

YuGuard Flow

**HDPE Double-Wall
Corrugated Piping System**



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To be the most valuable global enterprise in the construction materials industry

About Oriental Yuhong

Founded in 1995, Oriental Yuhong, over the past 30 plus years, has been devoted to providing high-quality waterproofing system solutions for tens of thousands of major infrastructures and industrial, civil and commercial buildings, having grown into a leading service provider in the construction and building materials industry.

The company went public in 2008 and its operating revenue exceeded USD 3.87 billion in 2024.

The products of company are exported to more than 100 countries and regions such as Germany, Brazil, Australia, America, Canada, Japan, Singapore, South Korea, Central Africa and South Africa.



YuGuard™

About YuGuard Flow

YuGuard Flow, a product line under YuGuard, the sub-brand of Oriental Yuhong, delivers advanced flow technology solutions to municipal, residential, commercial, and industrial sectors for their pipeline and valve systems. Our product portfolio spans water supply, drainage, mining, power transmission, electrical conduit, air conditioning, and gas systems. Guided by the philosophy of "product-led, service-obsessed, and customer-focused," we uphold Oriental Yuhong's mission to create safe and enduring environments. Our vision is to become the most valuable enterprise in the global flow industry.



30

years in the
building materials



100+

subsidiaries
worldwide



1916

valid patents



300+

real estate developers,
corporate groups in stable
strategic cooperation



100+

countries and regions
where our products and
services exported to



68

production facilities, R&D
institutes and logistics
centers worldwide

HDPE Double-Wall Corrugated Piping System

The HDPE double-wall corrugated drainage system is a purpose-built solution for drainage and sewage applications, using high-density polyethylene (HDPE) as its core raw material.

The pipe features a unique dual-layer structure, with a ring-shaped corrugated outer wall and a smooth inner wall. This design significantly enhances compressive strength while greatly reducing weight, delivering a clear cost advantage compared with other structural pipes.

With a mature manufacturing process and well-established application technologies, the system offers high drainage efficiency, excellent installation adaptability, and long-term operational stability. Combined with its cost-effective pricing, it has been widely promoted and extensively applied in developed markets such as Europe and North America.



Advantages



High Strength & Excellent Pressure Resistance

High mechanical strength with outstanding resistance to compression, bending, and impact.



Easy Installation & Reliable Connections

Lightweight and easy to install, significantly reducing overall project costs.

Sealing ring connections ensure secure joints and leak-free performance.



Corrosion Resistance & Environmental Friendliness

Corrosion-resistant and anti-aging, with a service life of up to 50 years; non-toxic and pollution-free, offering excellent environmental performance.



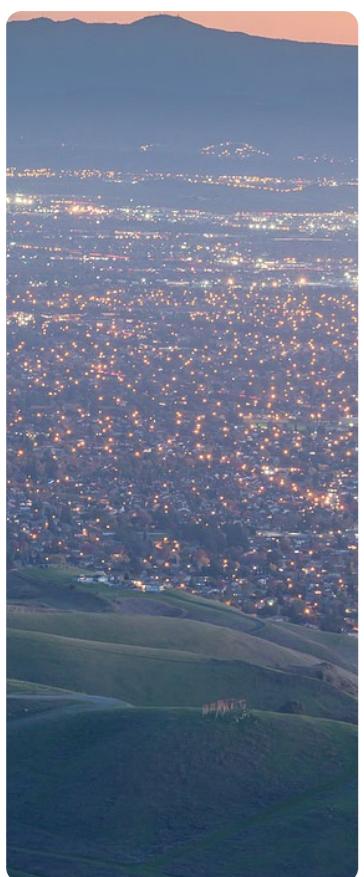
Smooth Inner Wall & Low Flow Resistance

A smooth inner wall minimizes flow resistance, enabling high flow capacity and efficient drainage.

Applications

01

Municipal drainage and sewage pipeline networks



02

Chemical wastewater discharge pipeline networks



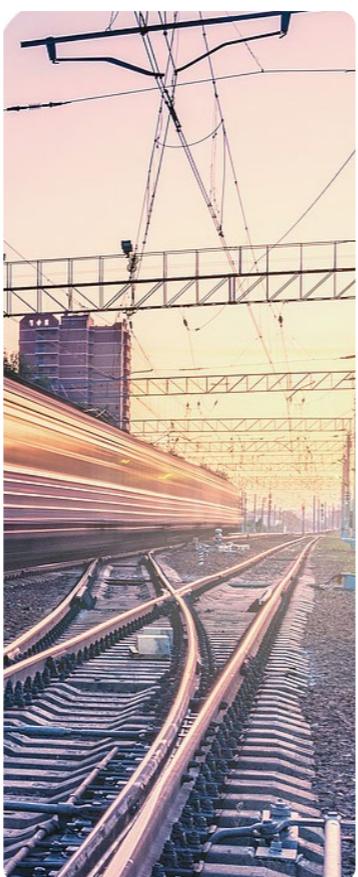
03

Mining and building ventilation



04

Railway and highway drainage systems



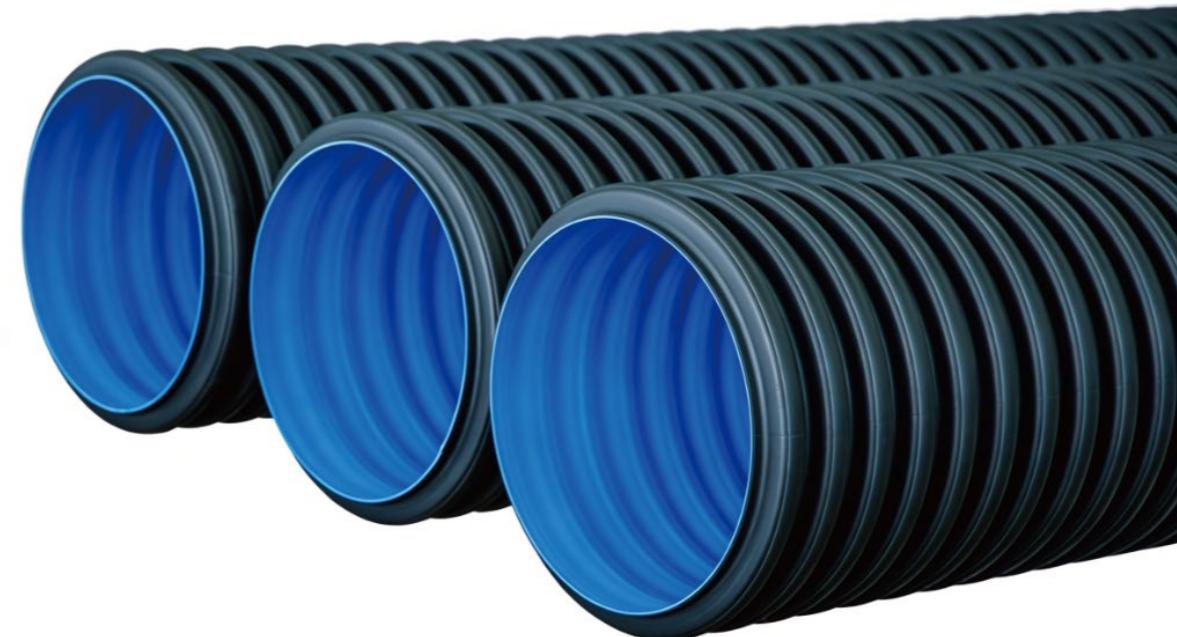
Mechanical Properties

Item	Requirement	Test Method
Ring stiffness (kN/m ²)	SN4	≥ 4
	SN6.3*	≥ 6.3
	SN8	≥ 8
	SN10*	≥ 10
	SN12.5	≥ 12.5
	SN16	≥ 16
Impact performance (TIR), %	≤ 10	GB/T 14152-2001
Flexibility	No cracking; no reverse bending of the inner wall	ISO 13968:2008
Oven test	No delamination; no cracking	8.7
Density (kg/m ³)	≤ 1180	GB/T 1033.1-2008
Oxidation induction time (200 °C), min	≥ 20	GB/T 19466.6-2009
Creep ratio	≤ 4	GB/T 18042-2000

Product Standard

GB/T 19472.1-2019:

Polyethylene (PE) Structured-Wall Piping Systems for Buried Use — Part 1: Polyethylene Double-Wall Corrugated Pipes





Dimensions of Pipes in the Outside Diameter (OD) Series

Unit: millimeters (mm)

Nominal Outside Diameter (DN/OD)	Minimum Average Outside Diameter	Maximum Average Outside Diameter	Minimum Average Inside Diameter	Minimum Valley Wall Thickness	Minimum Inner Wall Thickness	Minimum Outer Wall Thickness	Minimum Joint Length
110	109.4	110.4	90	1.0	0.8	0.7	32
125	124.3	125.4	105	1.1	1.0	0.8	35
160	159.1	160.5	134	1.2	1.0	0.8	42
200	198.8	200.6	167	1.4	1.1	0.9	50
250	248.5	250.8	209	1.7	1.4	0.9	55
315	313.2	316.0	263	1.9	1.6	1.0	62
400	397.6	401.2	335	2.3	2.0	1.2	70
500	497.0	501.5	418	2.8	2.8	1.7	80
630	626.3	631.9	527	3.3	3.3	2.0	93
800	795.2	802.4	669	4.1	4.1	2.5	110
1000	994.0	1003.0	837	5.0	5.0	3.0	130
1200	1192.8	1203.6	1005	5.0	5.0	3.0	150

Installation Guide

Rubber Ring Joint Connection



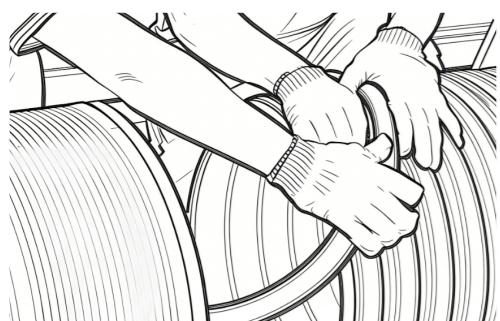
Step 1. Prepare the tools

1 rubber ring, lubricant (such as dish soap), gloves, marking pen, tape measure, cleaning cloth, 2 tightening straps or slings, and 2 manual chain hoists.



Step 2. Remove debris

Clean any dirt, moisture, or other foreign matter from the outer surface and inner wall of the pipe to be connected.



Step 3. Rubber ring installation

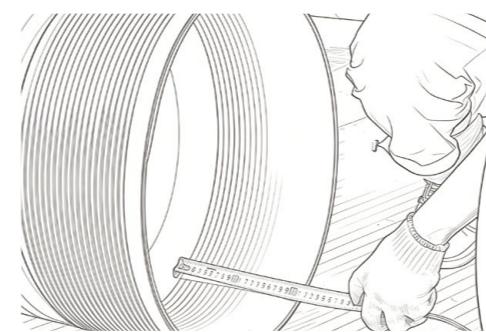
Position the rubber ring in the first corrugated groove at the socket end of the pipe.



Step 4. Apply lubricant

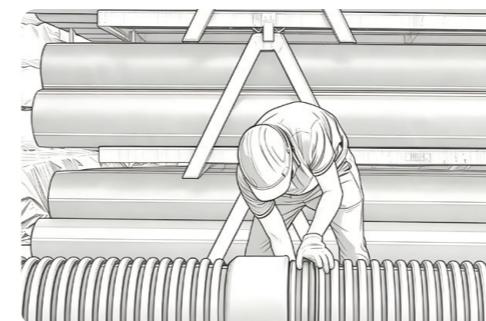
Spread the lubricant on the surface of the rubber ring in the socket and on the inner surface of the spigot of the pipe to be connected.

For TH press jaw: Insert the plastic spacer ring firmly into its dedicated groove.



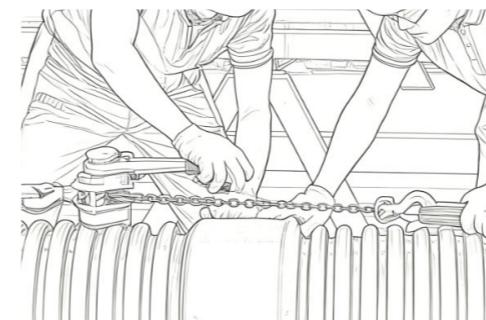
Step 5. Measure the depth

Measure the socket depth, then mark the measured point on the spigot end of the pipe using a marking pen.



Step 6. Install the connection tools

Loop 2 tightening straps or slings around the pipes about 1–2 meters from the connection ends, and align the two pipes horizontally.



Step 7. Pipe connection

Place 2 manual hoists on either side of the pipes and tighten them simultaneously. Once the pipe ends are connected to the required position, remove the manual chain hoists and tightening straps or slings, and store them properly to complete the pipe connection.

Note:

(1) The pipe should be installed with the socket facing downstream and the spigot facing upstream, with installation proceeding from downstream to upstream.

(2) Before laying the pipe, inspect the appearance of each pipe and fitting according to the product standards. Pipes that do not meet the standard requirements must not be used for construction.

During both the welding and cooling phases, do not move, rotate the joint or pipe, or apply any external force to the connection area or the pipeline. The joint is considered fully set only when it is completely cool to the touch.

Applications & Our References

Applications

- Municipal
- Industrial
- Residential
- Commercial

Applications & Our References



China National Stadium, China



China National Pavilion, China



Shanghai Tower, China



Huawei Data Center, China



Hongkong-Zhuhai-Macau Bridge, China



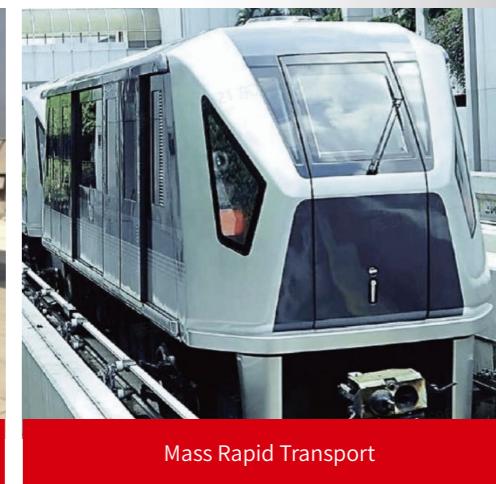
Beijing Daxing Airport, China



Jakarta-Bandung High-Speed Railway, Indonesia



Karachi Nuclear Power Plant



Mass Rapid Transport