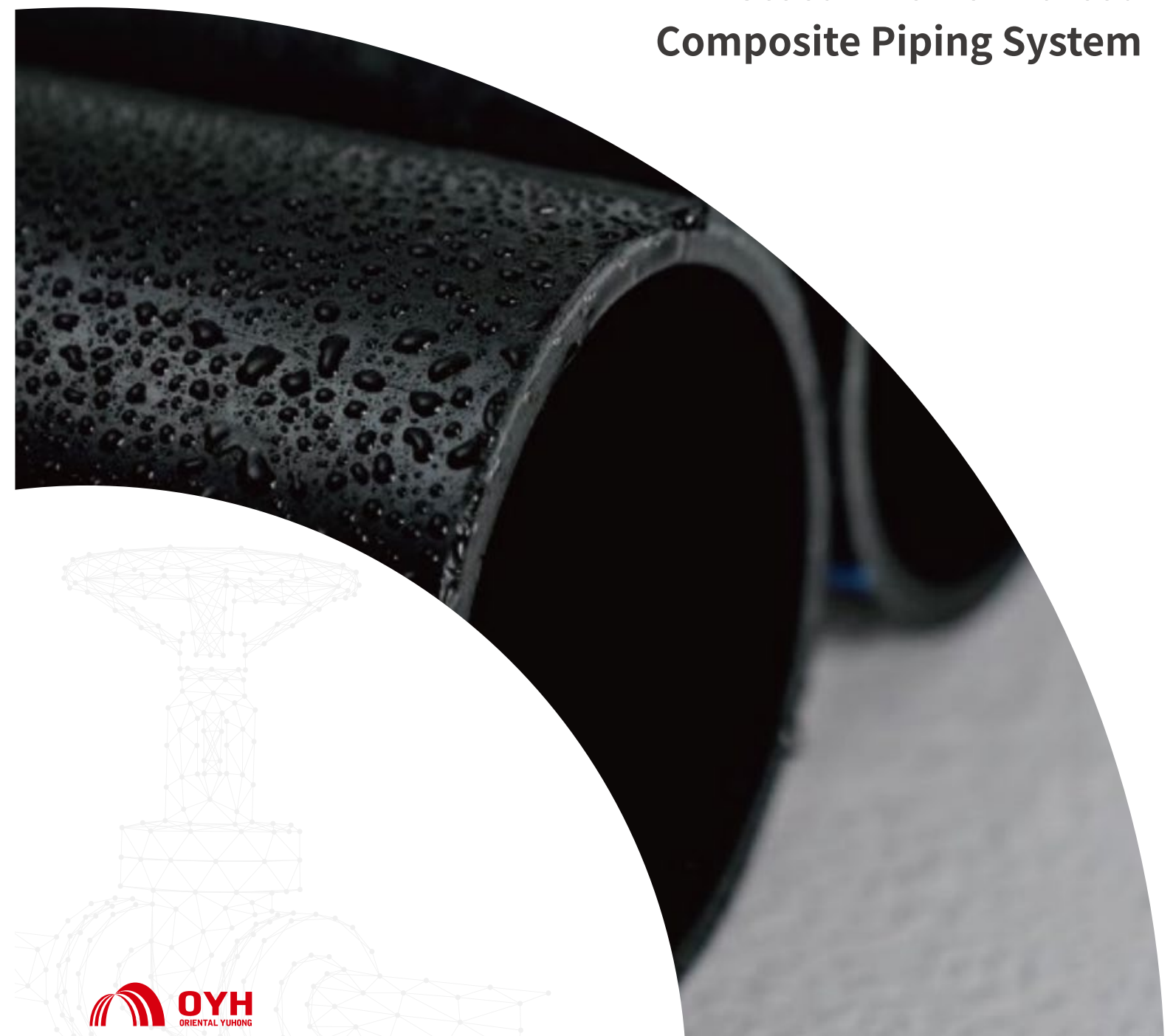


YuGuard Flow

PE Steel Wire Reinforced
Composite 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.



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.



Research & Development



Applied Technology



Production Process and Equipment



Engineering Technology



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

PE Steel Wire Reinforced Composite Piping System

PE steel wire reinforced composite pipe is a new type of composite structured wall pressure pipe. It uses a high-strength steel wire mesh skeleton, woven in spiral patterns, as the reinforcement body, with high-density polyethylene (HDPE) serving as the inner and outer layer matrix. The two are tightly bonded through high-performance modified adhesive resin.

Since the high-strength steel wire reinforcement is encapsulated in continuous thermoplastic plastic, this composite pipe combines the advantages of steel pipes and plastic pipes. Coupled with high-quality materials and advanced production processes, it exhibits high pressure resistance, excellent flexibility, and hygienic properties, while also being technologically reliable and having a long service life.

Advantages



Steel-Plastic Composite - Breaking PE Pipe Performance Limits

The combination of steel wire and plastic provides greater rigidity and impact resistance than conventional PE pipes, preventing rapid stress cracking in plastic pipelines.



Outstanding Pressure Resistance and Anti-Creep Performance

Maximum pressure resistance up to 3.5MPa, far exceeding that of ordinary plastic pipes.



Superior Corrosion and Abrasion Resistance

Combining the advantages of steel and plastic pipes, it offers excellent corrosion and wear resistance.



High-Pressure Water Transport with Larger, More Stable Flow

Compared to PE plastic pipes of the same grade, it has thinner walls and enables larger, more consistent flow.



Built-In Traceability

Contains steel wires detectable with metal detectors, facilitating subsequent excavation and maintenance work.



Long Service Life

Slower performance degradation than conventional PE pipes, with a service life exceeding 50 years.



Lightweight for Easy Handling and Installation

Compared to PE plastic pipes of the same grade, it features thinner walls and lighter weight, ensuring convenient handling and installation.

Product Standards

GB/T 32439-2015

Applications

01

Municipal Engineering

It also replace PE water supply pipes in municipal water supply and drinking water transportation applications.



03

Chemical Industry

It is used for transporting corrosive liquids in chemical manufacturing, textile, ignition, and other related industries.



02

Mining and Smelting

It is suitable for transporting ores, slurries, and corrosive media in mining operations.



04

Oil and Gas Fields

Equipped with built-in traceability and static electricity conduction capabilities, it is suitable for long-distance transportation of petroleum, natural gas, and other similar substances.



Physical and Mechanical Characteristics of Pipes

Testing Category	Test Temperature / °C	Test Pressure/MPa	Time/h	Performance Requirements
Hydrostatic Strength	20	2PN	1	No rupture and no leakage
	60	1.2PN	165	No rupture and no leakage
	60	1.1PN	1000	No rupture and no leakage
Burst Pressure	20	The pressure is continuously increased until the specimen bursts.		≥3PN

Specifications

Pipes



*Straight Pipe Length

6m in general, other lengths: customizable.



*Straight Pipe Length

6m in general, other lengths: customizable.



PE steel wire reinforced composite pipe PN1.0MPa

Spec (mm)		
dn110×6.0	dn225×8.0	dn450×14.0
dn125×6.0	dn250×10.5	dn500×16.0
dn140×6.0	dn315×12.0	dn560×20.0
dn160×6.5	dn355×12.5	dn630×22.0
dn200×7.0	dn400×13.0	

PE steel wire reinforced composite pipe PN1.6MPa

Spec (mm)		
dn50×5.0	dn140×8.0	dn355×14.0
dn63×5.5	dn160×9.0	dn400×15.0
dn75×6.0	dn200×9.5	dn450×16.0
dn90×6.5	dn225×10.0	dn500×18.0
dn110×7.0	dn250×12.0	dn560×21.0
dn125×7.5	dn315×13.0	dn630×24.0



Electrofusion 90° Elbow
Spec (mm)
dn50
dn63
dn75
dn90
dn110
dn160
dn200
dn225
dn250
dn315
dn400

Fittings (Electro–fusion fittings)



Electrofusion Flange Adapter			
Spec (mm)			
dn50	dn90	dn200	dn400
dn63	dn110	dn250	dn500
dn75	dn160	dn315	dn630



Electrofusion Equal Tee
Spec (mm)
dn50
dn63
dn75
dn90
dn110
dn125
dn160
dn200
dn225
dn250
dn315
dn400



Electrofusion 45° Elbow			
Spec (mm)			
dn50	dn90	dn160	dn315
dn63	dn110	dn200	dn400
dn75	dn125	dn250	



Electrofusion Reducing Tee		
Spec (mm)		
dn63×50	dn110×90	dn250×110
dn75×50	dn160×63	dn250×160
dn75×63	dn160×75	dn250×200
dn90×63	dn160×90	dn315×110
dn90×75	dn160×110	dn315×200
dn110×50	dn200×110	dn400×250
dn110×63	dn200×160	dn400×315
dn110×75	dn225×110	



Electrofusion Coupling		
Spec (mm)		
dn50	dn160	dn355
dn63	dn200	dn400
dn75	dn225	dn450
dn90	dn250	dn500
dn110	dn280	dn560
dn125	dn315	dn630



Electrofusion Reducing Coupling		
Spec (mm)		
dn63×50	dn110×90	dn250×110
dn75×63	dn125×90	dn250×160
dn90×75	dn160×90	dn250×200
dn110×50	dn160×110	dn315×250
dn110×63	dn200×110	dn315×200
dn110×75	dn200×160	dn400×315



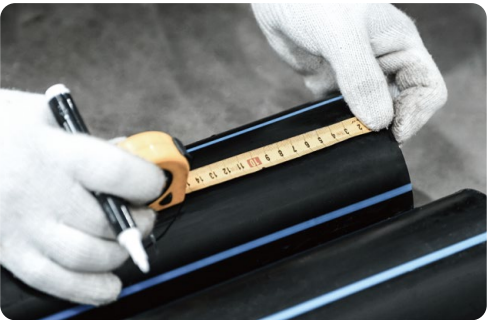
Installation:Electro Fusion Welding



Preparation Work

First, ensure that all the required equipment, such as electrofusion welding machines, specialized cutting tools, cleaning tools, and fixing clamps, is fully prepared.

Use cutting tools such as cutters or plastic pipe cutters to ensure the pipe end is cut perfectly perpendicular. High temperatures generated during cutting must be avoided to prevent thermal deformation.



Mark Insertion Depth

Measure the insertion depth of the fitting and mark it clearly on the pipe end.



Remove the Oxide Layer

Remove the oxide layer from the pipe surface using fine sandpaper or a scraper, then wipe off contaminants from both the pipe and fitting surfaces with a clean cloth.



Pipe and Fitting Assembly

Slide the electrofusion fitting onto the pipe until the marked insertion depth is reached. Ensure the pipe and fitting are properly aligned to prevent misalignment, which can lead to weak welds and poor airtightness.

Adjust the positions of the pipe and fitting to guarantee perfect coaxial alignment.



Electrical fusion welding

Insert the welder's output plug into the socket of the fitting, lock it securely, and ensure good contact. After verifying that the program and parameters are set correctly, start the welder to begin the fusion process.

The heating time and voltage must comply with the specifications of both the electrofusion welder and the fitting manufacturer.

Cooling

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.

Precautions

Welding Parameters

Welding should strictly adhere to the specified welding process.

Simultaneously, monitor the observation hole and the external surface temperature of the electrofusion sleeve by touch to ensure the plastic is fully melted.

Power Supply and Cables

The power cable for the electrofusion welder must use a wire with a cross-sectional area of at least 4 mm². If the cable length exceeds 50 meters, a 6 mm² wire is required. The use of 2.5 mm² cables is prohibited to prevent the formation of cold welds.

Welding Environment

Pay attention to the ambient temperature at the construction site. During construction in hot weather, PE electrofusion fittings are prone to slurry ejection and smoking, and the welding time should be reduced accordingly.



Applications & Our References

Applications

- Municipal
- Industrial
- Residential
- Commercial

YuGuard™

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