

PIPELIFE 
PIPES FOR LIFE

QualPLAST Polyethylene Pipe Systems
For Water, Gas and Electricity Cables

COMPANY PROFILE

Pipelife is Ireland's leading manufacturer and provider of plastic piping systems. Specialising in the extrusion of polyethylene (PE) pipes, Pipelife offers industry leading products for the heating & plumbing, water pressure, electricity, cable ducting, gas and agricultural sectors.

Drawing on over 45 years of manufacturing experience from our production plant in Cork, Pipelife has been to the forefront in developing innovative products, and has been an industry leader for many years. Quality and innovation continue to be the terms that define our philosophy and this is reflected in the range of products and systems that we manufacture to this day.

As well as being a leading edge manufacturer (ISO 9001 2015) of pipe for the Plumbing and Heating Industry, Pipelife has developed a true expertise in the design of heating systems to maximize the potential of Qual-PEX pipe. Many systems are straight-forward and are simply adapted from traditional metal pipe plumbing systems, but new methods of heating buildings are now being opened up with the use of thermoplastic pipe in applications such as wall heating, ceiling heating and most especially Underfloor Heating.

The experience and expertise of our Renewables Department coupled with the security of our design indemnity insurance, top quality materials, and comprehensive before and after sales technical support ensures that we continue to offer an industry leading service in this growing segment of the residential and commercial market. Selling exclusively through merchants our service is tailored to making the supply of renewable products & services easy, professional and painless.



Polyethylene (PE)

Polyethylene Pressure Pipe Systems have been appreciated in the water and gas industries for many years. Polyethylene has significant advantages over other pipe materials. These include a flexible and light weight pipe with excellent chemical resistance and ease of welding with availability of coils. These properties contribute to its appeal in situations where cost effective and reliable systems are required.

Materials

Polyethylene systems are available in different colours and are offered in the polymers PE80, also known as MDPE (Medium Density Polyethylene), and PE100, also known as HDPE (Higher Density Polyethylene).

PE80 - This is the term used to denote MDPE polyethylene material which has been widely used for gas and water industry for many years. PE80 is generally used for lower pressure applications and is supplied in a light blue or black colour.

PE100 - This is the term used to denote HDPE polyethylene. PE100 is a higher density material than PE80 and demonstrates exceptional resistance to rapid crack propagation and is suitable for higher pressure applications. PE100 is supplied in a dark blue or black colour.

Colour Codes:

- Blue - potable water supply.
- Yellow - gas supply
- Black - sewerage / industrial applications
- Red - electricity duct

Flow Characteristics of PE Pipe

In all water pipelines a certain amount of pressure head will be lost due to the friction of water against the internal pipe wall. For this reason the hydraulically smooth bore of PE pipe gives excellent flow characteristics.

Also PE has significant advantages over other pipe materials where internal resistance to abrasion is required- for example if the pipe is intended for transporting abrasive materials such as pumped sewer.

Corrosion Resistance

Polyethylene material is renowned for its good resistance to chemical attack. The degree of resistance to a specific chemical will depend on concentration, temperature and working pressure, each of which will affect the long term life of any system. PE does not rot, rust, pit, corrode or lose wall thickness through chemical or electrical reaction with the surrounding soil. PE does not normally support the growth of, nor is affected by, algae, bacteria or fungi.

Chemical Resistance

Special care is required in industrial applications where effluents contain particular chemicals. Under certain conditions of pressure and temperature, chemicals may be detrimental or permeate the pipe wall and taint water supplies. In general terms the most common harmful chemicals can be grouped into oxidizers, cracking agents and certain solvents. Where pipework is to be layered in contaminated environments, a barrier pipe should be used.

Expansion and Contraction

The coefficient of linear thermal expansion for PE is 1.5×10^{-4} per degree celsius. This is an average figure for temperatures between 20° C and 60° C. This is approximately ten times greater than exists in metal pipelines and an allowance must be made for this when designing polyethylene pipelines and installations where significant temperature variation is expected (eg. above ground).

Pressure Rating

The pressure rating of polyethylene pipes is generally referred to in 'bar', where one bar = 14.7psi.

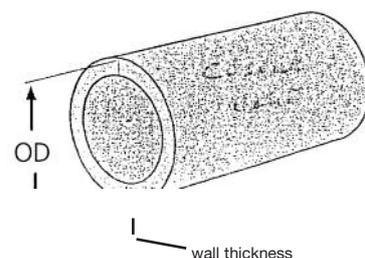
PE PIPE	COLOUR	BAR RATING
PE80 Gas	Yellow	Max 5.5 bar
PE80 Water	Light Blue	Max 12.5 bar
PE100 Water & Industrial	Dark Blue & Black	Max 16 bar

Identification and Marking of Product

Standard Dimensional Ratio (SDR)

One of the items of information stamped on both pipe and fittings is the abbreviation SDR. The wall thickness of polyethylene is stated as a ratio of the nominal outside diameter. This ratio is known as the Standard Dimension Ratio (SDR) as can be expressed as the equation:

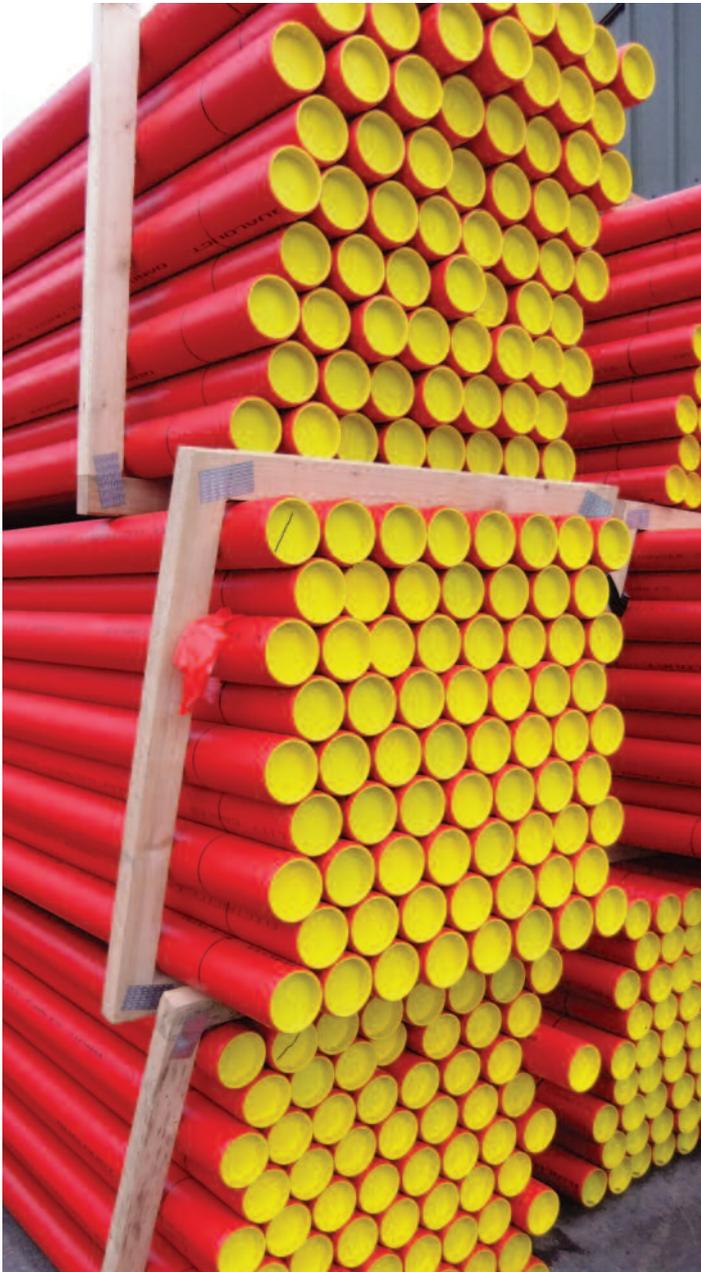
$$\text{SDR} = \frac{\text{Nominal Outside Diameter}}{\text{Minimum Wall Thickness}}$$



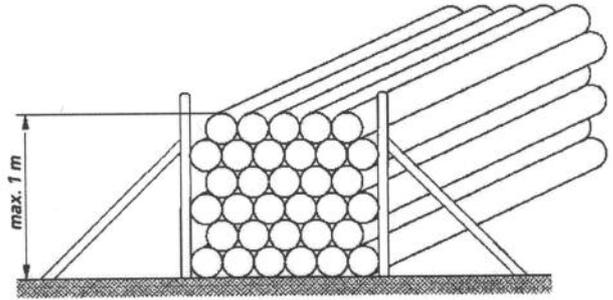
Relationship between wall thickness and outside diameter (OD)

Storage

All storage areas should be flat and kept free from stones and sharp-edged objects. Pipes are to be stored in such a way as to prevent any contamination of the insides. End closure caps should be removed just before installation. Storage zones and stack heights are to be chosen which avoid possible damage or permanent deformation. Large diameter pipes with low wall thicknesses are to be provided with stiffener rings. Single point or longitudinal contact support for any pipe is to be avoided. Non palletted pipes should be stacked in heights not exceeding 1 meter. This is not applicable for pipes which are stacked on pallets providing their full weight is supported by the frame of the pallet. In principle, coiled pipes are to be either layered flat or placed in a suitable protective framework for storage.



Fastening bands should not be removed until shortly before installation. If pipes are correctly stacked on pallets and secured against lateral movement, stacking heights may be increased by 50% .

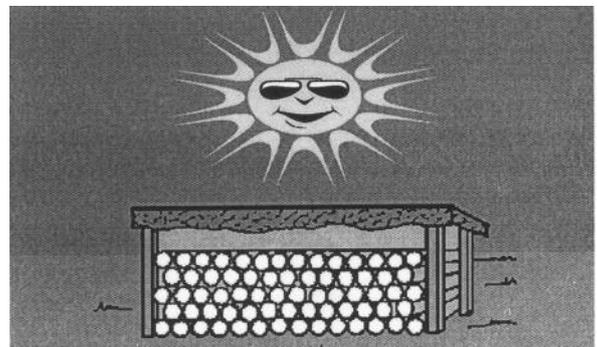


The location where pipe and piping components are stored must provide as much protection as possible. Pipes should not be allowed to come into contact with fuels, solvents, oil, greases, paints (silicones) or heat sources during storage.

Dragging pipes and coils over the ground must be avoided at all times.

Influence of Weather

The influence of weather on all stored piping components, is to be kept to an absolute minimum, i.e. such items should be kept in a covered warehouse. If pipes are stored in the open (for example, on construction sites) they must be covered with suitable coloured or



plain black sheeting to protect them from the effects of weather (eg. UV radiation). Furthermore, a one-sided exposure to direct sunshine can ultimately lead to a deformation of the pipe.

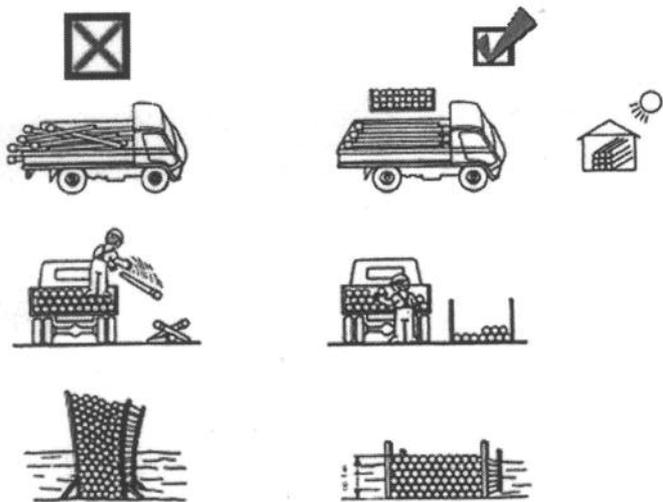
Measures are to be undertaken to obtain either a declaration of suitability from the manufacturer or a special fitness-for-purpose statement (national regulations must be followed) before attempting to use pipe and fittings which have been stored in the open for more than a year.

All piping components should be used in the order of their manufacture or delivery to ensure a systemised stock rotation.

Pipes and piping components should be checked before use to ensure their perfect condition and complete compliance with national marking regulations. The depth of any groove, scratch or flat abraded surface is permitted up to a total depth not exceeding 10% of the respective wall thickness. Pipes or fittings with damage in excess of this value may not be used.

Handling of Piping Systems Transport

Vehicles for transporting pipes should be selected in such a way so that the pipes can lay completely flat on the bed of the vehicle without any overhang. All pipes are to be supported so that they cannot bend or become deformed. Pipes and fittings should be protected from possible damage during transport and not be dragged over the bed of the truck or across open ground prior to installation. Pipes and fittings should always be loaded and unloaded with extreme care. Special support frames



are to be employed when using cranes for loading or unloading from vehicles. Throwing pipes onto the ground from the bed of the transport truck must be prevented at all times.

Sudden shock impacts are to be avoided under all circumstances. This is especially important at ambient temperatures around or below 0°C under which circumstances the impact resistance of almost all materials is significantly reduced.

Pipes and fittings are to be transported and stored in such a way that they do not become contaminated by earth, mud, sand, stones, water, oils, chemicals, solvents, other liquids, animal excrement and the effects of weather etc. We strongly recommend that all open pipe ends are covered by protective caps to prevent the ingress of foreign substances and matter inside the pipes.

Coiled pipes are to be fastened in such a way that they cannot become loose and damaged during their transport.

Following delivery, loose or individual pipes should be laid out flat so that they rest on their entire length as soon as possible and then secured so that they cannot roll against one another. All storage surfaces in contact with the pipes must be kept free from sharp-edged objects. Storing pipes on their pallets will offer basic protection from damage.



Blue and black medium density (PE80) polyethylene service pipes suitable for potable water and industrial uses. Kitemark certified to BS EN 12201.

COILED PIPES:

	Nominal O/D mm	SDR Rating	Bar Rating	Wall Thickness Min Max.mm	Coil Length mtr	
	20	9	16	2.3 2.7	25 50 100 150	
	25	11	12.5	2.3 2.7	25 50 100 150	
	32	11	12.5	3.0 3.4	25 50 100 150	
	40	11	12.5	3.7 4.2	25 50 100 150	
	50	11	12.5	4.6 5.2	25 50 100 150	
	63	11	12.5	5.8 6.5	25 50 100 150	

Qual-GAS MDPE

Yellow medium density (PE80) polyethylene gas pipes fully certified to IS EN 1555 and Kitemark certified to GIS/PL2-2

*Sizes 20mm - 63mm manufactured with BS Kitemark to GIS/PL2-2:2014



Qual-GAS MDPE:

	Nominal O/D mm	SDR Rating	Bar Rating	Wall Thickness		Coil Length mtr	Pipe Length mtr
				Min.	Max. mm		
	*20	9	5.5	2.3	-2.6	100	-
	*25	11	5.5	2.3	2.6	100	-
	*32	11	5.5	3.0	3.4	100	-
	*63	11	5.5	5.8	6.5	100	-
	90	11	5.5	8.2	9.2	-	12
	90	17.6	3	5.1	5.8	-	12
	125	11	5.5	11.4	12.7	-	12
	125	17.6	3	7.1	8.0	-	12

Red Electrical Duct:

ESB Poly Red Duct manufactured and approved to ESB Specification No. 16113

	Nominal O/D mm	Wall Thickness Min. Max. mm		Coil Length mtr	Pipe Length mtr		
	50	3.8	4.3	100	6		
	110	6.3	7.0	*100	9		
	125	7.1	7.9	*100	9		
	160	9.1	9.9	*100	9		
	200	11.9	13.2		9		

*Available to special order.

ESB Fittings:

DESCRIPTION

50mm RED ESB Hockey Sticks

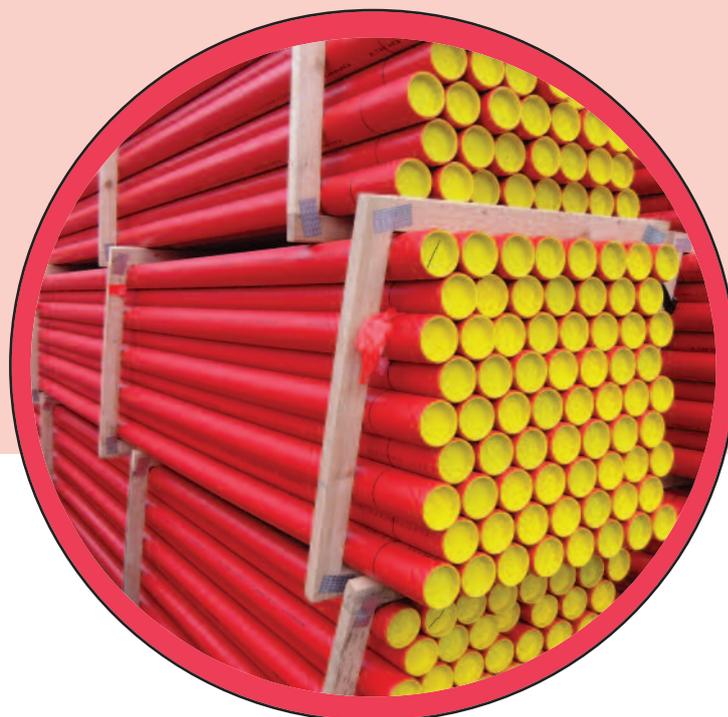
50mm RED ESB Double Socket Couplers

110mm Red ESB Double Ring Couplers

125mm Red ESB Double Ring Couplers

160mm Red ESB Double Ring Couplers

200mm Red ESB Double Ring Couplers



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