NEPROPLAST

Together We Build The Future معا نبني المستقبل

HDPE

WATER, GAS & SEWAGE SYSTEM

FM APPROVED

NSF

"Only products bearing the NSF mark are certified"

SASO QUALITY MARK

WRAS

التوزيع من قبل شركة المؤسسة الوطنية للتسويق المحدودة

Distributed by **NATIONAL MARKETING EST. CO. LTD.**

www.namat.com

certifications

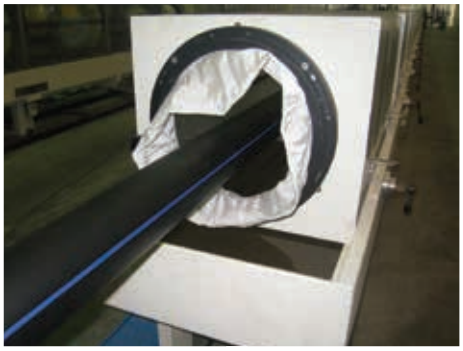
SASO certification available for the following SDR as follows:
7.4, 9, 11, 13.6, 17, 21, 26, 33 & 41

I	FM Approvals®
II	ISO 9001:2015
III	SASO ISO 4427 (Certification available for 7.4, 9, 11, 13.6, 17, 21, 26, 33 & 41)
IV	NSF Product & Service Listings "ONLY PRODUCTS BEARING THE NSF MARK ARE CERTIFIED"
V	WRAS Material Approval

Index

Overview	02
General properties of PE 100	03
Classification	03
Standards and Certifications	05
Pipe Dimension for PE 100 based on SASO ISO 4427-2, DIN 8074 & DIN EN 12201-2 for Water Application	08
NEPROPLAST PE100 pipes better piping solutions	10
Application of NEPROPLAST PE 100 pipes	12





1. Overview

NEPROPLAST (New Products Industries Co. Ltd.) was established in 1969 as the first manufacturing facility to introduce uPVC piping systems in the markets of Saudi Arabia. Since its inception, NEPROPLAST has followed a strict policy in producing high quality pipes.
Using state-of-the-art equipments and tools in its production facilities, hiring highly trained professional staff and working with experienced team of consultants in the industry.

NEPROPLAST Factory
Jeddah, K.S.A.

The initial production of **NEPROPLAST** uPVC pipes were manufactured according to British Standard Specifications BS 3505 / 3506. At later stage, **NEPROPLAST** started to manufacture pipes and fittings according to International Specifications ISO. **NEPROPLAST** actively participated with Saudi Arabia Standard Organization SASO to set the Saudi Arabian Standard SAS 14/151396. In the mid 80's **NEPROPLAST** started the production of PVC pipes and fittings according to ASTM standards of schedule 40, schedule 80 and CPVC pipes of Schedule 80. By producing a wide range of pipes and fittings according to different standards, **NEPROPLAST** has established for itself a strong position in the market to serve the construction industry in the fields of water network pressure lines, sewerage and drainage non-pressure lines and electrical and telecommunication conduits. **NEPROPLAST** made its pipes and fittings available in both options of Rubber Ring or Solvent Cement Jointing Systems.

In 2009, **NEPROPLAST** made a significant move into modern, heavy metal free stabilizers for all its uPVC & CPVC products. A move which ensured total elimination of toxicological content throughout the entire **NEPROPLAST** product range. Organic stabilizers pipes and fittings ensure a safe drinking water supply, free of any possible toxic traces which can develop through the use of heavy metal uPVC stabilizers.

All **NEPROPLAST** potable water products are now accredited through NSF, proof of its excellent health safety factor. **NEPROPLAST** added to its products portfolio the production of Polyethylene Pipes (HDPE) in 2009. **NEPROPLAST** HDPE product range covers pipes and ducts to serve the water, gas electrical and telecommunication applications. **NEPROPLAST** recently introduced to the market the Polyethylene Corrugated-Optic- Ducts (COD) as a unique product for fibre optic and electrical cabling installations.

All **NEPROPLAST** products are marketed and sold through National Marketing Est. Co. Ltd. which has more than 22 branches covering all cities and urban areas across the Kingdom of Saudi Arabia. National Marketing Est Co. Ltd. has an export department responsible for exporting **NEPROPLAST** products to Middle East and North African (MENA) markets. In addition to **NEPROPLAST** products, National Marketing Est. Co. Ltd. imports a wide range of fittings, valves, solvent cements and other accessory components. Now-a-days, National Marketing Est. Co. Ltd. is considered the largest trading company in Saudi Arabia that has all kinds of plastic pipes, fittings, valves and cements available in its stocks for all traders and contractors in the Saudi market.

Both **NEPROPLAST** and National Marketing Est. Co. Ltd. strive to be the largest quality leader in the supply of plastic piping systems to serve the water, gas, electrical & telecommunications sectors across the Middle East.

2.0 General properties of PE 100

Table No. 2.1

Property	Value	Test Method
Density	> 930 kg/m^3	ISO 1183 Test Method D
Thermal Stability	> 20 minutes	EN 728
MFR	+20% of the value in which producer determines	ISO 1133
Chemical Resistance	Excellent resistance to most acids and alkalis	
UV Resistance	Excellent resistance to outdoor exposure with minimum 50 years for black PE 100'	
Impact Resistance	Exceptional toughness compared to other polymer materials	
Carbon Black Content (Black pipes only)	≥ 2.0%	ISO 6964

2.2 Color Coding

HDPE and PE 100 materials are naturally non-coloured. Colour is generated in the pipes by the addition of coloured master batches, which as well as imparting the required base colour, also influence the UV resistance of the pipes. Colour master batches can be added either by the compound manufacturer during the polyethylene manufacturing and compounding process, or it can be added by the pipe manufacturer during extrusion of the pipe.

Black is the ideal colour for PE pipes, as the carbon black used to produce the black colour also imparts durable and long lasting UV resistance.

For this reason, application colouring is often done by adding coloured stripes to black pipes, so that the pipes have the optimum long term UV resistance due to their black base colour.

Pipes and PE raw materials which are in a colour other than black do not contain any carbon black. This is the case for all raw material and pipe manufacturers.

The water industry typically uses blue pipes or pipes with blue identification stripes, yellow pipes or black pipes with yellow stripes are used typically for gas applications, and pipes with red stripes are typically used for fire water mains.

The telecoms and power cable industry sectors make extensive use of coloured master batches, with many different colours of pipe and striping in common use, as per a customers specified requirements. Neproplast HDPE and PE 100 pipes are made to meet industry and customer specific requirements in terms of colour coding.

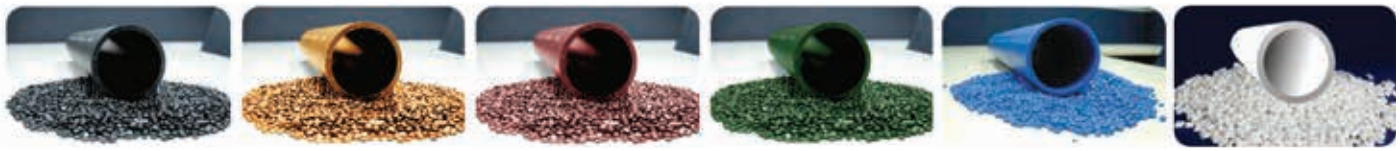


Fig. 2.2.a : Coloured HDPE and MDPE Granules

3.0 Classification

PE pipe materials for pressure applications are classified according to their minimum required strength (MRS). The MRS value for a pipe material is the value of pressure strength for a minimum of 50 years continuous operation under pressure.

There are three main types of HDPE currently in use for pipe manufacture.

Firstly there are grades which are unclassified in terms of 50 year strength under continuous pressure. These grades have high short term strength and are typically used for non-pressure applications like cable ducting, including cable ducting where cables are installed by high pressure blowing. These grades are perfectly suited for cable-blowing since the pipes and ducts are only under pressure for a very short time, and these grades are then durable and long lasting thereafter, as the pipes and ducts are not under sustained pressure for the remainder of their application life.

Secondly, PE 80 pipes remain in common use for small diameter water service pipes up to 63mm diameter. PE 80 is commonly used for these small diameters as it is slightly more flexible than PE 100, and this characteristic can be useful in installing small diameters like 25mm service pipes.

Most commonly, PE 100 materials are now used for pressure applications. PE 100 materials have a minimum 50 year strength of 10MPa under continuous sustained pressure. The design stresses to determine the minimum pipe wall thickness for a given working pressure are based on this MRS, with a safety factor also incorporated.

The safety factor used depends on the application and standard, with for example the gas industry using more cautious safety factors than the water industry.

3.2 Standard Dimensional Ratio (SDR)

The pipe industry classifies pipes by pipe external diameter and SDR as well as working pressure rating (PN). The SDR of a pipe / fitting is the constant ratio between the wall thickness and the outside diameter.

$$\textbf{SDR} = \frac{\textbf{nominal (minimum) outside diameter}}{\textbf{minimum wall thickness}}$$

Example: $\text{SDR } 11 = \frac{180}{16.4}$

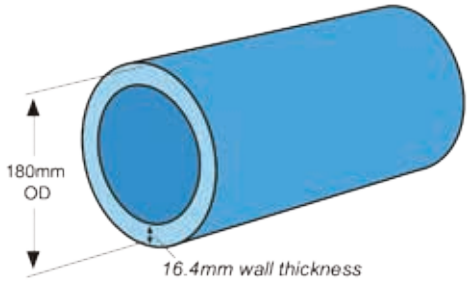


Fig. 3.2.a : Relationship between wall thickness and Outside Diameter (OD)

3.3 Extruder Model Process

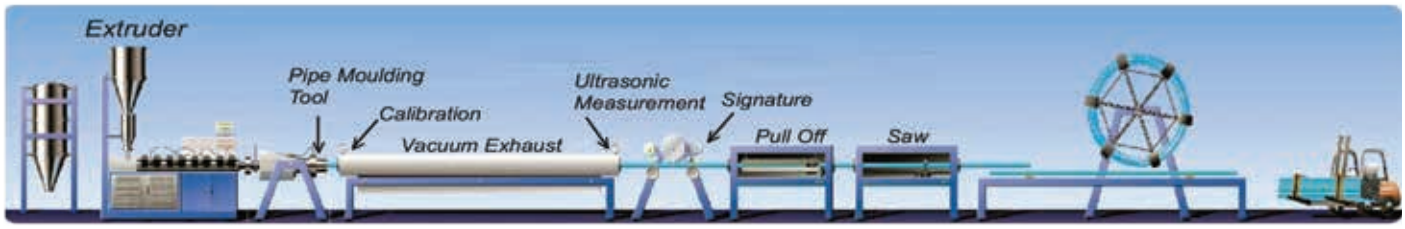


Fig. 3.3.a : Extruder Machine for HDPE pipes

- HDPE raw material is conveyed into the extruder, material heating process starts in the barrel of extruder.
- The melted material is extruded through the die set, shaped according to the size of the pipe required.
- The pipe enters the vacuum tank once it leaves the die set. The pipe is sized by the internal pressure and goes through the cooling process.
- The pipe is indelibly marked at preset intervals, with identification of trademark, pipe size & wall thickness, SDR, nominal pressure, PE classification, raw material grade code and date of manufacture.
- The pre-cooled and shaped pipe is pulled down by haul-off machine at a constant speed.
- The pipe is cut into the required length by using a cut-off saw machine or coiled up as required.

4.0 Standards & Certifications

NEPROPLAST PE 100 pipes are manufactured within the scope of the Neproplast ISO 9001 quality management system approval, fully certified Intertek.

In terms of raw materials, Neproplast only use suppliers and materials listed by the prestigious PE 100+ Pipes Association.

All Neproplast pipes are then manufactured and tested in accordance with the requirements of SASO ISO 4427-2, and are independently certified by SASO, and carry the SASO certification mark on the printing on each pipe.

Neproplast also hold FM certification for pipes for fire water main applications, in accordance with standard FM 1613.

In respect of the effect of PE pipes in contact with potable water, Neproplast PE 100 pipes can be safely used in contact with drinking water, and this is verified by both NSF 61 certification (USA National Sanitary Foundation scheme), and WRAS certification (UK water Industry scheme).

4.1 Quality Control

4.1.1a Hydrostatic Strength

4.1.1 Hydrostatic Strength

Determines the capability of the sample to withstand internal pressure for both long and short periods of time.

1. Test Reference ISO 1167
2. More than 100 hours @ 20°C on stress level : 12.4 Mpa for PE 100 Mpa
3. 165 hours @ 80°C on stress level : 5.5 Mpa for PE 100 Mpa

4.1.2a Density / Specific Gravity

4.1.2 Density / Specific Gravity

Determines the specific gravity and density to help in material identification.

1. Test Reference ISO 1183
2. Value : Density shall fall within PE material density range (≥0.94)

4.1.3a Vicat Softening Temperature

4.1.3 Vicat Softening Temperature

Determines the softening temperature of material when penetrated by a flattened needle to 1.0 mm depth under a specific load.

4.1.4a Dispersion of Carbon Black

4.1.4 Dispersion of Carbon Black (for black pipes only)

1. Test Reference ISO 18553
2. Value : Carbon Black dispersion must be < Grade 3 as per ISO 4427 requirements and appearance rating must not be inferior to micrograph B1 in annex. B of ISO 11420
3. Neproplast ensure by this test that all black PE100 pipes produced will not degrade in any way under MENA climate conditions for the lifetime of the product.

4.1.5a Melt Mass Flow Rate Test

4.1.5 Melt Mass Flow Rate Test

It measures the molten viscosity or the ease of the flow of the melt of a plastic material.

1. Test Reference ISO 1133
2. Change in MFR value caused by processing between the measure value for material from the pipe and the measured value for the compound must not be greater than ± 20%

4.1.6a Longitudinal Reversion / Effects of Heating

4.1.6 Longitudinal Reversion / Effects of Heating

It measures the change in length of the sample after exposure to high temperature and the ability to resist heat without showing de-lamination, cracks or blisters.

1. Test Reference ISO 2505
2. Value : Longitudinal Reversion (Shrinkage) shall be ≤ 3%

4.1.7a Thermal Stability OIT Test

4.1.7 Thermal Stability Oxidation Induction Time Test (OIT)

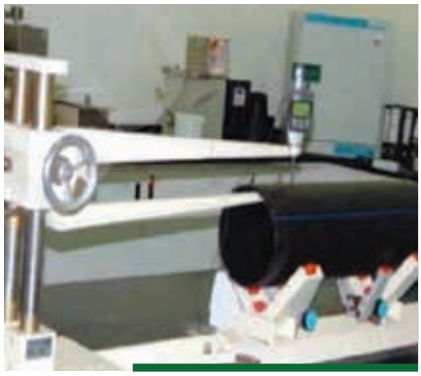
It measures the level of thermal stabilization of the material tested.

1. Test Reference ISO 11357-6
2. OIT must be ≥ 20 minutes when tested at 210°C

4.1.8a Impact Strength

4.1.8 Impact Strength

It measures the toughness of the sample against impact or the ability of the sample to absorb applied energy.



4.1.9a Wall Thickness & Outside Diameter Measurement

4.1.9 Wall Thickness and Outside Diameter Measurement

1. Test Reference ISO 3126
2. Value : Wall thickness must confirm to 11922 (Grade-T Tolerance for minimum wall thickness up to 16 mm) and (Grade-U Tolerance for wall thickness exceeding 16 mm) OD must confirm to ISO 11922 Grade-B
3. By dimensional control at frequencies more than required by the product standards, Neproplast ensure the highest standards of dimensional control on all pipes produced and dispatched.

4.1.10a Tensile Strength

4.1.10 Tensile Strength

It measures the strength of material (Resistance) being pulled apart.

1. Test Reference ISO 6259-3
2. Value : Elongation at break must be > 350%

Modulus of Elasticity
It measures the stiffness of material

Elongation at Break
It measures the extension length of the sample until it breaks.

5. Pipe Dimension for PE 100 based on

SASO ISO 4427-2, DIN 8074 & DIN EN 12201-2 for Water Application.

SASO ISO 4437-2, DIN 8074 & DIN EN 1555-2 for Gas Application.

Table No. 5.1

Nominal Outside Diameter	SDR 7.4		SDR 9		SDR 11			SDR 13.6		
	PN 25		PN 20		PN 16			PN 12.5		
dn (mm)	Wall Thickness (mm)	Weight (kg/m)	Wall Thickness (mm)	Weight (kg/m)	Wall Thickness (mm)	Weight (kg/m)	Coils (m)	Wall Thickness (mm)	Weight (kg/m)	Coils (m)
20	3.0	0.163	2.3	0.133	2.0	0.117	500	–	–	–
25	3.5	0.242	3.0	0.212	2.3	0.171	500	2.0	0.149	500
32	4.4	0.389	3.6	0.328	3.0	0.279	500	2.4	0.232	500
40	5.5	0.605	4.5	0.512	3.7	0.431	500	3.0	0.362	500
50	6.9	0.944	5.6	0.793	4.6	0.669	500	3.7	0.550	500
63	8.6	1.483	7.1	1.266	5.8	1.057	100	4.7	0.877	100
75	10.3	2.113	8.4	1.779	6.8	1.476	100	5.6	1.242	100
90	12.3	3.028	10.1	2.566	8.2	2.139	100	6.7	1.780	100
110	15.1	4.537	12.3	3.813	10.0	3.173	100	8.1	2.637	100
125	17.1	5.839	14.0	4.932	11.4	4.116	100	9.2	3.398	100
140	19.2	7.334	15.7	6.179	12.7	5.130	100	10.3	4.255	100
160	21.9	9.546	17.9	8.045	14.6	6.733	100	11.8	5.554	100
180	24.6	12.069	20.1	10.179	16.4	8.510	100	13.3	7.049	100
200	27.4	14.930	22.4	12.587	18.2	10.495	–	14.7	8.645	–
225	30.8	18.871	25.2	15.932	20.5	13.284	–	16.6	10.979	–
250	34.2	23.295	27.9	19.580	22.7	16.337	–	18.4	13.524	–
280	38.3	29.210	31.3	24.613	25.4	20.481	–	20.6	16.945	–
315	43.1	36.977	35.2	31.136	28.6	25.926	–	23.2	21.475	–
355	48.5	46.885	39.7	39.545	32.2	32.912	–	26.1	27.229	–
400	54.7	59.549	44.7	50.162	36.3	41.783	–	29.4	34.529	–
450	61.5	75.330	50.3	63.512	40.9	52.909	–	33.1	43.736	–
500	–	–	55.8	78.262	45.4	65.285	–	36.8	53.967	–
560	–	–	62.5	98.191	50.8	81.787	–	41.2	67.708	–
630	–	–	70.3	124.252	57.2	103.625	–	46.3	85.580	–
710	–	–	79.3	158.186	64.5	131.851	–	52.2	108.898	–
800	–	–	89.3	200.708	72.6	167.210	–	58.8	138.134	–

Remarks

1. Other SDR ranges on request eg. 27.6, 33, etc.
2. Other coil length on request
3. Mentioned pressure rating is considered in bar and based on temperature of 20°C at 50 years of service. Any modification of parameters reflects in change in parameters.

SDR 17			SDR 21		SDR 26		Nominal Outside Diameter
PN 10			PN 8		PN 6		
Wall Thickness (mm)	Weight (kg/m)	Coils (m)	Wall Thickness (mm)	Weight (kg/m)	Wall Thickness (mm)	Weight (kg/m)	*dn* (mm)
–	–	–	–	–	–	–	20
–	–	–	–	–	–	–	25
2.0	0.194	500	–	–	–	–	32
2.4	0.295	500	2.0	0.247	–	–	40
3.0	0.453	500	2.4	0.373	2.0	0.311	50
3.8	0.722	500	3.0	0.579	2.5	0.492	63
4.5	1.019	100	3.6	0.828	2.9	0.674	75
5.4	1.465	100	4.3	1.188	3.5	0.978	90
6.6	2.180	100	5.3	1.782	4.2	1.435	110
7.4	2.780	100	6.0	2.278	4.8	1.849	125
8.3	3.491	100	6.7	2.853	5.4	2.334	140
9.5	4.556	100	7.7	3.741	6.2	3.061	160
10.7	5.763	100	8.6	4.701	6.9	3.811	180
11.9	7.111	–	9.6	5.825	7.7	4.726	200
13.4	9.020	–	10.8	7.361	8.6	5.939	225
14.8	11.053	–	11.9	9.008	9.6	7.358	250
16.6	13.887	–	13.4	11.371	10.7	9.178	280
18.7	17.585	–	15.0	14.290	12.1	11.692	315
21.1	22.382	–	16.9	18.145	13.6	14.777	355
23.7	28.286	–	19.1	23.136	15.3	18.738	400
26.7	35.837	–	21.5	29.258	17.2	23.691	450
29.7	44.280	–	23.9	36.098	19.1	29.225	500
33.2	55.472	–	26.7	45.180	21.4	36.634	560
37.4	70.258	–	30.0	57.073	24.1	46.418	630
42.1	89.287	–	33.9	72.782	27.2	59.096	710
47.4	113.218	–	38.1	92.253	30.6	74.845	800

(Other diameters and SDR's are available on request)

6. NEPROPLAST PE100 pipes better piping solutions

NEPROPLAST High Density Polyethylene (PE 100) solid wall pipe has been used in potable water applications since the '60's and has been gaining approval and growth in municipalities ever since NEPROPLAST PE 100 is specified and/or approved in SASO ISO 4427-2, FM 1613, and the NSF and WRAS.

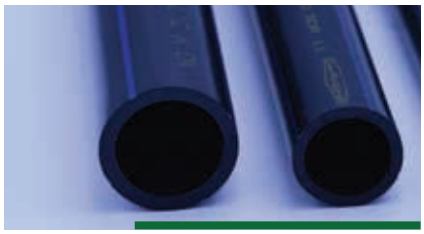
Some distinctive advantages of **NEPROPLAST** PE 100 pipe is that they provide important benefits for water applications which are listed below:

NEPROPLAST (High density polyethylene plastic pipe (PE 100) delivers exceptional value, unwavering reliability and remarkable advantages over conventional types of piping. It's today's right choice for water, drainage, fuel gas, conduit and plumbing & heating. Other reasons **NEPROPLAST** PE 100 is a superior choice, see below:

6.1 Flexibility & Fatigue Resistant

NEPROPLAST PE 100 pipes are flexible and can be bent to a minimum bending radius of 30 times the pipe's outside diameter. This flexibility is critical in applications such as submarine pipe lines, mine subsidence and earthquake prone areas. This inherent resiliency and flexibility allows the pipe to absorb surge pressures, vibration and stresses caused by soil movement including areas prone to earthquake.

6.2 Chemical Resistance

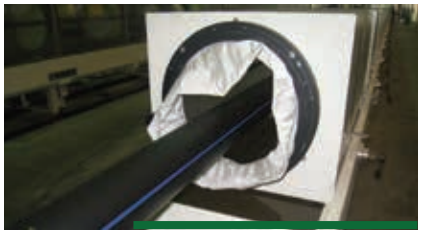


Outstanding resistance to a wide range of chemical reagents allows the use of polyethylene systems in applications such as Tailings pipelines and chemical treatment applications used in mining operations. **NEPROPLAST** PE 100 pipes are also not adversely affected by atmospheric conditions and are well suited for outdoor installations.

6.3 Weathering Resistance

NEPROPLAST PE 100 pipes are stabilised against ultra violet (UV) light degradation by the inclusion of carbon black in the raw material. Black **NEPROPLAST** PE 100 pipes are suitable for installations where the pipes are exposed to direct sunlight and cold weather.

6.4 Ease of Handling, Installation & Maintenance



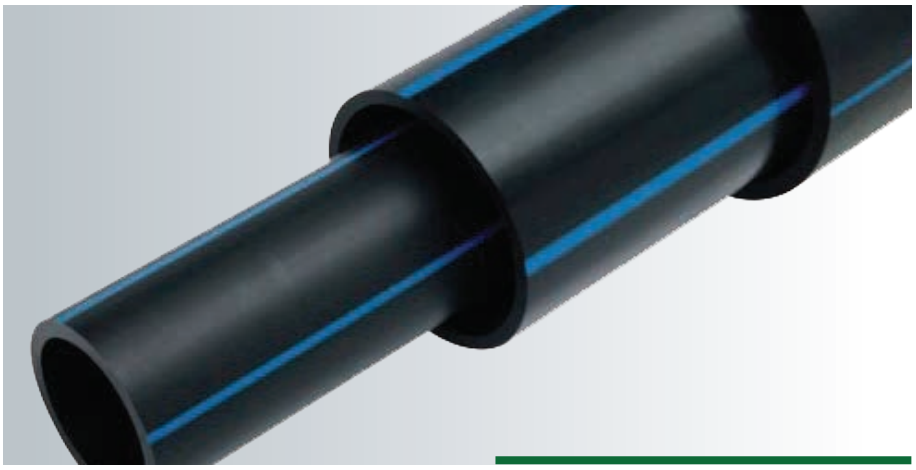
NEPROPLAST PE 100 pipes are easy to install with their light weight and long lengths. Polyethylene coiled pipes are widely used in applications such as stock watering, irrigation systems, power and telecommunication and gas due to rapid installation and the ease of less frequent jointing.

6.5 Superior flow characteristics

NEPROPLAST PE 100 pipes has lower friction factors than most non-plastic materials. Hazen Williams C Factor is 150 and doesn't change over time. The surface energy characteristics of **NEPROPLAST** PE 100 that material deposition is inhibited and the smooth bore characteristics is maintained over the working life of the pipeline. Because polyethylene is smoother than steel, cast iron, ductile iron or concrete a smaller **NEPROPLAST** PE pipe can carry an equivalent volumetric flow rate at the same pressure. It has less drag and a high flow. Its superior chemical resistance and "non-stick" surface combine to almost eliminate scaling and pitting and preserve the excellent hydraulic characteristic throughout the pipe service life.

6.6 Cost Effective, Long Term & Permanent

Polyethylene PE100 pipes have a proven high reliability record across a wide range of industries and applications, now approaching a period of 50 years. Polyethylene PE100 also provides a long maintenance free lifetime with low whole life costs, compared to many other materials. The polyethylene pipe industry estimates a service life for Polyethylene PE100 pipes to conservatively be 50-100 years. This relates to savings in replacement costs for generations to come.



6.7 Joining

NEPROPLAST Polyethylene pipes can be joined by a variety of methods. The preferred method is heat fusion. This encompasses butt fusion, saddle fusion, socket fusion and electro-fusion. This type of connection offers a completely leak proof, fully restrained joint.

6.8 High Impact Strength

High impact strength of **NEPROPLAST** PE 100 pipes compared with other plastic materials ensures greater resistance to the rigours of pipe laying conditions.

6.9 Corrosion

Corrosion and chemical resistant benefits. **NEPROPLAST** PE 100 pipes will not corrode, tuberculate or support biological growth. **NEPROPLAST** PE 100 pipes has superb chemical resistance and is the material of choice in harsh chemical environments. The advantages of corrosion and chemical resistance over traditional metal pipes are shared by many plastic pipes, but **NEPROPLAST** PE 100 pipes uniquely combines these attributes with the aforementioned advantages of heat fused joints, flexibility and fatigue resistance.

6.10 Light Weight & Flexible

Polyethylene pipe is produced in straight lengths or in coils. Made from materials about one-eighth the density of steel, it is light weight and does not require the use of heavy lifting equipment for installation. It reduces the need for fittings is excellent in shifting soils and per forms well in earthquake prone areas. **NEPROPLAST** PE 100 pipes resists the effects of freezing and allows bending without the need for an excessive number of fittings. Since **NEPROPLAST** PE 100 pipes are not of brittle material, it can be installed with bends over uneven terrain easily in continuous lengths without additional welds or couplings.

6.11 Biological Resistance

NEPROPLAST PE 100 pipe is not known to be subjected to any form of microbiological corrosion. It has excellent resistance to the attack of termites, fungi, insects, mildew, mold, fungus, rot and bacteria or biological agents when it is buried in soil. Polyethylene does not support fungi and even relatively virulent fungi.

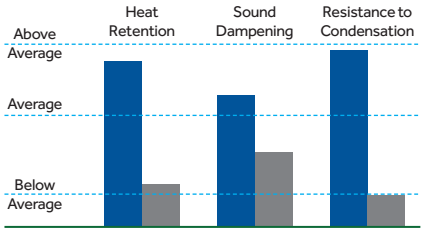
This is due mainly to the fact that water can easily be wiped off of the surface of the pipe rather than absorbed within it.

Polyethylene has been tested for resistance to marine-biological attack and it was found that in their biochemical oxygen demand-type tests. Polyethylene was not utilized by bacteria.

6.12 Abrasion Resistance

The smooth, tough, interior surface of **NEPROPLAST** PE 100 pipes out-performs most conventional piping materials against abrasion. **NEPROPLAST** PE 100 pipes has particularly demonstrated this exceptional advantage in slurry tailing applications. Concrete testimonies of these desirable quality are the uses of **NEPROPLAST** PE 100 pipes in most of the leading mining operations in the country.

6.13 Thermal Conductivity



NEPROPLAST PE 100 pipes have lower thermal conductivity than for metal which reduces heat losses (essentially acts as an insulator) and offer better uniform fluid temperature, prevent "sweating" formation of condensation on the pipe wall. Insulation in certain instances, may be completely eliminated.

7. Application of NEPROPLAST PE 100 pipes

7.1 Water Supplies

Non-toxic **NEPROPLAST** PE 100 pipes will not affect the taste, color or smell of drinking water. They will never corrode and are therefore extremely sanitary. Deposits and scales will not build up inside as in the case for conventional steel pipes. **NEPROPLAST** obtained SASO certification and NSF 61 for drinking water use.

7.2 Irrigation Systems

NEPROPLAST PE 100 pipes are ideal for agricultural irrigation and sprinkler systems. Non-corrosive **NEPROPLAST** PE 100 pipes are perfect for carrying water which contains chemical fertilizers and insect inhibitors. Within a thick wall and large diameter **NEPROPLAST** PE 100 pipes liquids can be transported under high pressure, which is convenient for the management of large volumes.

7.3 Industry

Fertilizers - Paper and Pulp Manufacturing, Power Plant, Petrochemical, Semiconductor, Plastic resin manufacturers, clean & ultra pure water process - Tank farms, fire loops and mains, LNG (Liquified Natural Gas) etc. Resistant to most chemicals, **NEPROPLAST** PE 100 pipes have an important role to play in industrial plants. Light, non-corrosive and easy to assemble they allow more complex piping work than with steel or cast-iron pipes.

7.4 Soil, Waste & Drainage Sewer System

Waste lines for corrosive gases, ventilation for office buildings and factories, drainage systems for private homes and elevated highways these are a few of the many possibilities for **NEPROPLAST** PE 100 pipes. A full line of PE 100 fittings is available to ensure easy installation.

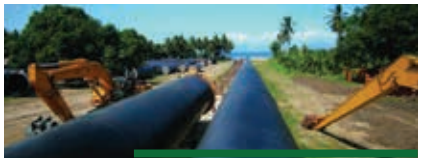
7.5 Mining

More than 30 years, polyethylene **NEPROPLAST** PE 100 pipes unique characteristics made it the product of choice for numerous applications in the mining industry. It is a proven product in rugged terrains, extreme climates and changing site environments. Heat-fused joints create a monolithic structure that allows long lengths of pipe to be pulled from one area to another. **NEPROPLAST** PE 100 pipes flexibility, abrasion resistance and leak-free joints have helped the product prove itself long-term in demanding environments. **NEPROPLAST PE 100 pipe is the accepted standard for these mining applications.** Solution Mining - Heap Leaching Process Water - Process Slurry - Tailings Transportation - Dust Suppression - Mine De-watering & Pit De-watering.

7.6 Electrical & Telecommunication Cables Protection

NEPROPLAST PE 100 pipes form an integral insulator, hence there is an ever increasing demand for them as electrical conduit. To facilitate work, a full line of fittings is available and fabricated from the same material as the pipes.

PE 100 conduit is flexible which allows ease of installation in existing pathways, yet its stiffness can withstand crush forces at the calculated level for buried applications. PE 100 conduit is installed along highways or roads and in buildings. It is used to protect power distribution lines (600V secondary, <69kV primary) and telecommunication lines (network backbones), landline (wireline) and broadband such as DSL Internet and CATV. The different installation methods are project specific and dictate what strength conduit is used.



7.7 Desalination

The increasing demand to convert sea water into drinking water supports the trend to use HDPE in larger sizes. Neproplast PE 100 pipes are available up to d800, SDR 11 and can be used for sea water intake and outfall lines. The non-corrosive material characteristics support its usage of sea water applications. Special concrete anchors will be fixed to the HDPE pipe so it can be laid into the sea without additional anti-corrosive protections. Besides applications like water, fire and chemicals, also highly concentrated brine can be carried in Neproplast PE100 lines as a sea water discharge line before it will be diluted.

Manufacturing Plant

NEPROPLAST
Together We Build The Future
معا نبني المستقبل

New Products Industries Co. Ltd.
Manufacturing Plant, Jeddah
P. O. Box 460, Jeddah 21411. Kingdom of Saudi Arabia.
Tel. : +966 12 636 3558 / 1596 / 1205
Fax : +966 12 636 2364
Email : info@neproplast.com

Distributor

شركة المؤسسة الوطنية للتسويق المحدودة
NATIONAL MARKETING EST. CO. LTD.

JEDDAH

P. O. Box 16375, Jeddah 21464. Kingdom of Saudi Arabia.
Tel. : +966 12 227 3271
Fax : +966 12 227 1796
Email : nm.jeddah@ikkgroup.com

RIYADH

P. O. Box 2729, Riyadh 11461. Kingdom of Saudi Arabia.
Tel. : +966 11 478 0015
Fax : +966 11 478 2567
Email : nm.riyadh@ikkgroup.com

DAMMAM

P. O. Box 2145, Al Khobar 31952. Kingdom of Saudi Arabia.
Tel. : +966 13 847 1315
Fax : +966 13 847 1312
Email : namat.dammam@ikkgroup.com

EXPORT

P. O. Box 16375, Jeddah 21464. Kingdom of Saudi Arabia.
Tel. : +966 12 627 8526
Email : export.namat@ikkgroup.com
Email : mahmoud.mesabbah@ikkgroup.com

Customer Service

+966 9200 18858

www.namat.com

@NAMATksa @NAMATksa Namat_ksa (NAMAT) NAMAT ksa

نيبروبلاست

Together We Build The Future معا نبني المستقبل

انابيب بولى إثيلين عللى الكثافة

توصيلات مياه الشرب, الغازو الصرف الصحي

WRAS

SASO QUALITY MARK

NSF

"Only products bearing the NSF mark are certified"

FM APPROVED

IK

التوزيع من قبل شركة المؤسسة الوطنية للتسويق المحدودة

Distributed by **NATIONAL MARKETING EST. CO. LTD.**

www.namat.com

NP - HDPE Pipes - May 2022