CHINA GATE GENERAL TRADING S. P. L.L.C
INFRASTRUCTURE DEVISION

BROCHURE OF CENTRIFUGAL DUCTILE IRON PIPE

Guoming Ductile Iron Pipes

For any further clarifications or enquiries kindly contact the below:

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CHINA GATE

CHINA GATE GENERAL TRADING

تشاينا غيت للتجارة العامة

ALL TYPES OF PIPES, FITTINGS, & VALVES

ISO CERTIFICATES

QUANTUM TRANSPACIFIC ASSESSMENT CERTIFICATION

Certificate of Registration

This is to certify that

CHINA GATE

CHINA GATE GENERAL TRADING- SOLE PROPRIETORSHIP L.L.C.

Store No.6 Block E, Behind National Archive, Mafraq Industrial
Abu Dhabi, United Arab Emirates

Has been successfully assessed &
Conforms with the following standard

ISO 9001:2015

Scope of Certification

Importing & Exporting, Retail & Wholesale of Safety, Building, Hardware and Electrical Material

Certificate No.: QTAC-202210071001

Certificate Issue Date	: 07-10-2022	Expiry Date	: 07-10-2025
Surveillance- 1 Date	: 07-09-2023	Surveillance-2 Date	: 07-09-2024

(Accredited by Global European Accreditation Assessment Center)
Unit 110 Mellstock Farm, Dorchester DT2 8QJ, United Kingdom

Signature of Director

QUANTUM TRANSPACIFIC ASSESSMENT CERTIFICATION

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Certificate of Registration

This is to certify that the Environmental Management System of

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ISO 14001:2015

Scope of Certification

Importing & Exporting, Retail & Wholesale of Safety, Building, Hardware and Electrical Material

Certificate No.: QTAC-202210071002

Certificate Issue Date	: 07-10-2022	Expiry Date	: 07-10-2025
Surveillance- 1 Date	: 07-09-2023	Surveillance-2 Date	: 07-09-2024

ACCREDITATION NO.GEAAC-17501
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QUANTUM TRANSPACIFIC ASSESSMENT CERTIFICATION

Certificate of Registration

This is to certify that the
Occupational Health and Safety Management System of

CHINA GATE

CHINA GATE GENERAL TRADING- SOLE PROPRIETORSHIP L.L.C.

Store No.6 Block E, Behind National Archive, Mafraq Industrial
Abu Dhabi, United Arab Emirates

Has been successfully assessed &
Conforms with the following standard

ISO 45001:2018

Scope of Certification

Importing & Exporting, Retail & Wholesale of Safety, Building, Hardware and Electrical Material

Certificate No.: QTAC-202210071003

Certificate Issue Date	: 07-10-2022	Expiry Date	: 07-10-2025
Surveillance- 1 Date	: 07-09-2023	Surveillance-2 Date	: 07-09-2024

ACCREDITATION NO.GEAAC-17501
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Signature of Director

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Uphold Integrity and Honesty for a Brighter Future

- Mission: To satisfy the customers with excellent products and service
- Vision: To build a world-renowned foundry enterprise
- Core values: Value co-creation for mutual progress and double benefits
- Belief: Quality goods will win the marketplace and integrity bring a brighter future
- Spirit: Uphold the integrity and insist on innovation

- Standing strong, diligent and tireless
- With 50-odd years of experience
- Guoming Ductile Iron cold steel has been identified as special product by Guoming Ductile Iron Pipes which adheres to the principle of self-discipline and social commitment
- Guoming upholds honesty and integrity with a world-renowned industrial monument, bringing the glorious future of the brand
- Guoming inherits the Qilu culture and belief that the quality will win the market and integrity bring a brighter future
- We will never cease to struggle and the legend never ends

Enterprise Honor

Since relocation in Lanling, Linyi, Guoming Ductile Iron Pipes has received full recognition from industry and society.

High Technology
Expertise Certification

National Top 10 Brands of
Product Quality and Service

Excellent Exhibitor of
Environmental Care

National Quality
Trusted Product

Top 10 Brands of
China Cast Pipe

The Model of
Green Enterprise

China AAA Gade
Credit Enterprise

Model Project of Resources
Recycling in Shandong Province

Gold Award of
Metallurgy Product

Product Overview

- The company's main products include pig iron and ductile iron pipes. The iron-making system can achieve an annual output of 1 million tons of pig iron for foundry and ductile iron casting. The cast iron pipe system from DN80 to DN2600 has a capacity of 730,000 tons of centrifugal ductile iron pipes, with a variety of joints such as T-type, self-anchored, K-type, etc., which can be applied to different terrain conditions. The cement-mortar lined ductile iron pipe and other materials like polyurethane lining, PE lining, epoxy ceramics, can meet the requirements of different water quality transportation. Ductile iron pipes with zinc-aluminum alloy coating, polyurethane and other anti-corrosion treatment technologies are suitable for different corrosive soil conditions and are ideal for urban water supply and gas transmission. The company has a large cast iron pipe production scale, product quality and comprehensive technical strength in the international leading position, with obvious competitive advantages.

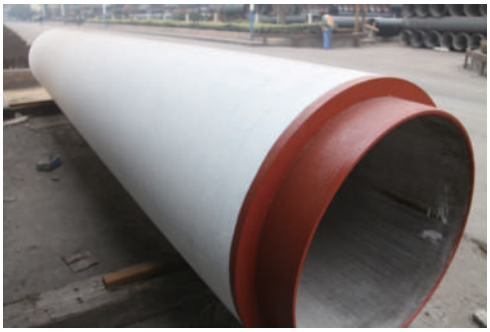
- Ductile iron pipe product categories include: water supply pipe, sewage pipe, polyurethane lined pipe, epoxy resin lined pipe, ceramic epoxy lined pipe, zinc-aluminum alloy coated pipe, jacking pipe, Self-anchored joint pipe, PE lined pipe, sewage pipe, and internal self-anchored pipe for horizontal directional drilling.

- Product standards: ISO2531/EN598/EN545/GB13295/GB17456/ GB17457.
  In addition, ductile iron pipe according to Australian Standard and Brazil Standard can be produced or can be customized based on the users' need.

Product Overview

Guoming Jacking Pipe

Jacking pipe is mainly used for special construction project that adopts trenchless technology, where the pipeline needs to cross roads, railroads, rivers, ground buildings and other obstacles, and the construction site does not allow or is difficult to dig a trench on the ground. Pipe jacking is a method of welding the jacking flanges on the outer wall of a T-joint ductile iron pipe with a reinforced concrete protection layer in a cylindrical structure. During construction, the thrust force is evenly transferred to the socket end through the welded flanges and reinforced plates, thus ensuring that no deformation on spigot end or damage to the outer protective layer is caused during the thrust operation. The fast construction process is recognized by the majority of users and solves some construction problems encountered in special projects.



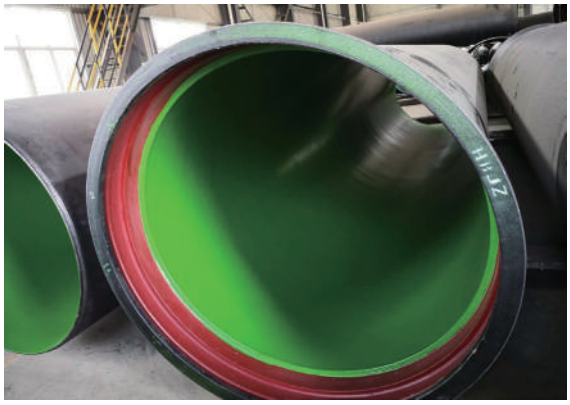
Guoming Self-anchored Ductile Iron Pipe

The self-anchored pipe adopts a special mechanical design, which utilizes the force transfer between the self-anchored component and the ring welded on spigot end to realize the reliable anchoring performance, while retaining the flexibility of the joint and featuring good deflection performance. The self-anchored joint can transfer the axial force to each other. Through the friction and passive earth pressure generated by the pipeline and the surrounding soil, it can effectively counteract the hydraulic thrust generated by axial and radial direction, so it can replace the function of restraining block and realize the design of non-restraining block, with simple structure and high bearing capacity. It is mainly used in the case that space, time or economic conditions are not suitable for the setting of restraining block; that there is a certain foundation settlement, or the slope of pipelines laid on the ground exceeds 20% or the slope of underground pipelines exceeds 25%.

Product Overview

Guoming Special Coating Pipe

The conventional zinc plus bituminous paint for external anti-corrosion coating is suitable for most soil environments, but for special soil, its performance shows slight deficiency. With the increasing requirements for water safety, the transmission medium is becoming more and more diversified, and the water contact inner liner has also changed greatly. In order to meet the needs of different customers, Guoming has developed many high-performance internal and external anti-corrosion coatings, such as zinc aluminum alloy external anti-corrosion coating, polyurethane internal and external coating, epoxy resin layer, ceramic coating and epoxy nano ceramic polymer lining, which can also be customized according to customers' needs.



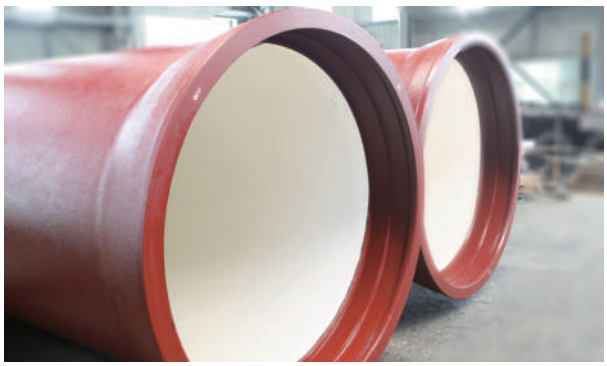
Guoming PE Liner Pipe

PE liner pipe is a new type of pipe material of Guoming ductile cast iron pipes. It takes socket type ductile cast iron pipe as base pipe and adheres thin-wall polyethylene (PE) pipe on the inner wall of the base pipe. It combines the advantages of ductile iron pipe and polyethylene pipe, which not only has good mechanical properties, but also has good corrosion resistance of PE pipe. It has the advantages of convenient construction, good sanitary performance, not easy to layer inside and outside, energy saving, low comprehensive cost, and long service life, meeting the requirements of direct drinking water, and resistant to corrosion of special media such as sea water and urban sewage. It is mainly used for drinking water, direct drinking water, municipal sewage pipe network, industrial water supply system, waste water and sewage discharge system.

Product Overview

Guoming Sewage Pipe

The sewage pipe has good sealing performance, which can effectively prevent all kinds of infiltration and erosion, besides, excellent rigidity characteristics can resist external pressure well. In addition, the elasticity and ductility of the metal further improve the safety factor of the pipeline system. High alumina cement internal anti-corrosion coating with good wear resistance can deal with special soil and transportation medium. The main application fields are municipal sewage pressure pipe network with high requirements for anti-corrosion. Through areas with special geological conditions, or river course, tunnel construction with relatively harsh buried conditions, pumping station and sewage treatment plant with certain requirements for pressure resistance value, as well as medium containing polyphenols and cyanides, these corrosive substances may harm the industrial sewage pipe network system. With its excellent performance, Guoming sewage pipeline meets the needs of these special conditions, and is obviously superior to other sewage pressure pipes in comprehensive cost performance.



Guoming Dragging Pipe

Pipeline installation technology of horizontal directional drilling (HDD), also known as dragging pipe and pulling pipe construction, is a new construction technology combining the directional drilling technology of petroleum industry with the traditional pipeline construction method. Under the condition of no soil excavation, the detector is used to guide and control the drill pipe direction to meet the requirements of the design axis. After multiple reaming, the pipeline is pulled back in place to complete the construction method of pipeline laying. As it is more and more difficult to bury underground pipelines in urban roads and intersections, the emergence of dragging pipe technology has avoided road excavation and damage to other underground pipelines, and reduced the trenchless cost of users. At the same time, the underground pipeline has less impact on the traffic and environment with its small construction site and less noise. Moreover, it can operate underground, bringing considerable economic and social benefits. In recent years, it has been widely used in the construction of municipal, industrial, electric power and other underground pipelines. The dragging pipe is suitable for medium and small diameter ductile iron pipe.

Quality Assurance

- Guoming Ductile Iron Pipes regards quality as life, and always adheres to and implements the quality policy that "quality is the foundation of enterprise survival, and it's our eternal pursuit to provide satisfactory products and services for users".
- Authenticated by the national quality system certifications including ISO9001 Quality Management System Certification, SGS Product Quality Certification (Swiss), BV Quality Certification (French), TUV Product Certification (Germany), after-sales service system certification and intellectual property system certification, we've formed a perfect product quality control means and a complete quality assurance system.
- Strict quality management system is an important guarantee of product quality and the foundation of the brand's long-term prosperity. Therefore, in Guoming Ductile Iron Pipes we adopt more stringent internal quality control standards than the national standards to ensure the quality and safety of each pipeline.
- Each pipe has passed more than ten links of strict quality inspection to ensure the product quality. The inspection process includes: ironmaking raw material inspection, ingredient inspection, furnace temperature control, iron melt composition detection, metallographic inspection, dimension inspection, pressure ring inspection, tensile test, hardness test, hydrostatic pressure test, inspection of lining and external anti-corrosion coating and surface quality inspection.


FACTORY APPROVAL CERTIFICATE

The company
Shandong Guoming Ductile Iron Pipe Technology Co., Ltd (Inside of Mining Circular Economy Industrial Park, Laring County), 206 National Highway South, Shangyao Town, Laring County, Linyi City, 277712, Shandong Province, P.R.China

As manufacturer for type products: Ductile Iron Pipes in accordance with standard

EN 545:2010

Has been audited and examined, the result of the audit is detailed in report 252692.

Auditor has verified
- the validity of the license granted to the manufacturer for compliance of his quality assurance system with ISO 9001;
- initial performance testing has been carried out by manufacturer in accordance with the requirements of this standard;
- factory production control including product assessment by manufacturer in accordance with the requirements of this standard.

The undersigned, auditor certified that the above factory meets the applicable requirements for the production of following product:

Type products: Ductile Iron Pipes
Model type: DN80-DN2600 C classes

This approval is only valid when no significant changes are made to the audited facility, its production route and its quality system.

This certificate is valid from: Apr. 04th, 2018
For a period of three years. Apr. 03rd, 2021

Certificate No.: IS-BJ-FA2018-034

Beijing, Apr. 04th, 2018


SGS

Our Strengths

- Guoming Ductile Iron Pipes not only has the leading ductile iron technology, management mode and service culture, but also adopts advanced technology in the whole production process. According to the requirements of ISO8179 and EN545, the outer wall of the pipe is hot sprayed with zinc and then sprayed with anti-corrosion paint or special anti-corrosion material products. According to the requirements of ISO4179, the inner wall is standard coated with cement lining.

Our products are fully:

----100% ductile iron

----100% surface anti-corrosion galvanizing

----100% high water pressure test

----100% internal corrosion protection

----100% protection for your investment

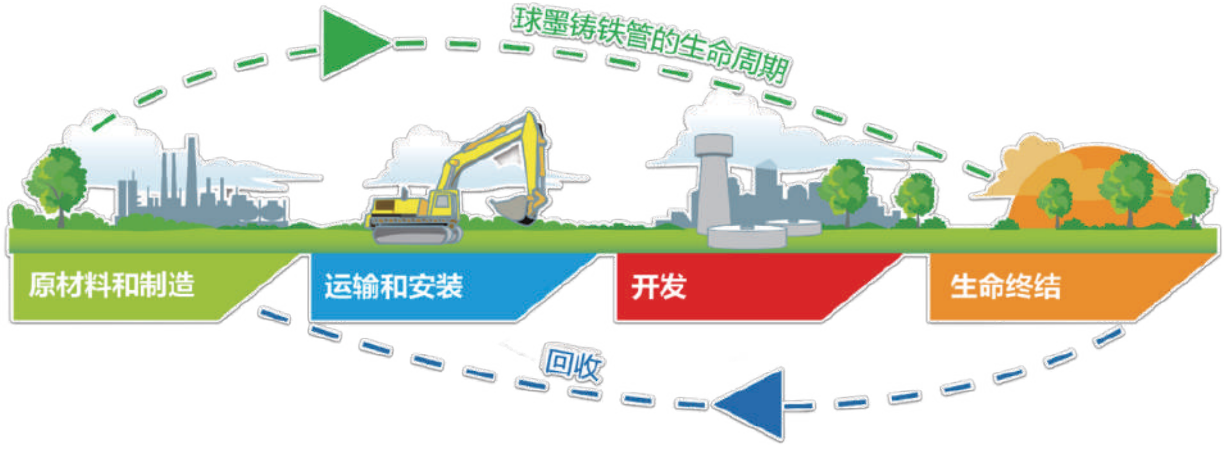
- Excellent cultural heritage: Jinan Iron & Steel Group came into being in 1957, reorganized into a new Shandong Ductile Iron Pipes Co., Ltd. in 2001, moved to Lanling in 2016 and established Guoming Ductile Iron Pipes With more than 60 years of development history, Guoming Ductile Iron Pipes adheres to the principle of "excellent products win the market, integrity creates the future", and takes "providing satisfactory products and services for customers" as the enterprise mission.
- Production management system: in order to ensure that the products meet the international standards and the quality is in a leading position, the company introduces a set of advanced management system and senior scientific and technological management personnel from abroad.
- Zinc and bituminous spraying are adopted for external anti-corrosion of ductile iron pipes, which can ensure strong anti-corrosion effect under most soil conditions and some special soil conditions. At the same time, it can provide appropriate solutions to the special requirements of customers. This way can greatly prolong the service life of ductile iron pipes and protect the economic and social benefits of investors.
- In order to ensure high quality cement lining and service life of each pipe, Guoming Ductile Iron Pipes adopts the most advanced computer-controlled lining system and strict inspection of cement raw materials.

OUR STRENGTHS

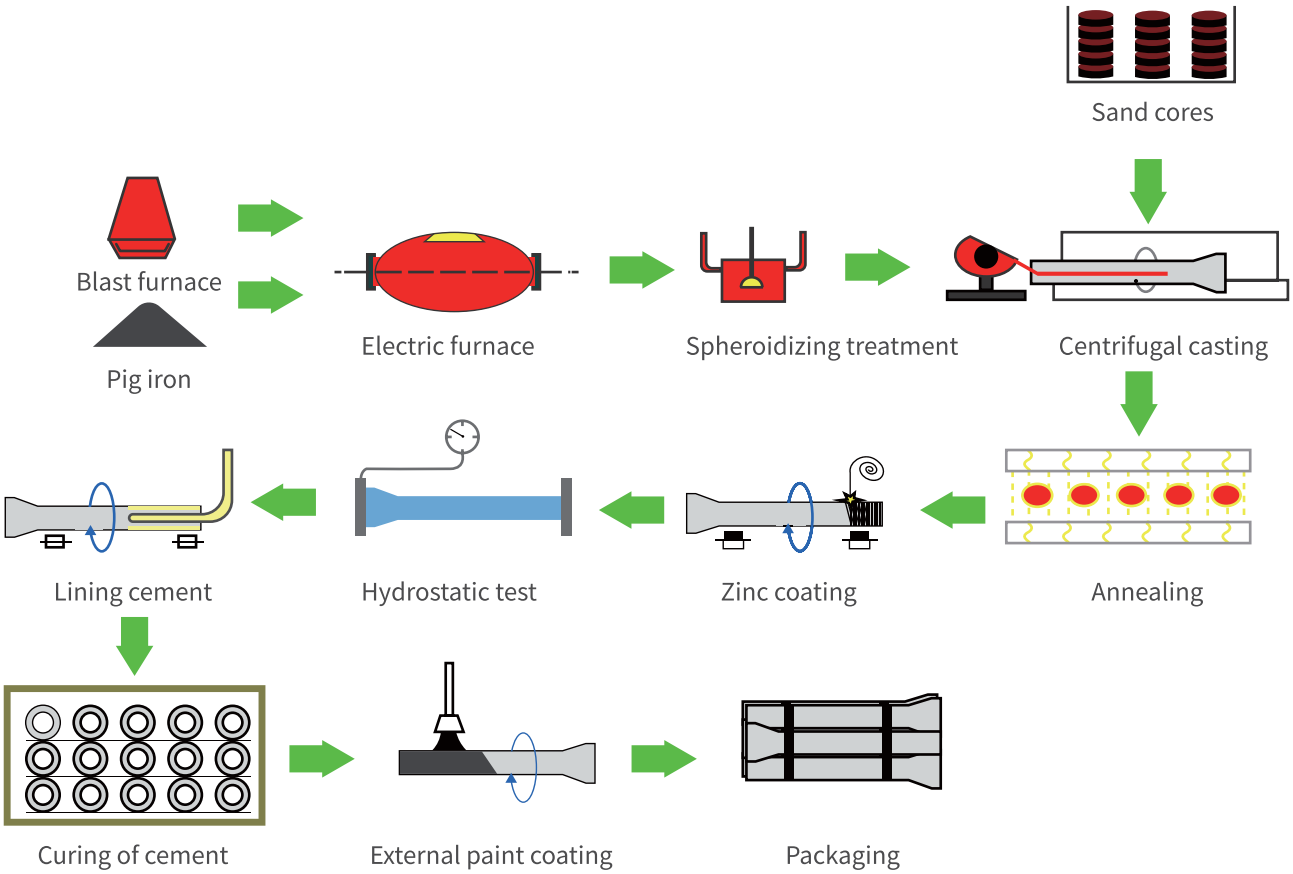
High quality raw materials, advanced technology, advanced testing and analysis equipment, strict quality control means and complete high water pressure testing ensure the mechanical properties and service life of each finished ductile iron pipe.

High quality service: high quality service is always an indispensable part of Guoming Ductile Iron Pipes for product sales The sales staff of Guoming Ductile Iron Pipes have experienced technical sales engineer team as backing, so that whether it is for project case study, soil analysis, laying consultation, site guidance, concrete trust blcok design scheme, application of anti-shedding scheme, or for scheme selection of crossing river, bridge and wall, Shandong Guoming Ductile Iron Pipes Technology will put all your requirements into practice, so that you can get the best return with the lowest investment. We are committed to ensuring that our users can enjoy the high quality products of Guoming with our excellent technology and after-sales service.

Guoming has always incorporated the concept of environmental protection into product design from raw materials to product recycling, from production to installation, representing a firm supporter and practitioner of environmental protection concept, and realizing the management of the whole life cycle of ductile iron pipe.



Production Process Flow Chart of Ductile Iron Pipes



- Spheroidizing treatment provides ductile iron with the excellent mechanical properties and also inherits the long-term service life of traditional gray cast iron.
- The perfect combination of elasticity and rigidity of ductile iron makes it unique in the field of water supply and drainage, and has been widely recognized for its excellent performance.
- With perfect resistance, ductile iron pipe system can resist all kinds of risks, impact and cracks under embedded conditions.
- There will be no any impact from the pipeline on the service life of the ductile iron pipe system as it is easy to complete soil backfill and compaction, with good strength.
- Due to the good bearing capacity for ground flow load, ductile iron pipe can easily resist the continuous passing of trucks and heavy machinery.
- With its remarkable advantages, such as low cost and good safety, 95% of the pipe material of water pipeline in developed European and American countries is made of ductile iron pipes.

Why Ductile Iron Piping System

Reliability

The stability of the pipeline is greatly dependent on the rubber sealing ring, which ensures the sealing performance, meanwhile it can also avoid obstacles on the pipeline through the deflection angle of joints. They have experienced the very strict inspection standards, including the service life that can be achieved by physical and chemical properties.

Safety

In addition to the excellent performance of ductile iron itself, Guoming's pipeline system design has a higher safety factor, far exceeding the normal working pressure. It can not only resist high and continuous working pressure, but also has no influence on the service life of pipeline even under the condition of water hammer and negative pressure.

consistency

Ductile iron pipe, fittings, valves and other materials maintain the consistency of the pipeline system. The internal and external coatings and rubber rings ensure the adaptability and service life of the pipeline, so as to flexibly adapt to the restrictions of various routes and construction sites.

Simplicity

Ductile iron piping system is well known for its convenience and rapidity of installation, suitable for long pipelines. Its socket joint is exceptionally reliable and durable under high pressure.

Protection

Numerous tests have proved that the zinc coating (200g/m2) + bituminous coating can effectively prevent the electrochemical corrosion, thus protecting the pipeline; ordinary portland cement is adopted for the internal coating, whose smooth surface enhances the water flow, reduces the head loss, and avoids the direct contact between water and metal.

Performance of Pipeline Products

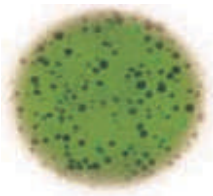
Quality Management System and Quality Standards

In line with the belief of providing first-class quality products for customers, Guoming Ductile Iron Pipes has introduced advanced management system and established strict quality control system. All of its products have passed the certification of ISO2531, and won the honorary certificates of top ten brands and authoritative media with satisfactory product quality and after-sales service.

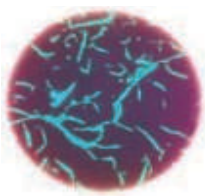
Standard	Chinese standard GB	European standard EN	International standard ISO
Product standard of pressure ductile iron pipe	GB13295	EN545	ISO2531
T-type joint	GB13295	EN681-1	ISO4633
Comfortable joint	GB13295 (Supplement)	EN681-1	ISO4633
Product standard of ductile iron pipe for sewage		EN598	SO7186
Technical requirements for rubber ring materials		EN681-1	ISO4633
Zinc and bituminousbituminous coating	GB17456	EN545	ISO8179-1
Cement lining	GB17457		ISO4179
Management standard for production and sales quality			ISO9001
Environmental management standards			ISO14001

Physical properties

Ductile iron is a kind of high performance material developed in 1948, which is a leap forward in metallurgical industry. Graphite in ductile iron exists in the spherical form, so the mechanical performance of the material itself have been greatly improved. In addition, ductile iron still maintains its traditional characteristics of compressive strength, castability, wear resistance, machinability and endurance. Thanks to the excellent mechanical performance of ductile iron pipe during its processing and manufacturing, it has good load bearing capacity, good extensibility and impact resistance.



Ductile iron
Graphite exists in the spherical form



Traditional gray iron
Graphite exists in flakes

Performance of Pipeline Products

Main performance

	Annealed ductile iron pipe	Unannealed ductile iron pipe	Gray iron pipe
Tensile strength	⩾ 420MPa	⩽ 420MPa	⩾ 200MPa
Elongation	⩾ 10%	⩾ 3%	⩽ 3%
Fracture mode	Elastic fracture	Sudden fracture	Sudden fracture

Mechanical performance

Mechanical properties of ductile iron pipes and fittings

Products	Nominal diameter (mm)	Tensile strength (N/mm2)	Yield strength (N/mm2)	Elongation (%)	Hardness (HB)
Ductile iron pipe	DN80-1000	⩾ 420	⩾ 300	10	⩽ 230
	DN1100-2600		⩾ 300	7	
Ductile iron pipe fittings	DN80-2600	⩾ 420	⩾ 300	5	⩽ 250

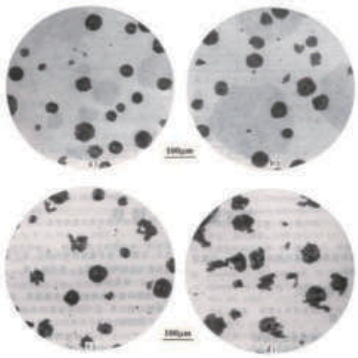
Hydraulic test standard

Products	Nominal diameter (mm)	Hydrostatic test pressure (bar)	Holding time (s)
Ductile iron pipe	80-300 350-600 700-1000 1100-2000 2200-2600	50 40 32 25 18	⩾ 10
Ductile iron pipe fittings	80-300 350-600 700-2600	25 16 10	⩾ 10

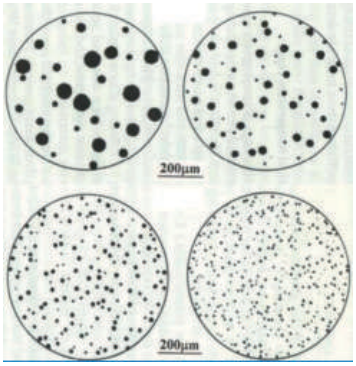
Performance of pipeline products

Quality control points of metallographic analysis

Test content	Control process	Person in charge	Control standards	Test frequency	Related records	Non-conforming product area	Remarks
Metallography	The quality department	Performance inspector	Process technology standard	Water cooling: 3 pieces per batch; detection of each thermal die	Metallographic examination record	Discard or conduct re-annealing	Product testing



Analysis of ductile situation



Graphite size analysis

Metallographic test

Quality control point of mechanical performance test

Test content	Control process	Person in charge	Control standards	Test frequency	Relevant records	Non-conforming product area	Remarks
Mechanical performance	Quality department	Performance inspector	ISO02531, EN545	Each batch	Test record of mechanical performance	Discard	Product testing

Performance of Pipeline Products

Calculation formula of K-grade pipe wall thickness

Wall thickness calculation formula:	e=K(0.5+0.001DN)
e:	Nominal wall thickness, mm, (minimum nominal wall thickness is 6mm)
DN:	Nominal diameter, mm
K:	Wall thickness grade, integer: 7,8,9,10,11,12
Minimum wall thickness:	When e = 6mm, the minimum wall thickness is 4.7mm
	When e > 6mm, the minimum wall thickness is e - (1.3 + 0.001DN) mm

Pipe weight calculation formula

Pipe weight calculation formula:	3.14X {[(DN/2,000)2-(DN-2e) /2,000]2}×6×7,050+socket weight
Pipe weight calculation formula:	Pipe weight = straight pipe weight + socket weight
Straight pipe weight	Straight pipe volume × densityDensity: 7,050kg/m3
Straight pipe volume:	Volume of outer circle - volume of inner circle
Volume of outer circle	3.14×(DN/2,000)2×6
Volume of inner circle:	3.14×[(DN-2e)/2,000]2×6
Unit conversion:	1000mm = 1m

Hydraulic pressure

Specification DN	Minimum pressure at K = 7 (Mpa)	Minimum pressure at K = 8 (Mpa)	Minimum pressure at K = 9 (Mpa)	Minimum test pressure of class C pipe (Mpa)	
				Recommended pressure rating	Pressure
DN80-DN300	3.2	4.0	5.0	C40	4
DN350-DN600	2.5	3.2	4.0	C30	3
DN700-DN1000	1.8	2.5	3.2	C25	2.5
DN1100-DN2000	1.3	1.8	2.5		
DN2200-DN2600	0.8	1.3	1.8	C25	2.5

Performance of pipeline products

Internal anti-corrosion coating (Executive Standard: ISO4179)

Centrifugal coated cement mortar protective layer is used as internal anti-corrosion coating, with the high quality and strictly tested cement raw materials selected, so as to ensure that the mortar is very solid, dense and smooth; the cast iron surface has good adhesion performance, does not fall off or scale, with the even thickness; and every inch of pipeline is protected in every detail.

External anti-corrosion coating (Executive Standard: ISO4179)

Due to the corrosivity of the soil, the outer wall of the pipeline will begin to rust due to the long-term corrosion of the soil after the pipeline is laid, and the pipeline system begins to leak, and the water resources are wasted. Therefore, special treatment must be carried out on the external surface of the pipeline to protect water resources and extend the use of the pipeline.

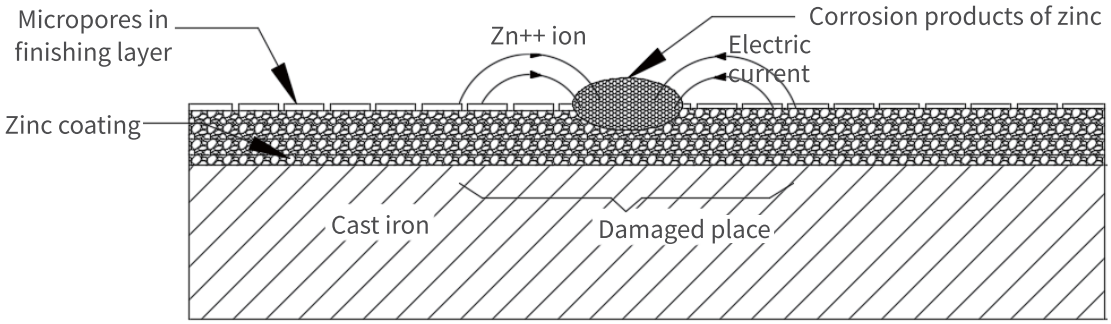
Coating	External anti-corrosion coating	Internal anti-corrosion coating
Conventional coating	Zinc coating+ external bituminous coating	Cement mortar
Strengthening coating	Zinc coating+ external bituminous coating + polyethylene pipe sleeve and polyurethane coating	Polyurethane coating, epoxy resin coating, epoxy ceramic coating, cement + epoxy resin lining, PE coating
Special coating	To be determined by the actual situation	To be determined by the actual situation

Performance of Pipeline Products

The function of zinc coating

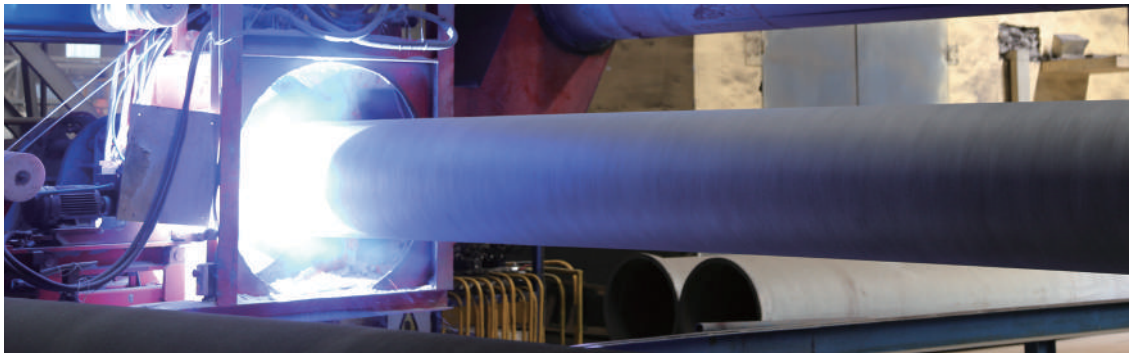
Forming a stable protective layer

In contact with soil, the metal zinc will gradually transform into a compact, cohesive and continuous zinc salt layer. The outer layer of bituminous paint (sealing pores) will transform zinc into insoluble zinc salts rather than soluble zinc hydroxide, as shown in the thin film.



Self-healing of injury

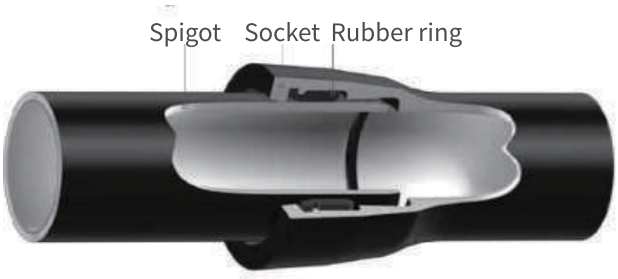
One of the main features of zinc coating is that it can repair the protective layer automatically at the damaged place to keep the protection layer intact. Zinc ions migrate to the damaged place through sealing pores (i.e. bituminous paint) to fill it and transform into stable insoluble zinc compounds.



Pipeline Product Joint

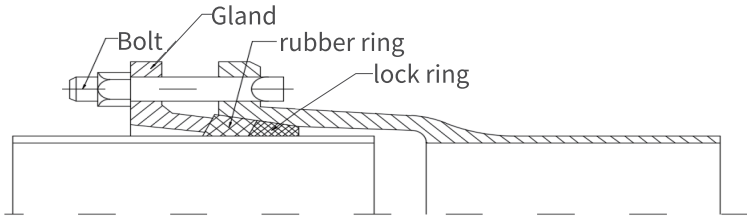
T-type joint

This is a common joint in China. The rubber ring is divided into soft rubber and hard rubber. Due to the existence of soft rubber part, T-type joint also allows certain angle deflection.



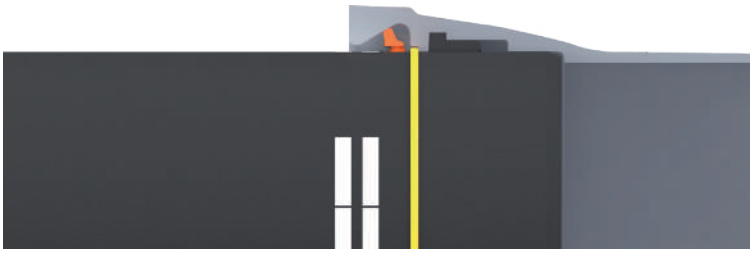
N1-type joint

N1-type ductile iron pipe joint includes bolt, thermal polymer, sealing rubber rings and lock ring.



Internal self-anchored joint

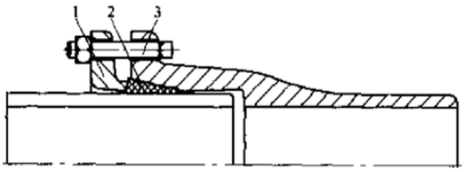
By the thrust transfer between the self-anchored assembly and the socket welding ring, the reliable anti-shedding performance and good deflection performance are realized. Guoming iron pipes can provide a variety of installation methods as well as technical services.



Pipeline Product Joint

K-type joint

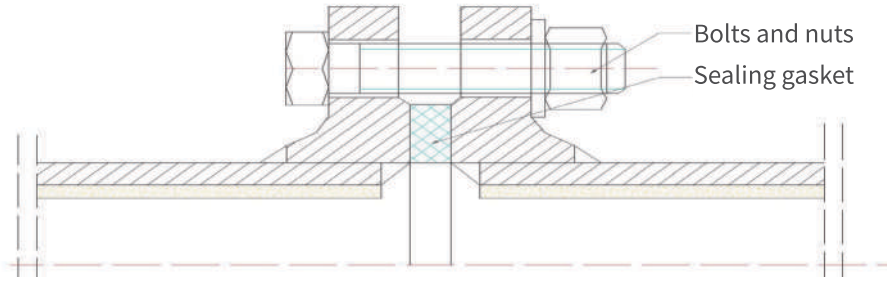
The sealing principle is stated as below: the pressure is transmitted to the gland and then to the rubber ring through bolt fastening, which is sealed after the rubber ring is compressed. It is used in the large diameter pipeline of DN1600-DN2600.



Mechanical (K-type) joint
1-Gland 2-rubber ring 3-Bolts and nuts

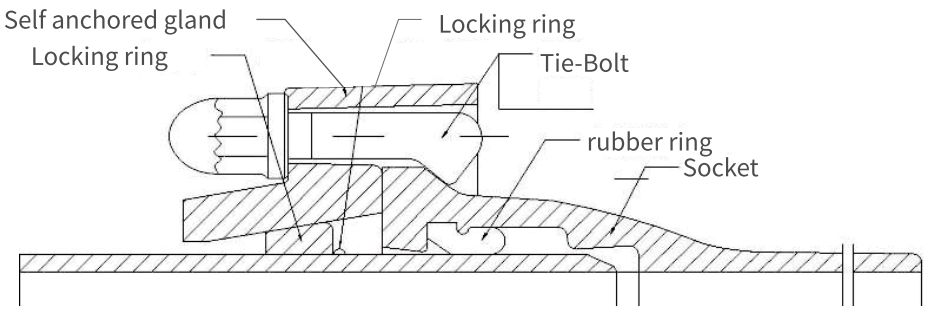
Welded flange joint

The flange joint is sealed by tightening the bolts to make the flange squeeze the sealing ring, and it has good sealing performance and is usually used in some special places if it is necessary to connect with pump, valve, fire hydrant and pass through foundation, wall and other special needs.



External self-anchored joint

It is evolved from T-type joint. In addition to the advantages of T-type joint, the strong sealing of the joint under high pressure is the highlight.



Product Specifications and Parameters of Guoming Ductile Pipes

General dimension table of T-type centrifugal ductile iron pipe (Class K9)

DN	Joint type	Nominal wall thickness enom	Outer diameter of barrel of pipe DE (mm)	Outer diameter of socket D (mm)	Socket depth P (mm)	Effective length Lu
80	T-type	6.0	98	140	85	6
100		6.0	118	163	88	6
125		6.0	144	190	91	6
150		6.0	170	217	94	6
200		6.3	220	278	100	6
250		6.8	274	336	105	6
300		7.2	326	393	110	6
350		7.7	378	448	110	6
400		8.1	429	500	110	6
450		8.6	480	540	120	6
500		9.0	532	604	120	6
600		9.9	635	713	120	6
700		10.8	738	824	150	6

DN	Joint type	Nominal wall thickness enom	Outer diameter of Outer diameter of barrel of pipe DE (mm)	Outer diameter of socket D (mm)	Socket depth P (mm)	Effective length Lu
800	T-type	11.7	842	943	160	6
900		12.6	945	1052	175	6
1000		13.5	1048	1158	185	6
1100		14.4	1152	1270	202	6/8.15
1200		15.3	1255	1378	217	6/8.15
1400		17.1	1462	1600	242	6/8.15
1500		18.0	1565	1710	253	6/8.15
1600		18.9	1668	1821	266	6/8.15
1800		20.7	1875	2043	297	6/8.15
2000		22.5	2082	2262	319	6/8.15
2200		24.3	2288	2482	328	6/8.15
2400		26.1	2495	2702	346.5	6/8.15
2600		27.9	2702	2921	365	6/8.15

Product specifications and parameters of Guoming ductile iron pipes

Pressure Data sheet for T-type centrifugal ductile iron pipes (Grade K9)

DN	Allowable operating pressure PFA (Mpa)	Maximum allowable operating pressure PMA (Mpa)	Minimum stiffness S (KN/m2)	Maximum Allowable deflection %
80	6.4	7.7	2400	0.85
100	6.4	7.7	1350	1.05
125	6.4	7.7	800	1.30
150	6.4	7.7	480	1.55
200	6.2	7.4	230	1.90
250	5.4	6.5	155	2.22
300	4.9	5.9	110	2.50
350	4.5	5.4	88	2.70
400	4.2	5.1	72	2.90
450	4.0	4.8	61	3.05
500	3.8	4.6	52	3.25
600	3.6	4.3	41	3.55
700	3.4	4.1	34	3.75

DN	Allowable operating pressure PFA (Mpa)	Maximum allowable operating pressure PMA (Mpa)	Minimum stiffness S (KN/m2)	Maximum Allowable deflection %
800	3.2	3.8	30	4.00
900	3.1	3.7	26	4.00
1000	3.0	3.6	24	4.00
1100	2.9	3.5	22	4.00
1200	2.8	3.4	20	4.00
1400	2.8	3.3	18	4.00
1500	2.7	3.2	17	4.00
1600	2.7	3.2	17	4.00
1800	2.6	3.1	16	4.00
2000	2.6	3.1	16	4.00
2200	2.6	3.1	15	4.00
2400	2.5	3.0	14	4.00
2600	2.5	3.0	13	4.00

Product Specifications and Parameters of Guoming Ductile Iron Pipes

Pressure data sheet for T-type centrifugal ductile iron pipe (Class C)

DN(mm)	Preferred pressure rating	Nominal wall thickness mm	Nominal wall thickness mm
80	C40	4.4	3.0
100	C40	4.4	3.0
150	C40	4.5	3.0
200	C40	4.7	3.2
250	C40	5.5	3.9
300	C40	6.2	4.6
350	C30	6.3	4.6
400	C30	6.5	4.8
450	C30	6.9	5.1
500	C30	7.5	5.7
600	C30	8.7	6.8
700	C25	8.8	6.8
800	C25	9.6	7.5
900	C25	10.6	8.4

DN(mm)	Preferred pressure rating	Nominal wall thickness mm	Minimum wall thickness mm
1000	C25	11.6	9.3
1100	C25	12.6	10.2
1200	C25	13.6	11.1
1400	C25	15.7	13.0
1500	C25	16.7	13.9
1600	C25	17.7	14.8
1800	C25	19.7	16.6
2000	C25	21.8	18.5
2200	C25	23.8	20.3
2400	C25	25.8	22.1
2600	C25	27.9	24.0

Ductile Iron Pipe Fittings and Rubber rings

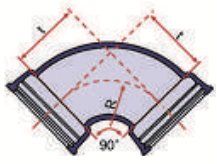
Concept

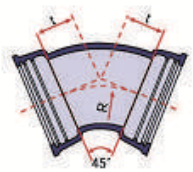
Different from the ductile iron pipe, ductile iron fittings can make the pipeline deflect, change direction or diameter, including elbow, tee, cross, etc. In addition, flanged socket, flanged spigot, collars and tapers are also ductile iron fittings.

Type of fittings	DN	Deviation (mm)
Flanged sockets Flanged spigots Collars, tapers	80-1,200 1,400-2,600	±25 ±35
Tees	80-1200	+ 50 − 25
	1400-2600	+ 75 − 35
Bends 90° (1/4)	80-2600	± (15+0.03DN)
Bends 45° (1/8)	80-2600	± (10+0.025DN)
Bends 22° 30' (1/16) and 11° 15' (1/32)	80-1200 1400-26000	±(10+0.02DN) ±(10+0.025DN)

Rubber rings

Rubber ring is one of the indispensable accessories in the installation of ductile iron pipe, and it must be used for sealing when installing ductile iron pipe. The rubber ring used for centrifugal ductile iron pipe is a special one for ductile iron pipe installation. The quality of rubber ring is directly related to the safety of ductile iron pipe engineering. There are many advantages of rubber rings, such as good anti-seismic effect, suitable for direct pipe installation in small radius bend, good sealing performance of joint, strong adaptability to foundation deformation and no water leakage in certain corner.





Main Application fields of Ductile Iron Pipes

Urban water supply and distribution network

Guoming Iron Pipe has made great achievements in metallurgy, hydraulics and casting fields and has won a good reputation in the transmission and distribution of drinking water. In order to better serve the cause of China's drinking water resources protection, the products of Guoming Iron Pipe include DN80-DN2600 ductile iron pipes and fittings, which strictly implement the corresponding national and industrial standards.

Municipal and industrial sewage pipe

All ductile iron sewage pipes and fittings of Guoming sewage pipe are made of ductile iron pipes, which can avoid the damage to the pipeline system caused by external pressure to the greatest extent. In addition, the external anti-corrosion measures include zinc coating, external coating of red anti-corrosion material and epoxy coating on the bell and spigot faucet, and the high alumina cement for internal anti-corrosion provide excellent wear resistance.

Drinking water pipe

The first step in the water cycle is pump stations or water-pumping stations to take water from underground aquifers, lakes and rivers, and from water intake to storage, groundwater should be treated and tested before water distribution. Guoming pipeline system provides perfect water transmission solution for the whole process from water intake to water distribution.

Municipal reclaimed water

With the shortage of water resources, many cities are facing a severe situation of drinking water. Some central cities are now using reclaimed water, which is between tap water and sewage discharged into the pipeline and can be used for car washing, lawn watering, road cleaning, urban fountain, cooling water for thermal power plants, etc. Guoming iron pipe enjoys rich experience, products and technology in this field.

Main application fields of ductile iron pipes

Agricultural irrigation pipe network

In order to ensure long-term impermeability in the future, the agricultural irrigation network must be able to resist soil movement, the passage of agricultural machinery, water hammer and any other possible accidents. Due to strong adaptability, ductile iron pipe is easy to expand capacity or modify the original pipeline. Besides, the ductile iron pipe system has a high factor of safety to meet the above conditions.

Industry (papermaking, thermoelectricity, textile)

The external load caused by soil backfill and transportation must be considered for industrial water pipeline, so it is particularly important to select pipes with good mechanical performance, so as to avoid leakage and water cut-off events affecting production. Guoming iron pipe with excellent performance can meet the minimum requirements for the conditions of burying pit and backfill, and no welding operation is required, so as to meet the requirements of safety and investment saving.

Small hydropower station

At present, power generation by small or micro hydropower stations is a newly developed but rapidly growing field. These hydropower stations are usually operated by local enterprises or private capital. In this field, ductile iron pipe has the ability to resist internal high pressure, as well as excellent resistance to external pressure of soil topography, thus allowing the pipeline to be buried in deep pits and valleys.

CHINA GATE

CHINA GATE GENERAL TRADING
تشاينا غيت للتجارة العامة

ALL TYPES OF PIPES, FITTINGS, & VALVES

Etihad Rail Project Package 2B, China Gate has managed to supply the project with all the needed DI pipes and fittings with all the accessories required.

This success was possible due to the high quality of the material, and the strong technical team that made this project accomplished.

Business performance of the company

Guoming iron pipe has won the wide recognition of domestic and foreign customers and cultivated a number of loyal customers with its high quality product and satisfactory service. Adhering to the concept of people-oriented, the company has created a sales team that is loyal to the enterprise, brave in fighting and willing to contribute. They adopt flexible marketing strategies to adapt to changes, and have a high market share in Shandong, Jiangsu, Anhui, Liaoning, Shanxi, northwest and other places. There is relatively large international demand in the Middle East, Southeast Asia, Africa, India and other countries and regions, however, the ductile iron pipe manufacturing center is gradually transferring to China, indicating a bright future for international ductile iron pipe market. In view of the current demand, our company actively expands the international market and exports its products to Middle East, South America, Africa, Southeast Asia and other countries.

Greece water supply project
DN1100-DN1200: 8,543 TONS

Southern section of the water-supply project Mauritania
DN200-DN500: 5,821 TONS

Business Performance of the Company

Water supply project in South Africa
DN900-DN1000: 18,970 TONS

Dammam & Riyadh city of Saudi
Arabia water supply project
DN1000-DN 1600: 23,480 TONS

Northern section of the water-supply project Mauritania
DN400-DN500: 23,570 TONS

Business performance of the company

Xixian New Area of Shaanxi Province
DN1400 pipe jacking project of sewage reconstruction

Dongying settlement engineering of ponding point
DN 1600 pipe jacking pipe project

Urban pipe network reconstruction project in Si County, Suzhou City, Anhui Province
Specification: DN800 DN 1000 16 km

Water supply project of urban and rural West line in Yinchuan metropolitan area
Specification: DN 1800 DN2000 34km

Business performance of the company

Xinjiang Beixin Road & Bridge Group Co., Ltd.
Urban pipe network reconstruction project in Beitun City, Xinjiang
DN 1000/1,200mm about 30 km

Yunnan OriginWater Water investment Technology Co., Ltd.
Water plant construction project in Yunnan Province More than 11,000 tons
(Mainly DN300400500600700 pipe)

Water supply project in Vietnam
DN1000: 12,001.15 TONS

Water supply pipeline reconstructionproject in
Xiamen Road, Rizhao City, Shandong Province
Specification: DN 1600 DN 1000 25km

Business Performance of the Company

47km water supply network project of West to East Gas Transmission Project in Jiayuguan City, Gansu Province

Emergency water supply pipeline project in Pingdingshan, Henan Province
DN1200: 11,997.3 TONS

Sewage pipeline project in Yixing City, JiangsuProvince
DN800: 7,849.61 TONS

Phase II surface water reconstruction project of Suining County Tap Water Company
DN1200: 11,997.3 TONS

Urban water supply project in Jingdezhen City, Jiangxi ProvinceRaw water transmission pipeline projectSpecification: DN2000 3km

Overseas water distribution project in Jiaxing City, Zhejiang Province
Specification: DN800-DN1200 12,000 TONS

Market Service

Whole process and barrier free brand service mechanism

01 Before-sales service

It' s required to research customer needs, customize solutions, answer all kinds of technical data of products at any time, and ensure the safe arrival of goods on the specified date.

Installation in sales 02

It is required to arrive at the site within 4 hours for guidance and problem solving, and participate in engineering design and installation guidance; in case of any product quality problem, it shall be returned and replaced unconditionally.

03 After-sales service

Regular return visit mechanism is needed to make the service run through the whole product life cycle.

With the mission of "providing customers with satisfactory products and services", Guoming iron pipe has established a perfect service system of before-sales consultation, installation in sale and after-sales return visit, and sincerely established a long-term close cooperation relationship with users. The company has been favored by the majority of users and widely praised at home and abroad with its excellent products and remarkable service, and become the most respected and trusted partner.

Market Distribution

From China to the world

Let countless cities
enjoy safe and worry free water system

Pursue Excellence and Be Perfect

PROFESSIONAL FOCUS · FULL SERVICE

PROFESSIONAL FOCUS FULL SERVICE

CHINA GATE

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ALL TYPES OF PIPES, FITTINGS, & VALVES

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