RADIUS SYSTEMS



Polyethylene Pipes

for water, wastewater, gas, power & renewable energy applications

Innovators in pipeline technologies



RADIUS SYSTEMS

WHO WE ARE



First PE pipe supplied by Radius systems 1969

Since 1969, when we supplied the first polyethylene (PE) gas pipe into the UK, we have constantly been at the forefront of innovation, with the development and manufacture of smart and flexbile PE pipeline solutions.

Designed for new infrastructures and for the replacement or rehabilitation of existing pipelines, our pipe range is an innovative offering specifically engineered for the transportation and distribution of gas, water and wastewater. In addition, our PE pipes are the ideal solution for the protection of cables in the power and renewable energy sectors.

Polyethylene is lightweight, does not corrode and is the ideal material for the construction of all pipelines. Polyethylene is inert and offers excellent chemical resistance. It can be successfully combined with other materials such as polypropylene or aluminium to form multi-layer pipes designed for specialist installation techniques or for the protection of drinking water.

One of the other many benefits of polyethylene pipes is that they can be fused together to form a fully welded, one piece pipeline for maximum leak-tightness, with end load bearing properties, overcoming the need for restraints, such as concrete anchor blocks. The longevity and outstanding properties of polyethylene, which include flexibility, durability, smooth internal bore which increases the hydraulic characteristics of pipes, have made it the material of choice for utility companies, specifiers and contractors.

Available in diameters 20 to 1,200 mm in PE80, PE100 or in a multi-layer construction, our pipes are supplied in a wide range of SDRs and pressure ratings to suit your system's requirements and can be installed using open-cut or no-dig installation techniques. Our service and mains pipes are joined using industry standard butt-fusion or electrofusion welding techniques by trained installers.

Manufactured in our ISO 9001:2015 certified production facilities, our PE pipe solutions are approved to the most stringent national and international standards, to deliver a comprehensive service and mains pipe offering for all your pipeline network requirements.



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PIPES FOR DRINKING WATER

POLYETHYLENE WATER PIPES

ENGINEERED PIPE SOLUTIONS FOR MODERN WATER PIPELINE NETWORKS



As well as manufacturing solid wall PE pipes, Radius Systems have developed a state-of-the-art range of multi-layer pipes such as ProFuse®, a unique peelable pipe specially designed for maximum jointing integrity and ideally suited for no-dig installation techniques, and our Puriton® barrier pipe, which is part of an exclusive pipe system designed to protect drinking water through contaminated land.

Pipe type	Application and suitability
Puriton® Barrier pipe	• Barrier pipe for use in contaminated land for the protection of drinking water • Below ground potable water use up to 16 bar • A multi-layer pipe manufactured from PE80 or PE100 with an aluminum barrier layer • Used for new pipelines, network rehabilitation and pipe replacement • Installed using open-cut or suitable no-dig installation techniques
ProFuse® Peelable pipe	• A multi-layer pipe with a peelable outer skin for maximum jointing integrity and installation cost savings • Below ground potable water use up to 16 bar • Used for new pipelines, network rehabilitation and pipe replacement • Ideal for no-dig and open-cut installation techniques
CleanPipe™ Factory sealed coils	• Factory sealed coils to prevent pipe bore contamination • Manufactured from ProFuse® peelable pipe for maximum joint integrity • Below ground potable water use up to 10 bar • Ideal for no-dig and open-cut installation techniques
SC80 light blue Service water pipe	• Service pipe offering manufactured from PE80 with a black inner and a light blue outer • Below ground potable water use up to 12.5 bar • Used for new pipelines, network rehabilitation and pipe replacement • Installed using open-cut or no-dig installation techniques
SC100 dark blue Mains water pipe	• Mains pipe offering manufactured from PE100 with a black inner and a dark blue outer • Below ground potable water use up to 16 bar • Used for new pipelines, network rehabilitation and pipe replacement • Installed using open-cut or no-dig installation techniques

PURITON® BARRIER PIPE



Protecting your drinking water through contaminated land.

The barrier pipe system of choice for your new or replacement potable water supply, Puriton® is the cutting edge solution for the safe distribution of drinking water through contaminated land.

Designed to provide a high level of protection against soil contaminants commonly found in brownfield sites, Puriton® is a multi-layer composite structure pipe, combining the unique characteristics of polyethylene (PE) with the exceptional barrier properties of aluminium (Al).

Specifically designed to offer water companies and developers of new housing, warehouses and industrial buildings on brownfield sites an engineered pipe solution, Puriton® is lightweight, flexible, corrosion resistant and easy to install, without the need to post-wrap the finished joints. The pipe can be joined with our comprehensive range of approved electrofusion and mechanical fittings specifically developed for the Puriton® pipe, to give you the assurance of a safe and durable system that protects your drinking water.

Features and Benefits

- Multi-layer pipe construction PE-Al-PE.
- Brown stripes denote a multi-layer construction.
- Full barrier pipe system.
- Combines the flexibility of polyethylene with the barrier properties of aluminium.
- Safeguards drinking water quality.
- Easy to handle, flexible and lightweight.
- End load resistant system.
- Installation cost savings - no requirement for thrust blocks.
- No requirement to post-wrap the joints.
- Suitable for most installation techniques.
- Suitable for new and replacement drinking water supply systems.

Approvals

- WRAS approved PE80 material.
- BS 8588:2017 for 25 to 180mm pipe.
- WIS 4-32-19* for 25 to 180mm pipe.

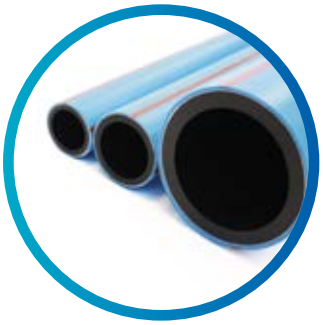
WRAS APPROVED MATERIAL

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KM 592372
KM 672956

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Product Range

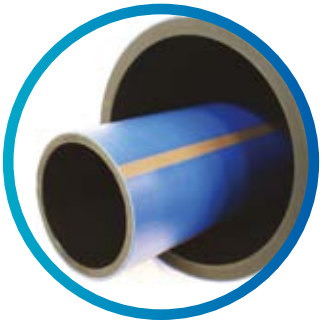


Puriton® service pipe

A 'Type A' pipe, as defined in BS8588 and WIS 4-32-19*.

Available in diameters 25 to 63 mm in coils or in straight lengths, our Puriton® service pipe is manufactured from a black PE80 core, an aluminium barrier layer and a light blue PE80 outer. Quick and easy to join without pipe surface preparation, the Puriton® service pipe uses our range of cutting edge mechanical fittings and Redman™ fittings for our 63 mm pipe.

Nominal diameter	SDR	Pressure rating	Product code straight pipe	Product code coiled pipe			Weight
mm		Bar	6m	25m	50m	100m	kg/m
25	11	12.5	-	-	XQ2528	-	0.3
32	11	12.5	-	-	XQ2535	-	0.5
63	11	12.5	XQ2568	XQ2570	XQ2571	XQ2572	1.5



Puriton® mains pipe

A 'Type A' pipe, as defined in BS8588 and WIS 4-32-19*.

Available in diameters 90 to 180 mm in coils or in straight lengths, our Puriton® mains pipe is manufactured from a black PE100 core, an aluminium barrier layer and a dark blue PE100 outer. Our Puriton® mains pipes are joined using our state-of-the-art range of Redman™ fittings and approved electrofusion fittings, or the butt-fusion jointing technique.

Nominal diameter	SDR	Pressure rating	Product code straight pipe		Product code coiled pipe		Weight
mm		Bar	6m	12m	50m	100m	kg/m
90	11	16	XQ0125	XQ0126	XQ0128	XQ0129	2.8
110	11	16	XQ0233	XQ0235	XQ0236	XQ0237	3.9
125	11	16	XQ0287	XQ0289	XQ0290	XQ0291	5.0
160	11	16	XQ0458	XQ0460	XQ0461	XQ0462	8.0
180	11	16	XQ0530	XQ0532	XQ0534	XQ0535	9.9
90	17	10	XQ0143	XQ0145	XQ0146	XQ0147	2.1
110	17	10	XQ0251	XQ0253	XQ0254	XQ0255	2.9
125	17	10	XQ0305	XQ0307	XQ0308	XQ0309	3.6
160	17	10	XQ0476	XQ0478	XQ0479	XQ0480	5.7
180	17	10	XQ0550	XQ0552	XQ0554	XQ0555	7.1

Note: Pipe weights shown are for lifting and handling purposes. They are based on the maximum diameter and pipe wall thicknesses as specified in BS 8588.

To ensure that the barrier properties of the Puriton® system are maintained, approved Puriton® fittings must be used with Puriton® pipe. The use of non Puriton® fittings may compromise the contamination resistance of the system. Please refer to our Puriton® brochure on how to join Puriton® pipe using our approved fittings. For more details, please contact our customer services team.
e: sales@radius-systems.com** or visit our **website www.radius-systems.com.

* WIS 4-32-19 is now superseded by BS 8588:2017



PROFUSE® PEELABLE PIPE

Maximum jointing integrity for asset longevity and installation cost savings.

ProFuse® is a leading pipe innovation offering a high performance solution with optimum joint integrity, damage protection and reduced installation time and costs to asset owners.

Manufactured from high performance PE100, ProFuse® has been designed with a unique peelable polypropylene skin that offers excellent abrasion resistance and protects the pipe during handling, transportation and installation. The skin, which is applied to the core pipe during the manufacturing process using melt on melt technology, is easily removed using our specially designed pipe exposure tool (PET). Once the skin is removed, the pipe surface is ready to be joined, without the need for further pipe preparation, using electrofusion and butt-fusion welding techniques, as well as our innovative range of Redman™ hydraulic compression fittings or other suitably approved mechanical fittings.

Ideal for open cut, slip lining, horizontal directional drilling and pipe bursting techniques, ProFuse® is a superior pipe solution especially suited to no-dig installation methods, as its tough protective skin absorbs damage normally associated with those installation technologies.

Designed for maximum jointing integrity, ProFuse® is the perfect solution for reduced installation costs, optimum installation quality, system reliability and longevity.

Features and Benefits

- **Optimum joint integrity**
  The peelable skin protects the pipe surface from contamination. Once removed, the pipe surface is in pristine condition, ready for jointing. This provides a high joint quality and maintains the integrity of your asset.

- **Reduced installation time and cost**
  ProFuse® offers reduced pipe preparation time, as the peelable skin is quick and easy to remove when a connection is required - it provides substantial installation time and cost benefits compared to hand scraping, specifically on large diameter pipes.

- **Damage protection**
  Trenchless installation methods such as pipe bursting or directional drilling can often damage the surface of polyethylene pipes. The tough ProFuse® skin protects the core of the pipe offering outstanding abrasion resistance during installation.

- **Designer pipe**
  A variety of pipe sizes, SDRs, pressure ratings and lengths are available to meet your exact project requirements.

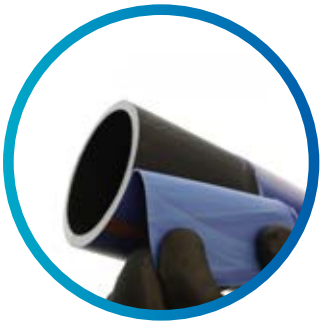
Approvals

- Approved under regulation 31 of the Water Supply (Water Quality) Regulations 2000.
- BS EN 12201-2:2011+A1:2013.

KM 83015

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Product Range



SDR21 available on request

Profuse® pipe

Manufactured in diameters 75 to 630 mm in straight or coiled format, ProFuse® is available in SDR11 and SDR17 as standard. For special projects requiring bespoke pipe diameters, SDRs and lengths, please contact Radius Systems.

Nominal diameter	SDR	Pressure rating	Product code straight pipe		Product code coiled pipe		Weight
mm		Bar	6m	12m	50m	100m	kg/m
90	11	16	VE0125	VE0127	VE0128	VE0129	2.7
110	11	16	VE0233	VE0235	VE0236	VE0237	3.8
125	11	16	VE0287	VE0289	VE0290	VE0291	4.9
160	11	16	VE0458	VE0460	VE0461	VE0462	7.7
180	11	16	VE0530	VE0532	VE0534	VE0535	9.7
200	11	16	VE0607	VE0609	-	-	11.8
225	11	16	VE0711	VE0713	-	-	14.9
250	11	16	VE0766	VE0769	-	-	18.1
280	11	16	VE0879	VE0881	-	-	22.6
315	11	16	VE0985	VE0988	-	-	28.4
355	11	16	VE1044	VE1047	-	-	35.9
400	11	16	VE1104	VE1107	-	-	45.3
450	11	16	VE1219	VE1221	-	-	57.1
500	11	16	VE1327	VE1329	-	-	70.2
560	11	16	VE1383	VE1385	-	-	87.5
75	17	10	VE0108	VE0109	VE0110	VE0111	1.4
90	17	10	VE0143	VE0145	VE0146	VE0147	2.0
110	17	10	VE0251	VE0253	VE0254	VE0255	2.8
125	17	10	VE0305	VE0307	VE0308	VE0309	3.5
140	17	10	VE0359	VE0361	VE0362	VE0363	4.3
160	17	10	VE0476	VE0478	VE0479	VE0480	5.5
180	17	10	VE0550	VE0552	VE0554	VE0555	6.8
200	17	10	VE0621	VE0623	-	-	8.3
225	17	10	VE0725	VE0727	-	-	10.4
250	17	10	VE0784	VE0787	-	-	12.7
280	17	10	VE0895	VE0897	-	-	15.7
315	17	10	VE1003	VE1006	-	-	19.8
355	17	10	VE1062	VE1065	-	-	25.0
400	17	10	VE1122	VE1125	-	-	31.3
450	17	10	VE1235	VE1237	-	-	39.4
500	17	10	VE1343	VE1345	-	-	48.4
560	17	10	VE1399	VE1401	-	-	60.4
630	17	10	VE1455	VE1457	-	-	76.1

Note: Pipe weights shown are for lifting and handling purposes. They are based on the maximum diameter and pipe wall thickness as specified in BS EN 12201.

The Profuse® Pipe Exposure Tool (PET)

The only tool recommended for the quick, simple and safe removal of the ProFuse® skin. The hardened steel blade cuts the ProFuse® skin and lifts its edge to allow easy peeling from the pipe core.

- **Single size tool** for all sizes of ProFuse pipe
- **Spring-loaded blade** to minimise damage to the tip of the blade
- **Direction marking** for clear and simple operation
- **Plastic body** lightweight and durable
- **Sculpted runners** for blade protection and precise one handed control



Product code: FT0648

CLEANPIPE™ FACTORY SEALED



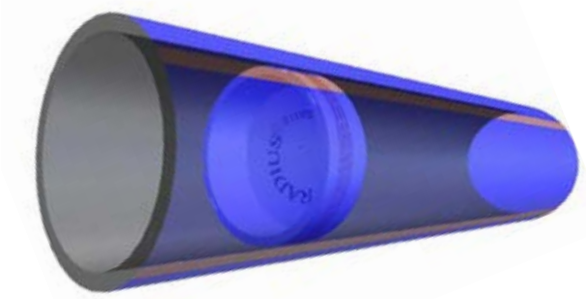
Factory sealed coils for optimum cleanliness.

A leading-edge pipe innovation, CleanPipe™ is Radius Systems' special range of factory sealed coils designed to reduce the risk of contaminants entering the drinking water network from manufacture to the connection point.

CleanPipe™ is fitted with factory fused internal seals, which ensure that the pipe maintains its cleanliness from manufacture through to installation. The seals remove the need for chlorination before the pipe is installed, as they provide a tamper-proof, air and pressure-tight seal solution up to the pipe's point of connection.

CleanPipe™ is ideal for no-dig installation techniques, as the recessed electrofusion seals inserted at both ends of the pipe and fused in place during the manufacturing process, facilitate the use of towing heads for trenchless installation techniques.

CleanPipe™ is available in ProFuse® peelable pipe in diameters 90 to 180 mm for maximum damage protection to the core of the pipe.



Features and Benefits

- **Factory welded internal electrofusion seals**
  Ensure the bore remains clean throughout storage, transportation, until the point of connection.
- **Sealed until connection**
  CleanPipe™ reduces the risk of contamination entering the water network.
- **Pressure and air-tight**
  CleanPipe™ eliminates the need for pre-chlorination before installation.
- **Sealed at both ends**
  The installer can pressure test the pipe directly after installation without the need for additional capping-off.
- **12 month shelf life**
  The internal bore of the pipe remains sterile for 12 months.
- **Ideal for trenchless techniques**
  The external peelable skin offers maximum pipe protection, with the recessed seals giving the ability to use conventional towing heads.

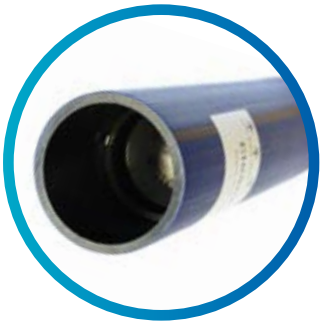
Approvals

- Approved under regulation 31 of the Water Supply (Water Quality) Regulations 2000.
- BS EN 12201-2:2011+A1:2013.

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Product Range

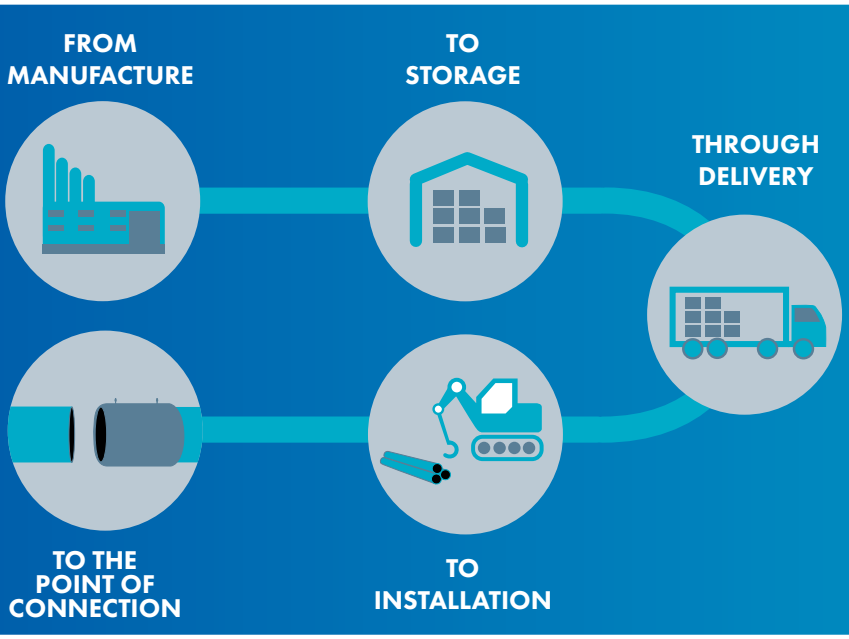


CleanPipe™

Manufactured using ProFuse® SDR17 pipe, CleanPipe™ is available in diameters 90 to 180 mm as standard, in 100m coils for longer, joint free pipeline installation.

Nominal diameter	SDR	Pressure rating	Product code coiled pipe	Weight
mm		Bar	100m	kg/m
90	17	10	VF0147	2.0
125	17	10	VF0309	3.5
180	17	10	VF0555	6.8

Note: Pipe weights shown are for lifting and handling purposes. They are based on the maximum diameter and pipe wall thickness as specified in BS EN 12201.



Guaranteed cleanliness

- CleanPipe™ coils are sealed at both ends of the pipe.
- The internal electrofusion caps are fused during the pipe's manufacturing process in a factory environment.
- CleanPipe™ remains contamination free until the point of connection.
- CleanPipe™ is the ideal solution for use in trenchless pipe installations.

CleanPipe™ shelf life

- CleanPipe's internal bore remains sterile for 12 months from the date of manufacture.
- The coils are individually coded with a month dependent coloured tape to indicate their shelf life. Operators should always check the expiry date shown on the CleanPipe™ label on the pipe coil end.
- If the expiry date passes, the CleanPipe™ seals can be removed and the pipe used as a standard ProFuse® pipe.
- Dated stock encourages good stock rotation.

Example of shelf life coloured tape





SC80 SOLID WALL PE80 PIPE

The flexible service pipe solution for the distribution of drinking water.

Our SC80 (PE80) service pipes are solid wall polyethylene pipes developed as part of Radius Systems' continuous product improvement process.

Manufactured using a specialist co-extrusion technique, the pipes are produced as a single layer pipe wall construction with a black inner and an integral colour coded light blue outer, denoting the pipe's material and application.

Available in diameters 20 to 63 mm in SDR9 and SDR11, our SC80 pipes can be joined using standard electrofusion techniques as well as our unique and innovative range of Redman™ hydraulic compression fittings and suitable mechanical fittings.

Features and Benefits

- Colour coded surface to easily identify the material and its application:
  - PE80 black inner
  - PE80 light blue outer
- Joined using electrofusion and approved mechanical jointing techniques.
- Simple pipe preparation using rotary or hand scraping tools for electrofusion jointing.
- Fully compatible with approved electrofusion, spigot, mechanical and Redman™ fittings.
- Standard and bespoke pipe sizes and SDRs available to meet your specific project requirements.
- Suitable for open-cut and no-dig installation techniques and for use in pipeline rehabilitation projects.
- All pipes supplied with end closures to protect the pipe from dust or rodent ingress from manufacturing to installation.

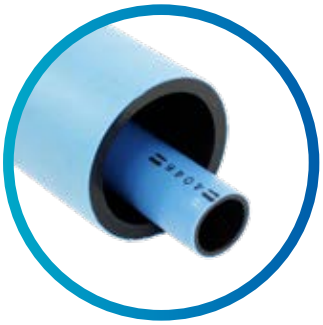
Approvals

- WRAS approved PE80 materials.
- Approved under regulation 31 of the Water Supply (Water Quality) Regulations 2000.
- BS EN 12201-2:2011+A1:2013.

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Product Range

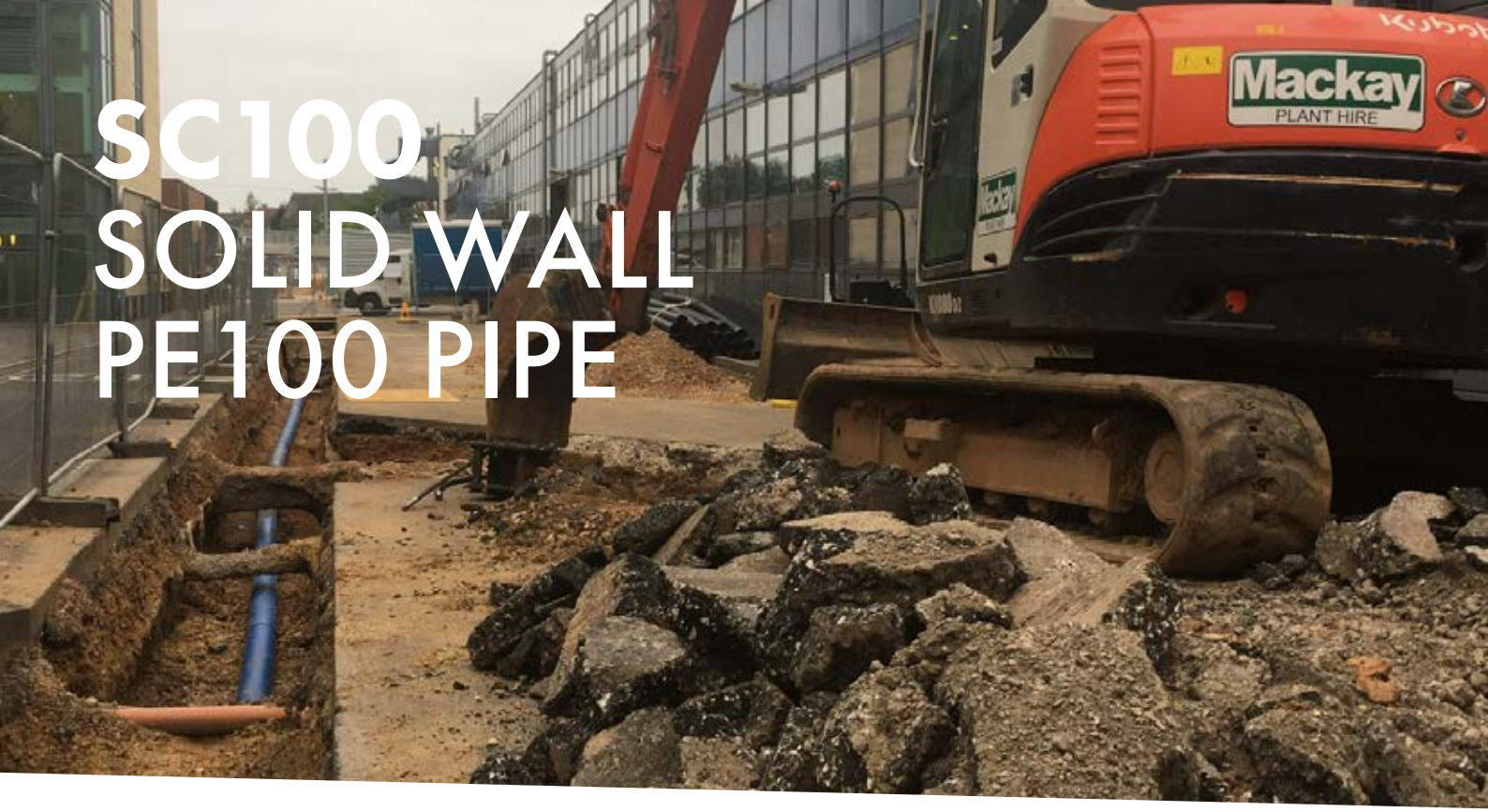


SC80 pipe

Nominal diameter	SDR	Pressure rating	Product code straight pipe	Product code coiled pipe				Weight
mm		Bar	6m	25m	50m	100m	150m	kg/m
20	9	12.5	-	VA0020	VA0021	VA0022	VA0023	0.2
25	11	12.5	-	VA0027	VA0028	VA0029	VA0030	0.2
32	11	12.5	-	VA0034	VA0035	VA0036	VA0037	0.3
40	11	12.5	-	-	-	VA0041	-	0.5
50	11	12.5	VA0049	VA0054	VA0051	VA0052	VA0053	0.7
63	11	12.5	VA0068	VA0070	VA0071	VA0072	VA0073	1.1

Note: Pipe weights shown are for lifting and handling purposes. They are based on the maximum diameter and pipe wall thickness as specified in BS EN 12201.





SC100 SOLID WALL PE100 PIPE

The high performance polyethylene mains pipe offering by Radius.

Our SC100 mains pipes are solid wall polyethylene pipes developed as part of Radius Systems' continuous product improvement process.

Manufactured from high performance PE100 materials using a specialist co-extrusion technique, the pipes are produced as a single layer pipe wall construction with a black inner and an integral colour coded dark blue outer, denoting the pipe's material and application.

Available in diameters 90 to 630mm for water pipeline pressure up to 16 bar, our SC100 pipes can be joined using standard electrofusion and butt-fusion welding techniques as well as our unique and innovative range of Redman™ hydraulic compression fittings and suitable mechanical fittings.

Features and Benefits

- Manufactured from high performance PE100 material.
- Colour coded surface to easily identify the material and its application:
  - PE100 black inner
  - PE100 dark blue outer
- Joined using conventional electrofusion and butt-fusion techniques.
- Simple pipe preparation using rotary or hand scraping tools for electrofusion jointing.
- Fully compatible with approved electrofusion, spigot, mechanical and Redman™ fittings.
- Standard and bespoke pipe sizes and SDRs available to meet your specific project requirements.
- Suitable for open-cut and no-dig installation techniques and for use in pipeline rehabilitation projects.
- All pipes supplied with end closures to protect the pipe from dust or rodent ingress from manufacturing to installation.

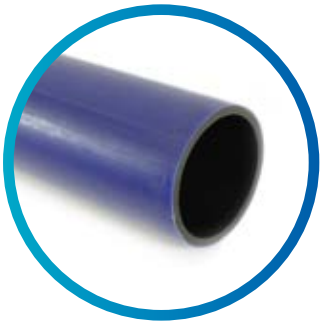
Approvals

- Approved under regulation 31 of the Water Supply (Water Quality) Regulations 2000.
- BS EN 12201-2:2011+A1:2013.
- DVGW - DW-8143CR0347

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Product Range



SDR 21/26 available on request

SC100 pipe

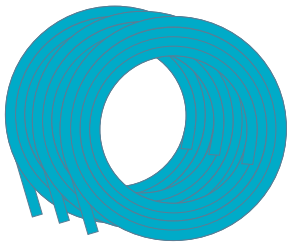
Nominal diameter	SDR	Pressure rating	Product code straight pipe			Product code coiled pipe		Weight
mm		Bar	6m	12m	13.5m	50m	100m	kg/m
90	11	16	VC0125	VC0127	-	VC0128	VC0129	2.3
110	11	16	VC0233	VC0235	-	VC0236	VC0237	3.3
125	11	16	VC0287	VC0289	-	VC0290	VC0291	4.3
160	11	16	VC0458	VC0460	-	VC0461	VC0462	7.1
180	11	16	VC0530	VC0532	-	VC0534	VC0535	9.0
200	11	16	VC0607	VC0609	VC0610	-	-	11.0
225	11	16	VC0711	VC0713	VC0714	-	-	14.0
250	11	16	VC0766	VC0769	VC0770	-	-	17.2
280	11	16	VC0879	VC0881	VC0882	-	-	21.5
315	11	16	VC0985	VC0988	VC0989	-	-	27.2
355	11	16	VC1044	VC1047	VC1048	-	-	34.5
400	11	16	VC1104	VC1107	VC1108	-	-	43.8
450	11	16	VC1219	VC1221	VC1222	-	-	55.5
500	11	16	VC1327	VC1329	VC1330	-	-	68.4
560	11	16	VC1383	VC1385	-	-	-	85.7
630	11	16	VC1439	VC1441	-	-	-	108.6
90	17	10	VC0143	VC0145	-	VC0146	VC0147	1.6
110	17	10	VC0251	VC0253	-	VC0254	VC0255	2.3
125	17	10	VC0305	VC0307	-	VC0308	VC0309	3.0
160	17	10	VC0476	VC0478	-	VC0479	VC0480	4.8
180	17	10	VC0550	VC0552	VC0558	VC0554	VC0555	6.1
200	17	10	VC0621	VC0623	VC0624	-	-	7.5
225	17	10	VC0725	VC0727	VC0728	-	-	9.5
250	17	10	VC0784	VC0787	VC0788	-	-	11.6
280	17	10	VC0895	VC0897	VC0898	-	-	14.6
315	17	10	VC1003	VC1006	VC1007	-	-	18.5
355	17	10	VC1062	VC1065	VC1066	-	-	23.6
400	17	10	VC1122	VC1125	VC1126	-	-	29.7
450	17	10	VC1235	VC1237	VC1238	-	-	37.7
500	17	10	VC1343	VC1345	VC1346	-	-	46.5
560	17	10	VC1399	VC1401	VC1402	-	-	58.3
630	17	10	VC1455	VC1457	-	-	-	73.8

Note: Pipe weights shown are for lifting and handling purposes. They are based on the maximum diameter and pipe wall thickness as specified in BS EN 12201.



Coil pack quantity and dimensions

Coil pack quantity



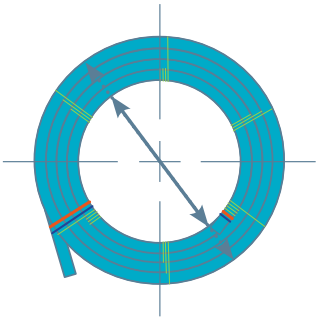
Puriton® pipe

Pipe nominal diameter	Pack quantity	Total pack length	Pack quantity	Total pack length	Pack quantity	Total pack length
mm	25 m	m	50 m	m	100 m	m
25	-	-	6	300	-	-
32	-	-	6	300	-	-
63	6	150	6	300	4	400

SC80 and universal black PE100

Pipe nominal diameter	Pack quantity	Total pack length	Pack quantity	Total pack length	Pack quantity	Total pack length	Pack quantity	Total pack length
mm	25 m	m	50 m	m	100 m	m	150 m	m
20	9	225	9	450	9	900	7	1050
25	10	250	8	400	7	700	5	750
32	8	200	8	400	4	400	4	600
40	-	-	-	-	6	600	5	750
50	9	225	5	250	5	500	4	600
63	9	225	6	300	4	400	3	450

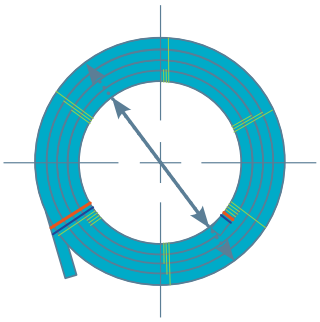
Coil dimensions



Puriton® pipe

Pipe nominal diameter	SDR	Coil length	Coil outer diameter	Coil inner diameter	Coil width	Coil banding sequence	Coil weight
mm		m	mm	mm	mm		kg
25	11	50	965	785	175	-	14.5
32	11	50	1015	785	175	-	22.0
63	11	25	1510	1275	230	•	36.3
63	11	50	1815	1275	208	•	72.5
63	11	100	1815	1275	310	•	145.0
90	11	50	2220	1800	320	•	137.9
90	11	100	2440	1800	410	•	275.7
90	17	50	2930	2500	320	•	102.7
90	17	100	3000	2500	410	•	205.4
110	11	50	3000	2500	320	•	197.1
110	11	100	3200	2500	410	•	394.1
110	17	50	3000	2500	400	•	145.7
110	17	100	3200	2500	500	•	291.4
125	11	50	3000	2500	450	•	251.0
125	11	100	3200	2500	600	•	502.0
125	17	50	3000	2500	450	•	181.6
125	17	100	3200	2500	600	•	363.1
160	11	50	3590	3000	530	•	397.6
160	11	100	3850	3000	700	•	795.2
160	17	50	3590	3000	530	•	284.4
160	17	100	3850	3000	700	•	568.8
180	11	50	3800	3000	630	•	496.3
180	11	100	4000	3000	800	•	992.6
180	17	50	3800	3000	630	•	353.0
180	17	100	4000	3000	800	•	706.0

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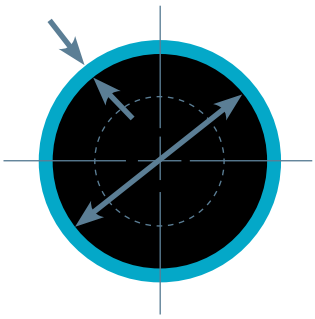


SC80, SC100, universal black PE100 and ProFuse® coil dimensions

Pipe nominal diameter	SDR	Coil length	Coil outer diameter	Coil inner diameter	Coil width	Coil banding sequence	Coil weight SC80 pipe	Coil weight SC100 PE100 pipe	Coil weight ProFuse® pipe
mm		m	mm	mm	mm		kg	kg	kg
20	9	25	710	600	100	-	3.5	3.5	-
20	9	50	780	600	100	-	7.0	7.0	-
20	9	100	885	600	120	-	14.0	14.0	-
20	9	150	885	600	180	-	21.0	21.0	-
25	11	25	740	600	150	-	4.5	4.5	-
25	11	50	780	600	150	-	9.0	9.0	-
25	11	100	910	600	175	-	18.0	18.0	-
25	11	150	910	600	225	-	27.0	27.0	-
32	11	25	875	700	145	-	7.3	7.5	-
32	11	50	990	700	145	-	14.5	15.0	-
32	11	100	990	700	275	-	29.0	30.0	-
32	11	150	1100	700	275	-	43.5	45.0	-
40	11	100	1800	1275	170	-	45.0	-	-
40	11	150	1780	1275	220	-	67.5	-	-
50	11	25	1600	1275	160	•	17.5	17.8	-
50	11	50	1800	1275	220	•	35.0	35.6	-
50	11	100	1880	1275	210	•	70.0	71.2	-
50	11	150	1880	1275	270	•	105.0	106.8	-
63	11	25	1740	1275	130	•	27.5	28.0	-
63	11	50	1815	1275	195	•	55.0	56.0	-
63	11	100	1810	1275	300	•	110.0	112.0	-
63	11	150	2035	1275	345	•	165.0	168.0	-
75	17	50	2220	1800	255	•	-	-	70.0
75	17	100	2220	1800	350	•	-	-	140.0
90	11	50	2220	1800	320	•	-	113.0	135.0
90	11	100	2440	1800	410	•	-	226.0	270.0
90	17	50	2930	2500	320	•	-	77.5	100.0
90	17	100	3000	2500	410	•	-	145.0	200.0
110	11	50	3000	2500	400	•	-	166.5	190.0
110	11	100	3200	2500	500	•	-	333.0	380.0
110	17	50	3000	2500	400	•	-	115.5	140.0
110	17	100	3200	2500	550	•	-	131.0	280.0
125	11	50	3000	2500	450	•	-	216.5	245.0
125	11	100	3200	2500	600	•	-	433.0	490.0
125	17	50	3000	2500	450	•	-	147.0	175.0
125	17	100	3200	2500	600	•	-	294.0	350.0
140	17	50	3530	3000	420	•	-	-	215.0
140	17	100	3700	3000	690	•	-	-	430.0
160	11	50	3590	3000	530	•	-	354.0	385.0
160	11	100	3850	3000	700	•	-	708.0	870.0
160	17	50	3590	3000	530	•	-	241.0	275.0
160	17	100	3850	3000	700	•	-	482.0	550.0
180	11	50	3800	3000	630	•	-	447.0	485.0
180	11	100	4000	3000	800	•	-	894.0	970.0
180	17	50	3800	3000	630	•	-	304.0	340.0
180	17	100	4000	3000	800	•	-	608.0	780.0

Note: The coil banding sequence can be found within this brochure. As part of Radius Systems' commitment to ongoing product development, pipe coil dimensions may be subject to change.

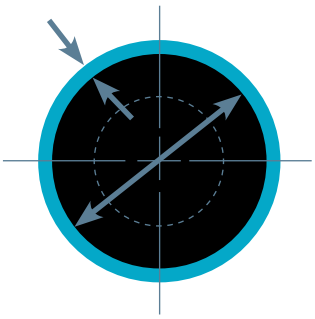
Pipe dimensions



SC80, SC100, universal black PE100 and ProFuse®* pipe dimensions

Nominal diameter	SDR	Outside diameter		Wall thickness		Internal diameter	
		Min	Max	Min	Max	Min	Max
mm		mm	mm	mm	mm	mm	mm
20	9	20.0	20.3	2.3	2.7	14.6	15.7
25	11	25.0	25.3	2.3	2.7	19.6	20.7
32	11	32.0	32.3	3.0	3.4	25.2	26.3
40	11	40.0	40.4	3.7	4.2	31.6	33.0
50	11	50.0	50.4	4.6	5.2	39.6	41.2
63	11	63.0	63.4	5.8	6.5	50.0	51.8
75	11	75.0	75.5	6.8	7.6	59.8	61.9
90	11	90.0	90.6	8.2	9.2	71.6	74.2
110	11	11.0	110.7	10.0	11.1	87.8	90.7
125	11	125.0	125.8	11.4	12.7	99.6	103.0
140	11	140.0	140.9	12.7	14.1	111.8	115.5
160	11	160.0	161.0	14.6	16.2	127.6	131.8
180	11	180.0	181.1	16.4	18.2	143.6	148.3
200	11	200.0	201.2	18.2	20.2	159.6	164.8
225	11	225.0	226.4	20.5	22.7	179.6	185.4
250	11	250.0	251.5	22.7	25.1	199.8	206.1
280	11	280.0	281.7	25.4	28.1	223.8	230.9
315	11	315.0	316.9	28.6	31.6	251.8	259.7
355	11	355.0	357.2	32.2	35.6	283.8	292.8
400	11	400.0	402.4	36.3	40.1	319.8	329.8
450	11	450.0	452.7	40.9	45.1	359.8	370.9
500	11	500.0	503.0	45.4	50.1	399.8	412.2
560	11	560.0	563.4	50.8	56.0	448.0	461.8
75	17	75.0	75.5	4.5	5.1	64.8	66.5
90	17	90.0	90.6	5.4	6.1	77.8	79.8
110	17	110.0	110.7	6.6	7.4	95.2	97.5
125	17	125.0	125.8	7.4	8.3	108.4	111.0
140	17	140.0	140.9	8.3	9.3	121.4	124.3
160	17	160.0	161.0	9.5	10.6	138.8	142.0
180	17	180.0	181.1	10.7	11.9	156.2	159.7
200	17	200.0	201.2	11.9	13.2	173.6	177.4
225	17	225.0	226.4	13.4	14.9	195.2	199.6
250	17	250.0	251.5	14.8	16.4	217.2	221.9
280	17	280.0	281.7	16.6	18.4	243.2	248.5
315	17	315.0	316.9	18.7	20.7	273.6	279.5
355	17	355.0	357.2	21.1	23.4	308.2	315.0
400	17	400.0	402.4	23.7	26.2	347.6	355.0
450	17	450.0	452.7	26.7	29.5	391.0	399.3
500	17	500.0	503.0	29.7	32.8	434.4	443.6
560	17	560.0	563.4	33.2	36.7	486.6	497.0
630	17	630.0	633.8	37.4	41.3	547.4	559.0
710	17	710.0	716.4	42.1	46.5	617.0	632.2
800	17	800.0	807.2	47.4	52.3	695.4	712.4
225	21	225.0	226.4	10.8	12.0	201.0	204.8
250	21	250.0	251.5	11.9	13.2	223.6	227.7
280	21	280.0	281.7	13.4	14.9	250.2	254.9
315	21	315.0	316.9	15.0	16.6	281.8	286.9
355	21	355.0	357.2	16.9	18.7	317.6	323.4
400	21	400.0	402.4	19.1	21.2	357.6	364.2
450	21	450.0	452.7	21.5	23.8	402.4	409.7
500	21	500.0	503.0	23.9	26.4	447.2	455.2
560	21	560.0	563.4	26.7	29.5	501.0	510.0
630	21	630.0	633.8	30.0	33.1	563.8	573.8
710	21	710.0	716.4	33.9	37.4	635.2	648.6
800	21	800.0	807.2	38.1	42.1	715.8	731.0

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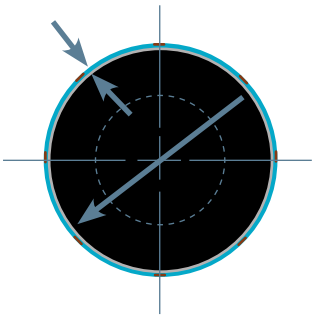
SC80, SC100, universal black PE100 and ProFuse®* pipe dimensions

Nominal diameter	SDR	Outside diameter		Wall thickness		Internal diameter	
		Min	Max	Min	Max	Min	Max
mm		mm	mm	mm	mm	mm	mm
900	21	900.0	908.1	42.9	47.3	805.4	822.3
1000	21	1000.0	1009.0	47.7	52.6	894.8	913.6
315	26	315.0	316.9	12.1	13.5	288.0	292.7
355	26	355.0	357.2	13.6	15.1	324.8	330.0
400	26	400.0	402.4	15.3	17.0	366.0	371.8
450	26	450.0	452.7	17.2	19.1	411.8	418.3
500	26	500.0	503.0	19.1	21.2	457.6	464.8
630	26	630.0	633.8	24.1	26.7	576.6	585.6
710	26	710.0	716.4	27.2	30.1	649.8	662.0
800	26	800.0	807.2	30.6	33.8	732.4	746.0
900	26	900.0	908.1	34.4	38.3	823.4	839.3
1000	26	1000.0	1009.0	38.2	42.2	915.6	932.6
1100[1]	26	1100.0	1109.9	42.3	46.6	1006.6	1025.3
1200	26	1200.0	1210.8	45.9	50.6	1098.8	1119.0

Note: Pipe dimensions based on the PE water pipe specification BS EN 12201:2 are provided for guidance only.

* For ProFuse® pipe, the dimensions within the table only relate to the PE100 core pipe and do not include the outer polypropylene skin. The thickness of the skin ranges between 0.6 and 1.2 mm across the range of pipe diameters.

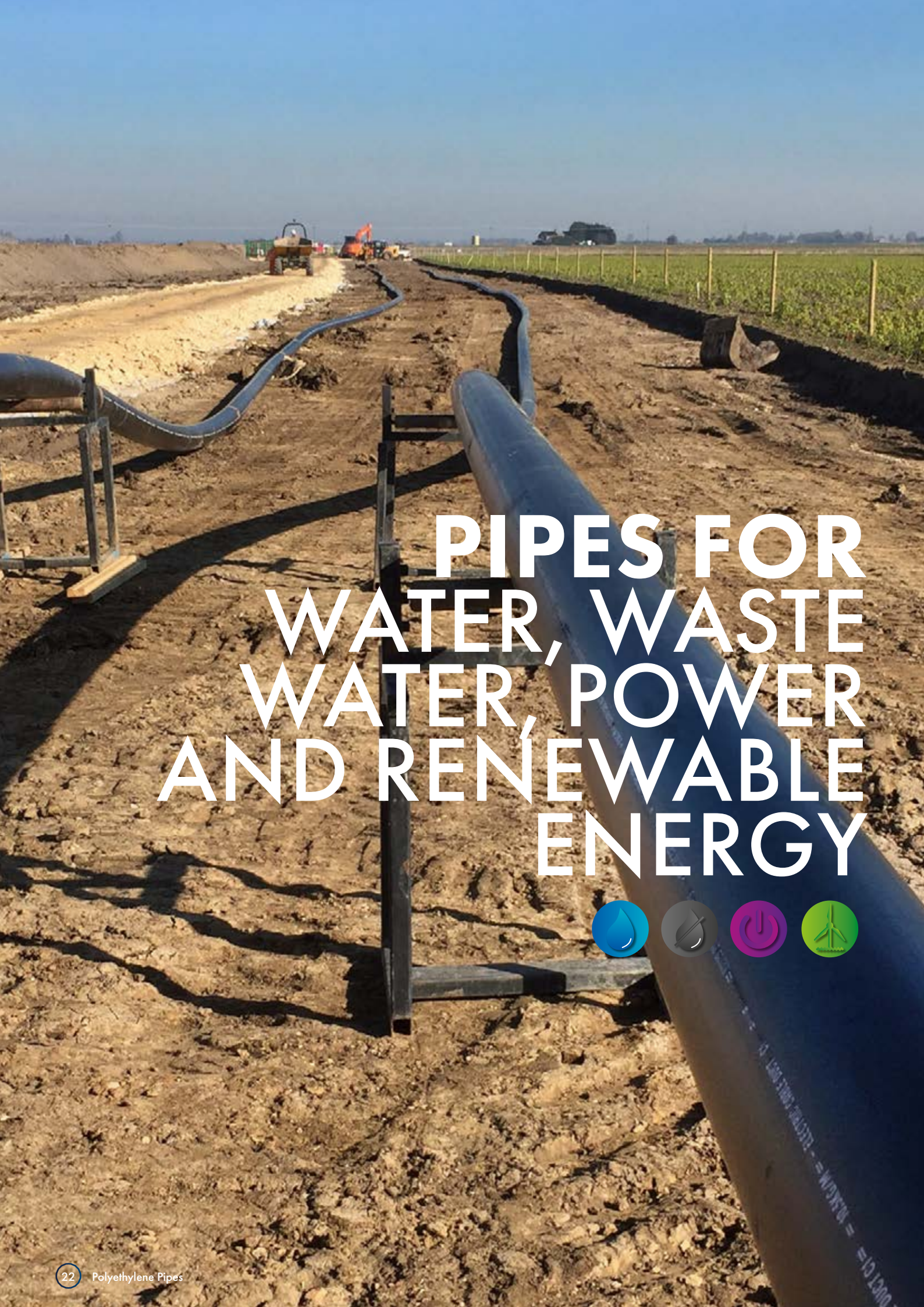
[1] Dimensions based on in-house specification.



Puriton® pipe dimensions

Nominal diameter	SDR	Core pipe outside diameter		Core pipe wall thickness		Overall external diameter		Internal diameter	
		Min	Max	Min	Max	Min	Max	Min	Max
mm		mm	mm	mm	mm	mm	mm	mm	mm
25	11	25.0	25.3	2.3	2.7	27.0	27.6	19.6	20.7
32	11	32.0	32.3	3.0	3.4	34.0	34.6	25.2	26.3
63	11	63.0	63.4	5.8	6.5	64.8	65.8	50.0	51.8
90	11	90.0	90.6	8.2	9.2	92.2	93.8	71.6	74.2
110	11	110.0	110.7	10.0	11.1	112.2	113.9	87.8	90.7
125	11	125.0	125.8	11.4	12.4	127.2	129.0	99.6	103.0
160	11	160.0	161.0	14.6	16.2	162.2	164.2	127.6	131.8
180	11	180.0	181.1	16.4	18.2	182.2	184.3	143.6	148.3
90	17	90.0	90.6	5.4	6.1	92.2	93.8	77.8	79.8
110	17	110.0	110.7	6.6	7.4	112.2	113.9	95.2	97.5
125	17	125.0	125.8	7.4	8.3	127.2	129.0	108.4	111.0
160	17	160.0	161.0	9.5	10.6	162.2	164.2	138.8	142.0
180	17	180.0	181.1	10.7	11.9	182.2	184.3	156.2	159.7

Note: The Puriton® core pipe dimensions are based on the PE water pipe specification BS EN 12201:2 and are provided for guidance only. They do not include the outer aluminium and PE layers.



PIPES FOR WATER, WASTE WATER, POWER AND RENEWABLE ENERGY

UNIVERSAL POLYETHYLENE PIPES

ENGINEERED PIPE SOLUTION FOR MODERN PIPELINE NETWORKS



The versatile pipe solution for water, power and renewable energy applications.

Radius Systems' universal black PE100 pipes are the most versatile and widest pipe offering for non potable, potable water, power and renewable energy pipeline projects. Manufactured from high performance polyethylene, with a solid wall construction, our universal black pipes are available in diameters 20 to 1200 mm in a range of SDRs and pressure ratings, and can be tailored to fit the most challenging pipeline projects.

The versatility of our black pipes means that they can be used above ground for potable water(*), and below ground in a diverse range of applications:

- Hydroelectricity schemes
- Geothermal pipework
- Buried fire protection ring mains
- Sewerage systems
- Rainwater drainage
- Fish farming (cage frames)
- Marine outfall
- Irrigation systems
- Ducting for electricity cabling in renewable energy projects

Our universal black pipes are easily joined using industry standard electrofusion and butt-fusion welding techniques, as well as our unique and innovative range of Redman™ hydraulic compression fittings and suitable mechanical fittings.

Features and Benefits

- A versatile black PE pipe offering suitable for a wide range of applications.
- Joined using conventional electrofusion and butt-fusion techniques.
- Simple pipe preparation using rotary or hand scraping tools for electrofusion jointing.
- Fully compatible with approved electrofusion, spigot, mechanical and Redman™ fittings.
- Standard and bespoke pipe sizes and SDRs available to meet your specific project requirements.
- Suitable for open-cut and no-dig installation techniques and for use in pipeline rehabilitation projects.

Approvals

- Approved under regulation 31 of the Water Supply (Water Quality) Regulations 2000.
- BS EN 12201-2: 2011+A1:2013.

KM 83015

(*) Approval should be sought from the water undertaker before installing PE black pipe above ground for potable water use.

Product Range



Universal black PE100 pipe

Nominal diameter	SDR	Pressure rating	Product code straight pipe			Product code coiled pipe				Weight
mm		Bar	6m	12m	13.5m	25m	50m	100m	150	kg/m
20	9	16	-	-	-	VC2520	VC2521	VC2522	VC2523	0.2
25	11	16	-	-	-	VC2527	VC2528	VC2529	VC2530	0.2
32	11	16	-	-	-	VC2534	VC2535	VC2536	VC2537	0.3
50	11	16	-	-	-	VC2554	VC2551	VC2552	VC2553	0.7
63	11	16	VC2568	-	-	VC2570	VC2571	VC2572	VC2573	1.1
90	11	16	VC2625	-	-	-	VC2628	VC2629	-	2.3
110	11	16	VC2733	VC2735	-	-	VC2736	VC2737	-	3.3
125	11	16	VC2787	VC2789	-	-	VC2790	VC2791	-	4.3
140	11	16	-	VC2843	-	-	-	-	-	5.4
160	11	16	VC2958	VC2960	-	-	VC2961	VC2962	-	7.1
180	11	16	VC3030	VC3032	-	-	VC3034	VC3035	-	9.0
200	11	16	VC3107	VC3109	-	-	-	-	-	11.0
225	11	16	VC3211	VC3213	-	-	-	-	-	14.0
250	11	16	VC3266	VC3269	-	-	-	-	-	17.1
315	11	16	VC3485	VC3488	-	-	-	-	-	27.2
355	11	16	VC3544	VC3547	-	-	-	-	-	34.5
400	11	16	-	VC3607	-	-	-	-	-	43.8
450	11	16	-	VC3721	-	-	-	-	-	55.5
500	11	16	-	VC3829	-	-	-	-	-	68.4
560	11	16	-	VC3885	-	-	-	-	-	85.7
90	17	10	VC2643	VC2645	-	-	VC2646	VC2647	-	1.6
110	17	10	VC2751	VC2753	-	-	VC2754	VC2755	-	2.3
125	17	10	VC2805	VC2807	-	-	VC2808	VC2809	-	3.0
160	17	10	VC2976	VC2978	-	-	VC2979	VC2980	-	4.8
180	17	10	VC3050	VC3052	-	-	VC3054	VC3055	-	6.1
200	17	10	VC3121	VC3123	-	-	-	-	-	7.5
225	17	10	VC3225	VC3227	VC3228	-	-	-	-	9.5
250	17	10	VC3284	VC3287	VC3288	-	-	-	-	11.6
280	17	10	VC3395	VC3397	-	-	-	-	-	14.6
315	17	10	VC3503	VC3506	VC3507	-	-	-	-	18.5
355	17	10	VC3562	VC3565	VC3566	-	-	-	-	23.6
400	17	10	VC3622	VC3625	-	-	-	-	-	29.7
450	17	10	VC3735	VC3737	VC3738	-	-	-	-	37.7
500	17	10	VC3843	VC3845	VC3846	-	-	-	-	46.5
560	17	10	VC3899	VC3901	VC3902	-	-	-	-	58.3
630	17	10	VC3955	VC3957	-	-	-	-	-	73.8
315	21	8	-	-	VC3524	-	-	-	-	15.0
400	21	8	-	-	VC3644	-	-	-	-	24.4
450	21	8	-	-	VC3754	-	-	-	-	30.8
500	21	8	-	-	VC3862	-	-	-	-	38.0
560	21	8	-	-	VC3918	-	-	-	-	47.5
630	21	8	-	-	VC3974	-	-	-	-	60.0
710	21	8	-	-	VC4030	-	-	-	-	72.8
800	21	8	-	-	VC4086	-	-	-	-	97.1
900	21	8	-	-	VC4142	-	-	-	-	122.8
1000	21	8	-	-	VC4190	-	-	-	-	151.6

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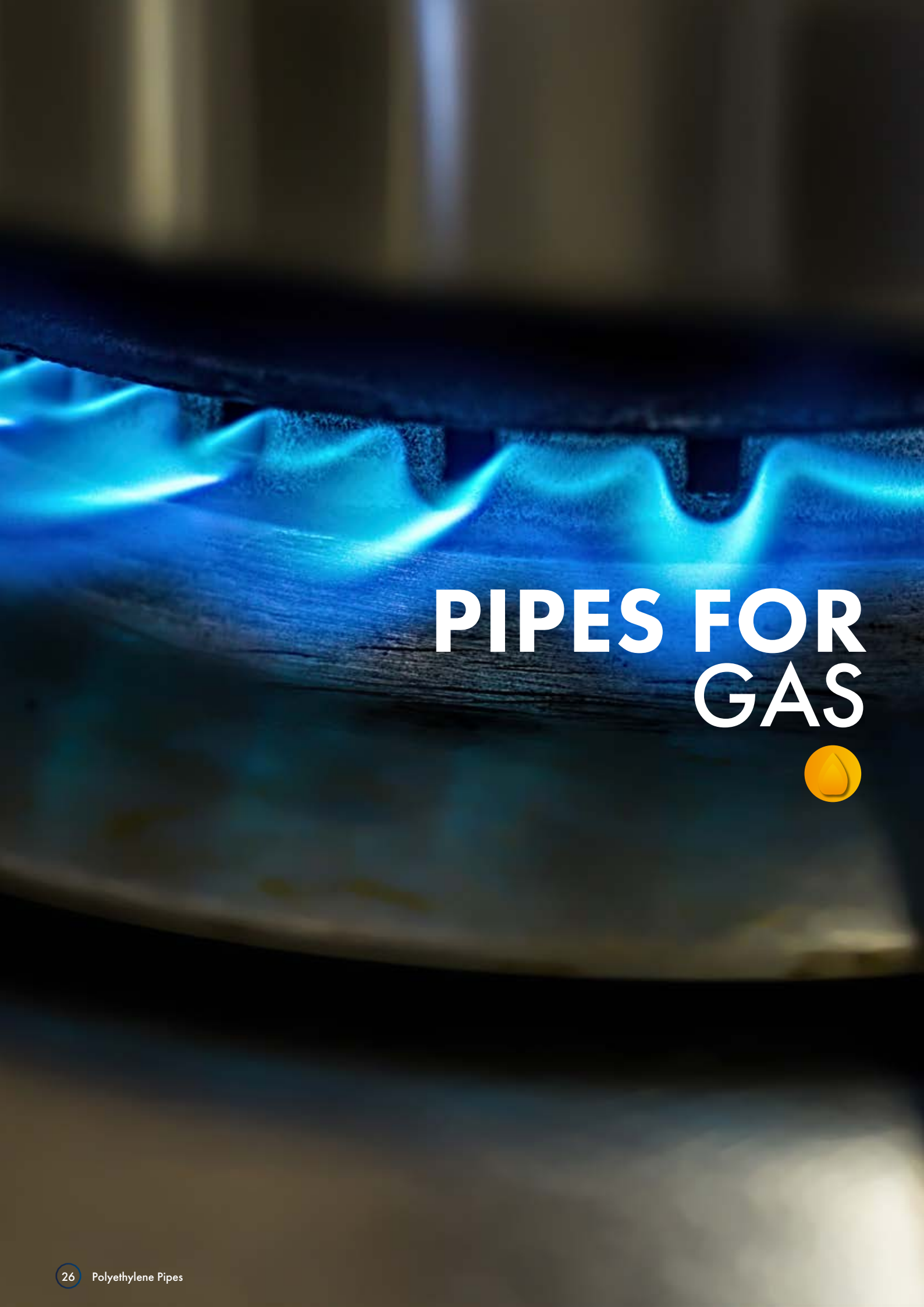


Universal black PE100 pipe - continued

Nominal diameter	SDR	Pressure rating	Product code straight pipe			Product code coiled pipe				Weight
mm		Bar	6m	12m	13.5m	25m	50m	100m	150	kg/m
315	26	6	-	-	VC3532	-	-	-	-	12.4
355	26	6	-	-	VC3592	-	-	-	-	15.6
400	26	6	-	-	VC3653	-	-	-	-	19.8
450	26	6	-	-	VC3762	-	-	-	-	25.0
500	26	6	-	-	VC3870	-	-	-	-	30.8
560	26	6	-	-	VC3926	-	-	-	-	38.6
630	26	6	-	-	VC3982	-	-	-	-	48.9
710	26	6	-	-	VC4038	-	-	-	-	62.3
800	26	6	-	-	VC4094	-	-	-	-	78.9
900	26	6	-	-	VC4150	-	-	-	-	100.5
1000	26	6	-	-	VC4198	-	-	-	-	128.0
1100	26	6	-	-	VC4254	-	-	-	-	148.0
1200	26	6	-	-	VC4310	-	-	-	-	177.1

Note: Pipe weights shown are for lifting and handling purposes. They are based on the maximum diameter and pipe wall thicknesses as specified in BS EN 12201.





PIPES FOR GAS

POLYETHYLENE GAS PIPES

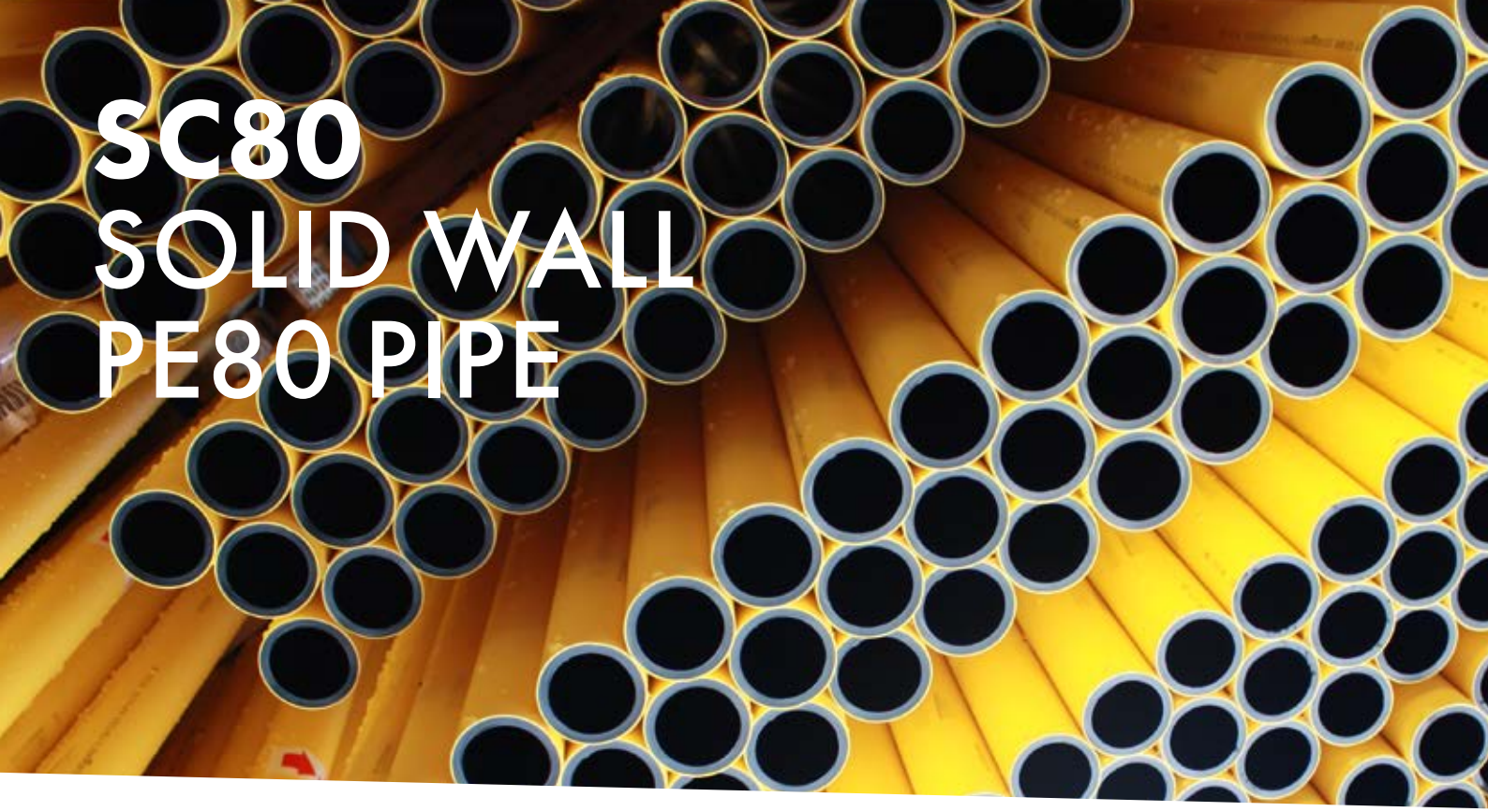
ENGINEERED PIPE SOLUTIONS FOR MODERN GAS PIPELINE NETWORKS



As well as providing solid wall PE pipes for new installations and pipeline rehabilitation, Radius Systems have developed a range of solutions for metallic service pipe relining and a peelable pipe, ProFuse®, specially designed for use in open-cut and no-dig installations. Below is a summary of our pipe range with their key applications.

Pipe type	Application and suitability
SC80 yellow	• A solid wall PE80 pipe with a black inner and a yellow outer. • Approved to GIS/PL2-2 and BS EN 1555-2. • Used for new pipelines, network rehabilitation and pipe replacement. • Installed using open-cut or no-dig techniques.
SC100 orange	• A solid wall PE100 pipe with a black inner and an orange outer. • Approved to GIS/PL2-8 and BS EN 1555-2. • Used for new pipelines, network rehabilitation and pipe replacement. • Installed using open-cut or no-dig techniques.
ProFuse®	• A multi-layer pipe, manufactured from black PE100 and a yellow peelable polypropylene outer skin with stripes. • Approved to GIS/PL2-2 and BS EN 1555-2. • Used for new pipelines, network rehabilitation and pipe replacement. • Ideally suited for no-dig and open-cut installation techniques.
HY100	• A solid wall, single layer co-extruded pipe. • Approved to the UK Gas Industry specification GIS/PL2-2. • Manufactured from a PE100 black core and a PE80 yellow outer • For low and medium pressure gas pipeline projects with 2 bar MOP.
ServiFlex®	• A flexible twin-wall pipe manufactured from yellow PE80. • MOP 75 millibar. • Used for 1" steel pipe relining. • Installed using the no-dig insertion technique.
17.5 mm relining system	• Manufactured from PE80 with a black inner and a yellow outer. • Approved to GIS/PL2-2 (PE80 pipe), GIS/PL3 (service head adaptor) and GIS/PL2-4 (electrofusion reducer). • MOP 75 millibar. • Used for ¾" metallic pipe relining. • Installed using the no-dig insertion technique.

MOP = Maximum operating pressure.
For guidance on the MOP for our range of gas pipes, please contact Radius Systems.



SC80 SOLID WALL PE80 PIPE

The flexible service pipe solution for gas distribution.

Our range of SC80 gas pipes are innovative solid wall polyethylene pipes developed as part of Radius Systems' continuous product improvement process and are the ideal solution for the construction of gas pipelines.

Manufactured using a specialist co-extrusion technology, the pipe is produced as a single pipe wall construction with a black inner and an integral colour coded yellow outer, denoting the pipe's material and application.

Available in diameters 20 to 315 mm in a range of SDRs and pressure ratings to suit your gas pipeline project, our SC80 gas pipes can be joined using industry standard electrofusion and butt-fusion welding techniques.

Ideally suited for new pipeline installations, close-fit legacy pipe rehabilitation and pipe replacement projects, our SC80 gas pipes can be used in open-cut or no-dig installation techniques.

Features and Benefits

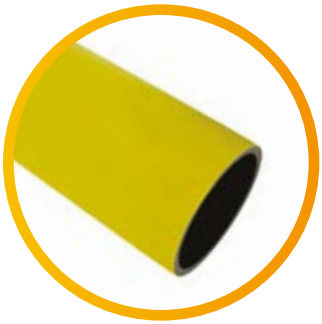
- Yellow colour coded outer to easily identify the pipe material and its application.
- Longer coil lengths reducing the number of joints in the pipeline.
- Flexible and easy to install.
- Corrosion free material for longer life.
- Fully compatible with approved electrofusion and spigot fittings.
- Joined using conventional electrofusion and butt-fusion techniques.
- Simple pipe surface preparation for electrofusion jointing using industry approved tooling.
- Suitable for open-cut and no-dig installation techniques.
- Ideal for use in pipe rehabilitation projects.

Approvals

- GIS/PL2-2 (KM 513530)
- BS EN 1555-2 (KM 575728

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Product Range



SC80 pipe

Our SC80 pipes are manufactured from PE80 materials and are easily identifiable by their yellow coloured outer surface. Manufactured in sizes 20 to 315 mm as standard, in straight or coiled pipe, SC80 pipe are available in SDR9, 11, 13.6 and 17.6. For special projects requiring bespoke pipe diameters, SDRs and lengths, please contact Radius Systems.

Nominal diameter	SDR	Product code straight pipe		Product code coiled pipe					Weight
mm		6m	12m	50m	100m	150m	250m	500m	kg/m
20	9	-	-	-	FA0022	-	-	-	0.1
25	11	FA0026	-	FA0028	FA0029	-	-	-	0.2
32	11	FA0033	-	FA0035	FA0036	-	-	-	0.3
40	11	-	-	-	FA0041	-	-	-	0.5
63	11	FA0068	-	FA0071	FA0072	FA0073	-	-	1.1
75	11	FA0092	-	FA0094	FA0096*	-	FA0098	FA0091	1.5
90	11	FA0125	-	-	FA0129	-	-	-	2.2
125	11	FA0287	-	FA0290	FA0291	-	-	-	4.3
180	11	FA0530	FA0532	FA0534	FA0535	-	-	-	8.8
63	13.6	FA0076	-	FA0079	FA0080	FA0081	FA0082	FA0083	0.9
75	13.6	FA0100	-	-	FA0104*	-	FA0106	FA0107	1.3
90	17.6	FA0152	FA0154	FA0155	FA0156	FA0157	FA0158	FA0159	1.5
125	17.6	FA0314	FA0316	FA0317	FA0318	FA0319	-	-	2.8
140	17.6	FA0368	-	-	FA0372	-	-	-	3.5
180	17.6	FA0560	FA0562	FA0564	FA0565	-	-	-	5.8
250	17.6	FA0793	FA0796	-	-	-	-	-	11.1
315	17.6	FA1012	FA1014	-	-	-	-	-	17.5

Note:

- *Supplied in 120 m coils.
- Pipe weights shown are for lifting and handling purposes. They are based on the gas industry specification's maximum pipe diameter and wall thickness.
- For guidance on maximum operating pressures, please contact Radius Systems.





SC100 SOLID WALL PE100 PIPES

The high performance PE pipe for intermediate pressure pipelines.

Our range of SC100 gas pipes are innovative solid wall polyethylene pipes developed as part of Radius Systems' continuous product improvement process and are the ideal solution for the construction of gas pipelines.

Manufactured using specialist co-extrusion technology, the pipe is produced as a single pipe wall construction with a black inner and an integral colour coded orange outer, denoting the pipe's material and application.

Available in diameters 63 to 500 mm in SDR11 or SDR17.6 for pressure ratings to suit your pipeline requirements, our SC100 pipe can be joined using standard electrofusion and butt-fusion welding techniques.

Ideally suited for new pipeline installations, close-fit legacy pipe rehabilitation and pipe replacement projects, our SC100 gas pipes can be installed using open-cut or no-dig installation techniques.

Features and Benefits

- Orange colour coded outer to easily identify the pipe material and its application
- Fully compatible with approved electrofusion and spigot fittings.
- Joined using conventional electrofusion and butt-fusion techniques.
- Simple pipe surface preparation for electrofusion jointing using industry approved tooling.
- Suitable for open-cut and no-dig installation techniques.
- Ideal for use in pipe rehabilitation projects.

Approvals

- GIS/PL2-8 (KM 513620) - pressure rating up to 7 bar
- BS EN 1555-2 (KM 575728) - pressure rating up to 10 bar

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Product Range



SC100 pipe

Our SC100 pipes are manufactured from PE100 materials and are easily identifiable by their orange coloured outer surface. Manufactured in sizes 63 to 630 mm in straight or coiled pipe, SC100 pipes are available in SDR11 and SDR17.6. For special projects requiring bespoke pipe diameters, SDRs and lengths, please contact Radius Systems.

Nominal diameter	SDR	Product code straight pipe		Product code coiled pipe	Weight
mm		6m	12m	100m	kg/m
63	11	-	FC0069	FC0072	1.1
90	11	-	FC0127	FC0129	2.3
125	11	-	FC0289	FC0291	4.3
180	11	-	FC0532	FC0535	8.9
250	11	-	FC0769	-	17.1
315	11	-	FC0988	-	27.2
355	11	-	FC1047	-	34.6
400	11	FC1104	FC1107	-	43.9
450	11	FC1219	FC1221	-	55.4
500	11	FC1327	FC1329	-	68.5
90	17.6	-	FC0154	FC0156	1.5
125	17.6	-	FC0316	-	2.8
180	17.6	-	FC0562	-	5.9
250	17.6	-	FC0796	-	11.2
315	17.6	-	FC1015	-	17.7
355	17.6	-	FC1074	-	22.6

Note: Pipe weights shown are for lifting and handling purposes. They are based on the gas industry specification's maximum pipe diameter and wall thickness.





PROFUSE®
PEELABLE PIPE

Maximum jointing integrity for asset longevity and installation cost savings.

ProFuse® is a technologically advanced peelable pipe innovation for the transportation of natural and suitable manufactured gases in buried pipeline applications, offering a high performance solution with optimum joint integrity, damage protection and reduced installation time and costs to asset owners.

Manufactured from black PE100, ProFuse® has been designed with a unique polypropylene peelable skin, which is applied to the core pipe during the manufacturing process using melt on melt technology. The skin is tough and offers excellent abrasion resistance to protect the pipe during handling, transportation and installation. It is easily removed, using the pipe exposure tool (PET™), revealing a pristine pipe surface, ready to be joined using electrofusion or butt-fusion welding techniques.

Ideal for open cut, dead or live insertion, horizontal directional drilling and pipe bursting installation techniques, ProFuse® is a superior pipe solution, especially suited to no-dig installation techniques, as its tough protective skin absorbs damage normally associated with those installation methods.

Designed for maximum jointing integrity, ProFuse® is the perfect solution for reduced installation costs, optimum joint quality, system reliability and confidence in the longevity of your pipeline.

Features and Benefits

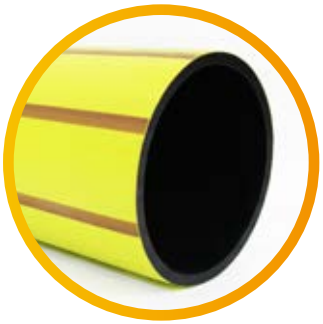
- Unique external skin
  Specifically developed with an external skin to minimise damage to the core pipe. The tough polypropylene skin offers excellent abrasion resistance to protect the pipe during handling, storage, transportation and installation.
- Installation damage protection
  Ideally suited for trenchless installation techniques such as pipe insertion, pipe bursting and horizontal directional drilling.
- Optimum joint integrity
  The ProFuse® peelable skin is removed locally with the PET tool, revealing a pipe surface in pristine condition, ready for jointing.
- Reduced installation time
  The peelable skin is easily removed, reducing pipe surface preparation time for electrofusion jointing compared to conventional PE pipe.

Approvals

- GIS/PL2-2 (KM 513530)
- BS EN 1555-2 (KM 575728)

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Product Range



ProFuse® pipe

Nominal diameter	SDR	Product code straight pipe		Weight
mm		6m	12m	kg/m
180	17.6	-	FE0562	6.5
250	17.6	-	FE0796	12.3
315	17.6	-	FE1015	19.1
400	17.6	-	FE1134	30.4
250	21	FE0802	FE0805	10.6
280	21	FE0910	FE0912	13.1
315	21	FE1020	FE1023	16.4
355	21	FE1079	FE1082	20.6
400	21	FE1140	FE1143	25.9
450	21	FE1251	FE1253	32.4
500	21	FE1359	FE1361	39.9
630	21	FE1471	FE1473	62.6

Note:

- Pipe weights shown are for lifting and handling purposes. They are based on the gas industry specification's maximum pipe diameter and wall thickness.
- For special projects requiring bespoke pipe diameters, SDRs and lengths, please contact Radius Systems.
- For guidance on maximum operating pressures, please contact Radius Systems.

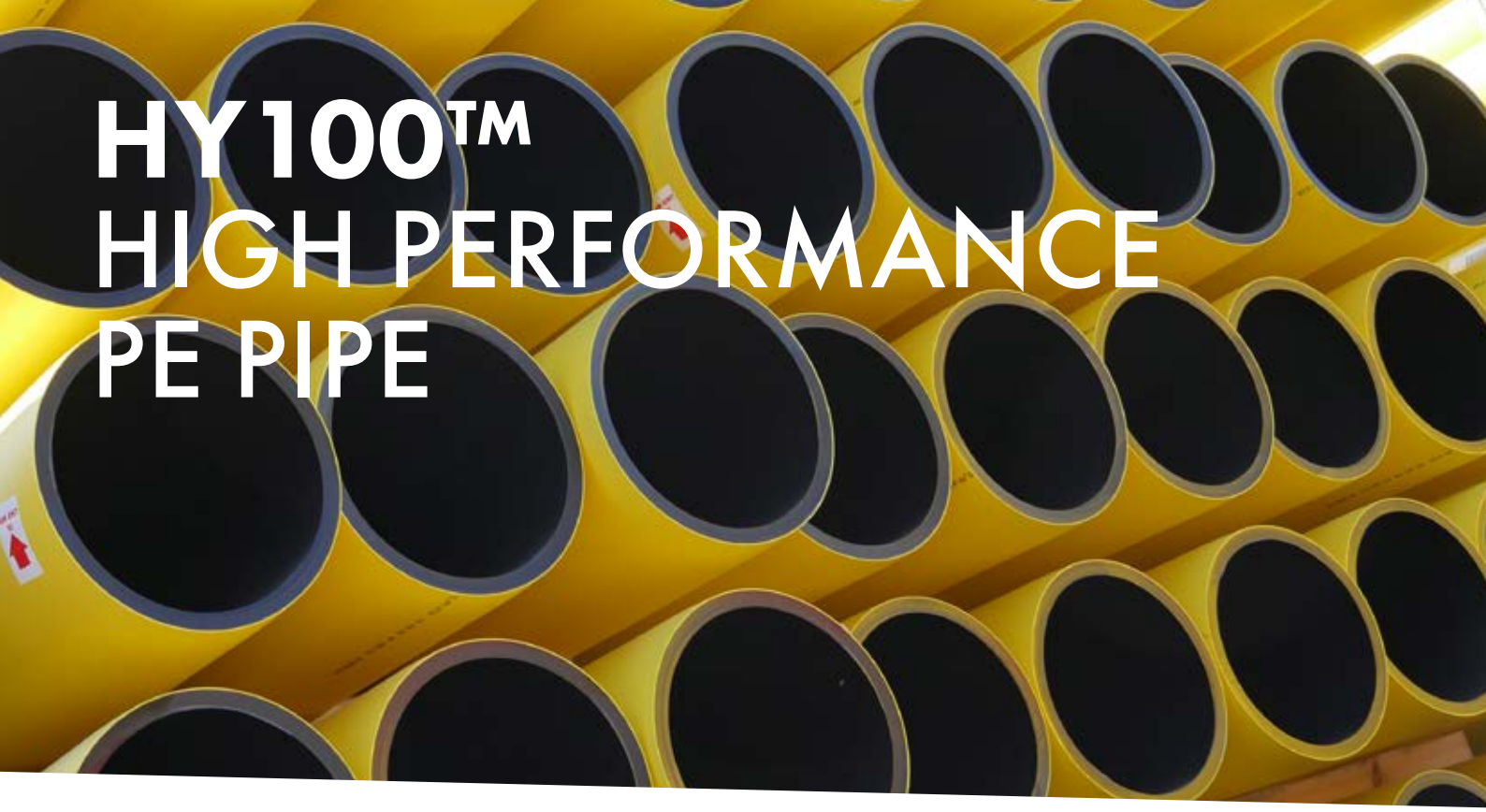
The ProFuse® Pipe Exposure Tool (PET)

The only tool recommended for the quick, simple and safe removal of the ProFuse® skin. The hardened steel blade cuts the ProFuse® skin and lifts its edge to allow easy peeling from the pipe core.

- **Single size tool** for all sizes of ProFuse pipe
- **Spring-loaded blade** to minimise damage to the tip of the blade
- **Direction marking** for clear and simple operation
- **Plastic body** lightweight and durable
- **Sculpted runners** for blade protection and precise one handed control







HY100™ HIGH PERFORMANCE PE PIPE

A modern, high performance polyethylene pipe for twenty-first century gas pipeline networks.

Radius Systems' new HY100™ gas pipes have been specifically designed to deliver a complete high performance pipe offering for the construction of below ground low and medium pressure gas pipeline networks.

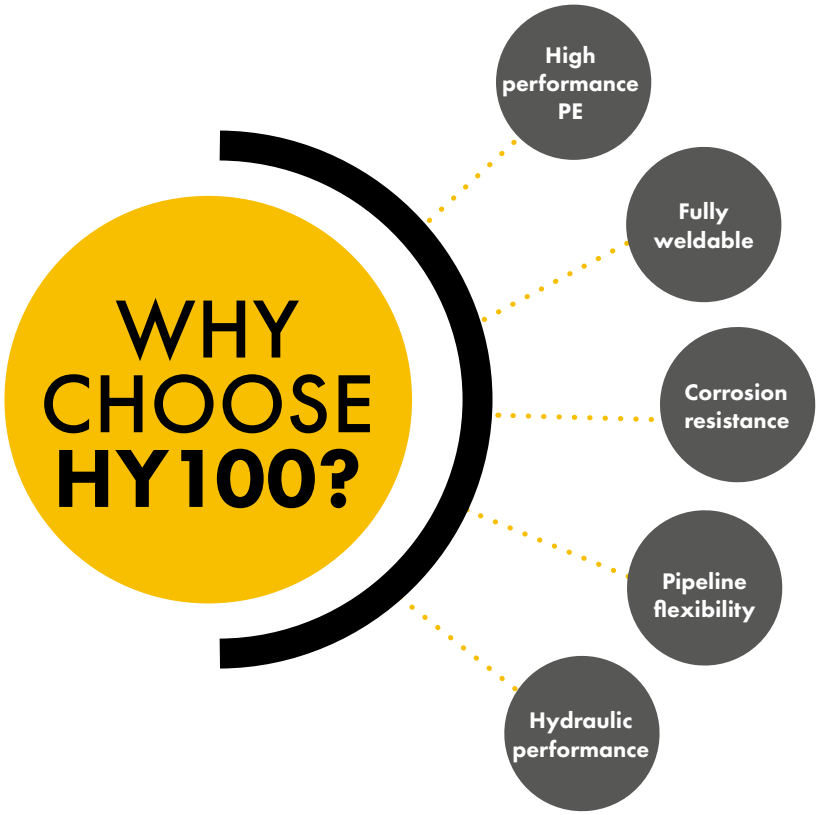
HY100™ is a pioneering class of co-extruded solid wall polyethylene (PE) pipes which combine the strength of PE100 at its core with a yellow PE80 outer for pipe identification and application recognition. The pipe range has been specifically developed to extend our gas pipe offering and provide our customers with a wider choice of high performance pipe solutions for the construction of gas distribution pipelines.

Our new HY100™ pipes are manufactured using a specialist co-extrusion technique, where the PE100 and PE80 materials are combined using melt-on-melt technology.

The use of PE100 high performance material in the production of HY100™ enables Radius Systems to offer a specially engineered SDR21 pipe solution, with a larger bore for greater gas carrying capacity. In addition, PE100 is a tough material, giving the confidence in a robust gas pipe solution that will last a lifetime.

Joined using industry standard electrofusion and butt-fusion welding techniques, HY100™ pipes are ideally suited for new pipeline installations, close-fit legacy pipe rehabilitation and pipe replacement projects and can be installed using open-cut or no-dig installation techniques.

The HY100™ pipe range is available in diameters 250 to 450 mm and is approved to the UK gas industry specification GIS/PL2-2:2016.



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HY100 at a glance

- A solid wall, single layer co-extruded pipe.
- Manufactured from a PE100 black core and a PE80 yellow outer.
- For low and medium pressure gas pipeline projects with 2 bar MOP.
- Diameter range 250 to 450 mm.
- Approved to the UK Gas Industry specification GIS/PL2-2.
- Used for new pipelines, network rehabilitation and pipe replacement.
- Installed using open-cut or no-dig techniques
- Complemented by a range of approved electrofusion and spigot fittings.

Features and Benefits

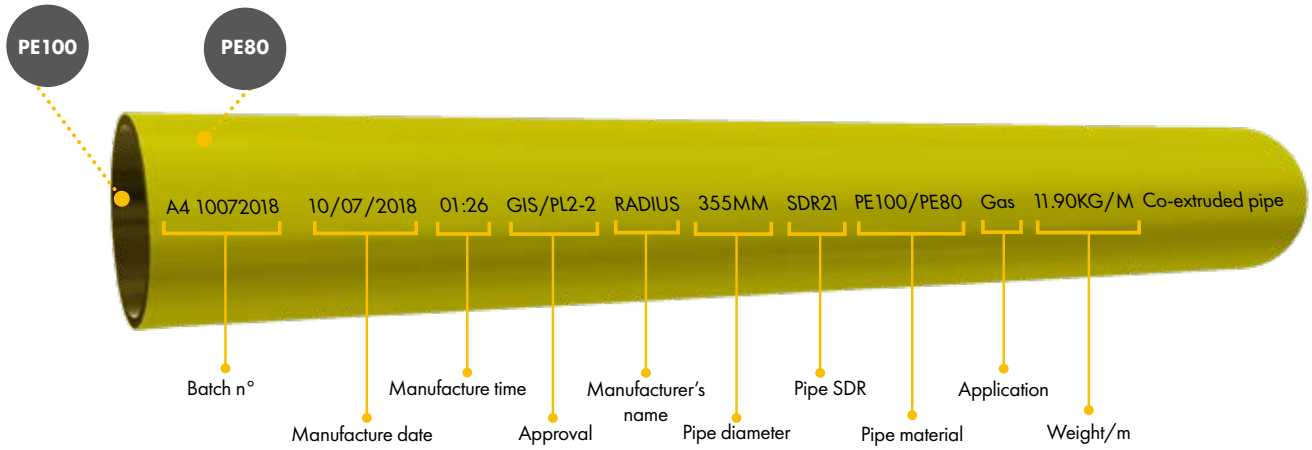
- A high performance pipe offering robustness and longevity.
- SDR21 pipe with a larger bore for greater gas carrying capacity
- Flexible and easy to install.
- Corrosion free material for longer life.
- Joined using conventional electrofusion and butt-fusion techniques.
- Simple pipe preparation for electrofusion jointing using rotary or hand scraping tools.
- Fully compatible with approved electrofusion and spigot fittings.
- Suitable for open-cut and no-dig installation techniques.
- Ideal for use in pipeline insertion and rehabilitation schemes.

Identifying HY100™

Manufactured from black PE100 and yellow PE80 materials, the pipes are easily identified by the markings on the pipe's outer surface, repeated every meter along its length.

Approvals

- Manufactured in ISO 9001:2015 approved manufacturing facilities.
- GIS/PL2-2:2016 (KM 513530).





Product Range



HY100™ pipe

Nominal diameter	SDR	MOP GIS/PL2:2	Product code		Weight
mm		bar	6m	12m	kg/m
250	21	2	FB0802	FB0805	9.5
280	21	2	FB0910	FB0912	11.9
315	21	2	FB1020	FB1023	15.0
355	21	2	FB1079	FB1082	19.1
400	21	2	FB1140	FB1143	24.1
450	21	2	FB1251	FB1253	30.6

Note: Pipe weights are for lifting and handling purposes. They are based on the pipe maximum diameter and wall thickness as specified in GIS/PL2-2.

Joining and making connections to HY100™

HY100™ are conventional solid wall PE pipes that are joined using industry standard electrofusion or butt-fusion welding techniques.

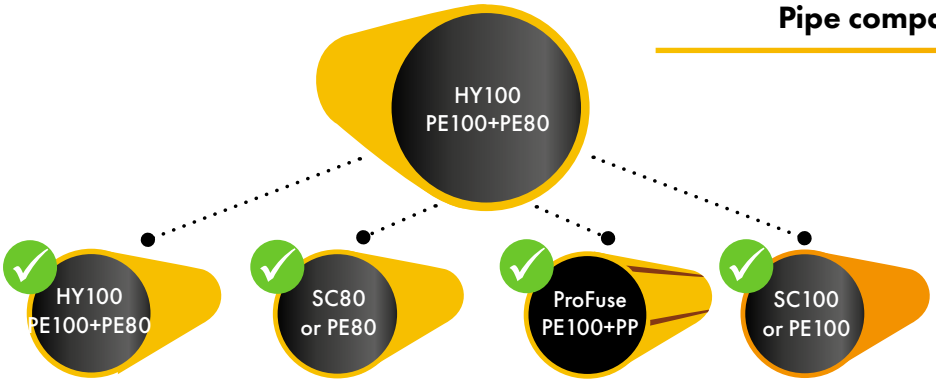
To comply with manufacturers' guidance and the gas industry best practice, butt-fusion jointing in the field is only permitted between pipes of the same diameter, SDR, polyethylene classification and colour. When using the butt-fusion jointing technique, HY100™ should only be joined to HY100 pipes. When connecting HY100™ pipes to other polyethylene pipes, Radius Systems recommend the use of approved electrofusion fittings.

Before making an electrofusion joint, the surface of HY100™ pipe must be prepared using industry approved tooling and techniques to ensure that the pipe is clean and free from contamination.

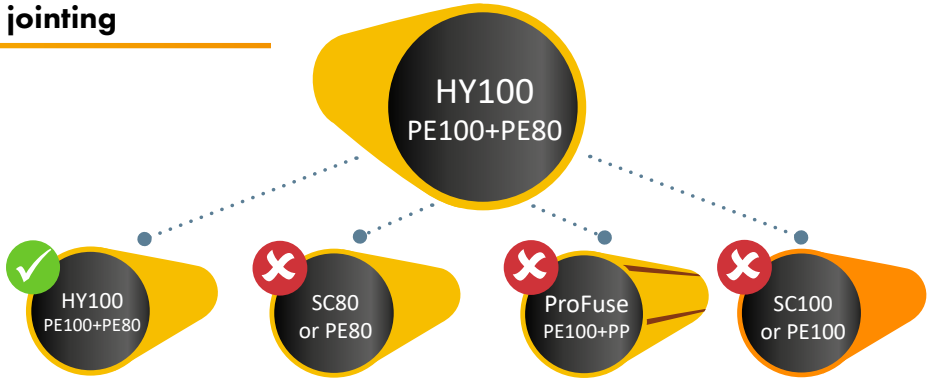
For pipe preparation when using socket electrofusion fittings, Radius Systems recommend the use of rotary pipe preparation tools as they remove a uniform layer of PE from the pipe's surface.

Welding equipment must be calibrated and in good working condition to ensure maximum joint integrity.

Pipe compatibility for electrofusion jointing



Pipe compatibility for butt fusion jointing



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SERVICE PIPE RELINING SOLUTIONS

A no-dig pipe relining solutions for minimal disruption.

Conventional PE pipes have been routinely used by utility companies as a relining solution to address their ageing metallic mains. Service pipes, often installed under footpaths and gardens have been a challenge to reline, due to the complexity of their layout, the changes in the pipe direction from the main to the gas meter and the numerous fittings used in the service pipe.

Working closely with our utility customers, we have developed a range of advanced PE pipeline solutions for the rehabilitation of 1" and ¾" metallic services using pipe insertion techniques. Unique to Radius Systems, our 20 mm ServiFlex® and 17.5 mm systems are innovative pipe relining solutions specifically engineered to maintain the leak-tightness of the service and at the same time, limiting the pipe pressure loss from the main to the meter.

Installed using no-dig pipe insertion techniques for minimal disruption to customers, our ServiFlex® and 17.5 mm kits are quick and easy to install and combined with our PE mains pipe offering, deliver a smart pipe rehabilitation alternative to traditional pipeline replacement from main to meter.

Features and Benefits

- **Cutting-edge offering**
  Unique engineered metallic service pipe relining solutions to maintain the integrity of the service pipe.
- **Optimum leak-tightness**
  The host pipe provides structural stability, whilst the PE liner provides leak-tightness.
- **Reduced number of joints in the system**
  The PE pipes are flexible and can accommodate changes in direction of the original service pipe without the need for additional fittings. ServiFlex® easily passes through 1" short radius bends and our 17.5 mm system can negotiate ¾" long radius bends.
- **Reduced disruption to customers**
  The pipe lining solutions are installed using no-dig insertion techniques, reducing disruption to utility customers.
- **Designer pipe solutions**
  Specifically designed to be inserted into 1" and ¾" metallic service pipes and negotiate bends without the need for additional fittings.

Approvals

- 17.5 mm system
  - 17.5 mm pipe GIS/PL2-2 (KM 513530)
  - Service head adaptor GIS/PL3 (KM 539621)
  - Electrofusion reducer GIS/PL2-4 (KM 538462)

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Product Range



ServiFlex® relining system

Unique to Radius Systems, ServiFlex® is a leading edge innovation consisting of a PE80 twin wall corrugated flexible pipe liner system specifically designed for the relining of 1" steel service pipes.

Quick and easy to install using pipe insertion techniques, ServiFlex® is a cost effective solution compared to pipe replacement, as excavations are kept to a minimum size, with little disruption to customers. Lightweight and flexible, ServiFlex® can be easily pushed through short radius bends during relining operations.

Nominal diameter	MOP	Product code	Weight
mm	millibar	6m	kg/coil
20	75	FA0017	2.5

Installation requirements: Radius Systems' ServiFlex® pipe relining system is installed using a pipe pushing technique. Specialist tooling is required to carry out the installation.

Training must be undertaken before carrying out the installation of ServiFlex®. Please contact Radius Systems for more information. t: +44 (0)1773 811112 or e: sales@radius-systems.com.



17.5 mm relining system

Specially manufactured by Radius Systems, the 17.5 mm system has been designed to offer a smart and easy solution for relining ¾" metallic service pipes with long radius bends. Our House Entry Kits are ideal for relining service pipes under gardens and footpaths, as they minimise the requirement for service relays and are supplied with all the appropriate electrofusion fittings and service head adaptors for inside the property. Flexible and easy to install, our 17.5 mm relining kits reduce excavation requirements and the need for meter relocation.

Nominal diameter	Description	SDR	MOP	Coil length	Product code	Weight
mm			millibar	m	6m	kg/coil
17.5	House entry kit	9.7	75	8.4	GZ0037	0.1

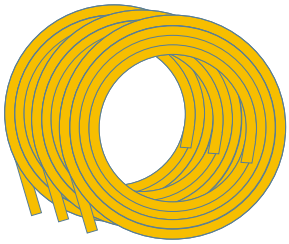
- **House entry kit:** 8.4 m of 17.5 mm pipe coil with wire cable, one 17.5 mm x ¾" service head adaptor for inside the property, one 17.5 x 32 mm reducer for the garden connection.

Installation requirements: Radius Systems' 17.5 mm pipe relining system is installed using a pipe pushing technique. Specialist tooling is required to carry out the installation.

Training must be undertaken before carrying out the installation of the system. Please contact Radius Systems for more information. t: +44 (0)1773 811112 or e: sales@radius-systems.com.

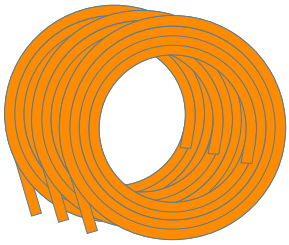
Coil pack quantity and dimensions

Coil pack quantity



SC80 solid wall PE80 pipes

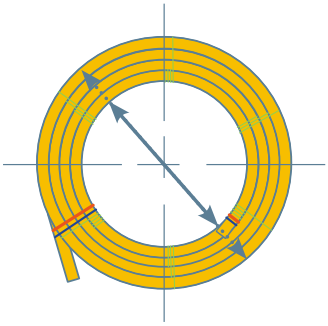
Pipe nominal diameter	Pack quantity	Total pack length	Pack quantity	Total pack length	Pack quantity	Total pack length	Pack quantity	Total pack length
mm	50 m	m	100 m	m	150 m	m	250 m	m
25	8	400	7	700	-	-	-	-
32	8	400	4	400	-	-	-	-
40	-	-	6	600	-	-	-	-
63	6	300	4	400	3	450	2	500



SC100 solid wall PE100 pipes

Pipe nominal diameter	Pack quantity	Total pack length	Pack quantity	Total pack length	Pack quantity	Total pack length	Pack quantity	Total pack length
mm	50 m	m	100 m	m	150 m	m	250 m	m
63	-	-	4	400	-	-	-	-

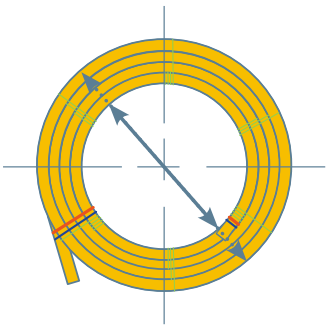
Coil dimensions



SC80 solid wall PE80 pipes

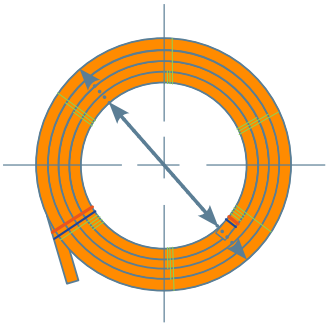
Pipe nominal diameter	SDR	Coil length	Coil outer diameter	Coil inner diameter	Coil width	Coil banding sequence	Coil weight
mm		m	mm	mm	mm		kg
20	9	50	780	600	100	-	7.1
20	9	100	885	600	120	-	14.2
25	11	50	780	600	150	-	9.1
25	11	100	910	600	175	-	18.2
32	11	50	990	700	145	-	14.7
32	11	100	990	700	275	-	29.3
40	11	100	1800	1275	170	-	45.3
63	11	50	1815	1275	195	•	55.1
63	11	100	1810	1275	300	•	110.3
63	11	150	2035	1275	345	•	165.4
63	11	250	2100	1275	470	•	275.7
63	11	500	2800	1800	570	•	551.3
75	11	50	2220	1800	255	•	76.9
75	11	120	2350	1800	340	•	184.6
75	11	250	2475	1800	535	•	384.6
75	11	500	3120	1800	565	•	769.3
90	11	50	2220	1800	320	•	111.6

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SC80 solid wall PE80 pipes - continued

Pipe nominal diameter	SDR	Coil length	Coil outer diameter	Coil inner diameter	Coil width	Coil banding sequence	Coil weight
mm		m	mm	mm	mm		kg
90	11	100	2440	1800	410	•	223.3
125	11	100	3200	2500	570	•	428.2
180	11	100	4000	3000	800	•	883.9
63	13.6	50	1815	1275	195	•	46.7
63	13.6	100	1810	1275	300	•	93.4
63	13.6	150	2035	1275	345	•	140.1
63	13.6	250	2100	1275	470	•	233.4
63	13.6	500	2800	1800	570	•	466.9
75	13.6	120	2350	1800	340	•	158.2
75	13.6	250	2475	1800	535	•	329.6
75	13.6	500	3120	1800	565	•	659.2
90	17.6	50	2220	1800	320	•	74.5
90	17.6	100	2440	1800	450	•	149
90	17.6	150	2400	1800	625	•	223.5
90	17.6	250	2600	1800	620	•	372.5
90	17.6	500	3075	1800	855	•	744.9
125	17.6	50	3000	2500	450	•	140.5
125	17.6	100	3200	2500	570	•	281
125	17.6	150	3200	2500	820	•	421.5
140	17.6	100	3765	3000	630	•	350.3
180	17.6	50	3800	3000	600	•	290.7
180	17.6	100	4000	3000	800	•	581.5

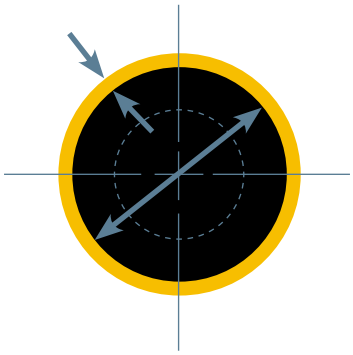


SC100 solid wall PE100 pipes

Pipe nominal diameter	SDR	Coil length	Coil outer diameter	Coil inner diameter	Coil width	Coil banding sequence	Coil weight
mm		m	mm	mm	mm		kg
63	11	100	1810	1275	300	•	111.43
90	11	100	2440	1800	410	•	225.6
125	11	100	3200	2500	570	•	432.8
180	11	100	4000	3000	800	•	893.2
90	17.6	100	2440	1800	450	•	150.6

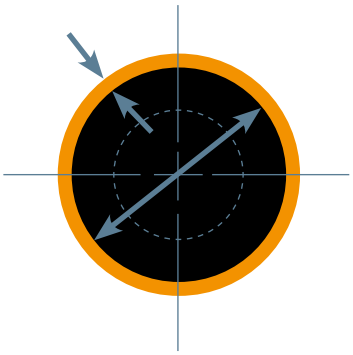
Note: The coil banding sequence can be found within this brochure. As part of Radius Systems' commitment to ongoing product development, pipe coil dimensions may be subject to change.

Pipe dimensions



SC80 solid wall PE80 pipes

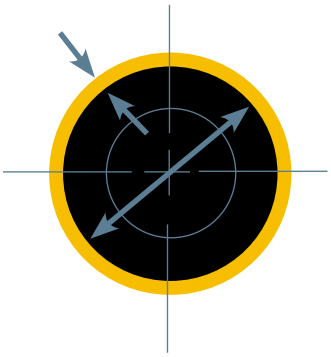
Nominal diameter	SDR	Mean outside diameter		Wall thickness		Mean internal
		Min	Max	Min	Max	Diameter
mm		mm	mm	mm	mm	mm
20	9	20.0	20.3	2.3	2.7	15.2
25	11	25.0	25.3	2.3	2.7	20.2
32	11	32.0	32.3	3.0	3.4	25.8
40	11	40.0	40.4	3.7	4.2	32.3
63	11	63.0	63.4	5.8	6.5	50.9
75	11	75.0	75.5	6.8	7.6	60.9
90	11	90.0	90.6	8.2	9.2	72.9
125	11	125.0	125.8	11.4	12.7	101.3
180	11	180.0	181.1	16.4	18.2	146.0
63	13.6	63.0	63.4	4.7	5.4	53.1
75	13.6	75.0	75.5	5.6	6.4	63.3
90	17.6	90.0	90.6	5.2	5.9	79.2
125	17.6	125.0	125.8	7.1	8.0	110.3
140	17.6	140.0	140.9	8.0	8.9	123.6
180	17.6	180.0	181.1	10.3	11.5	158.8
250	17.6	250.0	251.5	14.2	15.8	220.8
315	17.6	315.0	316.9	17.9	19.8	278.3



SC100 solid wall PE100 pipes

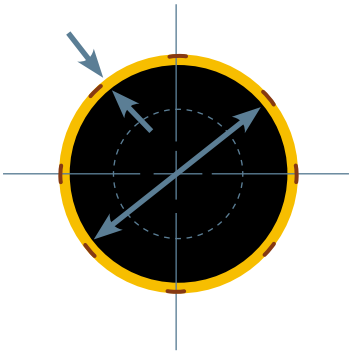
Nominal diameter	SDR	Mean outside diameter		Wall thickness		Mean internal
		Min	Max	Min	Max	Diameter
mm		mm	mm	mm	mm	mm
63	11	63.0	63.4	5.8	6.5	50.9
90	11	90.0	90.6	8.2	9.2	72.9
125	11	125.0	125.8	11.4	12.7	101.3
180	11	180.0	181.1	16.4	18.2	146.0
250	11	250.0	251.5	22.7	25.1	203.0
315	11	315.0	316.9	28.6	31.6	255.8
355	11	355.0	357.2	32.3	35.7	288.1
400	11	400.0	402.4	36.4	40.2	324.6
450	11	450.0	452.7	40.9	45.1	365.4
500	11	500.0	503.0	45.5	50.2	405.8
90	17.6	90.0	90.6	5.2	5.9	79.2
125	17.6	125.0	125.8	7.1	8.0	110.3
180	17.6	180.0	181.1	10.3	11.5	158.8
250	17.6	250.0	251.5	14.2	15.8	220.8
315	17.6	315.0	316.9	17.9	19.8	278.3
355	17.6	355.0	357.2	20.2	22.4	313.5

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HY100 pipes

Nominal diameter	SDR	Mean outside diameter		Wall thickness		Mean internal
		Min	Max	Min	Max	Diameter
mm		mm	mm	mm	mm	mm
250	21	250	251.5	11.9	13.2	225.7
280	21	280	281.7	13.3	14.8	252.8
315	21	315	316.9	15.0	16.6	284.4
355	21	355	357.2	16.9	18.7	320.5
400	21	400	402.4	19.0	21.0	361.2
450	21	450	452.7	21.4	23.7	406.3



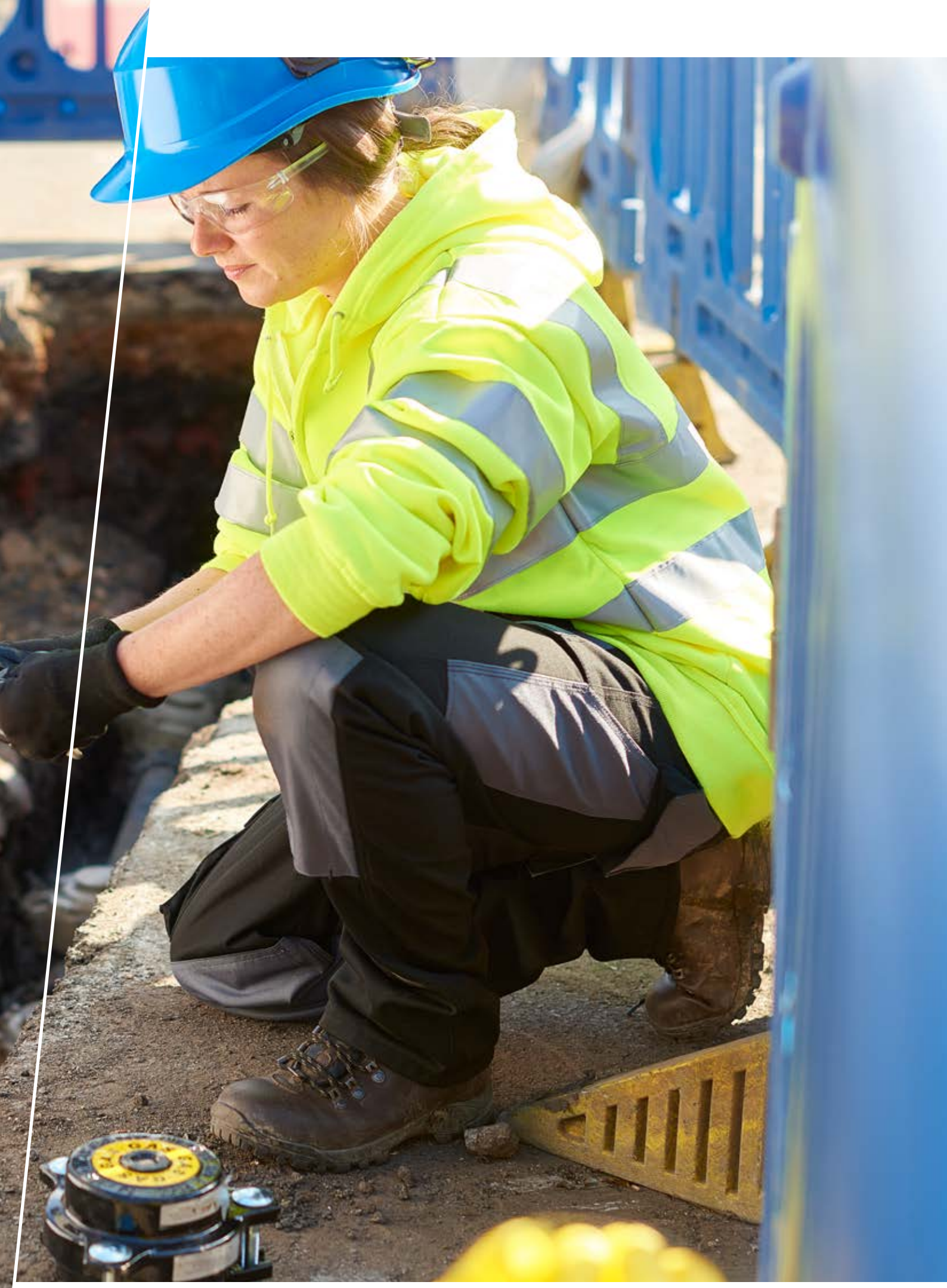
ProFuse® pipes

Nominal diameter	SDR	Mean outside diameter				Skin thickness		Wall thickness		Mean internal diameter
		Without skin		With skin						
		Min	Max	Min	Max	Min	Max	Min	Max	
mm		mm	mm	mm	mm	mm	mm	mm	mm	mm
180	17.6	180.0	181.1	181.2	183.5	0.6	1.2	10.3	11.5	158.8
250	17.6	250.0	251.5	251.2	254.5	0.6	1.5	14.2	15.8	220.8
315	17.6	315.0	316.9	316.2	319.9	0.6	1.5	17.9	19.8	278.3
400	17.6	400.0	402.4	401.2	405.4	0.6	1.5	22.8	25.2	353.2
250	21	250.0	251.5	251.2	254.5	0.6	1.5	11.9	13.2	225.7
280	21	280.0	281.7	281.2	284.7	0.6	1.5	13.3	14.8	252.8
315	21	315.0	316.9	316.2	319.9	0.6	1.5	15.0	16.6	284.4
355	21	355.0	357.2	356.2	360.2	0.6	1.5	16.9	18.7	320.5
400	21	400.0	402.4	401.2	405.4	0.6	1.5	19.0	21.0	361.2
450	21	450.0	452.7	451.2	455.7	0.6	1.5	21.4	23.7	406.3
500	21	500.0	503.0	501.2	506.0	0.6	1.5	23.8	26.3	451.4
630	21	630.0	633.8	631.2	636.8	0.6	1.5	30.0	33.1	568.8

Note: The mean internal diameter is based on the gas industry specification and is provided for guidance only.
Mean internal diameter = [mean external diameter] - [2 x mean pipe wall thickness].



GUIDANCE INFORMATION



Coil banding for safe handling & dispensing

When pipes are packaged into coils, Radius Systems use restraining straps around the pipe to retain the pipe's coil shape. Coils in diameters 75 to 180 mm contain a considerable amount of stored energy, which could potentially cause injury to personnel, if the coils are not handled and dispensed correctly. To allow the safe handling and dispensing of coils, Radius Systems use specialist straps, fitted at different positions around the turns and layers of pipe that form the coils. When the coil is ready to be dispensed, the straps are removed in sequence, ensuring that the energy contained in the coil is release in a controlled and safe manner. (See diagrams below and opposite).

To ensure a safe working environment during the installation of pipe coils, these should only be dispensed from specially designed coil dispensers, supplied by a reputable manufacturer.

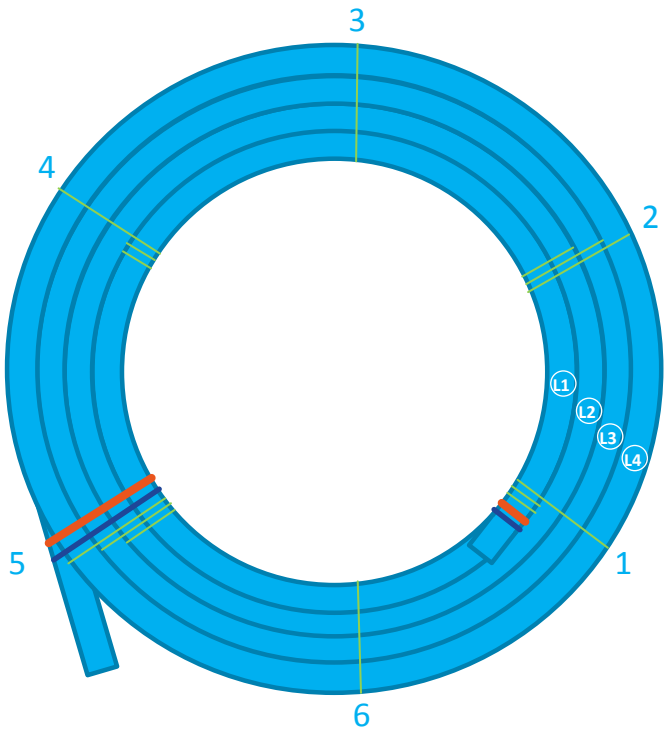
Radius Systems recommend that personnel involved in the handing and dispensing of pipe coils are adequately trained for this operation. Courses in the safe and correct handling and dispensing of pipe coils are available from industry bodies.



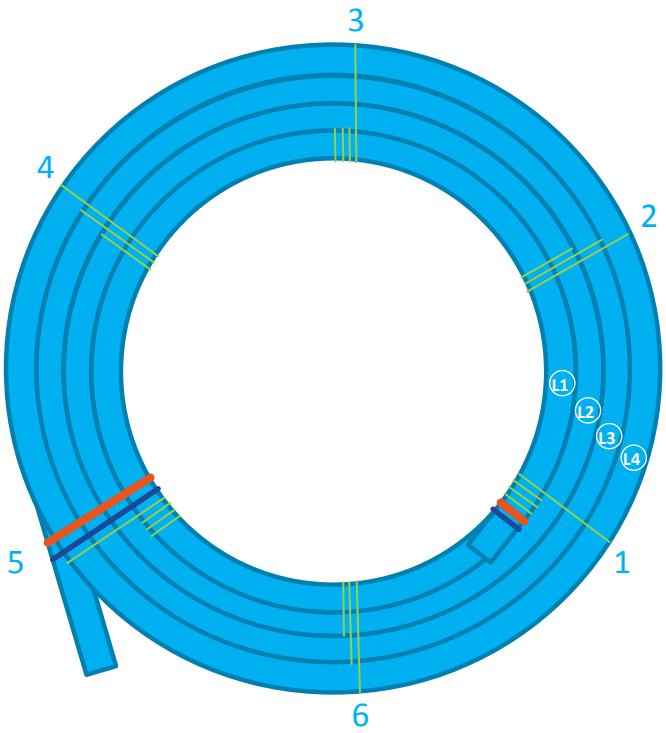
Minimum recommended personal protection equipment (PPE)

- Always wear the minimum PPE or the recommended PPE as identified by the risk assessment.
- Restrict the work area to essential personnel only.
- Always dispense coils from a coil dispenser.
- Take care when cutting the straps to release the pipe.
- Always ensure the tail ends of the coil are released in a restrained and controlled manner.
- Only use a suitable round-nosed cutting tool to cut the strap to prevent the pipe from being damaged.
- Never cut all of the restraining straps at once. Only cut the number of straps to allow the required pipe length to be dispensed.
- Ensure the tail ends of a part used coil are secured before transporting it from the site.
- Do not transport coiled pipes containing water.

● For coils with inner diameter ≤ 1.8 m



● For coils with inner diameter ≥ 2.5 m



Welded polyester strap
Steel security band
Coil length & caution tape

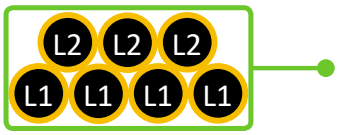
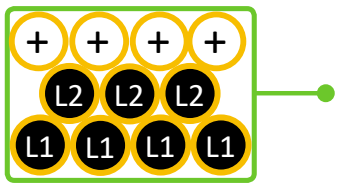
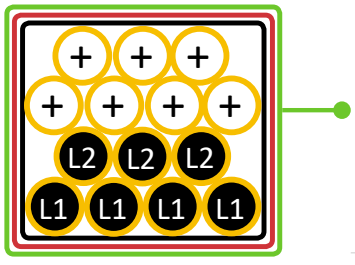
Illustrations showing the banding positions on a 4 layer coil

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Coil banding

Banding position for coils 50 to 180 mm

Coils will consist of a minimum of 2 layers and the number of layers and turns in a coil will depend on its length and may exceed the ones shown below. If the coil consists of only 2 layers, the banding sequence for the 'Final layer' applies to the coil.

	• Coil internal diameter ≤ 1.8 m	• Coil internal diameter ≥ 2.5 m
Layer 1 (L1)		
	Steel security band* and length & caution tape are applied around turns T1 & T2 of layer 1 (L1) Position 1	Steel security band* and length & caution tape are applied around turns T1 & T2 of layer 1 (L1) Position 1
	Not applicable	Polyester strap around turns T1 & T2 of L1 Positions 1, 3 & 5
	Polyester strap Around turns T1, T2 & T3 of L1 Positions 1 & 4	Polyester strap around turns T1, T2 & T3 of L1 Positions 1, 3 & 5
	Additional turns on L1 follow the same banding sequence as above	Additional turns on L1 follow the same banding sequence as above
Additional layers		
	Once layer 2 (L2) is completed Polyester straps are applied around L1 and L2 Positions 2 & 5	Once layer 2 (L2) is completed Polyester straps are applied around L1 and L2 Positions 2, 4 & 6
	Additional layers follow the same banding sequence as above	Additional layers follow the same banding sequence as above
Final layer		
	Steel security band* and coil length & caution tape are applied to the coil end. Polyester straps are applied at all positions.	Steel security band* and coil length & caution tape are applied to the coil end. Polyester straps are applied at all positions.

* Steel security bands are applied to coils 75 mm and above.
Coil length + caution tape applied to 75mm+

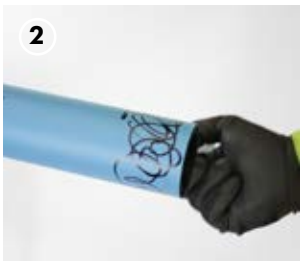
Electrofusion on SC80 and SC100 pipe

For gas and water

SC80 and SC100 pipe preparation for electrofusion jointing



Ensure the pipes to be joined are free from damage and are cut square. Using an approved marker pen, mark the fitting's insertion depth + 25 mm.



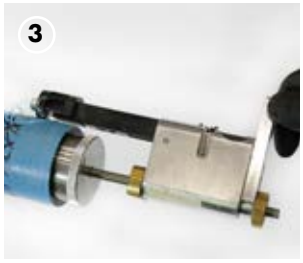
Mark the pipe surface area to prepare.

...Using a rotary scraper or a hand scrapper

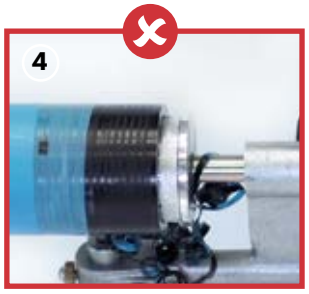


Minimum recommended personal protection equipment (PPE)

Rotary scrapper



Prepare the pipe surface using an industry approved pipe surface preparation tool.



Treat the pipe as a conventional PE pipe. DO NOT remove all of the blue outer surface as this may lead to a poor quality joint.



Immediately place the fitting on the pipe up to the insertion stop. Repeat steps 1 to 3 for the second pipe to be joined. Follow industry best practice when making the joint.



Hand scrapper



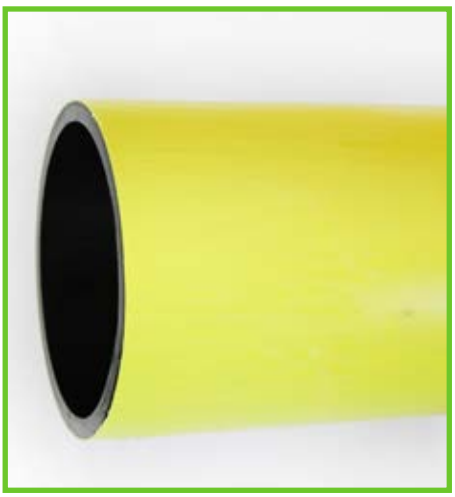
Prepare the pipe surface using an industry approved pipe surface preparation tool.



Treat the pipe as a conventional PE pipe. DO NOT remove all of the yellow outer surface as this may lead to a poor quality joint.



Immediately place the fitting on the pipe up to the insertion stop. Repeat steps 1 to 3 for the second pipe to be joined. Follow industry best practice when making the joint.

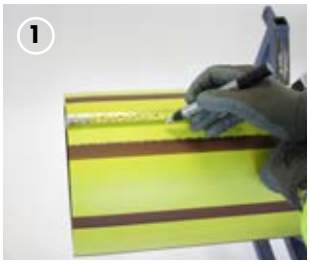


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Electrofusion on ProFuse® pipe

For gas and water

ProFuse® peelable pipe preparation for electrofusion jointing



Ensure the pipes to be joined are free from damage and are cut square. Using an approved marker pen, mark the fitting's insertion depth + 25 mm.



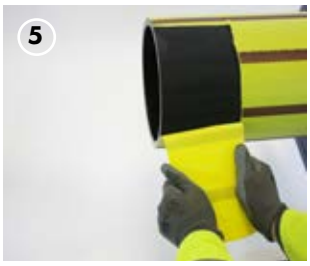
Using the ProFuse pipe exposure tool (PET™), score the external skin around the circumference of the pipe.



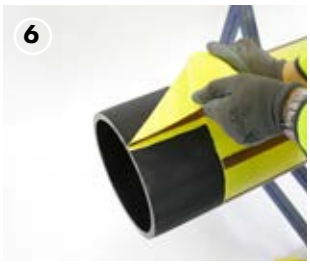
Rotate the PET™ 90° and score the external skin longitudinally towards the pipe end.



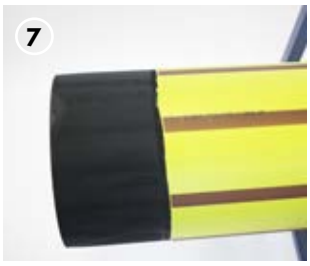
Lift the edge of the skin as shown above and peel the skin away from the core pipe.



Remove the skin carefully in one continuous process.



Ensure the skin is completely removed around the pipe's circumference.



Skin removed.
If the pipe surface becomes contaminated after skin removal, re-prepare the pipe using industry approved pipe surface preparation tools.

ProFuse® PET - Product code: FT0648

- The only tool recommended for the quick, simple and safe removal of the ProFuse® skin
- The minimum recommended skin removal is the fittings socket depth plus 25 mm
- For butt-fusion jointing, a minimum of 25 mm should be removed, to ensure enough of the core polyethylene material is exposed for the jointing process.



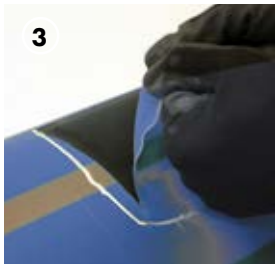
Using saddle fittings



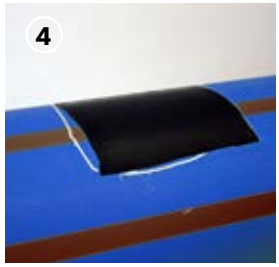
Using an approved marker pen, mark the fittings outline on the pipe + 25 mm.



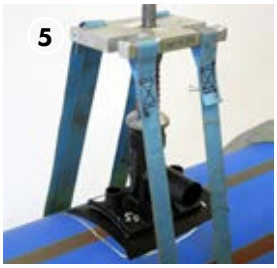
Using the ProFuse pipe exposure tool (PET™), score the external skin around the marked area.



Lift the edge of the skin as shown above and peel the skin away from the pipe's surface.



Skin removed.



Immediately secure the saddle fitting in place. Follow industry best practice when making the joint.

Butt-fusion overview

For gas and water

Solid wall PE pipe butt-fusion jointing overview

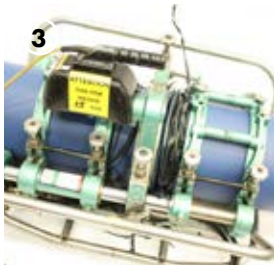
- Only use approved fully automatic butt-fusion equipment and follow industry best practice when joining SC80, SC100 and universal black PE100 pipes.
- Ensure that the print-line on the two pipes are in line to minimise pipe misalignment.
- To minimise contamination of the joint, the butt-fusion operation should be carried out in a suitable welding shelter.

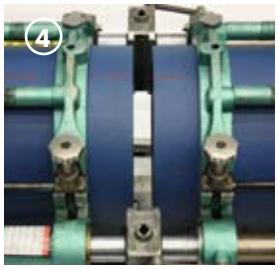


Minimum recommended personal protection equipment (PPE)

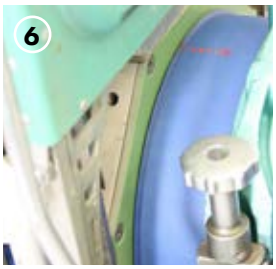






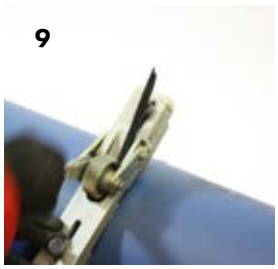
















Butt-fusion on ProFuse® pipe

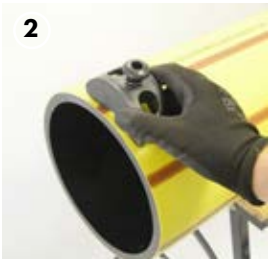
For gas and water

ProFuse® peelable pipe preparation for butt-fusion jointing

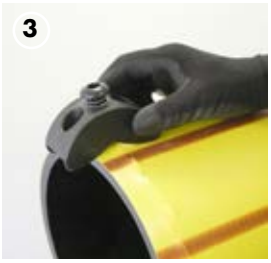
When welding ProFuse® pipe using the butt-fusion technique, a minimum 25 mm wide strip of skin must be removed from the pipe ends to ensure the polypropylene skin does not come into contact with the heater plate and that the bead can be correctly removed. The width of the strip will depend on the de-beading tool being used.



Ensure the pipes to be joined are free from damage and are cut square. Using an approved marker pen, mark a minimum of 25 mm around the pipe's circumference.



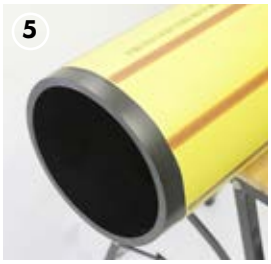
Using the ProFuse pipe exposure tool (PET™), score the external skin around the circumference of the pipe.



Rotate the PET™ 90° and score the external skin longitudinally towards the pipe end.



Lift the edge of the skin as shown above and peel the skin away from the core pipe.



Skin removed. Repeat steps 1 to 4 for the second pipe to be joined. Follow industry best practice when making the butt-fusion joint.



CleanPipe™ jointing guidance

Using CleanPipe™ in trenchless installations



Attach the towing head directly to the leading end of the pipe coil. This operation is undertaken without removing the CleanPipe™ seals, located internally, a short distance from the pipe ends.



The pipe remains sealed throughout the whole installation procedure. Contamination from the installation process remains outside the factory seal.



After the installation is complete, CleanPipe™ can be pressure tested without the need to fit end caps. De-pressurise the pipeline before cutting the pipe ends.



Cut the pipe ends beyond the arrows which identify the cutting position on the label. This removes the seals, ready for the pipe to be joined using Radius Systems' fittings.



Prepare the pipe ends following the ProFuse® pipe preparation for electrofusion jointing above. Follow industry best practice and water industry procedures to make the joint and cleanse and test the pipeline.



FAQs water and gas

Are SC80 and SC100 multi-layer pipes and should they have external stripes to identify their multi-layer construction?

SC80 and SC100 pipes are single layer solid wall pipes. They are therefore not multi-layer pipes and do not require external longitudinal stripes.

Should I completely remove the coloured outer when preparing SC80 and SC100 pipes for electrofusion jointing?

No. The coloured PE outer is not a 'scrape to' guide and should not be completely removed. Removing too much pipe material may lead to joint failure.

What equipment is recommended to prepare SC80 and SC100 pipe surface for electrofusion jointing?

For socket fittings, use a hand scrapper or an industry approved mechanical rotary tool as this removes a continuous and uniform ribbon of material. For saddle fittings, industry approved hand scraping tools should be used.

What is the thickness of SC80 outer and SC100 outer and does it differ for each pipe diameter?

The coloured PE outer thickness ranges from 0.7 to 1.2 mm. It does not differ through the pipe diameter range.

Why do ProFuse® pipes have external stripes?

Stripes identify the pipe as multi-layer. ProFuse® is manufactured from a PE100 core and an outer polypropylene skin.

Does the ProFuse® skin add to the pipe's pressure rating?

The external polypropylene skin applied to the ProFuse® pipe does not add to the pipe's pressure rating. It is a sacrificial layer and identifies the pipe's application and structure and is specifically designed to protect the core pipe from potential damage during handling, transportation and installation.

Should I remove the external skin when joining ProFuse® pipe using mechanical fittings?

Yes, the external polypropylene skin must be locally removed when joining ProFuse® using mechanical fittings, electrofusion fittings or the butt-fusion welding technique. Follow the pipe preparation overview within this brochure.

What should I do if the ProFuse® pipe surface becomes contaminated after removing the peelable skin in preparation for electrofusion jointing?

If the ProFuse® pipe surface becomes contaminated after removing the peelable skin, prepare the pipe surface in the same way as a conventional PE pipe, using industry approved pipe surface preparation tools (rotary or hand scraping tools).

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FAQs water and gas

Water specific

Why do the pipe dimensions for ProFuse® and Puriton® only cover the black core of the pipes?

ProFuse® and Puriton® are classed as multi-layer pipes and are manufactured in accordance with the PE water pipe specification BS EN 12201. The specification only provides dimensions for the pressure bearing structure of PE pipes. For ProFuse® and Puriton® pipes, the black PE core is the only pressure bearing structure within the pipe construction. The dimensions for the outer layers are therefore not included within the water specification.

How should I prepare the pipe surface for solid wall SC80 and SC100 pipes when using Redman™ mechanical fittings?

There is no requirement for any pipe surface preparation when joining SC80 or SC100 pipes. The pipe should be cut square and free from damage before making a joint.

Gas specific

What are the maximum pressure ratings for Radius Systems' gas pipes?

The maximum operating pressure for polyethylene pipes for gas application varies as it is dependent on the following:

- Pipe material
- Pipe diameter and wall thickness
- Operational temperature
- Applied safety factor or service design coefficient.

Values for the pipe safety factor or service design coefficient are quoted within the product manufacturing specifications, namely the Gas Industry Specification (GIS) PL2:2 & PL2:8 and the European gas specification BS EN 1555-2.

The reference specifications identify values for the pipe design stress with applicable operational temperature range and sub-zero temperature limitations to satisfy rapid crack considerations. In addition, where pipes are intended for use above the 20° C reference temperature, the pipe material design stress and calculated pressure rating must be de-rated to account for the material's reduction in tensile strength.

For guidance on the MOP of pipes for gas application manufactured in accordance with the above specifications please contact Radius Systems.

Reference specifications

- *GIS/PL2 'Specification for Polyethylene pipes and fittings for natural gas and suitable manufactured gas'.*
  - Part 2: Pipes for use at pressures up to 5.5 bar.
  - Part 8: Pipes for use at pressures up to 7.0 bar.

- *BS EN-1555 'Plastic piping systems for the supply of gaseous fuels'*
  - Part 2: Polyethylene (PE) pipes.

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FAQs HY100™

How do I identify Radius Systems' HY100 pipes?

Unlike other Radius Systems' solid wall pipes, HY100 have a dual material construction: black PE100 at its core and yellow PE80 for the outer. The PE materials PE100/PE80, together with the manufacturer's name are identified on the ink-jet and indented markings on the pipe surface. These markings are repeated every metre along the length of the pipe.

Why is HY100 not approved to EN 1555-2?

The scope of the EN 1555-2 specification does not allow the combination of different material classifications in the manufacture of co-extruded pipes. Therefore, HY100 pipes are only approved to the UK gas industry specification GIS/PL2-2.

Are HY100 multi-layer pipes and should they have external stripes to identify their multi-layer construction?

HY100 pipes are single layer solid wall pipes. They are therefore not multi-layer pipes and do not require external longitudinal stripes.

Why are HY100 pipes manufactured from two different material classifications of PE?

PE100 materials are increasingly becoming the norm, especially in larger pipe diameters and Radius Systems have developed their HY100 pipe range to meet with current customer and industry requirements.

GIS/PL2-2 stipulates that the outer surface of the pipe should be yellow to identify pipes for gas applications, and since there are currently no commercially available approved PE100 materials in yellow, Radius Systems have combined a PE80 yellow material with a PE100 black material to manufacture their HY100 pipes.

How should I join HY100 to alternative PE gas pipes?

To join HY100 to alternative PE gas pipes, Radius Systems recommend the use of approved electrofusion fittings. The butt-fusion technique is not recommended to join HY100 to alternative PE pipes.

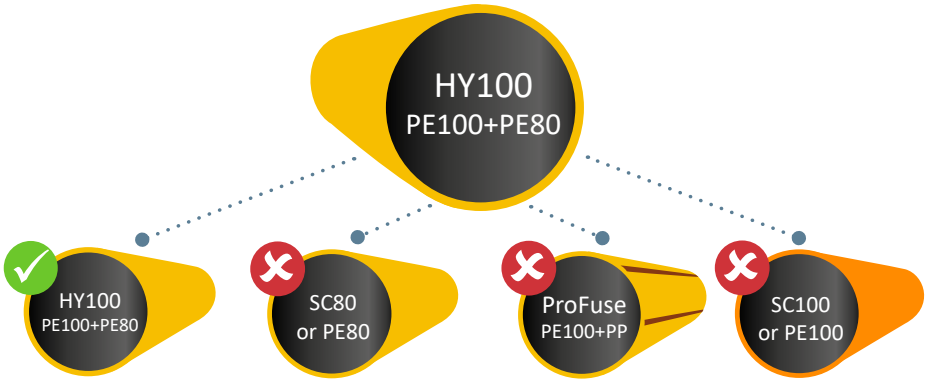
Should I completely remove the yellow outer when preparing HY100 pipe for electrofusion jointing?

No. The yellow PE outer is not a 'scrape to' guide and should not be completely removed. Removing too much pipe material may lead to joint failure.

Can I join HY100 to HY100 pipes using the butt-fusion welding technique and do I need specialist equipment?

HY100 pipes can be joined together using the butt-fusion welding technique. HY100 pipes are conventional solid wall PE pipes and as such, there is no requirement for specialist equipment to join the pipes.

Pipe compatibility for butt-fusion jointing:



What is the thickness of HY100 yellow outer and does it differ for each diameter?

The PE80 yellow outer thickness ranges from 0.7 to 1.2 mm. It does not differ through the pipe diameter range.

Radius Systems HY100 and SC80 pipes are identical in appearance. How do I differentiate them?

The differences between SC80 and HY100 pipes are identified on the ink-jet and indented markings applied to the surface of the pipes. SC80 is identified as a PE80/PE80 pipe approved to GIS/PL2-2 and EN 1555-2, whilst HY100 is identified as a PE100/PE80 pipe approved to GIS/PL2-2 only.



Correct pipe preparation for electrofusion



Incorrect pipe preparation for electrofusion

Radius Systems

Radius Systems are a market leader in the innovation and manufacture of plastic pipe systems for the utilities and construction industries. With extensive research and development at the heart of our products and systems, we take care of the entire pipe life cycle - from design and manufacture through to installation, repair and rehabilitation. We strive to improve industry practices, with good health and safety policies at the forefront of our philosophy of 'getting it right first time'. Our continuous customer inspired research and development, combined with successful customer partnerships represent our total dedication to the plastic piping industry.

- **Manufacturing facilities**
  With 2 production sites in the UK, we have complete control over quality and the ability to meet our customers' expectations.

- **Innovative approach**
  We are leaders in our field with a history of research and new product development. Practicality, durability and adaptability are all high on our agenda to meet our clients' needs.

- **Flexible product and service provision**
  Our comprehensive range of services is designed to fit the variable demands of our clients' developments in pipes, fittings, training and support services.

- **Reliability and safety**
  With 50 years experience in pipe design and manufacture, our clients know that they can count on us to meet not just their product and service needs, but also their delivery and safety requirements.

- **Great customer service**
  We have a dedicated Customer Services team to answer queries from our customers in the UK and overseas. Our service is not just about the delivery of products - contact our team if you have a product or installation enquiry or a post-delivery query.

For more information please visit our website.
www.radius-systems.com



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