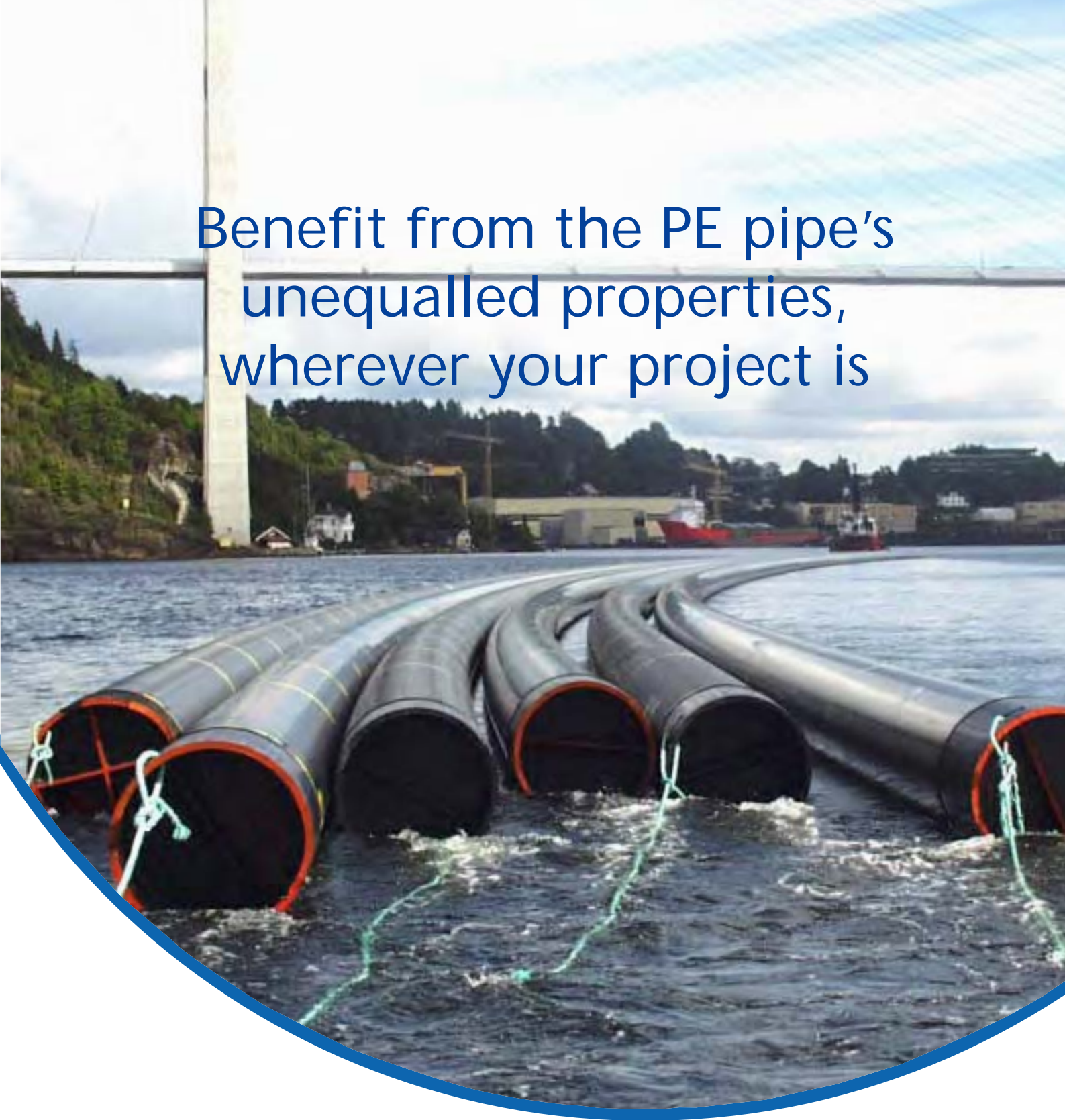


Benefit from the PE pipe's  
unequaled properties,  
wherever your project is



**PE Pipe Systems**

**PIPELIFE** 

## Large diameter PE pipes, made in 550 meters sections and towed directly to where you build the pipeline, that's real efficiency!



Welding of the on-land pipe section inside the cofferdam, Ø 1600 mm pipe, Antalya, Turkey, 1998



Connection of two ready weighted Ø 1400 mm pipe sections over a pontoon, Iceland, 2001

Pipelife's Stathelle plant in Norway is designed and located for one main purpose: On-demand manufacturing of large diameter solid wall PE pipes in continuous lengths up to 550 meters. Thanks to our capacity, competence and towing experience, we have saved time and money for developers, contractors and communities as far from Norway as Brazil.



The Stathelle plant produces continuous pipe lengths directly onto the sea, where they are sealed and prepared for towing.

### Dimensions up to 2000 mm

Until mid 2004 we were recognized as one of the world's few manufacturers of solid wall pipes up to 1600 mm. From this date we enlarged the product range with the dimensions of 1800 mm and 2000 mm, bringing the opportunities of taking benefit from the unique PE properties into new areas.

### The towing is both effective and safe – we have done it for 40 years

The pipe sections, normally up to maximum 550 m\*, are sealed off in both ends with PE end plugs or flange connections. The closed pipe sections are then towed by tugboat to the marine destination – wherever that is.

### Train and truck transportation

The Pipelife PE solutions are equally appreciated for land use as marine use, even though you cannot benefit from the huge lengths. We have developed effective routines for train and truck transportation, based on optimum pipe lengths in every case.

*\* We have produced individual large diameter (Ø1400 mm) pipe lengths as long as 967 m!*

### Fulfilling your contract safely

The contractor, the project consultant and Pipelife, inspects all deliveries jointly. The delivery is checked for possible damages during transport and the parties sign a hand over certificate. The contractor moors the pipes up at a sheltered place.

Pipelife offers all the competence and technical back-up you may need on the spot, ranging from handling advisory to welding. Pipelife's certified, experienced welding team are experts on large

diameter pipe butt fusion. Force Technology of Denmark has accredited the laboratory at Pipelife Norge AS, Stathelle for calibration of butt fusion welding machines.

Pipelife has also a well-equipped workshop for production of segment welded pipe accessories, like bends, T-branches and reducers. As one of our main applications is sewer-outfalls, we have developed special welding equipment for diffuser risers on the main pipe.

## Two different types of tow preparation are used:



Pipes with end plugs, front cones and towing clamps ready for delivery (Montpellier, France, 2003)

### A) Traditional tow preparation with PE end plugs, front cones and towing clamps.

This method is normally used when the assembly of the joining parts is made on site or when mechanical couplings are used. This preparation method is also used when so called "continuous weight collars" are used for ballast on the pipe.

### Certified towing equipment only

The towing gears, (shackles, chains and wires / hawsers), are very critical parts of the whole towing concept. Pipelife has, with its 40 years experience of towing PE pipes, developed a stringent control of these parts. Internationally recognised certifying bodied, like Det norske Veritas, certifies the equipment.

### Benefit from the low-risk experiences

Pipelife deliveries include towing transport and transport insurance up to the "hook off" point to the contractor's vessel outside the job site. Our long track record of successful deliveries has developed a good understanding and co-operation with transport insurance companies and towing companies.



Welding of stubend on 1400 mm pipe (Reykavik, Iceland 2001)

### B) Tow with flange connections ready assembled at the factory.

This method has the advantage that no welding work is required at the job site, resulting in cost reductions. Only spaced collars mounted in two parts can be used as ballast weights though.



Departure of 1600 mm tow (Recife, Brazil 2002)

## PE pipes delivered in long lengths are considered as the most attractive solution by marine contractors and end users



Pulling of Ø 1000 mm PE pipe over a lock in Sdertlje, Sweden, 2000



Submerging of the first 1500 m section of a Ø 1200 mm PE pipe sea outfall in Sibenik, Croatia, 2004

The characteristics of the PE pipes and the possibility to supply the pipes in long lengths by towing gives a number of advantages over traditional materials and traditional transport methods.

**PE pipes have the following technical properties, which are all very important for a long service life and easy installation:**

- Flexible, allowing the pipeline to be installed by using the "float and sink" method.
- Non-corrosive, non-toxic and potable water approved.
- High abrasion and chemical resistance.
- Permanent low head loss, thus reducing the cost of pumping.
- Accept much rougher handling during installation than any other pipe material due to high fatigue strength and high resilience to shocks.
- Light in weight, (density of 0,95 – 0,96 kg / dm<sup>3</sup>), which gives buoyancy in sea-water.

All these properties are very important and therefore highly valued by the end user, who benefits from a pipeline with longer service life than any alternative pipeline using other materials.

**The cost saving advantages from supplying PE pipes in long lengths are equally important:**

- No or very little welding work is required.
- Supply of pipes in lengths of 500 – 550 m results in very few joints.
- Low transport costs. The tug takes several thousands metres of large diameter pipe in one tow.
- Substantial time and cost savings for the marine contractor as normally no land based work site and storage area would be required.
- Low installation costs due to short installation time and no need of heavy installation equipment.
- Less risk for damages during handling and storage.

## PE Pipe Standards

Pipelife polyethylene pipes are produced in accordance with existing international and national standards and norms in European countries. The main international standards followed are:

**-ISO 4427:E -EN12201**

Additionally, pipes can be produced in accordance with the following national standards to fit with the clients' wish and/or special requirements:

**-NS 3622 -DS2119 -SFS4231 -WIS 4-32-17  
-SIS 3362 -SFS2336-7 -DIN8074**

Pipelife's Quality Assurance System managed by our skilled personnel and well-equipped laboratory and monitoring equipments guarantee high quality products and services.

## Welding of Polyethylene - different techniques

Somebody once described a pipe as "two holes with something in between" We, as pipe makers do not see it quite so simply but he may have a point - the finished pipeline should be trouble-free!

If trouble occurs it's most often at the outset – it's when the pipes are joined to various components and then connected into a system, to perform the tasks and duties that the designer intended for it, that the true values of the material and fitter are revealed!

The polyethylene material for pipe systems has been developed over 60 years and has given the pipe systems designer huge scope design-wise in performance and with proven and reliable methods for jointing.

This short presentation emphasises some of the characteristics of PE material as well as some of the most commonly used machining and jointing techniques.

As a basic guideline - polyethylene material can be sawn, drilled, planed and welded in numerous ways. Here we look at welding techniques.

### Butt- or mirror weld

The most commonly used welding method. The two pipe ends are placed in a clamping rig, machined to fit and then a teflon coated heating mirror is inserted to heat up the ends of the pipe material to approximately 210 °C. The heating mirror is removed and the two pipe ends adjoined together under pressure and for a time, both aspects according to a prescribed procedure. Mostly, these elements are keyed into a controlled and

automated welding machine.

It is essential to use skilled and certified operators and certified welding rigs for these operations. There are several internationally accepted standards, like INSTA or WIS, which give excellent guidelines for butt-welding operations.

Butt-welding is also utilised in bend machines and welding tables. It is by far the most used jointing method for Polyethylene.

### Socket-welding

The socket-welding method is closely related to the butt-welding but utilises a profiled heating mirror [with male and female parts] instead of a plane mirror. This method is used primarily for joining branches, diffuser orifices or similar insets.

### Electro-fusion couplers

For smaller pipes, up to 400-mm diameter, welding of electro-fusion couplers has been widespread. The coupler itself has heating elements inlaid into the socket. When these are electrically heated the fusion of pipe into the socket takes place. This method is fast and secure, it also avoids the internal beads that occur with butt-welding. This can be important in smaller bore sizes.

### Extrusion welding

Finally, for construction of complex PE items in plate and/or pipe, an extrusion-welding technique is often used. This method is based on local heating of the work pieces and adding melt from PE rods. Gradually building a strong fillet of PE material to fix and strengthen the mated surfaces.

Extrusion welds do not have the same strength as butt or electro-fusion welds but the method is often used as a secondary and supplementary aid. A typical use would be to fix stiffeners on branches, manholes, tanks or similar items.

Pipelife Norge AS has a wide experience with these different techniques and is happy to assist you in your selection of the optimum welding or construction method.



Hand extrusion welding machine.



Bend welding machine.



Three successful marine pipe deliveries from three main types of applications

Connection of GRP coupling and submerging of the Ø 1600 mm PE outfall pipeline in Montpellier, France, 2003



Towing of Ø 1400 mm pipes south of Iceland, 2001



**Marine waste water discharges:**

**Montpellier Sea Outfall Project, France 2003**

The Montpellier Sea Outfall is the longest marine sewer discharge installed in Europe, almost 11.000 m long. Special attention was given to have no metal parts in the pipeline, so PE stubends and GRP couplings were used for joining the pipe sections together.

Pipe specification: OD 1600 x 61,2 mm SDR26 PE100 PN6,3 pipe, total length: 10.825 m

The pipe was delivered by tugboat in 20 lengths, (5 x 515 m + 15 x 550 m), in 4 deliveries from March to August 2003.

Special accessories like, PE stubends for the GRP couplings and diffuser risers were part of the delivery. Pipelife also made the required welding of the stubends to the pipe sections as well as the diffuser riser welding work.

The pipeline was installed during the summer and autumn 2003. Continuous concrete weight collars were used, which gave both ballast and mechanical protection of the pipeline. Additionally, concrete mattresses were laid over the installed pipeline in order to give the specified ballast on the pipeline. The maximum depth of the pipeline at the end of the diffuser is about 35 m.

Client and Investor: Agglomération de Montpellier.  
 Consultant: Cabinet Merlin.  
 Marine Contractor: Consortium EMCC-Van Oord ACZ - Draflumar - Sogea Sud.



**Intake pipe systems for cooling water and raw water for desalination plants:**

**Södertälje Cooling Water Intake Project, Sweden, 2000**

The cooling water intake pipeline for Telge Energi, installed in the lake of Mälaren outside the city of Södertälje, has a total length of 6134 m. This is probably one of the longest intake pipelines in Europe. As the installation is in a lake which has a different water level than the Baltic Sea, the pipe sections had to be lifted over the lock in Södertälje and then further towed into the lake of Mälaren.

Pipe specification: OD 1000 x 35 mm SDR28,5  
PE80 pipe, total length: 6.134 m

The pipe was delivered by tugboat in 13 lengths, (12 x 500 m + 1 x 134 m), in 3 deliveries from March to May 2000.

Special accessories like flange connections including PE stubends and steel flanges as well as bends, T-branches for air vent valves were part of the delivery. Pipelife also made the required welding of the stubends to the pipe sections.

The pipeline was installed during the spring and summer 2000. The maximum depth of the pipeline at the end of the intake is about 42 m.

Client and Investor: Telge Energi AB.  
Consultant: Fjärrvärmebyrån.  
Marine Contractor: PEAB AB.



**Sea and river crossings for waste water and potable water:**

**Lough Mahon Crossings, Cork, Ireland, 2001**

The waste water pumping mains for the Cork Municipal Sewerage Scheme consists of a twin pipeline crossing the bay Lough Mahon, from the city border of Cork to Carrigrennan on the other side of the bay where the new treatment plant is located. The two diameter 1200 mm pipelines are installed in a trench the whole distance. In order to reduce the trench width so called continuous collars were used. These collars are actually short pieces of concrete rings installed on the whole length of the pipelines. These collars gave also additional protection of the pipelines during the backfilling operation.

Pipe specification: OD 1200 x 43,4 mm SDR27,6 PE100 PN6,  
total length: 7.062 m

The pipe was delivered by tugboat in 18 lengths, (16 x 386 m + 2 x 443 m), in 3 deliveries from August to November 2001.

Rising mains in 450 mm diameter, totally 3 pieces in accurate lengths of 301,45 m and 292,64 m (measured at specific ambient air and water temperature) and with specially designed end plugs were part of the delivery. Pipelife also made the required welding of the stubends to the pipe sections.

The pipeline was installed during the autumn 2001 and winter 2002. The maximum depth of the pipeline when crossing the shipping lane is about 15 m.

Client and Investor: Cork Municipality  
Consultant: E.G. Pettit & Company  
Marine Contractor: Van Oord ACZ Ltd.

For a full reference list, from the late 1950's until the latest ones, check our website: [www.pipelife.com](http://www.pipelife.com)

Pressurised polyethylene pipe materials															
Material Class	S (MPa)	MRS (MPa)	C	41	33	27.6	26	22	21	17.6	17	13.6	11	9	7.4
PE-80	5	8	1.6	PN 2.5	PN 3.2	PN 3.8	PN 4	PN4.8	PN 5	PN 6	PN 6.3	PN 8	PN 10	PN 12.5	PN 16
PE-80	6.3	8	1.25	PN 3.2	PN 4	PN 4.7	PN 5	PN6	PN 6.3	PN 7.5	PN 8	PN 10	PN 12.5	PN 16	PN 20
PE-100	6.3	10	1.6	PN 3.2	PN 4	PN 4.7	PN 5	PN6	PN 6.3	PN 7.5	PN 8	PN 10	PN 12.5	PN 16	PN 20
PE-100	8	10	1.25	PN 4	PN 5	PN 6	PN 6.3	PN7.7	PN 8	PN 9.6	PN 10	PN 12.5	PN 16	PN 20	PN 25

Material: Type og material used (PE-80 can be both PE-MD & PE-HD) MRS: Minimum Required Strength by ISO 9080-2 C: Safety factor MRS/S  
 S: Design stress SDR-class: Outside pipe diameter divided by wall thickness

Outside diameter vs wall thickness and weight of different SDR Classes													
OD mm	SDR 41 e(mm)	SDR 41 kg/m	SDR 33 e(mm)	SDR 33 kg/m	SDR 27,6 e(mm)	SDR 27,6 kg/m	SDR 26 e(mm)	SDR 26 kg/m	SDR 22 e(mm)	SDR 22 kg/m	SDR 21 e(mm)	SDR 21 kg/m	
20													
25													
32													
40									2.0	0.251	2.0	0.251	
50					2.0	0.317	2.0	0.317	2.4	0.356	2.4	0.372	
63					2.3	0.455	2.5	0.482	2.9	0.561	3.0	0.586	
75					2.7	0.640	2.9	0.682	3.4	0.791	3.6	0.826	
90	2.2	0.633	2.8	0.800	3.3	0.917	3.5	0.987	4.1	1.14	4.3	1.19	
110	2.7	0.850	3.4	1.17	4.0	1.36	4.2	1.45	5.0	1.69	5.3	1.77	
125	3.1	1.23	3.9	1.53	4.5	1.75	4.8	1.86	5.7	2.18	6.0	2.28	
140	3.5	1.50	4.3	1.88	5.1	2.19	5.4	2.35	6.4	2.73	6.7	2.85	
160	4.0	1.86	4.9	2.50	5.8	2.86	6.2	3.08	7.3	3.55	7.7	3.73	
180	4.4	2.50	5.5	3.15	6.5	3.61	6.9	3.83	8.2	4.49	8.6	4.69	
200	4.9	3.08	6.2	3.85	7.2	4.46	7.7	4.74	9.1	5.54	9.6	5.81	
225	5.5	3.90	6.9	4.89	8.1	5.63	8.6	5.96	10.2	7.0	10.8	7.35	
250	6.2	4.77	7.7	6.09	9.0	6.95	9.6	7.38	11.4	8.64	11.9	9.03	
280	6.9	5.96	8.6	7.55	10.1	8.71	10.7	9.2	12.7	10.8	13.4	11.34	
315	7.7	7.60	9.7	9.7	11.4	11.0	12.1	11.7	14.3	13.7	15.0	14.3	
355	8.7	9.6	10.9	12.1	12.8	14.0	13.6	14.8	16.1	17.4	16.9	18.2	
400	9.8	12.5	12.3	15.7	14.5	18.1	15.3	19.1	18.2	22.5	19.1	23.6	
450	11.0	15.8	13.8	19.9	16.3	22.9	17.2	24.2	20.5	28.5	21.5	29.8	
500	12.3	19.4	15.3	24.4	18.1	28.3	19.1	29.9	22.7	35.2	23.9	36.9	
560	13.7	24.4	17.2	30.7	20.2	35.5	21.4	37.5	25.5	44.1	26.7	46.2	
600	14.7	27.8	18.7	35.2	21.7	40.7	23.1	43.3	27.3	50.6	28.6	52.9	
630	15.4	30.8	19.3	38.7	22.8	44.9	24.1	47.4	28.6	55.8	30.0	58.3	
710	17.4	39.0	21.8	49.2	25.7	57.0	27.2	60.2	32.3	70.9	33.9	74.2	
800	19.6	49.5	24.5	62.4	28.9	72.3	30.6	76.3	36.4	89.9	38.1	94.0	
900	22.0	62.8	27.6	79.0	32.5	91.5	34.4	97.4	40.9	113.8	42.9	118.9	
1000	24.5	77.0	30.6	98.0	36.1	112.9	38.2	120.0	45.5	140.4	47.7	147.0	
1100	26.8	93.5	34.1	117.9	39.8	136.6	42.3	145.0	50.0	169.9	52.4	177.6	
1200	29.4	111.0	36.7	140.0	43.4	162.5	45.9	173.0	54.5	202.2	57.2	211.6	
1400	34.3	151.3	42.9	190.9	50.6	221.1	53.5	234.7	63.6	275.2	66.7	287.5	
1600	39.2	198.0	49.0	249.0	57.8	288.8	61.2	306.0	72.7	359.3	76.2	375.5	
1800	43.9	250.0	54.5	308.5	65.1	365.5	69.1	387.9	81.8	454.7	85.7	475.1	
2000	48.8	308.6	60.6	380.8	72.3	451.1	76.9	478.8	90.9	561.3	95.2	586.5	

OD = Outside pipe diameter e = Minimum wall thickness kg/m = Weight per metre pipe

# Range of Products

Outside diameter vs wall thickness and weight of different SDR Classes												
OD mm	SDR 17.6 e(mm)	SDR 17.6 kg/m	SDR 17 e(mm)	SDR 17 kg/m	SDR 13,6 e(mm)	SDR 13,6 kg/m	SDR 11 e(mm)	SDR 11 kg/m	SDR 9 e(mm)	SDR 9 kg/m	SDR 7.4 e(mm)	SDR 7.4 kg/m
20							2.0	0.118	2.3	0.133	3.0	0.156
25					2.0	0.151	2.3	0.172	3.0	0.213	3.5	0.243
32	2.0	0.197	2.0	0.200	2.4	0.228	3.0	0.274	3.6	0.326	4.4	0.387
40	2.3	0.288	2.4	0.290	3.0	0.354	3.7	0.434	4.5	0.507	5.5	0.607
50	2.9	0.445	3.0	0.460	3.7	0.550	4.6	0.672	5.6	0.789	6.9	0.945
63	3.6	0.695	3.8	0.730	4.7	0.869	5.8	1.06	7.1	1.25	8.6	1.5
75	4.3	0.986	4.5	1.03	5.6	1.23	6.8	1.48	8.4	1.77	10.3	2.11
90	5.1	1.40	5.4	1.47	6.7	1.76	8.2	2.14	10.1	2.54	12.3	3.04
110	6.3	2.10	6.6	2.19	8.1	2.63	10.0	3.18	12.3	3.79	15.1	4.55
125	7.1	2.69	7.4	2.79	9.2	3.39	11.4	4.09	14.0	4.89	17.1	5.85
140	8.0	3.37	8.3	3.50	10.3	4.25	12.7	5.13	15.7	6.12	19.2	7.34
160	9.1	4.40	9.5	4.57	11.8	5.54	14.6	6.74	17.9	7.99	21.9	9.61
180	10.2	5.54	10.7	5.77	13.3	7.01	16.4	8.51	20.1	10.1	24.6	12.13
200	11.4	6.86	11.9	7.10	14.7	8.65	18.2	10.5	22.4	12.5	27.4	15.0
225	12.8	8.64	13.4	9.03	16.6	10.9	20.5	13.3	25.2	15.8	30.8	18.9
250	14.2	10.7	14.8	11.1	18.4	13.5	22.7	16.3	27.9	19.5	34.2	23.4
280	15.9	13.3	16.6	13.9	20.6	16.9	25.4	20.4	31.3	24.4	38.3	29.3
315	17.9	16.9	18.7	17.2	23.2	21.4	28.6	25.9	35.2	30.9	43.1	37.2
355	20.1	21.4	21.1	22.4	26.1	27.2	32.2	33.0	39.7	39.3	48.5	47.2
400	22.7	27.8	23.7	28.9	29.4	35.2	36.3	42.7	44.7	50.8	54.7	61.1
450	25.5	35.1	26.7	36.6	33.1	44.6	40.9	54.1	50.3	64.3	61.5	77.3
500	28.3	43.3	29.7	45.1	36.8	55.0	45.4	66.7	55.8	79.4		
560	31.7	54.2	33.2	56.6	41.2	69.0	50.8	83.7	62.2	99.6		
600	34.0	62.3	35.6	65.4	44.1	79.2	54.5	95.4	67.6*	115.7*		
630	35.7	68.7	37.4	71.8	46.3	87.3	57.2	105.0	71.0	127.6		
710	40.2	87.2	42.1	91.0	52.2	110.8	64.5	134.3	80.0*	162.0*		
800	45.3	111.0	47.4	115.0	58.8	140.7	72.7	170.4	90.1*	205.7*		
900	51.0	140.0	53.3	146.0	66.2	178.1	81.8*	215.6*				
1000	56.6	173.0	59.3	180.0	72.5*	216.9*	90.9*	266.2*				
1100	62.3	209.0	65.2	218.0	80.9*	266.0*						
1200	67.9	248.5	70.6	257.8	88.2*	316.5*						
1400	79.2	338.2	82.4	350.6	102.9	430.7						
1600	90.6	441.7	94.1	457.8	117.6*	562.5*						
1800	101.9	558.9	105.9*	579.3*								
2000	113.2	690.2	117.6*	715.2*								

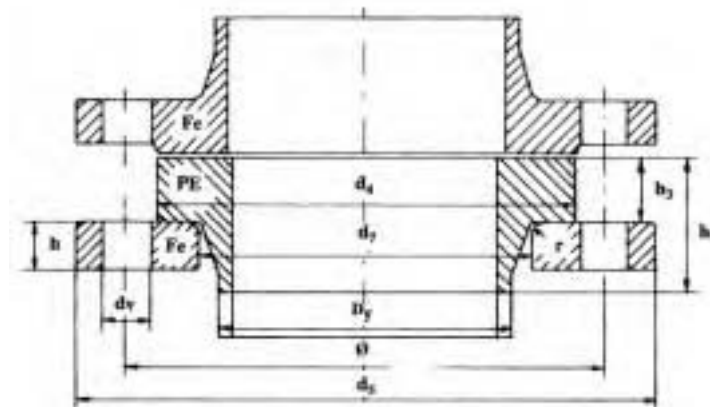
OD = Outside pipe diameter e = Minimum wall thickness kg/m = Weight per metre pipe \* =Contact Pipelife for more information about these SDR classes

Resin characteristics - typical values					
Property	Unit	Test methods	PE-80 PE-MD	PE-80 PE-HD	PE-100 HPPE
Density	kg/m <sup>3</sup>	ISO 1872/1183	948	953	961
Melt flow rate	g/10 min	ISO 1133 (190 °C/5kg)	0.8	0.5	0.4
Yield stress	N/mm <sup>2</sup>	ISO 6259	19	21	23
Elongation at yield point	%	ISO6259	9	9	8
Elongation at break	%	ISO 6259	>600	>600	>600
Charpy impact strength	kJ/m <sup>2</sup>	ISO 179 (Unnotched)	No failure	No failure	No failure
Shore hardness D		ISO R 868	60	61	61
Environmental stress crack resistance F <sub>50</sub>	h	ASTM D 1693 (condition A)	5000	10000	10000
Vicat softening point	°C	ISO R 306	124	121	119
Average coefficient of thermal expansion	mm/m °C	ASTM 696	0.2	0.2	0.2
Thermal stability	Min	ISO/TR-10837(210 °C)	>15	>15	>15
Tensile modulus	MPa	ISO 527-2	800	1000	1100

# Range of Products

Stub ends different SDR classes											Backing rings						Bolt sets		
OD	DN	d4	SDR 33		SDR 26		SDR 17		SDR 11		d5	d7	Ø	NP	PN 10		hole	M	dv
mm	mm	mm	h1	h3	h1	h3	h1	h3	h1	h3				h	h	r			
20	15	45							35	10	95	32	65	14	2		4	12	14
25	20	58							35	9	105	38	75	14	2		4	12	14
32	25	68							35	10	115	48	85	16	2		4	12	14
40	32	78					40	11	40	11	140	55	100	16	2		4	16	18
50	40	88					60	12	60	12	150	66	110	16	2		4	16	18
63	50	102					75	14	75	14	165	78	125	16	2		4	16	18
75	65	122					80	16	80	16	185	92	145	16	2		4	16	18
90	80	138					90	17	90	17	200	108	160	18	2		8	16	18
110	100	158			80	26	100	18	100	18	220	128	180	18	2		8	16	18
125	100	158			80	28	110	18	110	25	220	135	180	18	2		8	16	18
140	125	188			80	30	120	18	120	25	250	155	210	18	3		8	16	18
160	150	212			80	30	130	18	130	25	285	178	240	18	3		8	20	23
180	150	212			80	32	140	20	140	30	285	188	240	18	3		8	20	23
200	200	268	100	32	100	32	145	24	145	32	340	235	295	20	5		8	20	23
225	200	268	100	32	100	32	150	24	150	32	340	238	295	20	3		8	20	23
250	250	320	100	32	100	32	160	25	160	35	395	288	350	22	5		12	20	23
280	250	320	100	34	100	34	170	25	170	35	395	294	350	26	3		12	20	23
315	300	370	100	36	100	36	190	25	190	35	445	338	400	26	5		12	20	23
355	350	430	110	40	110	40	110	30/50	205	66/40	505	376	460	28	4		16	20	23
400	400	482	120	44	120	44	120	33/54	220	72/46	565	430	515	32	4		16	24	27
450	450	535	120	44	120	44	120	56	120	74	615	465	565	36	6		20	24	27
500	500	585	120	47	120	47	120	58	120	76	670	533	620	36	6		20	24	27
560	600	645	120	50	120	50	120	60	120	80	780	618	725	35/44	7		20	27	30
600	600	690	85	45	92	52	100	60	110	73	780	615	725	35/44	7		20	27	30
630	600	690	120	56	120	56	120	64	120	82	835	645	725	35/44	7		20	27	30
710	700	805	120	60	120	60	120	70	120	85	895	725	840	35	50	7	24	27	30
800	800	900	120	77	120	77	120	85	120	95	1015	815	950	35	56	7	24	30	33
900	900	1005	120	88	120	86	120	90			1115	915	1050	35	68	7	28	30	33
1000	1000	1110	140	96	140	96	140	100			1230	1015	1160	35		7	28	33	36
1100	1200	1330	160	100	175	100	160	120			1455		1380	35		7	32	36	39
1200	1200	1330	160	100	160	100	160	120			1455	1215	1380	35		7	32	36	39
1400	1400	1535	180	110	180	110	180	130			1675	1440	1590	42		10	36	39	42
1600	1600	1760	190	115	190	115	190	140			1915	1650	1820	42		10	40	45	48
1800	1800	1965	215	120	215	120					2115	1860	2020	50		10	44	45	48
2000	2000	2165	240	140	240	140					2325	2060	2230	50		10	48	45	48

Stub end with backing ring



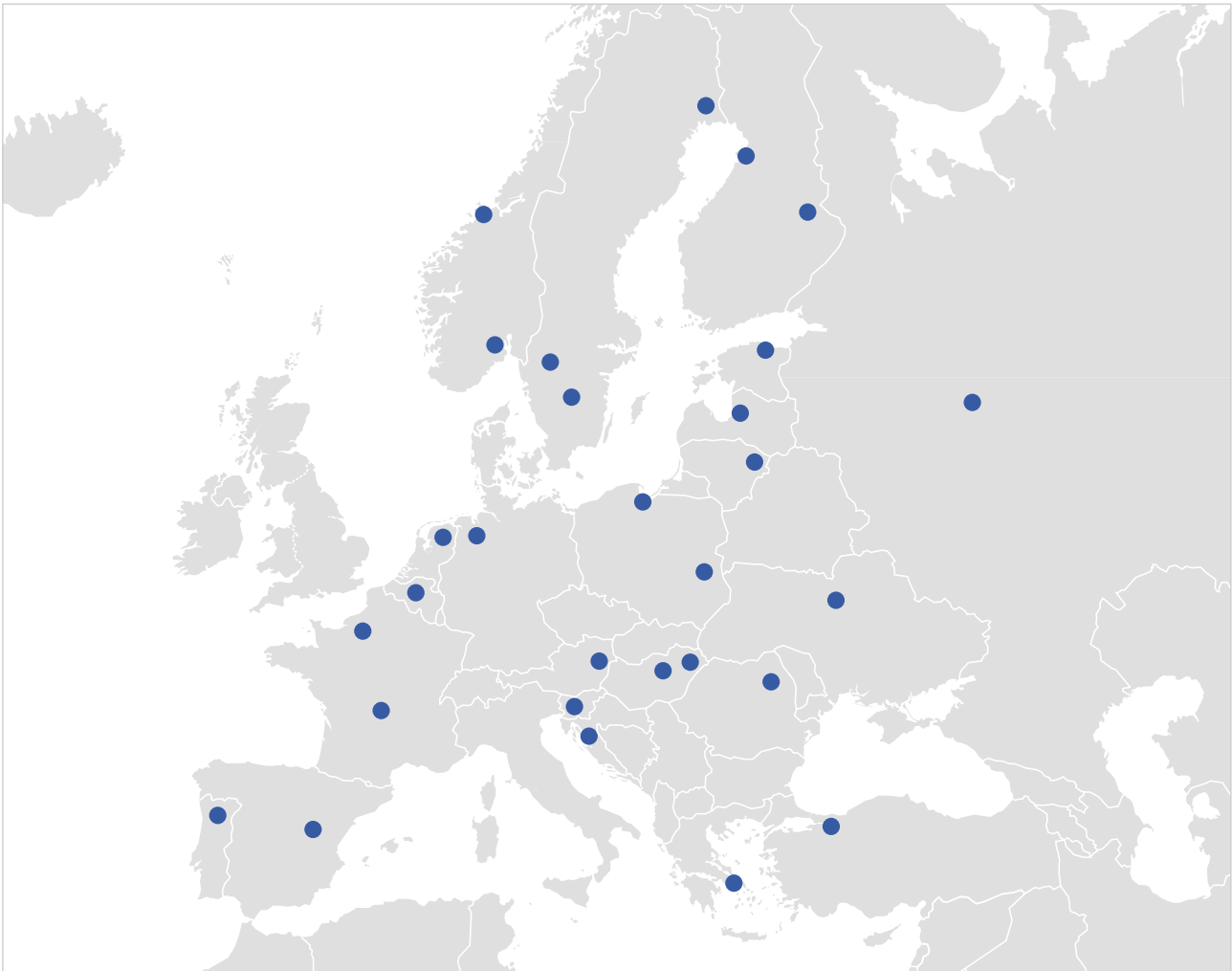
## Pipelife delivers all components required for a complete PE pipe installation

- PE stubends
- Steel backing rings, with or without support sleeves
- Bolt sets
- Gaskets
- Bends, segment welded
- T-branches, segment welded
- Reducers
- Spool pieces / Anchoring pieces
- Diffuser risers



Pipelife Norge AS is a subsidiary of the international Pipelife Group, one of the leading manufacturers of plastic pipe systems. Pipelife is established in 26 countries with 35 factories. Our goal is to deliver plastic pipe systems of high quality to competitive prices from a manufacturer which leads the technological development in the industry.

In Pipelife Norge AS you find the leading manufacturer of large diameter PE pipe systems with the widest range of extruded PE pressure pipe system, as well as high competence in technical back-up and advice. Contact us in the early stage of your project, and we all shall be happy to assist with technical solutions in order to achieve the optimum design.



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