



Metal reinforced PE spirally corrugated pipe, non-pressure pipe (DN300-DN2400)

We occupy HDPE original material & eliminate the recycled material

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Metal reinforced PE spirally corrugated pipe

Metal reinforced polyethylene (PE) spirally corrugated pipe is a new kind of double-wall spirally corrugated pipe. The HDPE is used as basic material, and the steel strap spiraled as the supporting part which is spiraled to corrugated wall structure.

Material

The stuffing material of steel reinforced HDPE pipe and fitting is PE 80 (piping class) , and we use high quality low-carbon steel wire as the reinforcing part of the pipe and Q235 steel sheet for fittings.

Characteristics of PE 80(piping class) material

Characteristics	Test Standard	Unit	Result
Melt Flow Index(5Kg,190℃)	ASTM D 1238	G/10min	0.56
Density	ASTM D 792	G/cm ³	0.954
Tensile Yield Strength	ASTM D 638	Kg/cm ²	230
Tensile Fracture Strength	ASTM D 638	Kg/cm ²	370
Tensile&Elongation Ratio	ASTM D 638	%	≥600
Brittleness Temperature	ASTM D 746	℃	≤-70
Linear Expansion Coefficient	DIN 53752	K ⁻¹	1.3x10 ⁻⁴
ESCR (F50)	ASTM D 1689	HR	>2000
Thermal Stability	ISO 10837	min	>20
Grade	ASTM D 4131(B)		PE 80
Long-term Hydro Static Strength	ISO 9080	MPa	9.33
Short-term Hydro Static Strength	ASTM D 4131	HR	>165

The characteristic of steel wire and sheet

Characteristics	Test Standard	Unit	Result
Steel wire			
Tensile strength	GB/T 343-1994	MPa	400-500
Tensile&Elongation Ratio	GB/T 343-1994	%	12
Steel sheet			
Tensile strength	GB/T 709-1988	MPa	200
Tensile&Elongation Ratio	GB/T 709-1988	%	10

Characteristics

Because of the reasonable design and the advanced production technology, the Metal reinforced polyethylene (PE) spirally corrugated pipe possesses many advantages, such as high ring stiffness, resistance to corrosion and abrasion, light weight, convenient construction and installation etc..

It is a new kind of pollution-free plastic pipe which recommended by the Ministry of Construction. The features follows:

1 For the high elastic modulus of corrugated steel strip, the pipe possesses high ring stiffness.

Metal reinforced polyethylene (PE) spirally corrugated pipe makes use of the special corrugated steel as supporting structure. Because of steel's high elastic modulus and pipe cross-section's high moment of inertia, there are 4 ring stiffness classes for the pipe: SN8, SN10, SN12.5, and SN16. Its high ring stiffness breaks the limit that the highest ring stiffness of plastic pipe can only reach the SN8. It makes plastic pipe can satisfy various engineering requirements.

2 The HDPE materials is very stable is chemical reaction, the pipe can resist corrosion and abrasion, and has a long service life.

The steel is completely covered by HDPE, so only the HDPE is exposed to the liquid and the soil. HDPE is a kind of crystal Non-polar material, it is very stable and has no electric-corrosion. Pipe resists corrosion and abrasion, has a long service life.

3 Smooth inter wall, the transportation capability of the pipe is high

The inner wall surface of Metal reinforced polyethylene (PE) spirally corrugated pipe is smoother than concrete pipe. So the transportation capability of the pipe is obviously higher than that of concrete pipe under the same condition.

4 Hollow structure, light weight, convenient construction and installation

With the corrugated steel strip as supporting structure, it needs fewer raw materials than other plastic pipes. Metal reinforced polyethylene (PE) spirally corrugated pipe is light. It can be connected by many kinds of method, for example, electric melting belt; the transport and installation are convenient and simple.

5 HDPE and adhesive resin are combined with the steel strip closely in molten state.

As bond between HDPE and steel, there is a layer of adhesive resin which the steel strip's surface coats with. To control the optimum temperature, pressure and time can ensure that HDPE and steel compound closely. It prevents the steel strip being rusty.

6 Flexible pipe, joint steady, resist to unequal settlement

Metal reinforced polyethylene (PE) spirally corrugated pipe possesses the characteristic of both rigidity and flexibility, when under pressure, the pipe and backfill soil can resist to external load and reasonable uneven settlements of soil.

Combined with the advantages of the electric-melting belt welding method and the patented technology of welding, it can ensure the welding quality be safety.



Specification

specification	minimum mean inside diameter (mm)	minimum inner wall thickness (mm)	minimum multilayer wall thickness (mm)	Maximum thread pitch (mm)
300	294	2.5	4.0	55
400	392	3.0	4.5	65
500	490	3.5	5.0	75
600	588	4.0	6.0	85
700	673	4.0	6.0	110

800	785	4.5	6.5	120
900	885	5.0	7.0	135
1000	985	5.0	7.0	150
1100	1085	5.0	7.0	165
1200	1185	5.0	7.0	180
1300	1285	5.0	7.0	190
1400	1385	5.0	7.0	200
1500	1485	5.0	7.0	210
1600	1585	5.0	7.0	210
1800	1785	5.0	7.0	210
2000	1985			
2200	2185			

Application

The 12th China National Games Projects

The 12th National Games of the People's Republic of China was held in Liaoning province in 2013. Liaoning was the 6th provincial level host of the games, following Beijing, Shanghai, Guangdong, Jiangsu and Shandong.

HTIDC won the bidding of drainage pipeline projects of the 12th National Games in Shenyang in 2012.