

About the Company

Established in 1984, **GPCO** Plastic Co. is a leading manufacturer of PE pipes and fittings with applications in Water, Gas, Sewage, Industrial, and Irrigation systems. With a great commitment to growth and innovation, Gostareh has been able to expand its production capacity, and to become one of the major regional players in the field of PE piping systems. Today, operating at two plants with the combined manufacturing facilities of 50,000 m² and annual production capacity of 70,000 MT, Gostareh is the dominant player in the Iranian market and has a sizable market shares in CIS, GCC, and the rest of the Middle East.



Products



PE Pipes for Water Applications

GPCO produces water PE pipes with the range from 16 up to 2000 mm OD, at variety of pressure ratings. The pipes for water applications are produced using both PE80 and PE100 according to our customer's demand. The pipes have applications in water transportation, water collection, wastewaters and drainage, residential and industrial water distribution networks, and fire-loop networks in refineries, petrochemical plants, and oil rigs. These pipe are manufactured according to ISO 4427 and EN 12201 standards. The lifecycle expectancy of our water pipes exceeds 100 years.

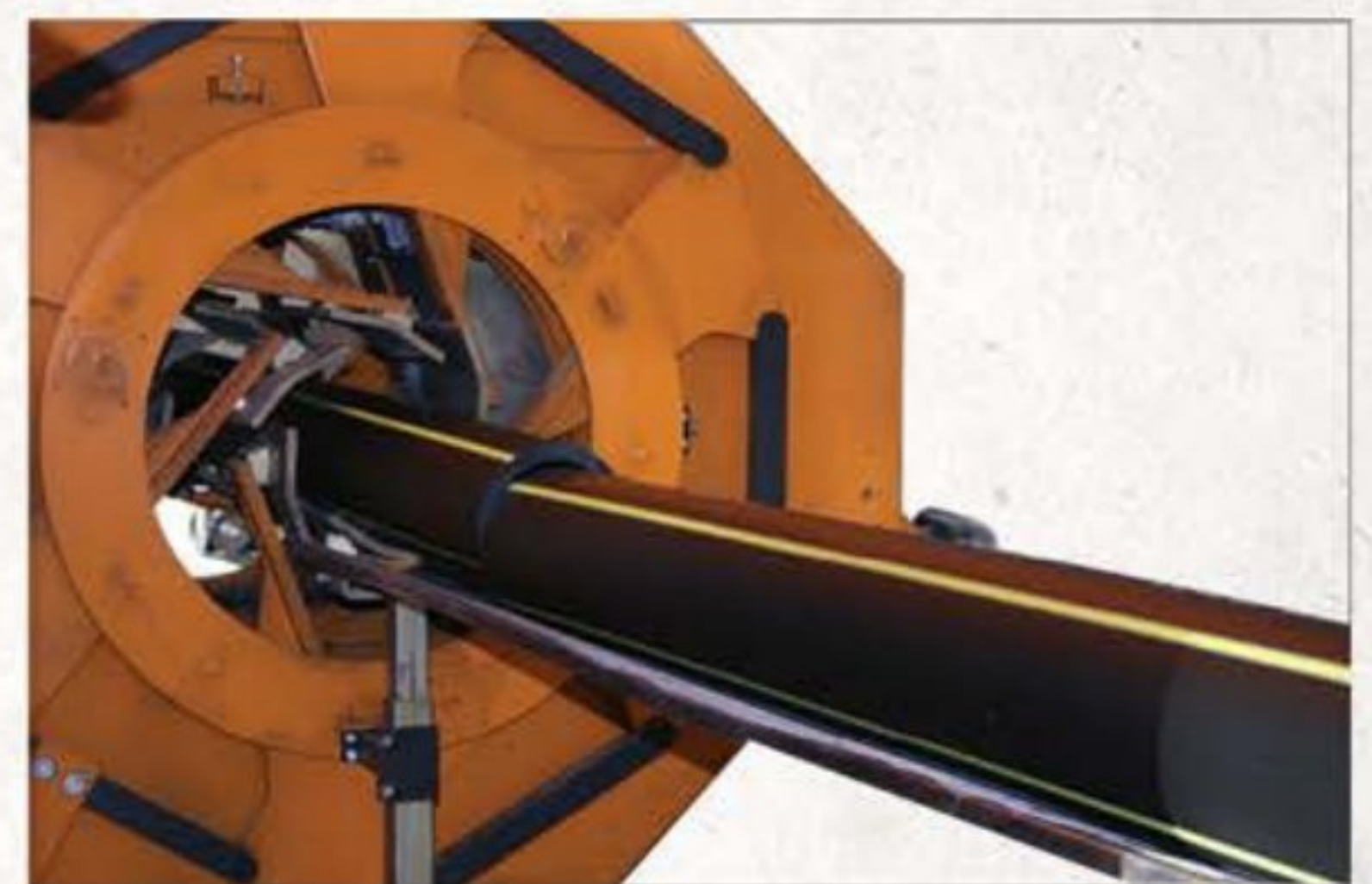


PE Pipes for Irrigation Applications

Our irrigation pipes have a size range from 16 to 32 mm OD at pressure ratings of 2.5, 4, and 6 bars. The irrigation pipes are produced using LDPE (PE40), with the guaranteed operating lifecycle of 10 years in standard conditions. The pipes are used laterally in irrigation systems according to ISO 8779 standard.

PE Pipes for Oil and Gas Applications

GPCO produces PE pipes for oil and gas applications using the superior PE100 black material. Among many other fields, these pipes are internationally the exclusive choice for municipal natural gas distribution networks at 80-100 psi pressure. Our pipes in this category are manufactured according to ISO 4437 and EN 1555 standards. The lifecycle expectancy of our oil and gas pipes exceeds 100 years.



Joins and Fittings for PE Piping Systems

Our company is the exclusive distributor of Agru GmbH electrofusion joints and fittings for PE piping systems in Iran. The design of the electrofusion fittings incorporates heating coils to ensure uniform heating during the fusion process, and it results in maximum material bond. Agru electrofusion line incorporates variety of fittings up to the size of 710 mm.



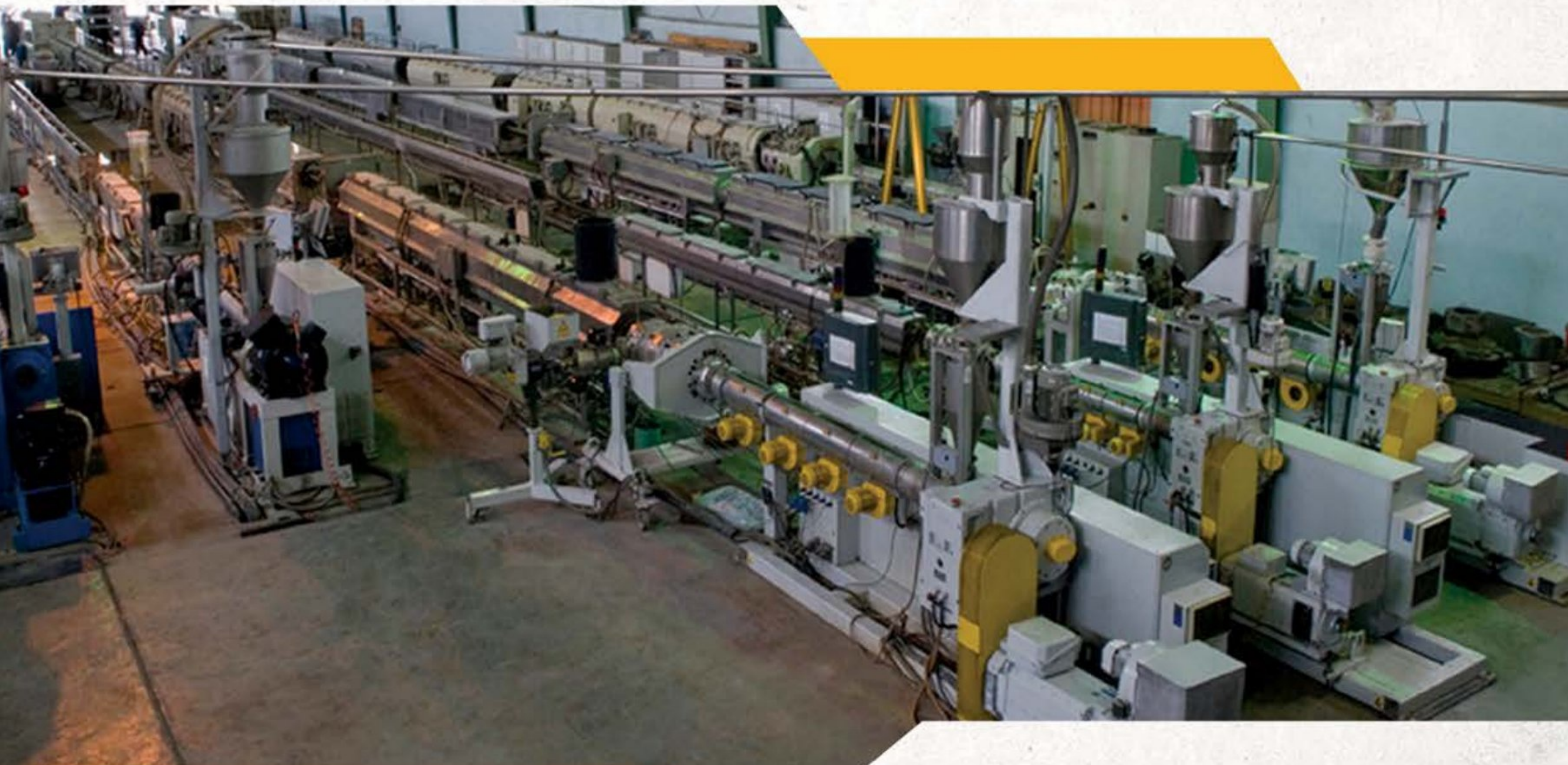
PE Pipes Advantages

- Long lifecycle expectancy of over 100 years.
- High flexibility and impact resistance
- High resistance to corrosion and abrasion
- Great performance during ground movement events such as earthquake and land slide
- Availability of certified material for potable water
- Complete adoptability with underwater installation projects
- Quality stability and consistent mechanical and physical properties during operation
- Easy transportation, loading, discharging, and packaging due to the relative low weight of the pipes
- Production and packaging in different lengths
- Abundance and accessibility of different types of joints and fittings adaptable to PE pipes
- Easy handling and installation
- Easy and low-cost welding process, using either butt-fusion or electro-fusion method. The welding points become stronger than the pipe itself in both cases.



Production Lines and Machineries

In other to build and to manage a world-class manufacturing company, we have invested heavily on our production lines and machineries. We deploy the state-of-the-art German technology in our production lines, testing equipment, and our material handling machineries. All our production lines are equipped with gravimetric and ultrasonic systems in order to ensure the highest quality in our finished product. The list of our machinery suppliers includes Reifenhauer GmbH, Battenfeld GmbH, and Krauss Maffei GmbH.



QC Laboratory

GPCO has one of the most equipped laboratories for testing the pipes, materials, and the components of PE piping systems in Iran. Our QC Lab has built an organic relationship with the leading Iranian academic and scientific centers in the field of polymer engineering, such as Amir Kabir University of Technology, Department of Polymer Engineering. Since 2007 we have been accredited with ISO/IEC 17025 certificate by DAP institute in Germany. Our QC Laboratory acts as an independent department in our company, and in addition to controlling our production process, it offers lab services to third party institutes and organizations.



Laboratory Services

GPCO's QC lab team consists of highly skilled and experienced staffs and we offer the following tests using the state-of-the-art testing equipment:



- Hydrostatic strength test at the temperatures of 20° C and 80° C, with multiple durations of 100, 165, and 1000 hrs in accordance with ISO 1167-1, 2.
- Squeeze-off followed by hydrostatic strength at the temperature of 80° C, and the durations of 165 and 1000 hrs in accordance with annex C of EN 1555 and EN 12106.
- Resistance to slow crack growth (SCG) notched pipe test (NPT) at the temperature of 80° C, and the duration of 500 hrs in accordance with ISO 13479.
- Determination of environmental stress cracking (ESC) of PE-full notch creep test (FNCT) in accordance with ISO 16770.
- Resistance to rapid crack propagation (RCP) in accordance to ISO 13477.
- Point loading test.
- Tensile properties test including the stress at yield, stress at break, and stress vs. strain chart, in accordance with ISO 6259-1,3.
- Determination of the electro-fusion welded joints cohesion, using crushing de-cohesion test in accordance with ISO 13954.
- Tensile strength for butt-fusion welded joints in accordance with ISO 13953.
- Determination of oxidation induction time (OIT) in accordance with ISO 11357-6.
- Melt-mass flow rate (MFR) in accordance with ISO 1133.
- Carbon black content and carbon black dispersion and distribution in accordance with ISO 6964 and ISO





GOSTARESH
PLASTIC

Producer of PE pipes

from 16 to 2000mm

Introduction to Polyethylene

Polyethylene is one of the most popular plastics used in a wide range of applications such as bags, bottles, and packaging films. PE is the preferred material for pressurized pipelines with the applications in water and gas. Since its commercial introduction in 1950s, the technology for producing PE has undergone through an enormous evolution and advancement. Today, using the third-generation Ziegler-Natta catalyst, ethylene is converted to PE using a low-pressure process, such as slurry, solution, or gas-phase. The latest technology for producing pipe-grade PE utilizes advanced cascade reactors with butene, hexene, or octene as comonomer. The resulting multi-modal pipe-grade PE exhibits excellent mechanical, physical, and chemical characteristics such as resistance to slow crack growth (SCG) and resistance to rapid crack propagation (RCP).

Raw materials

The raw materials used for the production of PE pipes should have good physical, mechanical, optical, and chemical properties and should be in full conformity to the requirements of ISO 4427, ISO 4437, and EN 1555. Pipe-grade PE materials are classified based on the minimum required strength (MRS) at 20°C temperature over 50 years of service, according to the following table:

Technical Data

PE Pressure Class	Minimum Required Strength (MRS) MPa	Minimum Safety Factor Water Pipes	Minimum Safety Factor Gas Pipes
PE 40	4	1.25	-
PE 80	8	1.25	2
PE 100	10	1.25	2

Our suppliers for PE pipe-grade material are the leading petrochemical plants in GCC and NE Asia region, and all of our suppliers have Bodycote accreditation for their products.



Packaging, Transportation, and Storage

Water PE pipes, up to the size of 110mm and gas pipes up to the size of 90mm are offered in 50m or 100m coils. The interior diameter of coils should not be less than 22 times the nominal diameter of pipe. The standard dimension ratio (SDR) should not exceed 17 for water pipes and 13.6 for gas pipes when packaged in coils. All coils should be controlled completely by cotton ropes or plastic belts in at least 4 to 6 appropriate points according to their sizes.

Other diameters and SDRs are produced and packaged at the request of customer in the lengths of 6, 9, or 12m. Pipes should be carried with appropriate equipment before shipment and kept at standard place. Quality control unit should have complete supervision during transportation, storage, and loading. It is also possible to produce pipes in other lengths at the request of our customer.



Our Certificates and Recognitions

1. Certificate of National Iranian Standard Institute for the production of polyethylene pipes and fittings.
2. Certificate of National Iranian Gas Company (NIGC) for production of PE pipes in natural gas applications from the size of 25 up to 500 mm OD.
3. 10-year insurance policy for our products by Iranian Insurance Company.
4. Ranked A in Iranian producers of polyethylene pipes, by the ministry of agriculture
5. ISO 9001, ISO 14001, and ISO 18001 certificates from SWISS TS Company.
6. QC laboratory ISO/IEC 17025 certificate from DAP institute in Germany.
7. Acquiring the title of exemplary manufacturing unit from National Standard and Industrial Research in 2001, 2004, 2006, 2007, 2008, and 2011.
8. Holding the title of exemplary quality control management from National Standard and Industrial Research in 2004, 2006, 2010, and 2011.
9. On the preferred vendor lists of National Iranian Oil Company (NIOC) and National Iranian Gas Company (NIGC).





Wall thickness and mass table according to ISO 4427-2, DIN 8074

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PIPE SERIES	20			16			12.5			10			8			6.3			5			4			3.2			2.5				
SDR	41			33			26			21			17			13.6			11			9			7.4			6				
PE 80	PN 3.2			PN 4			PN 5			PN 6			PN 8			PN 10			PN 12.5			PN 16			PN 20			PN 25				
PE 100	PN 4			PN 5			PN 6			PN 8			PN 10			PN 12.5			PN 16			PN 20			PN 25			-----				
d mm	e _{min}	e _{max}	Mass in Kg/m	e _{min}	e _{max}	Mass in Kg/m	e _{min}	e _{max}	Mass in Kg/m	e _{min}	e _{max}	Mass in Kg/m	e _{min}	e _{max}	Mass in Kg/m	e _{min}	e _{max}	Mass in Kg/m	e _{min}	e _{max}	Mass in Kg/m	e _{min}	e _{max}	Mass in Kg/m	e _{min}	e _{max}	Mass in Kg/m	e _{min}	e _{max}	Mass in Kg/m		
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1) 2.0	2.3	0.091	1) 2.3	2.7	0.103	1) 3.0	3.4	0.125			
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1) 2.0	2.3	0.117	2.3	2.7	0.133	1) 3.0	3.4	0.164	3.4	3.9	0.180
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1) 2.0	2.3	0.149	2.3	2.7	0.171	1) 3.0	3.4	0.212	3.5	4.0	0.240	4.2	4.8	0.278		
32	-	-	-	-	-	-	-	-	-	-	-	-	1) 2.0	2.3	0.194	2.4	2.8	0.232	1) 3.0	3.4	0.279	3.6	4.1	0.327	4.4	5.0	0.386	5.4	6.1	0.454		
40	-	-	-	-	-	-	-	-	-	1) 2.0	2.3	0.247	2.4	2.8	0.295	3.0	3.5	0.356	3.7	4.2	0.430	4.5	5.1	0.509	5.5	6.2	0.600	6.7	7.5	0.701		
50	-	-	-	1) 1.8	2.1	0.287	2.0	2.3	0.314	2.4	2.8	0.374	3.0	3.4	0.453	3.7	4.2	0.549	4.6	5.2	0.666	5.6	6.3	0.788	6.9	7.7	0.936	8.3	9.3	1.09		
63	1) 1.8	2.1	0.364	2.0	2.3	0.399	2.5	2.9	0.494	3.0	3.4	0.580	3.8	4.3	0.721	4.7	5.3	0.873	5.8	6.5	1.05	7.1	8.0	1.26	8.6	9.6	1.47	10.5	11.7	1.73		
75	2.0	2.3	0.467	2.3	2.7	0.551	2.9	3.3	0.675	3.6	4.1	0.828	4.5	5.1	1.02	5.6	6.3	1.24	6.8	7.6	1.47	8.4	9.4	1.76	10.3	11.5	2.09	12.5	13.9	2.44		
90	2.2	2.6	0.643	2.8	3.2	0.791	3.5	4.0	0.978	4.3	4.9	1.18	5.4	6.1	1.46	6.7	7.5	1.77	8.2	9.2	2.12	10.1	11.3	2.54	12.3	13.7	3.00	15.0	16.7	3.51		
110	2.7	3.1	0.943	3.4	3.9	1.17	4.2	4.8	1.43	5.3	6.0	1.77	6.6	7.4	2.17	8.1	9.1	2.62	10.0	11.1	3.14	12.3	13.7	3.78	15.1	16.8	4.49	18.3	20.3	5.24		
125	3.1	3.6	1.23	3.9	4.4	1.51	4.8	5.4	1.84	6.0	6.7	2.27	7.4	8.3	2.76	9.2	10.3	3.37	11.4	12.7	4.08	14.0	15.6	4.87	17.1	19.0	5.77	20.8	23.0	6.75		
140	3.5	4.0	1.54	4.3	4.9	1.88	5.4	6.1	2.32	6.7	7.5	2.83	8.3	9.3	3.46	10.3	11.5	4.22	12.7	14.1	5.08	15.7	17.4	6.11	19.2	21.3	7.25	23.3	25.8	8.47		
160	4.0	4.5	2.0	4.9	5.5	2.42	6.2	7.0	3.04	7.7	8.6	3.72	9.5	10.6	4.52	11.8	13.1	5.50	14.6	16.2	6.67	17.9	19.8	7.96	21.9	24.2	9.44	26.6	29.4	11.0		
180	4.4	5.0	2.49	5.5	6.2	3.07	6.9	7.7	3.79	8.6	9.6	4.67	10.7	11.9	5.71	13.3	14.8	6.98	16.4	18.2	8.42	20.1	22.3	10.1	24.6	27.2	11.9	29.9	33.0	14.0		
200	4.9	5.5	3.05	6.2	7.0	3.84	7.7	8.6	4.69	9.6	10.7	5.78	11.9	13.2	7.05	14.7	16.3	8.56	18.2	20.2	10.4	22.4	24.8	12.4	27.4	30.3	14.8	33.2	36.7	17.2		
225	5.5	6.2	3.86	6.9	7.7	4.77	8.6	9.6	5.89	10.8	12.0	7.30	13.4	14.9	8.93	16.6	18.4	10.9	20.5	22.7	13.1	25.2	27.9	15.8	30.8	34.0	18.6	37.4	41.3	21.8		
250	6.2	7.0	4.83	7.7	8.6	5.92	9.6	10.7	7.30	11.9	13.2	8.93	14.8	16.4	11.0	18.4	20.4	13.4	22.7	25.1	16.2	27.9	30.8	19.4	34.2	37.8	23.0	41.5	45.8	27.0		
280	6.9	7.7	5.98	8.6	9.6	7.40	10.7	11.9	9.10	13.4	14.9	11.3	16.6	18.4	13.7	20.6	22.8	16.8	25.4	28.1	20.3	31.3	34.6	24.3	38.3	42.3	28.9	46.5	51.3	33.8		
315	7.7	8.6	7.52	9.7	10.8	9.37	12.1	13.5	11.6	15.0	16.6	14.2	18.7	20.7	17.4	23.2	25.7	21.2	28.6	31.6	25.6	35.2	38.9	30.8	43.1	47.6	36.5	52.3	57.7	42.7		
355	8.7	9.7	9.55	10.9	12.1	11.8	13.6	15.1	14.6	16.9	18.7	18.0	21.1	23.4	22.1	26.1	28.9	26.9	32.2	35.6	32.5	39.7	43.8	39.1	48.5	53.5	46.3	59.0	65.0	54.3		
400	9.8	10.9	12.1	12.3	13.7	15.1	15.3	17.0	18.6	19.1	21.2	22.9	23.7	26.2	28.0	29.4	32.5	34.1	36.3	40.1	41.3	44.7	49.3	49.6	54.7	60.3	58.8	-	-	-		
450	11.0	12.2	15.3	13.8	15.3	19.0	17.2	19.1	23.5	21.5	23.8	28.9	26.7	29.5	35.4	33.1	36.6	43.2	40.9	45.1	52.3	50.3	55.5	62.7	61.5	67.8	74.4	-	-	-		
500	12.3	13.7	19.0	15.3	17.0	23.4	19.1	21.2	28.9	23.9	26.4	35.7	29.7	32.8	43.8	36.8	40.6	53.3	45.4	50.1	64.5	55.8	61.5	77.3	-	-	-	-	-	-		

.The calculated value of e_{min}. (ISO 4065) is rounded up to nearest value of either 2.0, 2.3 or 3.0

.This table is provided in accordance to EN 12201-2, DIN 8074 and ISO 4427-2 standards for pressurized PE piping system with Sf=1.25 at temperature of 20°C and operating life cycle of 50 years

Wall thickness and mass table according to ISO 4427-2, DIN 8074

G P C O

PIPE SERIES	20			16			12.5			10			8			6.3			5			4		
SDR	41			33			26			21			17			13.6			11			9		
PE 80	PN 3.2			PN 4			PN 5			PN 6			PN 8			PN 10			PN 12.5			PN 16		
PE 100	PN 4			PN 5			PN 6			PN 8			PN 10			PN 12.5			PN 16			PN 20		
d mm	e _{min}	e _{max}	Mass in Kg/m	e _{min}	e _{max}	Mass in Kg/m	e _{min}	e _{max}	Mass in Kg/m	e _{min}	e _{max}	Mass in Kg/m	e _{min}	e _{max}	Mass in Kg/m	e _{min}	e _{max}	Mass in Kg/m	e _{min}	e _{max}	Mass in Kg/m	e _{min}	e _{max}	Mass in Kg/m
560	13.7	15.2	23.6	17.2	19.1	29.4	21.4	23.7	36.2	26.7	29.5	44.7	33.2	36.7	54.8	41.2	45.5	66.9	50.8	56.0	80.8	62.5	68.9	97.0
630	15.4	17.1	29.9	19.3	21.4	37.1	24.1	26.7	45.9	30.0	33.1	56.4	37.4	41.3	69.4	46.3	51.1	84.6	57.2	63.1	102.0	70.3	77.5	122.5
710	17.4	19.3	38.0	21.8	24.1	47.2	27.2	30.1	58.4	33.9	37.4	71.8	42.1	46.5	88.1	52.2	57.6	107.0	64.5	71.1	130.0	79.3	87.4	155.8
800	19.6	21.7	48.1	24.5	27.1	59.7	30.6	33.8	73.9	38.1	42.1	91.1	47.4	52.3	112.0	58.8	64.8	136.0	72.6	80.0	164.7	89.3	98.4	197.7
900	22.0	24.3	60.9	27.6	30.5	75.6	34.4	38.3	93.4	42.9	47.3	115.0	53.3	58.8	141.0	66.1	72.9	172.2	81.7	90.0	208.5	-	-	-
1000	24.5	27.1	75.2	30.6	33.5	93.1	38.2	42.2	115.0	47.7	52.6	142.0	59.3	65.4	175.0	73.4	80.9	212.4	90.8	100.0	257.5	-	-	-
1200	29.4	32.5	108.0	36.7	40.5	134.0	45.9	50.6	166.0	57.2	63.1	205.0	71.1	78.4	250.9	88.2	97.2	306.2	-	-	-	-	-	-
1400	34.3	37.9	147.0	42.9	47.3	183.0	53.5	59.0	226.0	66.7	73.5	278.0	83.0	91.5	341.7	102.9	113.3	416.6	-	-	-	-	-	-
1600	39.2	43.3	192.0	49.0	54.0	238.0	61.2	67.5	295.0	76.2	84.0	363.2	94.84	104.4	445.9	117.5	129.4	543.8	-	-	-	-	-	-
1800	44.0	48.6	242.2	55.1	60.8	301.2	68.8	75.8	372.6	85.8	94.5	459.8	106.6	117.4	564.0	-	-	-	-	-	-	-	-	-
2000	48.9	53.9	298.8	61.2	67.5	371.6	76.4	84.2	459.8	95.3	105.0	567.6	118.4	130.4	596.0	-	-	-	-	-	-	-	-	-
2200	53.7	59.2	-	66.7	73.5	-	79.6	87.7	-	104.8	115.4	-	129.5	142.6	-	-	-	-	-	-	-	-	-	-
2250	55.0	60.7	-	70.0	77.2	-	86.0	94.8	-	107.2	118.1	-	132.4	145.8	-	-	-	-	-	-	-	-	-	-
2400	58.6	64.6	-	72.8	80.2	-	86.8	95.6	-	114.3	125.9	-	141.2	155.5	-	-	-	-	-	-	-	-	-	-
2500	61.2	67.5	-	77.7	85.6	-	95.6	105.2	-	119.1	131.2	-	147.1	162.0	-	-	-	-	-	-	-	-	-	-

This table is provided in accordance to EN 12201-2, DIN 8074 and ISO 4427-2 standards for pressurized PE piping system with Sf=1.25 at temperature of 20°C and operating life cycle of 50 years

با ما در تماس باشید

جهت کسب اطلاعات بیشتر از طریق راههای ارتباطی ذیل در تماس باشید.

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