HAYKALPLAST PLASTICS SOLUTIONS



POLYETHYLENE (PE) PIPES INDUSTRIAL PRODUCTS CATALOG

would be have



ISO 9001 BUREAU VERITAS Certification





COMPANY PROFILE

GENERAL OVERVIEW

HaykalPlast was first founded in 1993, and the factory is now located in Zouk Mosbeh.

In addition to manufacturing PVC pipes and fittings under the brand name MIA, HaykalPlast is now manufacturing HDPE pipes.

Keeping up with its high quality standards, Haykal Plast has obtained the ISO 9001:2008 certificate along with product certification for Industrial Research Institute (IRI). Haykal Plast is committed to maintaining the quality of its products through consistant and continuous testing in its own laboratories, as well as in collaboration with IRI.

Haykal Plast manufactures HDPE 100 and HDPE 80 pipes (in blue and black colors) according to EN 12201 standards in 50, 100, 150 and 200 meter rolls, depending on pipe diameter.

PE pipes are used for several applications in the drainage and water solutions systems. PE is well known for its high-resistance to chemicals, acids and other abraisive substences.

Haykal Plast manufactures HDPE 100 and HDPE 80 pipes specifically for potable water use. HDPE pipes have several properties that make them well suited for, and easy to use in, potable water systems.

Haykal Plast also manufactures LDPE pipes according to DIN 8072/8073 for potable water use and irrigation.

Sister Companies



Haykal Group SCS. is a sister company of Haykal Plast, it deals mainly in importing sanitary products

- Haykal Group today is the agent of some of best European & Turkish brands.
- It distributes PPR Pipes and fittings for both hot and cold water.
- Pvc fittings from Germany according to EN1401 Standard for drainage and sewer systems.
- Isolation and Insulation Systems for Pipes.
- Iron malleable fittings for Pipes.
- And many other Products

Mia plast was founded in 2004. It manufactures all kinds of injection moulding products.

Its primary work today is manufacturing PVC Fittings for drainage systems according to EN1329 Standard.

Mia Plast provides the Lebanese Market with the best quality Products, comparable to European Products.

Also Mia Plast has a very good reputation today in the Lebanese Market where it is in high demand.



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HDPE PIPES

PROPERTIES

HDPE 100 is a strong material developed as result of long studies and research. It is resistant to high pressure. The thickness of its wall is thinner than those of PE 32, PE 40, PE 63 and PE 80 while having the same operating pressure and outer diameters. This property of PE 100 allows for a bigger inner pipe diameter, hence allowing for the same water flow as the other PE types while saving raw material.

- PE pipes are easy to use and flexible in the sense that they can be installed above ground (without digging) as well as below ground.
- Yield strength of HDPE is approximately 1/50 that of DI or steel and 1/5 that of PVC.
- Modulus of Elasticity of HDPE is much lower than other pipe materials, which means it is not as rigid.
- Low coefficient of friction means HDPE is very "slick." This makes it easy for fittings to rotate on the pipe or migrate along it.
- Ease of handling due to flexibility and light weight
- Chemical resistance
- Long life with low operational costs

INSTALLATION

At both the ends of HDPE Pipe, GI nipple is fitted for lowering the pump inside bore by using oil immersion method. The pipe is bolted down for further safety. Using a flange to flange joint, one side of pipe is fitted with submersible pump.

MANUFACTURING PROCESS

Polyethylene is a versatile material having outstanding mechanical and chemical properties. It is obtained by the polymerization of ethylene gas in varying densities ranging between 0.910 to 0.965 gr/cc.

Physical Properties

Density	~ 952 kg/m ³
Melt Flow Index	~ 0.48 g/10 min
Elongation at Break	~ ≥ 350 %
Heat Reversion	~ < 5.0 %





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HDPE 100 PIPE TABLE

d Outside Diameter	s SDR 26 (PN 6)	s SDR 17 (PN 10)	s SDR 13.6 (PN 12.5)	s SDR 11 (PN 16)	s SDR 9 (PN 20)	s SDR 7.4 (PN 25)	Coil/Pipe Length (m)
16					1.8	2.3	250
20			1.8	1.9	2.3	3.0	200
25		1.8	1.9	2.3	2.8	3.5	200
32		1.9	2.4	2.9	3.6	4.4	150
40	1.8	2.4	3.0	3.7	4.5	5.5	150
50	2.0	3.0	3.7	4.6	5.8	6.9	150
63	2.5	3.8	4.7	5.8	7.1	8.6	100
75	2.8	4.5	5.8	6.8	8.4	10.3	100
90	3.5	5.4	6.7	8.2	10.1	12.3	100
110	4.2	6.6	8.1	10.0	12.3	15.1	50
125	4.8	7.4	9.2	11.4	14.0	17.1	12
140	5.4	8.3	10.3	12.7	15.7	19.2	12
160	6.2	9.5	11.8	14.6	17.9	21.9	12
180	6.9	10.7	13.3	16.4	20.1	24.6	12
200	7.7	11.9	14.7	18.2	22.4	27.4	12
225	8.6	13.4	16.6	20.5	25.2	30.8	12
250	9.6	14.8	18.4	22.7	27.9	34.2	12
280	10.7	16.6	20.6	25.4	31.3	38.3	12
315	12.1	18.7	23.2	28.6	35.2	43.1	12
355	13.6	21.1	26.1	32.2	39.7	48.5	12
400	15.3	23.2	29.4	36.3	44.7	54.7	12

All dimensions are in mm.

s: Wall Thickness

HDPE 100 pipe dimensions are based on DIN standard 8074 - EN 12201. The pressure indicated above is given at 20°C. Other sizes and diameters are available upon request.

Haykal Plast provides HDPE 100 pipes in both blue and black colors. For different colors, please contact Haykal Plast.



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HDPE 80 PIPE TABLE

d Outside Diameter	s SDR 17 (PN 8)	s SDR 13.6 (PN 10)	s SDR 11 (PN 12.5)	s SDR 9 (PN 16)	s SDR 7.4 (PN 20)	s SDR 6 (PN 25)	Coil/Pipe Length (m)
16				2.0	2.3	3.0	250
20			2.0	2.3	3.0	3.4	200
25		2.0	2.3	3.0	3.5	4.2	200
32	2.0	2.4	3.0	3.6	4.4	5.4	150
40	2.4	3.0	3.7	4.5	5.5	6.7	150
50	3.0	3.7	4.6	5.6	6.9	8.3	150
63	3.8	4.7	5.8	7.1	8.6	10.5	100
75	4.5	5.6	6.8	8.4	10.3	12.5	100
90	5.4	6.7	8.2	10.1	12.3	15.0	100
110	6.6	8.1	10.0	12.3	15.1	18.3	50
125	7.4	9.2	11.4	14.0	17.1	20.8	12
140	8.3	10.3	12.7	15.7	19.2	23.3	12
160	9.5	11.8	14.6	17.9	21.9	26.6	12
180	10.7	13.3	16.4	20.1	24.6	29.9	12
200	11.9	14.7	18.2	22.4	27.4	33.2	12
225	13.4	16.6	20.5	25.2	30.8	37.4	12
250	14.8	18.4	22.7	27.9	34.2	41.5	12
280	16.6	20.6	25.4	31.3	38.3	46.5	12
315	18.7	23.2	28.6	35.2	43.1	52.3	12
355	21.1	26.1	32.2	39.7	48.5	59	12
400	23.7	29.4	36.3	44.7	54.7		12

All dimensions are in mm.

s: Wall Thickness

HDPE 80 pipe dimensions are based on DIN standard 8074 - EN 12201. The pressure indicated above is given at 20°C. Other sizes and diameters are available upon request.

Haykal Plast provides HDPE 80 pipes in both blue and black colors with 4 blue stripes. For different colors, please contact Haykal Plast.







Storage & Transportation

• When loading HDPE/LDPE pipelines on the vehicles, care should be taken to avoid impact and ensure the vehicle board is free from any sharp object like nails, cope iron, etc.

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- While in transit, pipelines should be well secured and well supported over the entire length of the pipeline.
- Where mechanical handling is employed, metal slings, hooks and chains must not come into direct contact with the pipelines.
- Pipelines should be given adequate support at all times and should be stacked on a flat surface free from any sharp objects.
- Small diameter pipelines can be easily carried without the use of auxiliary equipments.
- Small diameter pipelines can be manually placed in the trench. Pipelines in larger diameter may necessitate either a special lifting bar or a sling; always use at least 2 slings.
- Avoid positioning pipelines or coils next to an exhaust systems and other heat sources.
- Avoid placing any heavy loads on top of pipelines.



WARNING: DO NOT DRAG THE PIPELINE ACROSS THE GROUND AND AVOID SHARP EDGES.

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Compression Fittings 16 Bar

A standard compression fitting can be utilized to joint a PE pipeline. The compression fittings are manufactured utilizing PolyPropylene (PP) material suitable for use in contact with drinking water.

The joints are constructed from a body and a lock-nut made from PolyPropylene, a Gasket made from Nitric Rubber of a hardness of 75, and a Locking ring made from white Polyacetal suitable at a maximum temperature of 10°C, and at a nominal pressure of PN 16 and PN 10 at 20°C.

SPECIFICATIONS

Applied standards:

- Design: ISO 14236:2000 6.
- Size: MSZ EN ISO 3126:2005
- Pull out resistance: MSZ EN 712:1995
- Resistance to internal pressure when subject is bended: MSZ EN 713:1995
- Resistance to internal pressure (1 hour): MSZ EN 715:1995
- Resistance to internal pressure (1000 hours): MSZ EN ISO 13846:2001; MSZ EN ISO 1167:2006
- Resistance to external water pressure: MSZ EN 911:1997
- Marking: ISO 14236:2000 10.
- Effect to water quality: according to the national regulations
- Field of use: Establish mechanical bond between the part of buried PE or metal pipe systems, making connection between standardized PE-PE or PE-metal pipes.
- Available diameters: Ø20 Ø110 mm
- Pressure resistance on 20oC:
 - DN20-75: PN 16 Bar
 - DN90-110: PN 10 Bar



PP compression tee connection



PP compression clamp saddles



PP compression male connections



PP compression female connections



PP compression connections



PP compression reducing connections



PP compression end caps

PP compression

female elbows

PP compression

male tee connection



PP compression male elbows



PP compression elbows



PP compression female tee connection

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BUTT-FUSION JOINTING

In this jointing technique the two pipe ends are clamped in a hydrolic moving carriage which provides a basis for a number of secondary operations, as follows:

- The pipe ends are trimmed so that they are clean, and so that when brought together or aligned there should be no visible gap or step between them.
- The pipe ends are then heated simultaneously against a double-sided flat heater plate for a specific time and at a specific pressure, depending on pipe diameter. This stage generally includes a 'soak' phase with heat continuing to be applied but with virtually no pressure, to ensure the pipe absorbs enough heat to provide a secure joint.
- Following the heating cycle, the ends are brought together, again under pressure, to form a complete joint. After a specific cooling time, the Butt-Fusion machine is removed, for assembly onto the next joint. (In hotter climates, it is recommended that the cooling times are doubled).
- The cooled joint should be inspected for bead size and cleanliness. De-beading of the joint provides an additional means of assessing joint quality.

Butt-Fusion jointing provides an ideal method for size-to-size replacement work, giving maximum possible capacity in new pipes within existing lines.



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ELECTRO-FUSION JOINTING

Electro-Fusion fittings work on the principle of an integral electrical heating coil or mat. When energized, this heats the adjacent material which expands causing the fittings to be fully fused to the pipe. These fittings are energized using a 40V electro-fusion control box; jointing should be carried out using the appropriate pipe clamps. It is important that a suitable 3KVa generator be used to power the control box on site.

When jointing pipes with electro-fusion socket fittings, there are a number of basic steps to follow to ensure sound joints:

- Pipe ends must be cut square and de-burred.
- Depth of entry marks must be clearly indicated on pipe.
- The required surface must be clean and dry and thoroughly scraped.
- The correct size pipe alignment clamps must be used to avoid movement during fusion.
- The correct fusion times and cooling periods must be observed. (In hotter climates it is recommended that the cooling times are doubled).
- Fittings must be left in their bags until immediately prior to jointing.
- The performance of the fusion indicators must be observed and noted.





QUALITY **CERTIFICATIONS**



IRI CERTIFIED LAB REPORTS



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Designed by:





