250N24P	250PR24P
315	315N24P	315PR24P
355	355N24P	355PR24P
400	400N24P	400PR24P
450	450N24P	450PR24P

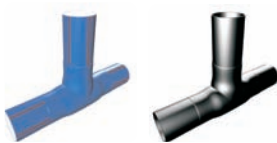
PE 100 dark blue equal tees are also available in the above size range at the same prices. Please contact Radius Systems for further details.



Polyethylene pipe systems

PE 100 fittings for electrofusion or butt fusion jointing

PE 100 equal tees ⁷



Size mm	Black SDR 17 All Purpose Water Product code	ProFuse SDR 17 Water Product code
90	90N724P	90PR724P
110	110N724P	110PR724P
125	125N724P	125PR724P
160	160N724P	160PR724P
180	180N724P	180PR724P
200	200N724P	200PR724P
225	225N724P	225PR724P
250	250N724P	250PR724P
315	315N724P	315PR724P
355	355N724P	355PR724P
400	400N724P	400PR724P
450	450N724P	450PR724P

PE 100 equal tees
flanged branch ^{6 7}



Size mm	Black SDR 11 All Purpose Water Product code	ProFuse SDR 11 Water Product code
90 x DN80	90N25P	90PR25P
110 x DN100	110N25P	110PR25P
125 x DN100	125N25P	125PR25P
160 x DN150	160N25P	160PR25P
180 x DN150	180N25P	180PR25P
200 x DN200	200N25P	200PR25P
225 x DN200	225N25P	225PR25P
250 x DN250	250N25P	250PR25P
315 x DN300	315N25P	315PR25P
355 x DN300	355N25P	355PR25P
400 x DN400	400N25P	400PR25P
450 x DN450	450N25P	450PR25P

⁶ Supplied with NP16 (BS4504) flange

⁷ Pipped fittings are supplied either in spigot or electrofusion pipped format

PE 100 equal tees
flanged branch ⁶⁷



Size mm	Black SDR 17 All Purpose Water Product code	ProFuse SDR 17 Water Product code
90 x DN80	90N725P	90PR725P
110 x DN100	110N725P	110PR725P
125 x DN100	125N725P	125PR725P
160 x DN150	160N725P	160PR725P
180 x DN150	180N725P	180PR725P
200 x DN200	200N725P	200PR725P
225 x DN200	225N725P	225PR725P
250 x DN250	250N725P	250PR725P
315 x DN300	315N725P	315PR725P
355 x DN300	355N725P	355PR725P
400 x DN400	400N725P	400PR725P
450 x DN450	450N725P	450PR725P

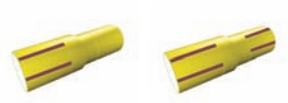
PE 100 dark blue flanged equal tees are also available in the above size range at the same prices. Please contact Radius Systems for further details.



Polyethylene pipe systems

PE 100 fittings for electrofusion or butt fusion jointing

PE 100 ProFuse gas reducers ⁷



Size mm	SDR 21 PE 100 ProFuse to SDR 26 PE 80 Yellow Product code
250 x 213	250G07P
250 x 225	250G707P
250 x 268	268G707P
315 x 268	315G707P

Size mm	PE 100 ProFuse gas Product code
315 x 250	315Y70P
355 x 315	355Y70P
400 x 315	400Y07P
400 x 355	400Y70P
450 x 315	450Y07P
450 x 400	450Y70P
500 x 355	500Y07P
500 x 450	500Y70P
630 x 500	630Y70P

⁷ Pipped fittings are supplied either in spigot or electrofusion pipped format

PE 100 reducers 7



Size mm	Black SDR 11 All Purpose Water Product code	ProFuse SDR 11 Water Product code
110x90	110N07P	110PR07P
125x90	125N07P	125PR07P
160x110	160N07P	160PR07P
180x90	180N077P	180PR077P
180x125	180N07P	180PR07P
250x180	250N07P	250PR07P
315x250	315N07P	315PR07P
355x315	355N07P	355PR07P
400x355	400N07P	400PR07P
450x400	450N07P	450PR07P
500x450	500N07P	500PR07P
560x500	560N07P	560PR07P
630x560	630N07P	630PR07P

Size mm	Black SDR 17 All Purpose Water Product code	ProFuse SDR 17 Water Product code
110x90	110N707P	110PR707P
125x90	125N707P	125PR707P
160x110	160N707P	160PR707P
180x90	180N7077P	180PR7077P
180x125	180N707P	180PR707P
250x180	250N707P	250PR707P
315x250	315N707P	315PR707P
355x315	355N707P	355PR707P
400x355	400N707P	400PR707P
450x400	450N707P	450PR707P
500x450	500N707P	500PR707P
560x500	560N707P	560PR707P
630x560	630N707P	630PR707P

PE 100 dark blue reducers are also available in the above size range at the same prices. Please contact Radius Systems for further details.



Polyethylene pipe systems

PE 100 fittings for electrofusion or butt fusion jointing

PE 100 ProFuse gas end caps

Size mm	PE 100 ProFuse gas Product code
250	250Y62
280	280Y62
315	315Y62
355	355Y62
400	400Y62
450	450Y62
500	500Y62
630	630Y62



PE 100 ProFuse gas reduced tees ⁷

Size mm	PE 100 ProFuse gas (PE 80 branch outlet) Product code
450 x 180	450G180G28
500 x 180	500180G28
630 x 180	630180G28

Size mm	PE 100 ProFuse gas (PE 100 ProFuse branch outlet) Product code
355 x 315	355315Y26P
400 x 315	400315Y26P
450 x 315	450315G28
500 x 315	500315G28
630 x 315	630315G28

⁷ Pipped fittings are supplied either in spigot or electrofusion pipped format

PE 100 reduced tees ⁷



Size mm	Black SDR 11 All Purpose Water Product code	ProFuse SDR 11 Water Product code
110 x 90	11090N26P	11090PR26P
125 x 90	12590N26P	12590PR26P
160 x 110	160110N26P	160110PR26P
180 x 90	18090N26P	18090PR26P
180 x 125	180125N26P	180125PR26P
200 x 160	200160N26P	200160PR26P
250 x 90	25090N26P	25090PR26P
250 x 125	250125N26P	250125PR26P
250 x 180	250180N26P	250180PR26P
315 x 90	31590N26P	31590PR26P
315 x 125	315125N26P	315125PR26P
315 x 180	315180N26P	315180PR26P
315 x 250	315250N26P	315250PR26P
355 x 315	355315N26P	355315PR26P
400 x 355	400355N26P	400355PR26P
450 x 400	450400N26P	450400PR26P

PE 100 dark blue reduced tees are also available in the above size range at the same prices. Please contact Radius Systems for further details.



Polyethylene pipe systems

PE 100 fittings for electrofusion or butt fusion jointing

PE 100 reduced tees 7



Size mm	Black SDR 17 All Purpose Water Product code	ProFuse SDR 17 Water Product code
110 x 90	11090N726P	11090H726P
125 x 90	12590N726P	12590H726P
160 x 110	160110N726P	160110H726P
180 x 90	18090N726P	18090H726P
180 x 125	180125N726P	180125H726P
200 x 160	200160N726P	200160H726P
250 x 90	25090N726P	25090H726P
250 x 125	250125N726P	250125H726P
250 x 180	250180N726P	250180H726P
315 x 90	31590N726P	31590H726P
315 x 125	315125N726P	315125H726P
315 x 180	315180N726P	315180H726P
315 x 250	315250N726P	315250H726P
355 x 315	355315N726P	355315PR726P
400 x 355	400355N726P	400355PR726P
450 x 400	450400N726P	450355PR726P

PE 100 dark blue reduced tees are also available in the above size range at the same prices. Please contact Radius Systems for further details.



PE 100 reduced tees
Flanged branch ^{6 7}



Size mm	Black SDR 11 All Purpose Water Product code	ProFuse SDR 11 Water Product code
110 x DN80	11080N27P	11080PR27P
125 x DN80	12580N27P	12580PR27P
160 x DN100	160100N27P	160100PR27P
180 x DN80	18080N27P	18080PR27P
180 x DN100	180100N27P	180100PR27P
200 x DN150	200150N27P	200150PR27P

Size mm	Black SDR 17 All Purpose Water Product code	ProFuse SDR 17 Water Product code
110 x DN80	11080N727P	11080PR727P
125 x DN80	12580N727P	12580PR727P
160 x DN100	160100N727P	160100PR727P
180 x DN80	18080N727P	18080PR727P
180 x DN100	180100N727P	180100PR727P
200 x DN150	200150N727P	200150PR727P

PE 100 dark blue flanged reduced tees are also available in the above size range at the same prices. Please contact Radius Systems for further details.



⁶ Supplied with NP16 (BS4504) flange

⁷ Pipped fittings are supplied either in spigot or electrofusion pipped format

Polyethylene pipe systems

PE 100 fittings for electrofusion or butt fusion jointing

PE 100 ProFuse gas mitred elbows ⁷

Maximum 2 bar operating pressure



90° mitred elbows

Size mm	PE 100 ProFuse Gas Product code
250	250Y12P
280	280Y12P
315	315Y12P
355	355Y12P
400	400Y12P
450	450Y12P
500	500Y12P
630	630Y12P

45° mitred elbows

Size mm	PE 100 ProFuse Gas Product code
250	250Y21P
280	280Y21P
315	315Y21P
355	355Y21P
400	400Y21P
450	450Y21P
500	500Y21P
630	630Y21P

⁷ Pipped fittings are supplied either in spigot or electrofusion pipped format



22¹/₂° mitred elbows

Size mm	PE 100 ProFuse Gas Product code
250	250Y22P
280	280Y22P
315	315Y22P
355	355Y22P
400	400Y22P
450	450Y22P
500	500Y22P
630	630Y22P

11¹/₄° mitred elbows

Size mm	PE 100 ProFuse Gas Product code
250	250Y11P
280	280Y11P
315	315Y11P
355	355Y11P
400	400Y11P
450	450Y11P
500	500Y11P
630	630Y11P

Polyethylene pipe systems

PE 100 fittings for electrofusion or butt fusion jointing

PE 100 mitred elbows ⁷

90° mitred elbows



Size mm	Black SDR 11 All Purpose Water Product code	ProFuse SDR 11 Water Product code
90	90N12P	90PR12P
110	110N12P	110PR12P
125	125N12P	125PR12P
140	140N12P	140PR12P
160	160N12P	160PR12P
180	180N12P	180PR12P
200	200N12P	200PR12P
225	225N12P	225PR12P
250	250N12P	250PR12P
280	280N12P	280PR12P
315	315N12P	315PR12P
355	355N12P	355PR12P
400	400N12P	400PR12P
450	450N12P	450PR12P
500	500N12P	500PR12P
560	560N12P	560PR12P
630	630N12P	630PR12P

PE 100 dark blue mitred elbows are also available in the above size range at the same prices. Please contact Radius Systems for further details.



⁷ Pipped fittings are supplied either in spigot or electrofusion pipped format

90° mitred elbows 7



Size mm	Black SDR 17 All Purpose Water Product code	ProFuse SDR 17 Water Product code
90	90N712P	90PR712P
110	110N712P	110PR712P
125	125N712P	125PR712P
140	140N712P	140PR712P
160	160N712P	160PR712P
180	180N712P	180PR712P
200	200N712P	200PR712P
225	225N712P	225PR712P
250	250N712P	250PR712P
280	280N712P	280PR712P
315	315N712P	315PR712P
355	355N712P	355PR712P
400	400N712P	400PR712P
450	450N712P	450PR712P
500	500N712P	500PR712P
560	560N712P	560PR712P
630	630N712P	630PR712P

PE 100 dark blue mitred elbows are also available in the above size range at the same prices. Please contact Radius Systems for further details.



Polyethylene pipe systems

PE 100 fittings for electrofusion or butt fusion jointing

PE 100 mitred elbows ⁷

45° mitred elbows



Size mm	Black SDR 11 All Purpose Water Product code	ProFuse SDR 11 Water Product code
90	90N21P	90PR21P
110	110N21P	110PR21P
125	125N21P	125PR21P
140	140N21P	140PR21P
160	160N21P	160PR21P
180	180N21P	180PR21P
200	200N21P	200PR21P
225	225N21P	225PR21P
250	250N21P	250PR21P
280	280N21P	280PR21P
315	315N21P	315PR21P
355	355N21P	355PR21P
400	400N21P	400PR21P
450	450N21P	450PR21P
500	500N21P	500PR21P
560	560N21P	560PR21P
630	630N21P	630PR21P

PE 100 dark blue mitred elbows are also available in the above size range at the same prices. Please contact Radius Systems for further details.



⁷ Pipped fittings are supplied either in spigot or electrofusion pipped format

45° mitred elbows 7



Size mm	Black SDR 17 All Purpose Water Product code	ProFuse SDR 17 Water Product code
90	90N721P	90PR721P
110	110N721P	110PR721P
125	125N721P	125PR721P
140	140N721P	140PR721P
160	160N721P	160PR721P
180	180N721P	180PR721P
200	200N721P	200PR721P
225	225N721P	225PR721P
250	250N721P	250PR721P
280	280N721P	280PR721P
315	315N721P	315PR721P
355	355N721P	355PR721P
400	400N721P	400PR721P
450	450N721P	450PR721P
500	500N721P	500PR721P
560	560N721P	560PR721P
630	630N721P	630PR721P

PE 100 dark blue mitred elbows are also available in the above size range at the same prices. Please contact Radius Systems for further details.



Polyethylene pipe systems

PE 100 fittings for electrofusion or butt fusion jointing

PE 100 mitred elbows ⁷

22½° mitred elbows



Size mm	Black SDR 11 All Purpose Water Product code	ProFuse SDR 11 Water Product code
90	90N22P	90PR22P
110	110N22P	110PR22P
125	125N22P	125PR22P
140	140N22P	140PR22P
160	160N22P	160PR22P
180	180N22P	180PR22P
200	200N22P	200PR22P
225	225N22P	225PR22P
250	250N22P	250PR22P
280	280N22P	280PR22P
315	315N22P	315PR22P
355	355N22P	355PR22P
400	400N22P	400PR22P
450	450N22P	450PR22P
500	500N22P	500PR22P
560	560N22P	560PR22P
630	630N22P	630PR22P

PE 100 dark blue mitred elbows are also available in the above size range at the same prices. Please contact Radius Systems for further details.



⁷ Pipped fittings are supplied either in spigot or electrofusion pipped format

22¹/₂° mitred elbows 7



Size mm	Black SDR 17 All Purpose Water Product code	ProFuse SDR 17 Water Product code
90	90N722P	90PR722P
110	110N722P	110PR722P
125	125N722P	125PR722P
140	140N722P	140PR722P
160	160N722P	160PR722P
180	180N722P	180PR722P
200	200N722P	200PR722P
225	225N722P	225PR722P
250	250N722P	250PR722P
280	280N722P	280PR722P
315	315N722P	315PR722P
355	355N722P	355PR722P
400	400N722P	400PR722P
450	450N722P	450PR722P
500	500N722P	500PR722P
560	560N722P	560PR722P
630	630N722P	630PR722P

PE 100 dark blue mitred elbows are also available in the above size range at the same prices. Please contact Radius Systems for further details.



Polyethylene pipe systems

PE 100 fittings for electrofusion or butt fusion jointing

PE 100 mitred elbows ⁷

11¹/₄°



Size mm	Black SDR 11 All Purpose Water Product code	ProFuse SDR 11 Water Product code
90	90N11P	90PR11P
110	110N11P	110PR11P
125	125N11P	125PR11P
140	140N11P	140PR11P
160	160N11P	160PR11P
180	180N11P	180PR11P
200	200N11P	200PR11P
225	225N11P	225PR11P
250	250N11P	250PR11P
280	280N11P	280PR11P
315	315N11P	315PR11P
355	355N11P	355PR11P
400	400N11P	400PR11P
450	450N11P	450PR11P
500	500N11P	500PR11P
560	560N11P	560PR11P
630	630N11P	630PR11P

PE 100 dark blue mitred elbows are also available in the above size range at the same prices. Please contact Radius Systems for further details.



⁷ Pipped fittings are supplied either in spigot or electrofusion pipped format

11¹/₄° mitred elbows 7



Size mm	Black SDR 17 All Purpose Water Product code	ProFuse SDR 17 Water Product code
90	90N711P	90PR711P
110	110N711P	110PR711P
125	125N711P	125PR711P
140	140N711P	140PR711P
160	160N711P	160PR711P
180	180N711P	180PR711P
200	200N711P	200PR711P
225	225N711P	225PR711P
250	250N711P	250PR711P
280	280N711P	280PR711P
315	315N711P	315PR711P
355	355N711P	355PR711P
400	400N711P	400PR711P
450	450N711P	450PR711P
500	500N711P	500PR711P
560	560N711P	560PR711P
630	630N711P	630PR711P

PE 100 dark blue mitred elbows are also available in the above size range at the same prices. Please contact Radius Systems for further details.



Gravity Sewer & Drainage systems

Radius Systems' Ultra-Rib is a lightweight and easy to joint all socketed thermoplastic gravity system for buried non pressure sewer applications. Designed



with increased circumferential ring stiffness (Class 8 KPa), Ultra-Rib provides improved resistance to pipeline deflection and buckling, and combines the proven benefits and flexibility of thermoplastic materials with a unique design profile.

Applications for the Ultra-Rib system

Ultra-Rib is designed for use in domestic drains, public and private sewers and highway drainage schemes. The system can be used in conjunction with

BS EN1401 pipes and fittings or connected to clay or concrete pipes using adaptors from the Ultra-Rib range.

Benefits of the system

- Robust and light in weight
- All socketed system
- Ease of jointing with high performance sealing ring
- No requirement for pipe end chamfering prior to jointing
- External captive ring seal, securely located between the ribs
- Increased circumferential ring stiffness (Class 8 KPa)
- Excellent flow and self cleansing characteristics
- Equivalent bore size in diameters 150mm, 225mm and 300mm to clay and concrete systems
- Joint flexibility with up to $2\frac{1}{2}^{\circ}$ deflection at each ring seal joint
- Full range of adaptors to alternative materials, uPVC, clay and concrete

Approvals and Industry references

- ➔ WIS 04-35-01
BSI Kitemark licence n°
KM32600
- ➔ Adoptable Sewer &
Drainage BBA 97/3335
- ➔ Highway Drainage
BBA 89/R044
- ➔ Sewers for Adoption
Edition 6
- ➔ Civil Engineering
Specifications for the
Water Industry Edition 5



Installation & Training

Prior to installing the Radius Systems Ultra-Rib sewer system for the first time, it is recommended that training on the correct method of installation should be carried out by all installers. Radius Systems provide a bespoke training course on Ultra-Rib system installation. For further details, please contact us.

Technical support

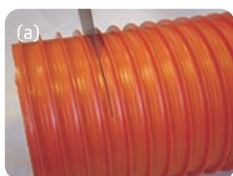
We offer full technical support for all our products. All our technical information, including installation and maintenance guidelines on Ultra-Rib, is available to download from our website. Please visit our website www.radius-systems.com for more details.

Gravity Sewer & Drainage systems

Joining instructions for Ultra-Rib

The Ultra-Rib system uses a spigot end and socket (push-fit) arrangement with a rubber seal to provide leak-tight joint when joining pipe to pipe and pipe to fittings.

Where it is necessary to cut Ultra-Rib pipes, then the pipe should be cut midway between the 2 larger ribs using a general purpose 10 t.p.i hand saw. Make sure that the pipe is cut square using the ribs as a cutting guide. Remove any swarf from the pipe spigot end prior to joining. Chamfering the pipe spigot end is not required.



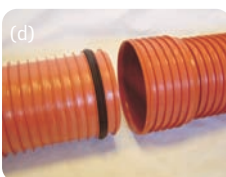
The pipe should be cut between the 2 larger ribs (as indicated using a general purpose 10 t.p.i hand saw



Remove the cutting burr



Place the sealing ring between the 2nd and 3rd ribs from the spigot end of the pipe. Make sure it is correctly positioned and not twisted



Lubricant should be applied to the pipe socket prior to joining

Ultra-Rib

Ultra-Rib pipes are manufactured from unPlasticised Polyvinyl Chloride (uPVC). Ultra-Rib fittings are manufactured from uPVC or Polypropylene (PP) depending on the diameter and component.

Ultra-Rib sealing rings in diameters 150mm, 225mm and 300mm are manufactured from Styrene Butadene Rubber (SBR).

Pipe Weight and Pack quantities

Nominal diameter (mm)	150	225	300
Weight per metre	1.95	5.00	7.80
Pack quantities (lengths)	30	12	9

Ultra-Rib Pipe

Single Socket



Ultra-Rib pipe is supplied in 3m lengths as standard

Size mm	Product Code
150	6U3S
225	9U3S
300	12U3S

Gravity Sewer & Drainage systems

Ultra-Rib Fittings

Couplers - Double Socket



Description	Size mm	Product Code
With central stop	150	6UD
With central stop	225	9UD
With central stop	300	12UD
Without central stop	150	6UDSC
Without central stop	225	9UDSC
Without central stop	300	12UDSC

Short Radius Bends - Double Socket



Description	Size mm	Product Code
90° Bend	225	9U23D
87° Bend	150	6U23D
45° Bend	150	6U25D
45° Bend	225	9U25D
45° Bend	300	12U25D
30° Bend	150	6U27D
30° Bend	225	9U27D
30° Bend	300	12U27D
15° Bend	150	6U29D
15° Bend	225	9U29D
15° Bend	300	12U29D

Equal Junctions - All Socket



Description	Size mm	Product Code
87 $\frac{1}{2}$ ° Junction	150	6U30JD
45° Junction	150	6UJD
45° Junction	225	9UJD
45° Junction	300	12UJD

Unequal Junctions - All Socket



Description	Size mm	Branch Size mm	Product Code
87 $\frac{1}{2}$ ° Junction	150	110	6U4D30
45° Junction	150	110	6U4D33
45° Junction	225	110	9U4D33
45° Junction	225	150	9U6JD
45° Junction	225	160	9U6D33
45° Junction	300	110	12U4D33
45° Junction	300	150	12U6JD
45° Junction	300	160	12U6D33
45° Junction	300	225	12U9JD

Ultra-Rib pipe and fittings are supplied with sealing rings

Gravity Sewer & Drainage systems

Ultra-Rib Fittings

Adaptors



Description	Size mm	Product Code
Adaptor with Ultra-Rib socket to BS EN 1401 spigot - Push fit connection	150	6U71



Description	Size mm	Product Code
Adaptor 150mm Ultra-Rib spigot to 160mm BS EN 1401 socket - Push fit connection	150	6U72



Description	Size mm	Product Code
Adaptor with Ultra-Rib socket to BS EN 1401 socket - Push fit connection	150	6U77

Adaptors



Description	Size mm	Product Code
Adaptor with 150mm Ultra-Rib socket to 150mm Supersleve socket - Push fit connection	150	6U70SS



Description	Size mm	Product Code
Adaptor with 150 Ultra-Rib socket to 150mm Densleeve socket - Push fit connection	150	6U70DS
Adaptor with Ultra-Rib socket to BS EN 1401 clay and concrete socket - Mechanical connection	150	6U70
	225	9U70
	300	12U70

End Caps & Socket Plugs



Description	Size mm	Product Code
End Cap	150	6U68
Socket Plug	225	9U68
Socket Plug	300	12U68

Ultra-Rib pipe and fittings are supplied with sealing rings

Gravity Sewer & Drainage systems

Level Invert Reducers



Description	Size mm	Product Code
150mm x 110mm	150	6U4T
225mm x 150mm	225	9U6T
300mm x 225mm	300	12U9T

Spare Sealing Rings



Size mm	Product Code
150	6U86
225	9U86
300	12U86

Lubricant



Description	Product Code
500g Tub	LUB500

Hot Stuff from Radius Systems!

Ultra Fortis Gravity Sewer Pipe

4000 PSI

JETTING RESISTANCE

Now you can get your hands on the water industry's hottest new product, and the highest performing structured solid wall sewer pipe ever.

Radius Systems Ultra Fortis sets new standards, with its' 4000 psi (280 bar) water jetting damage resistance. This ensures no damage occurs to the pipe when cleaning procedures are not correctly followed.

Light, yet robust, and complete with a full range of fittings, **Ultra Fortis** is easy to joint, has a smooth internal bore for excellent self-cleansing characteristics and offers good impact resistance for reduced breakage on site.

Available in sizes 150mm, 225mm and 300mm.

Visit our website www.radius-systems.com for further details on our Ultra Fortis system.

Contact Information

To enquire about products, availability, delivery and pricing information please contact us at one of our offices and we will be pleased to help you.

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Radius Systems accepts no responsibility arising out of the information supplied which is given in good faith. It remains at all times, the responsibility of the customer to ensure that the pipe system selected is suitable for the particular application intended.