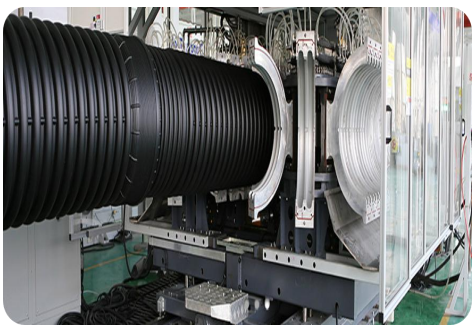
SHUANGLIN PIPE

Professional HDPE/PP double wall corrugated pipe and HDPE spiral pipe manufacturer

PT SHUANGLIN PIPE INDONESIA

www.shuanglinpipe.co.id

> HDPE/PP double wall corrugated pipe （ID100-600mm)


what is HDPE double wall corruagted pipe?

- Double-wall corrugated pipe: The pipe wall section double-layered. Its inner wall is smooth and flat. The outer wall is corrugated
  Nominal diameter (ID): The nominal diameter of the pipe, which is divided into two types: the inner diameter series and the outer diameter series.
  Ring stiffness: A measure of the ability of a pipe to resist circumferential deformation. Unit: KN/m2
- 1980s, Germany company manufactured the world first double wall corrugated pipe which was used in the underground sewage system world wide.

HDPE double wall corrugated pipe specification

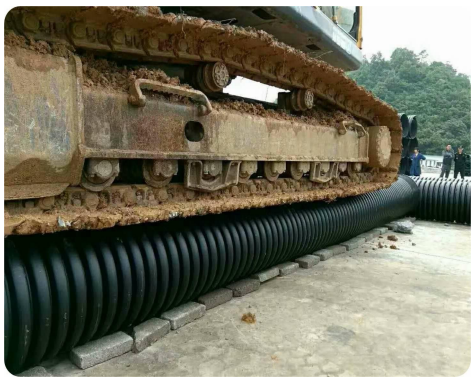
ID(mm)	OD(mm)	laminated wall thickness (mm)	inside layer wall thickness （mm)	connection length (mm)	ring stiffness KN/m2
100	115	1.2	1	21	20
150	173	1.9	1.7	43	8
200	235	2	1.7	54	8
300	355	3	2.7	64	8
400	473	4	3.7	74	8
500	588	5	4.7	85	8
600	707	6	5.7	96	8
remark: HDPE double wall corruaged pipe is mfactured in 6 meter/PCS					

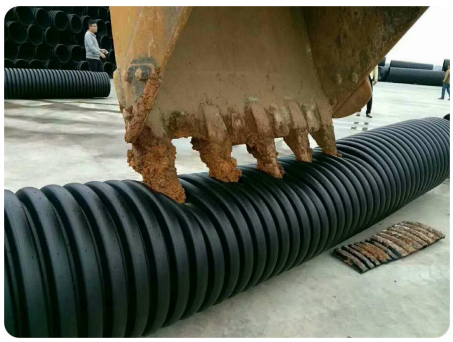
HDPE double wall corrugated pipe physical characteristic

item	requirement
Ring stiffnss (KN/m2)	≥8
Impact Resistance(TIR)	≤10

Extraordinary advantages of HDPE double wall corrugated pipe

- Super corrosion resistant
- Strong resistance to external impact
- Ultra-aging resistance
- Cold and heat resistant
- Light weight
- Low cost in engineering
- Fast and easy installation
- Durable
- Smooth inside and low flow friction
- Non-pollution to environment
- High ring stiffness and excellent ring flexibility





> HDPE spiral pipe (ID800-2000mm)



Manufacturing technology from Germany

- HDPE spiral pipe: The pipe is made by spirally winding technology. Its inner wall is smooth and flat. The outer wall is strengthened by prifile
  Nominal diameter (ID): The nominal diameter of the pipe, which is divided into two types: the inner diameter series and the outer diameter series.
  Ring stiffness: A measure of the ability of a pipe to resist circumferential deformation. Unit: KN/m2

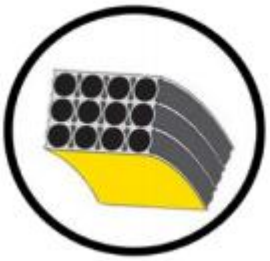
HDPE spiral pipe specification

ID(mm)	OD(mm)	ring stiffness KN/m2	remark
800	910	4/8/12.5/16	
1000	1170	4/8/12.5/16	
1200	1380	4/8/12.5/16	
1400		4/8/12.5/16	
1600		4/8/12.5/16	
1800		4/8/12.5/16	
2000		4/8/12.5/16	
Remark: HDPE spiral pipe is mfactured in 6 meter or 4 meter/PCS			

Products classification

- PR type-----outer winding type, that is, the inner surface of the product is smooth and the outer part is shaped with a reinforced structure. Mainly used as buried drainage pipe.

Application: sewage pipe, drainage pipe, storm drainage pipe



- SQ type ----- winding type, that is, inside the product, the outer surface is smooth, and the middle is a special-shaped reinforced structure. Mainly used in the manufacture of container, cargo wells
  Application: Ventilation pipes, shafts, pipes with the highest load and large diameter

- VW type----solid wall type, mainly used for tees, elbows, and secondary processing of pipe fittings.

Applications: Pressure pipes, vessels, fittings and special structures

Extraordinary advantages of HDPE spiral pipe

- Super corrosion resistant
- Strong resistance to external impact
- Ultra-aging resistance
- Cold and heat resistant
- Light weight
- Low cost in engineering
- Fast and easy installation
- Durable
- Smooth inside and low flow friction
- Non-pollution to environment
- High ring stiffness and excellent ring flexibility

item	HDPE spiral pipe	concrete pipe
material	HDPE, PP pure plastic made easy to recycle, long-term storage	Reinforced concrete, not easy to recycle, not easy to store for a long time
connection	Socket type electric hot melt connection, flexible connection and safe and reliable connection	Socket type, on-site cement
Ring stiffness	Arbitrary adjustment between SN2-SN16; easy adjustment of ring stiffness	SN8, SN12.5, SN16, ring stiffness is not easy to adjust
Flexibility	The loop flexibility at the joint is consistent with the pipe body	NO
Earthquake resistance	High (even sediment)	Low (leakage in-avoidable)
Storage period	Long	short
Life time	100years	10-30 years
Engineering period	Short construction period, no requirement for foundation	The construction period is long and the foundation needs to be treated.

HDPE spiral and corrugated pipe material property

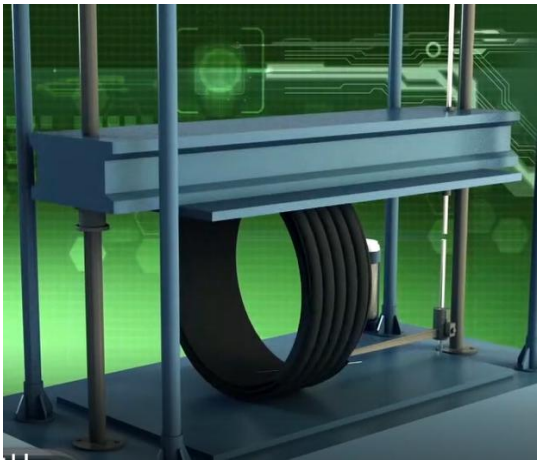
property	units	PE100
density	g/cm3	>0.959
poisons ration	-	0.4
Melt Flow Rate		
(190℃/2.16kg)	g/10min	<0.15
(190℃/5kg)	g/10min	<0.5
Tensile Strength		
at yield	Mpa	23
Elongation at break	%	>600
Modulus of Elasticity	Mpa	1000
softening point	℃	124
brittleness Temp	℃	<-100
Thermal Conductivity	℃	0.4

HDPE spiral and corrugated pipe production standard

production standard	pipe test standard
pr EN13476-3 DIN 16961 standard	ISO 9969

HDPE spiral and corrugated pipe quality inspection

raw material testing



finished pipe ring stiffness testing

The main application of HDPE spiral and corrugated pipe

1) Municipal engineering. used for drainage and sewage pipeline.
2) Used for building rainwater pipeline, underground drainage pipeline, sewage pipes, ventilation pipes, etc.
3) Electrical and telecommunications engineering. used for protection pipe of various power cables.
4) Railway and highway .Protective pipe for communication cable and optical cable.
5) Industry. Widely used in sewage, chemical, pharmaceutical, environmental protection and other industries.
6) Agriculture, garden projects. Used in farmland, orchard, tea garden and forest drainage.
7) Road works. used as a seepage and drainage pipe for railways and highways.
8) Mine: mine ventilation, air supply, drainage pipe
9) The double wall corrugated pipe with cutting holes can be used as perforated pipe of the highway.
10) Golf course and football field project. Used for perforated pipes on golf courses and football fields.

electricity power plant

high way works

port

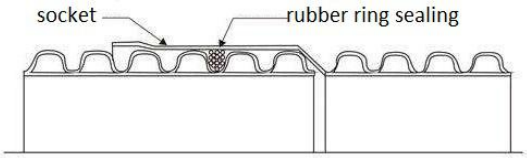
chemical industry

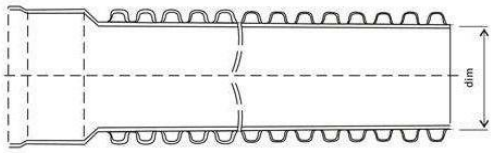
residential apartment

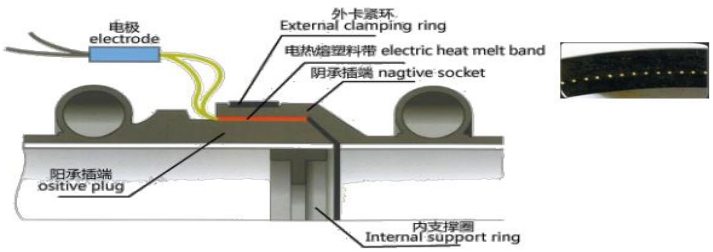
waste water treatment

HDPE double wall corrugated and spiral pipe installation

1. pipe connection overview (connected by rubbering and electrofusion)







2.pipe installation procedures

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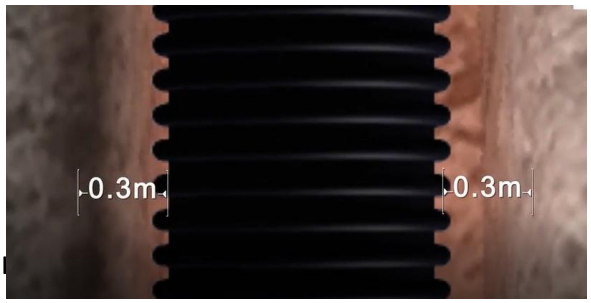

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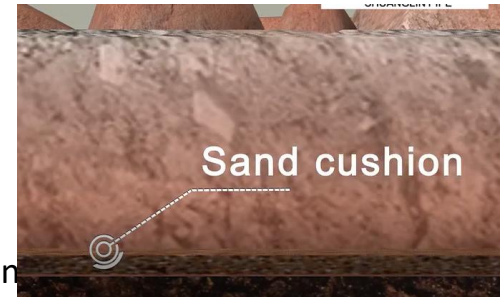
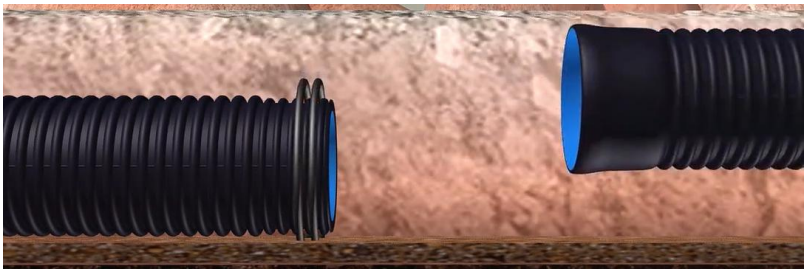
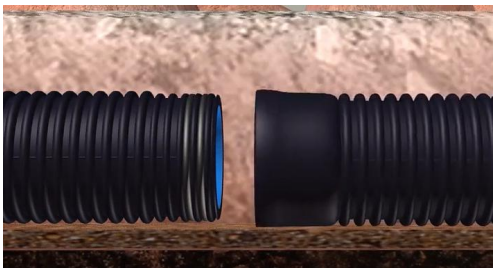
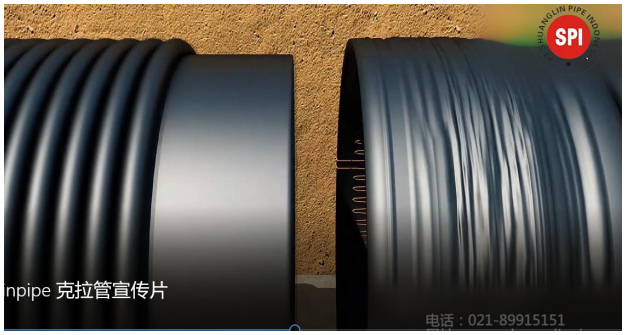


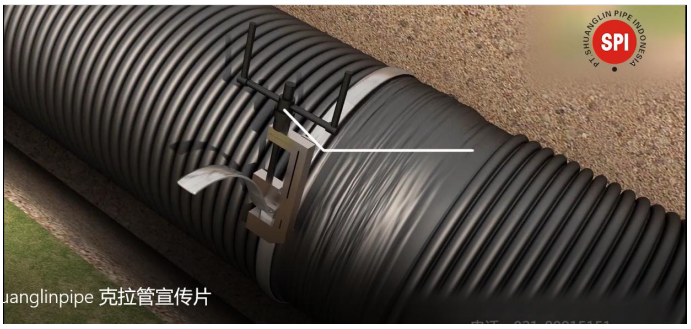




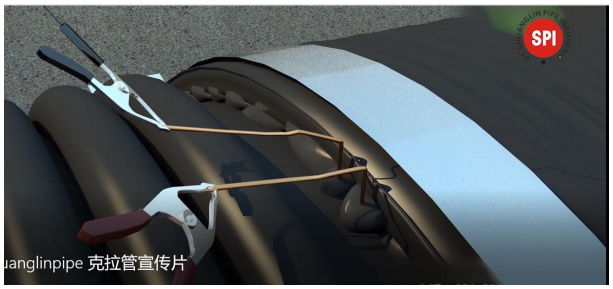
step 3(for corrugated pipe): mount rubber ring on spigot and rub lubricant (soap water) on rubber ring and inside surface of socket

step 4(for corrugated pipe): push the spigot into socket



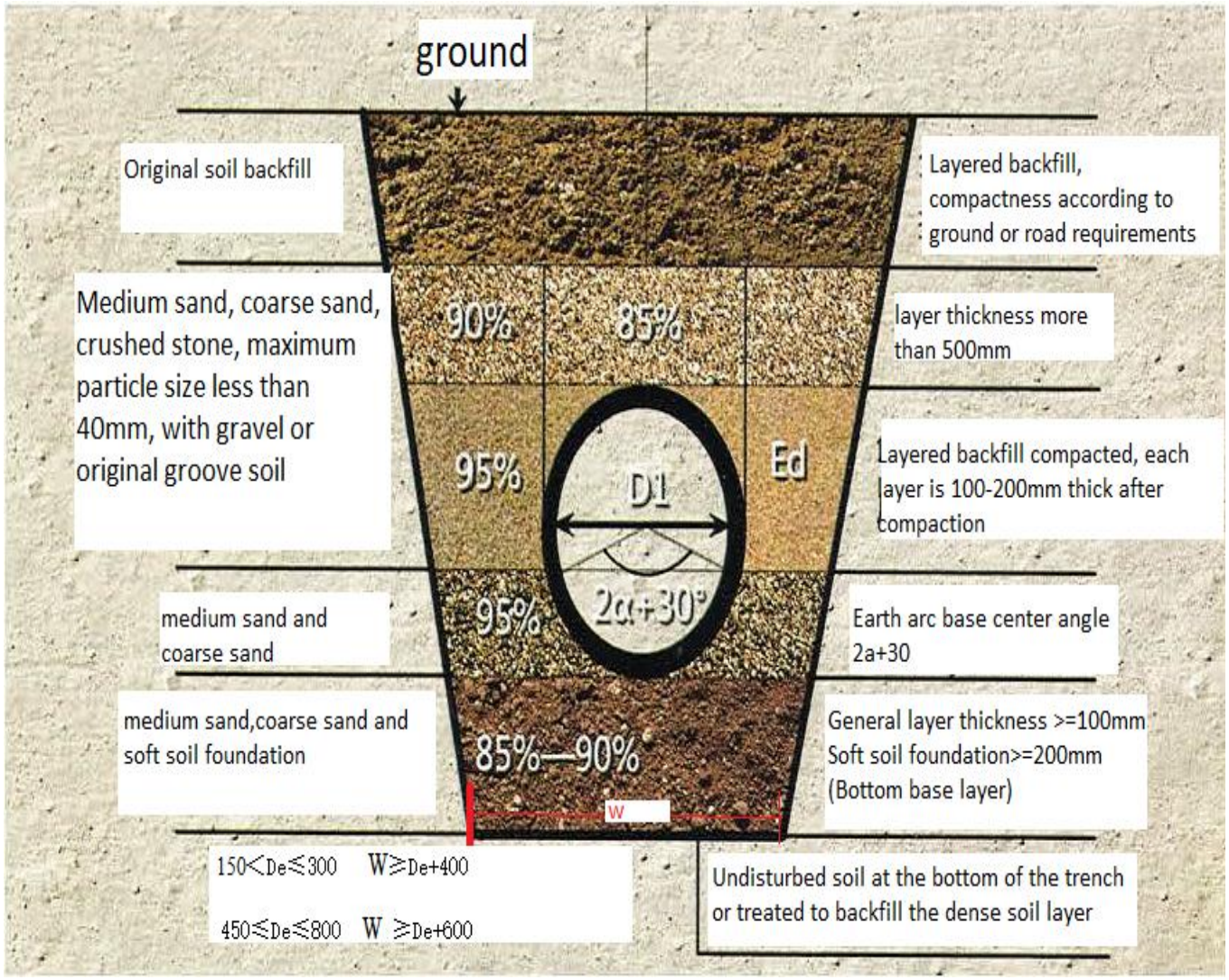


step 3(for HDPE spiral pipe): push the spigot into socket and then clamping the pipe with tool



step 4(for HDPE spiral pipe)：conduct the welder and until material get melt and complete connected

step 5: backfilling (backfill immediately after pipe installation) and the backfilling should follow the requirements as below.



Economic comparison between HDPE double wall corrugated pipe and cement pipe

- Compare the relevant costs of each pipe length with ϕ300 pipe diameter (as shown in the following table):

Data item	HDPE double wall corrugated pipe	Concrete pipe
Groove bottom width (m)	0．941	1．40
Grading coefficient	0．50	0．50
Groove depth （m)	2．00	2．00
Groove upper width (m)	2．261	2．761
Pipe diameter (mm)	0．341	0．41
Pipe cross-sectional area (m2)	0．029	0．029
Excavation of earthwork (cubic meters)	3．202	4．202
Residual soil volume (cubic meters)	3．202	4．202
Backfilled sand amount (cubic meters)	3．173	4．173
Excavation of earthwork costs (Rp/cubic meter)	1,728Rp	11,728Rp
Residual earth transportation cost (Rp/cubic meter)	63,288Rp	63,288Rp
Backfilling sand costs (Rp/cubic meter)	206,474Rp	206,474Rp

1. Earthwork cost calculation (calculated in 1 meter)

Data item	HDPE double wall corrugated pipe earthwork cost	Cement pipe earthwork cost
1.Excavation construction cost	37,540Rp	49,291Rp
2.Residual soil transportation cost	202,629Rp	265,939Rp
3.Backfilling sand costs	655,128Rp	861,602Rp
Earthwork total cost	1+2+3=895,297Rp	1+2+3=1,176,832Rp
Comparison results: HDPE double wall corrugated pipe saves 24% compared with concrete pipe		

2. Calculation of construction costs (calculated in 1 meter)

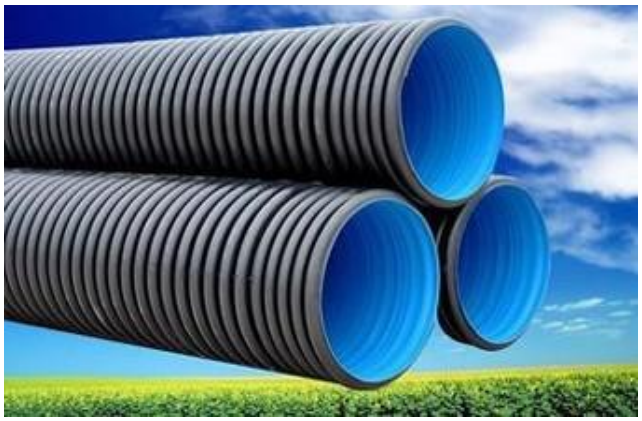
Data item	HDPE double wall corrugated pipe connection construction cost	Cement pipe connection construction cost
Unit price	86,400Rp/m	140,400Rp/m
Total cost	86,400Rp	140,400Rp
Comparison results: HDPE double wall corrugated pipe saves 38.5% compared with cement pipe		

3.the cost of pipe

Data item	HDPE Double wall corrugated pipe (ring stiffness SN8)	Concrete pipe S2
unit price	Φ300mm/S2 238,350Rp/m	Φ300mm / 155,944Rp/m
Total cost	238,350Rp	155,944Rp

In summary, the total cost of HDPE double wall corrugated pipe and concrete pipe is:
1.HDPE double wall corrugated pipe total cost: 1+ 2 + 3=1,184,047 Rp
2. the total cost of cement pipe:1+ 2 + 3 = 1,473,176Rp
3. the difference between the cost of the two kind of pipe per meter is 289,129Rp /meter

Plastic pipe



VS

Concrete pipe

1. The flow capacity of HDPE pipe is more than 1.35 times that of concrete pipe. If DN800 concrete pipe is used, the HDPE pipe only needs DN600 (800/1.35).

the same flow capacity (require diferent size)		
NO	HDPE double wall corrugated pipe	concret pipe
1	DN300	DN400
2	DN400	DN500
3	DN500	DN600
4	DN600	DN800
5	DN800	DN1000
6	DN1000	DN1200
7	DN1200	DN1500

2. The connection method of HDPE pipe is simple and quick, and the construction progress is greatly improved. Only 30% of the construction time of the cement pipe is required under normal conditions, thereby saving a lot of construction man-hour costs.

3. HDPE pipe has a standard length of 6 meters, all made of high-density polyethylene raw materials. The pipe is light in weight and the mechanical equipment use is greatly reduced.

4. HDPE pipe has small grading coefficient, small working surface, and pipe can be welded on the ground, so the trench excavation can be reduced by more than 30%, thus greatly saving engineering costs.

5. HDPE pipe can adapt to the embedding of uneven settlement geology such as soft foundation, and the pipeline trench does not need basic treatment.

6. HDPE pipe has more than 50 years service lifetime, so the lifetime of the pipeline system is more than 50 years. This is more than 2.5 times the lifetime of concrete pipe in theory, which is basically a long-term investment benefit.

> HDPE/PP single wall corrugated pipe



Single wall corrugated pipe: The pipe wall section single layer with inner wall and outer wall is corrugated

HDPE single wall corrugated pipe specification

ID(mm)	OD(mm)	application	pipe unit	length of unit(m)	ring stiffness KN/m2
	29	Cable conduit (cable protection pipe unburied underground)	coil	100/200	----
	34			100	----
	42			100	----
	56			100	----
	65			100	----
	80			100	----
	100			50/100	----
100	115	1.underground cable protection pipe	coil	50	8
150	175	2.Sub-soil Perforated pipe(buried undergound)	coil	30	6
200	235		straight or coil	6.5/30	6

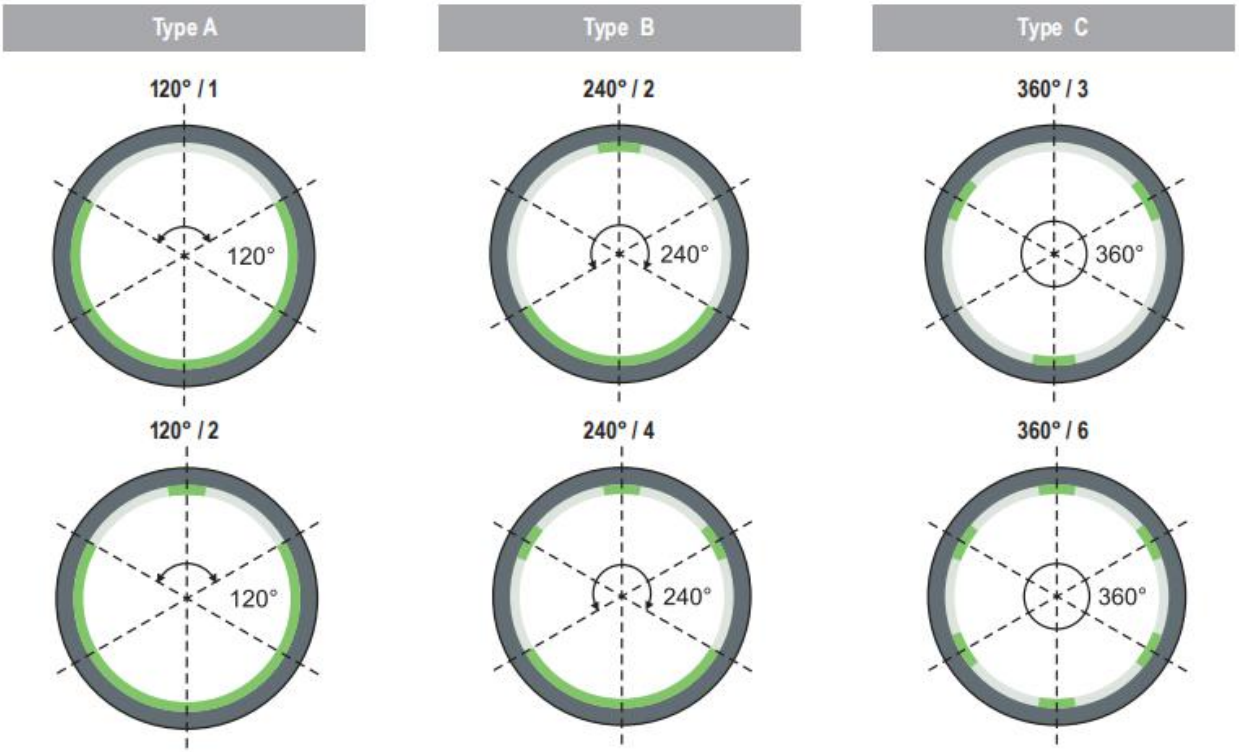
Types of perforated pipes

taking into consideration the angle and number of perforations, SHUANGLIN drainage pipe can be divided into three types:

Type A----pipes perforated at 120 degree with one or two incisions

Type B----pipes perforated at 240 degree with two or four incisions

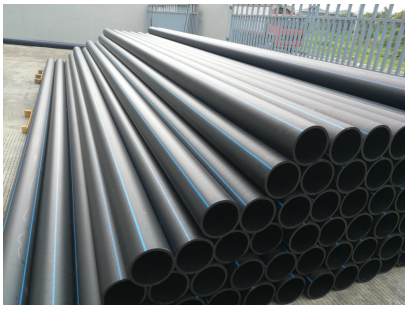
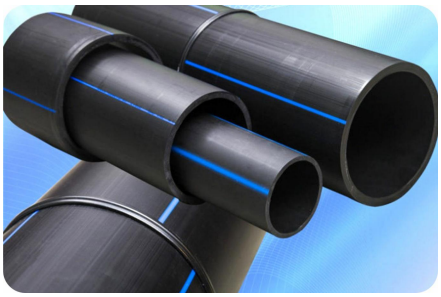
Type C----pipes perforated at 360 degree with three or six incisions



HDPE double wall corrugated perforated pipe techinal parameter

perforated pipe technical parameter			
outside diamater（mm)	115	175	235
inside diameter(mm)	100	150	200
number of incision per circumference	3-4	3-4	3-8
incision width(mm)	3	3	3

> HDPE solid wall pipe

HDPE solid wall pipe advantages

(1) Non-Toxic: no heavy metal additives, would not be covered with dirt or contaminated by bacterium

(2) Corrosion Resistance: resist chemical matters and electron chemical corrosion

(3) Low Installation Costs: light weight and ease of installation can reduce installation costs

(4) High Flow Capacity: smooth interior walls. Result in low pressure loss and high volume

(5) Longevity: more than 50 years under proper use

HDPE solid wall pipe application

(1) Municipal water supply

(2) Commercial & Residential water supply

(3) Industrial Liquids transportation

(4) Sewage treatment

HDPE solid wall pipe material property

property	units	PE100
density	g/cm3	>0.959
poisons ration	-	0.4
Melt Flow Rate		
(190℃/2.16kg)	g/10min	<0.15
(190℃/5kg)	g/10min	<0.5
tensile strength at yield	Mpa	23
Elongation at break	%	>600
Modulus of Elasticity	Mpa	1000
softening point	℃	124

HDPE solid wall pipe specification

Dimension		PE 100				
		SDR11	SDR13.6	SDR17	SDR21	pipe in length
OD	ND	PN16	PN12.5	PN10	PN8	meter/pcs
(mm)	(inch)	(mm)	(mm)	(mm)	(mm)	
50	1 1/2	4.60	3.70	3.0		6/12
63	2	5.80	4.70	3.80		6/12
75	2 1/2	6.80	5.50	4.50	3.60	6/12
90	3	8.20	6.60	5.40	4.30	6/12
110	4	10.00	8.10	6.60	5.30	6/12
125	5	11.4	9.20	7.40	6.00	6/12
140		12.7	10.30	8.30	6.70	6/12
160	6	14.6	11.8	9.50	7.70	6/12
180		16.4	13.30	10.70	8.60	6/12
200	8	18.2	14.70	11.90	9.60	6/12
225		20.5	16.60	13.40	10.80	6/12
250	10	22.7	18.40	14.80	11.90	6/12

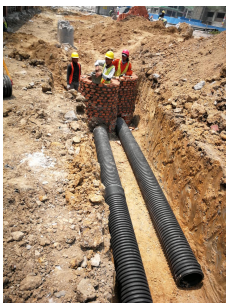
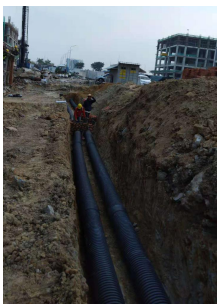
production standard

--ISO4427:2007 Polyehylene (PE) pipes for water supply--specification

--SNI 4829.2: 2015 sistem perpipaan plastik-pipa polietilena(PE) dan fitting untuk sistem penyediaan air minum

projects reference



MEIKARTA projects (applied HDPE double wall corrugated pipe)


Yoyic factory(Cikarang) used shuanglin pipe as sewage system


Surabaya projects used HDPE double wall corrugated pipe (ID500mm)


KCIC(high speed railway project) used HDPE double wall corrugated pipe

PT SHUANGLIN PIPE INDONESIA

PT Shuanglin Pipe Indonesia is a wholly-owned subsidiary jointly established by Zhejiang Shuanglin Environment Co.Ltd and Fujian Hualong Fubang investment Co.Ltd. The factory is located in CIKARANG, Indonesia, with a total investment of USD 5,000,000. Factory has an area of 7,000 square meters. The company relies on the technical support and professional production management team provided by Zhejiang Shuanglin Environment Co., Ltd., in order to achieve the goal of “safe and environmentally friendly integrated water supply and drainage pipeline supplier”, PT Shuanglin Pipe Indonesia has been continuously focusing on technology introduction and innovation, we provide cutting-edge integrated water supply and drainage network solutions for urban construction in Indonesia.

In order to ensure the excellent performance of the products, PT Shuanglin Pipe Indonesia introduced the most advanced production equipment and technology, and established a strict standardized internal quality control system. From raw material procurement to product delivery, every step is strictly controlled.

At present, the company has advanced high-speed corrugated pipe production line, spiral pipe production line and HDPE pipe production line, mainly produces water supply, drainage,Sewage, flexible conduit and permeation pipe, etc. The product series include single-wall corrugated pipe. HDPE Double-wall corrugated pipe,HDPE spiral pipe, HDPE water supply pipe. Corrugated perforated pipe and sealing rubber ring for pipe connection, inspection well and other accessories.

Address: KAWASAN INDUSTRI DELTA SILICON 5JL.KENARI BLOCK G.1 NO.28A-B LIPPO CIKARANGC IBATU CIKARANG SELATAN KAB BEKASI JAWA BARAT
TEL:(021)89915151 Fax:(021)8990 9098 Email address: info@shuanglinpipe.co.id

REFERENSI PROYEK

1. MEIKARTA PROJECT – CIKARANG

Material Specification : HDPE/PE Corrugated Double Wall ID 100, ID 150, ID 300, ID 400 dan ID 600.
Material Application : Drainage System, Cable Protection



2. YOYIC FACTORY – CIKARANG

Material Specification : HDPE/PE Corrugated Double Wall ID 400, ID 200
Material Application : Drainage System

3. PROJECT KERETA CEPAT INDONESIA–CHINA (KIIC) JAKARTA – BANDUNG

Material Specification :
- HDPE/PE Corrugated Double Wall ID 300, ID 400 dan ID 500.
- HDPE Spiral Pipe ID 800

Material Application :
- Drainage & Sub–drain System

4. TAMAN HERBAL BINTANG TOEDJOEH BY TATAMULIA – CIKARANG

Material Specification : HDPE/PE Corrugated Double Wall ID 100
Material Application : Drainage System and Sub–drain System

REFERENSI PROYEK

5. JAWA1 POWER PLANT BY SAMSUNG C&T, CILAMAYA , KARAWANG

Material Specification : HDPE/PE Corrugated Single Wall OD 80, ID 100, ID 150. HDPE Spiral Pipe ID 800.
Material Application : Cable Protection and Vertical Drainage.


6. PABRIK SUSU BY PT. GLOBAL DAIRY ALAMI – SUBANG JAWA BARAT.

Material Specification : HDPE/PE Corrugated Double Wall ID 100, ID 150, HDPE Connection Pit (Manhole) ID 600
Material Application : Drainage System



7. PABRIK SEMEN BY PT. SEMEN GROBOGAN – JAWA TENGAH.

Material Specification : HDPE/PE Corrugated Double Wall ID 300
Material Application : Drainage System

8. PLTU SUMATERA SELATAN 8 – TANJUNG ENIM

Material Specification : HDPE/PE Corrugated Double Wall ID 300
Material Application : Drainage System



REFERENSI PROYEK

9. TAMBAK UDANG – LUWUK, SULAWESI

Material Specification : HDPE/PE Corrugated Double Wall ID 400 and ID 500
Material Application : Drainage System



10. PABRIK SUSU JOYDAY – CIKARANG

Material Specification : HDPE/PE Corrugated Double Wall ID 300, ID 400
Material Application : Begasting (Pilar-pilar bangunan)


11. TURTLE ISLAND – JO CRCEC – TATAMULIA – SERANGAN BALI ISLAND

Material Specification : HDPE Corrugated Double Wall ID 300, ID 400, ID 500
Material Application : Drainage System




REFERENSI PROYEK

12. PATIMBAN PORT – SUBANG, JAWA BARAT

Material Specification : HDPE Corrugated Single Wall OD 80, ID 100, ID 150
Material Application : Cable Protection

13. PEMBANGKIT GEOTHERMAL SARULLA – TAPANULI, SUMATERA

Material Specification :
HDPE/PE Corrugated
Double Wall ID 600,
ID 150

Material Application :
Drainage System for
Geothermal Power Plant

14 . PABRIK HYUNDAI MOTOR– DELTAMAS

Material Specification : HDPE Corrugated single Wall OD56,ID100,ID150,ID200
Material Application : Cable Protection

15.BANDUN BOROUGE PROJECT – SEPTIC TANK

Material specification: ID1200X1000
Material Application : SEPTIC TANK

PT. SHUANGLIN PIPE INDONESIA