



# List of Core values

Professional, Reliable, Efficient



The Cast basalt lined products are mainly used for material transportation links and storage equipment linings with heavy wear and corrosion. They have served mines, metallurgy, power plants, chemicals, automobile brake yards, etc. For many years, and have rich service experience.

## There are always wear and tear of equipment and materials in industrial production



With the rapid development of modern industry, the equipment running faster and faster, the wear rate is also faster and more serious. Equipment or material life has become an important factor which restricts enterprises to improve production efficiency.

Although the wear and tear of materials or equipment hardly leads to catastrophic events, the accumulation of energy and material consumption is phenomenal. In many basic industries, material transportation and equipment wear and tear exist simultaneously.



The loss caused by wear and tear is not only the initial equipment investment, but the more serious loss caused by unplanned downtime is the swallowing of corporate assets.





In most cases, the biggest cost for a company is lost production time due to unplanned downtime. Effective use of suitable wear-resistant materials can reduce the frequency of unexpected shutdowns in the production process, extend production time, and reduce company costs.



According to statistics, each year in metallurgy, mining, electricity, coal industry, because of wear of equipment and materials caused losses amounting to 40 billion.



# Cast basalt

The product processed from cast basalt is a new type of silicate crystalline material. Using natural rock (basic database, shale, etc.) or industrial waste as the main raw material components, smelting, casting, heat treatment and other processes are regularly arranged, crystalline, hard, and fine-textured metal industrial materials. Casting basalt has an excellent high abrasion and high resistance. Abrasiveness. Corrosion resistance.



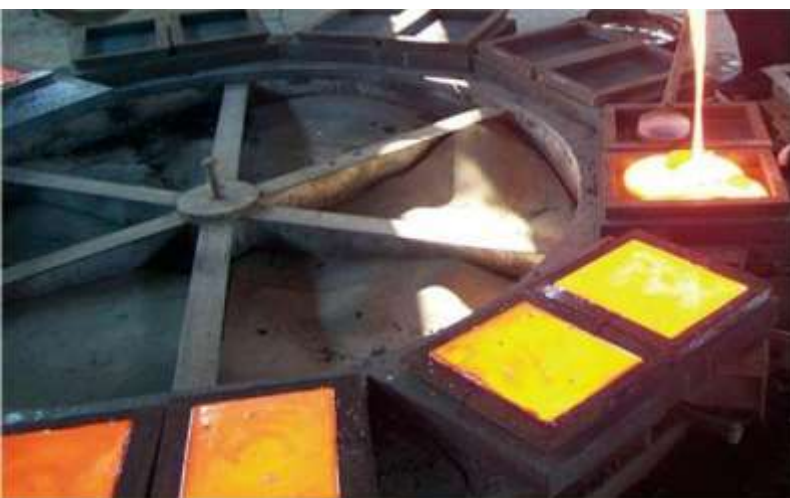
Sheet gravity casting





Its main products include cast basalt pipes, cast basalt lining, steel pipes, cast basalt tiles and cast basalt powder.

Cast basalt products have been widely used in the fields of industrial abrasion and corrosion. These industries are set up as follows: power, coal, mining, metallurgy, chemical industry and construction. Our cast basalt products can make the life of parts or equipment longer.



Due to the poor toughness and high hardness of cast basalt products, processing is difficult. Products are generally processed according to shape and size.



## The introduction of cast basalt production

### Chemical substance

SiO <sub>2</sub>	Al <sub>2</sub> O <sub>2</sub>	Fe <sub>2</sub> O <sub>3</sub>	TiO <sub>2</sub>	CaO
43.13-41.12	12.5-13.52	8.64-9.5	2.02-2.62	9.05-10.22
MgO	K <sub>2</sub> O	Na <sub>2</sub> O	FeO	P <sub>2</sub> O <sub>5</sub>
8.65-10.47	1.4-1.75	4.62-5.28	4.82-6.25	1.1-1.38

### Physical performance of cast basalt products

项目 Category	性能指标 Attribute
Density	3g/cm <sup>3</sup>
Compressive Strength	≥ 450MPa
Bending strength	≥ 60MPa
Impact strength	1.76KJ/M <sup>2</sup>
Abrasive strength	0.07g/cm <sup>2</sup>
Vickers scale	≥ 720kg/mm
Elasticity modulus	1.67x10 <sup>5</sup> MPa
Dilatation coefficient (60℃)	8.92x10 <sup>-6</sup>
Chemical Attack Resistance	
95%-98% H <sub>2</sub> SO <sub>4</sub>	≥ 98%
20%H <sub>2</sub> S <sub>4</sub>	≥ 94%
20 %NaOH	≥ 98%



# Application of cast basalt wear-resistant materials

Cast Basalt can be used for the lining of pipework, chutes, bunkers, cyclones, and hoppers. It has become the global standard in areas such as ash slurry pipework, often used at fossil-fuel power stations. It is an all-round cost-effective and adaptable lining material that extends the life of equipment in the pipe or tile



form where affected by erosion. Cast basalt lined steel pipe, as both a wear-resistant and corrosion-resistant materials, the transport properties of wear or corrosion of materials, after ten years of practical verification, cast basalt lined steel pipe can be well done.





Cast basalt is also used in cement plants for making air separators, chain conveyor, silica hoppers, nozzles, coal hoppers, cement hoppers, cyclones, raw mill ducts, chutes, thick slurry lines, mixers, grate cooler housing, coal venturi etc.

- Tailing's pipeline
- Concentration pipeline
- Pipeline for transporting ore
- Power station ash pipe
- Coal pipe
- Wind power sand pipe
- Slurry tank concentration
- Milling machine
- Disc feeder
- Mud tank



- Sand mixer
- Drilling trenches in the mining industry
- Storage tank explosion, coke funnel
- Various chutes, funnels, storage boxes, etc.
- Refractory industry loading and unloading trough
- Centrifugal Concentrator Punching Washer





Cast basalt lined steel pipe, as both a wear—resistant and corrosion—resistant materials, the transport properties of wear or corrosion of materials, after many years of practical verification, cast basalt lined steel pipe can be well done.

- Jet flushing granular tank
- Blast furnace slag ditch
- Raw ore chute
- Self-grinding funnel
- Grading back to the mine chute
- Overflow scrubber
- Coke-conveying chute
- Saturator
- Acid separator
- Cyclone separator



Cast basalt composite pipe used for many years

- Hydro cyclone
- dust collector
- Pickling tank
- Slag discharge machine
- Mixer downhill board
- Conveying equipment needs wear protection





## Production process of cast basalt wear-resistant

Natural gas is used for melting basalt stone in melting furnace. Natural gas is currently very clean and environmentally friendly fuel. No any pollution. To the customer requirements choose environmental protection material that is a good choice.



Cast stone powder



Cast stone aggregate







By internal hydraulic transmission, products annealing kiln slowly and evenly through the strict control of each setting temperature curve point.



Adopt centrifugal casting manufacturing cast basalt pipes.

Molten lava in the vacuum state is poured into the high-speed rotation of the centrifuge.





## Cast basalt pipe

Adopt centrifugal casting manufacturing cast basalt pipes. Molten lava in the vacuum state is poured into the high-speed rotation the centrifuge. In fixed standard time to exit the centrifuge into the annealing furnace. Cast basalt pipes have an excellent performance of high abrasive and high corrosion resistance.



As hydraulic or pneumatic conveying worn or corrosive wear resistance, corrosion resistant lining material pipe can effectively protect the pipe prolong the service life of pipelines.







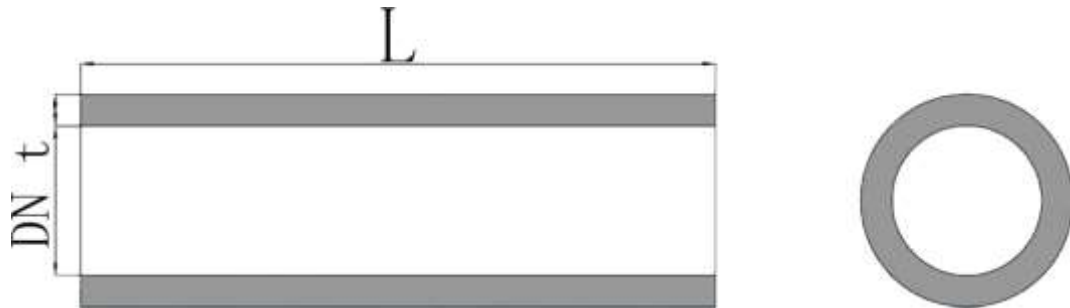
Cast basalt pipes are out of the tunnel annealing kiln and put outdoor for a long time, this can help products remove the rest internal stresses.



The whole production process of cast basalt wear resistant materials are completely finished under the monitoring of internal control procedures for the safe and orderly.



## Cast basalt pipe standard specification



DN (mm)	Wall thickness (mm)	Length(mm)
75	25	500
100	17.5	1000
125		
150		
175		
200		
225		
250		
275		
300		
350		
400	20	800
450		
500	25	
550		
600	30	
650		
700		
750		
800		

The other specification of cast basalt pipes can be manufactured by user requirements.





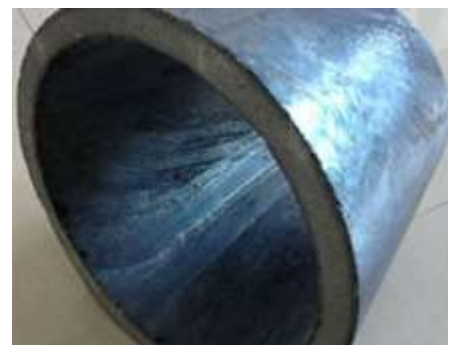


As shown.

Special parts using cast basalt pipe shaped.

### Cast stone pipe reducer

The drawing is cast basalt gravity casting reducer pipe.



Often in the form of cast basalt lined steel reducer pipe appeared in various operating conditions the pump outlet location.



# Cast basalt lined steel pipe



Cast basalt lined steel pipe is consist of steel pipe, cast basalt pipe and the concreteness of cement mortar.

— steel pipe

— concreteness of cement mortar

— cast basalt pipe

After 30 years of actual use, the cast basalt lined steel pipe is a reliable and effective combination of wear-resistant materials.



SCAN WHATSAPP



The excellent performance of cast basalt lined steel pipe is that it sets tenacity of steel pipe abrasive resistance of cast basalt pipe concreteness of commemorator one. This greatly improves the products adaptive capacity of complicated operation conditions. At the same time cement mortar is selected as the filling material and this can make the inside surface of steel pipe in alkali mediums. So, the surface of steel pipe generates purifying films These films can prevent being rusted.

The cast stone composite pipe.



The first Cast basalt lined steel pipe has been operated on 25 years. (by 2013)

It is used for the transportation of corrosive materials under various working conditions.



### Main specification of cast basalt lined steel pipe

DN (mm)	O.D.(mm)	Wall thickness (mm)	Length(mm)
75	159	25	4000
100	168	17.5 20	4000
125	195		6000
150	219		8000
175	245		6000 8000 10000 12000
200	273		
225	300		
250	325		
275	345		
300	377		
350	426		20 25
400	478		
450	529		
500	600	25	
550	650		
600	720	30	6000
650	770		
700	820		
750	870		
800	920		
850	970		
900	1020		

The other specification of cast basalt pipes can be manufactured by user requirements.





## Cast basalt lined steel pipe types:

Cast basalt line steel straight pipe





## Cast basalt lined elbow

Bending pipe is the most worn area and prone to problems in the pipe systems.

To better to protect piping systems, the design and installation bends to pipe are essential. Generally bending radius  $R$  of curvature is not less than five times the pipe diameter in order to reduce rate of wear.



Of course, if the installation space is larger enough, the greater radius of curvature the lower the rate of wear further extends / extended the period of use.







Cast basalt lined steel tee pipe

Cast basalt lined steel Y pipe (three way pipe)



Cast basalt lined steel special shape pipe





Here is a mineral processing enterprise of cast basalt lined steel pipe installation. The parameters of the outside steel pipe will be decided according to the working pressure of the system.



Cast basalt lined steel special shape pipe by iron and steel enterprise.

Cast basalt lined steel pipe as both a wear-resistant and corrosion-resistant materials the transport properties wear or corrosion of materials, after thirty years of practical verification cast basalt lined steel pipe can be well done.



Thermal power plant coal elbow

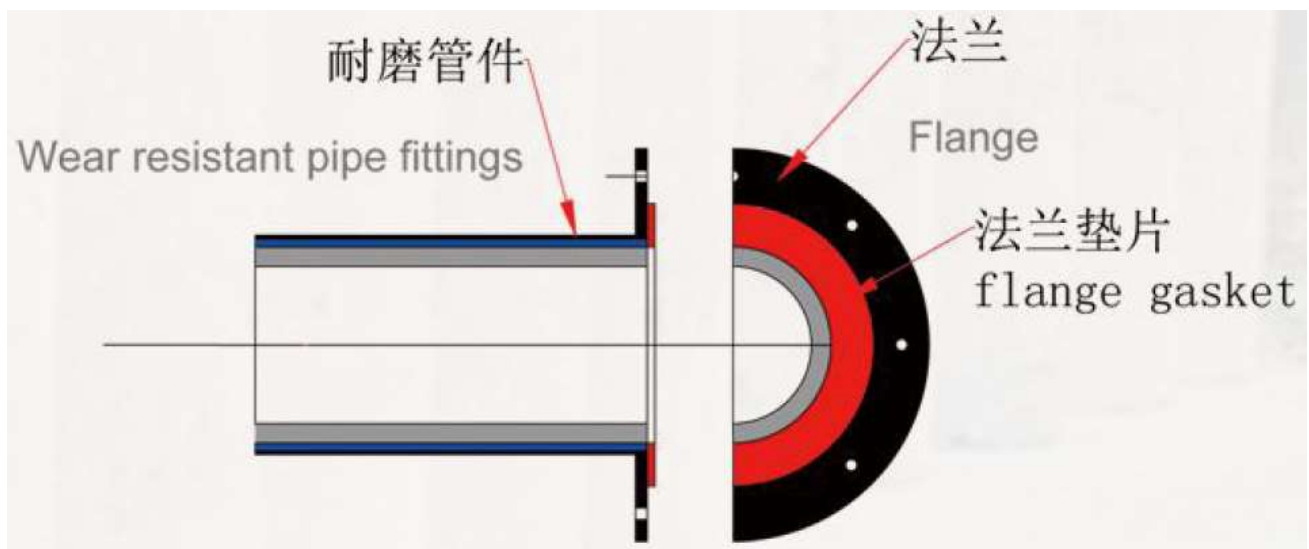




# Connection of cast basalt lined steel pipe

The connection of the pipes and fitting will be of flange connections, easy-flexible joint connection or by welding.

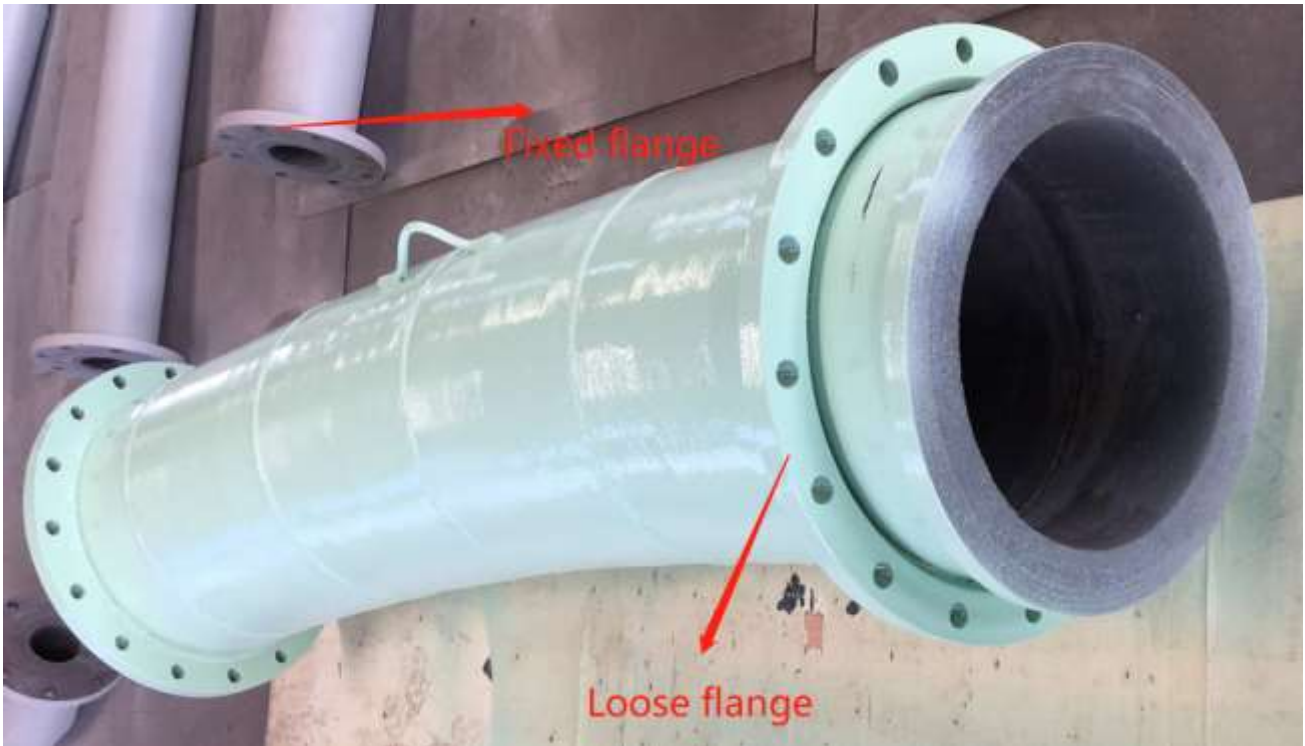
## Flange connection



Flange connection is one kind of common pipeline installation connections. By two pieces of flanges, pipeline, valve, equipment is connected and it forms a tight piping system. When pipeline pressure is larger, flange connection is priority selections. Flanges have lots of different sizes. Flange size is



determined according to pipeline normal diameter and pipeline operation pressure.



Flange gasket: soft gasket is used in medium pressure pipeline system and low-pressure pipeline system. Gasket material is determined according to conveying material's temperature, and operation pressure. Choosing gaskets is a critical factor for pipeline system safe operation.

Loose flange: A Lap Joint Flange (Loose flange) is a device which consist of two pieces, it looks like a weld neck flange together, and it is butt welded with the pipes, it also like a loose slip-on flange.

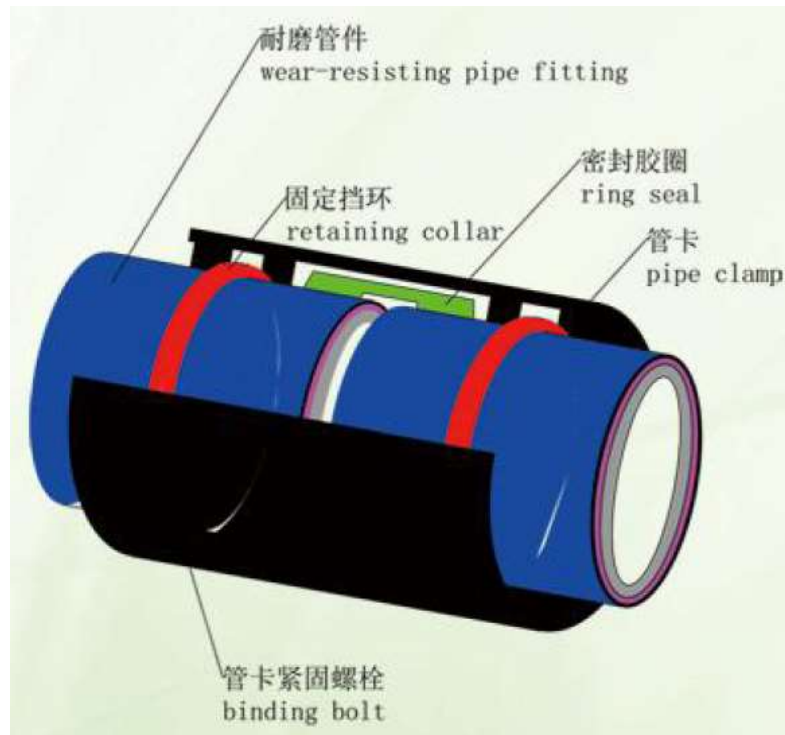
Using flange connection is easy for maintenance later stage.





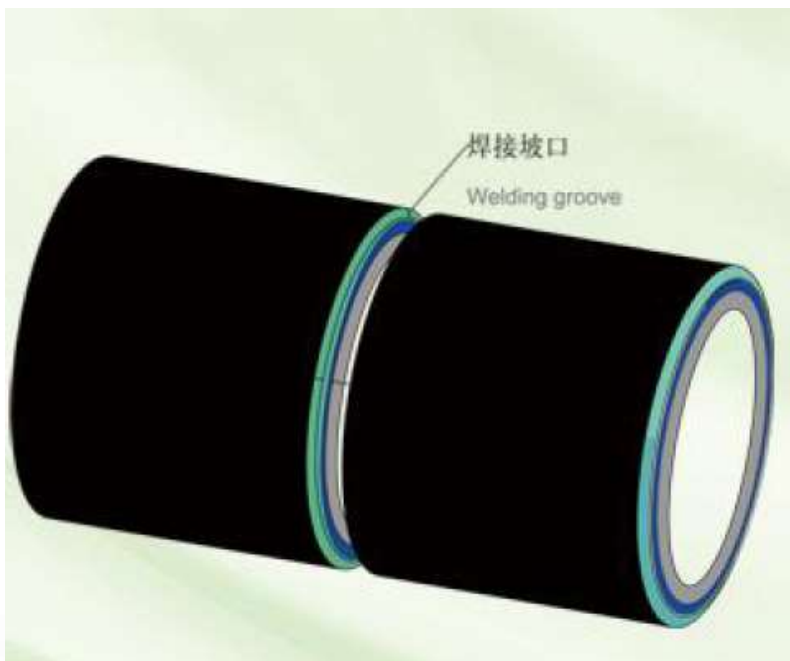
## Easy-flexible joint connection

It is one kind of highly efficient and rapid installation connections. It has the characteristic. Easily install and disassemble, fast installation, temperature adjustable compensation function, saving the necessary expansion in long pipeline. Easy-flexible joint also has angled compensation characteristic. At a smaller angle turning point, easy-flexible joint can be instead of bends and adjust the angle. Easy-flexible joint connection can make later maintain easily, disassemble quick and convenient shorten maintaining time so that it can extend the factory production time.



## Welding & beveled end

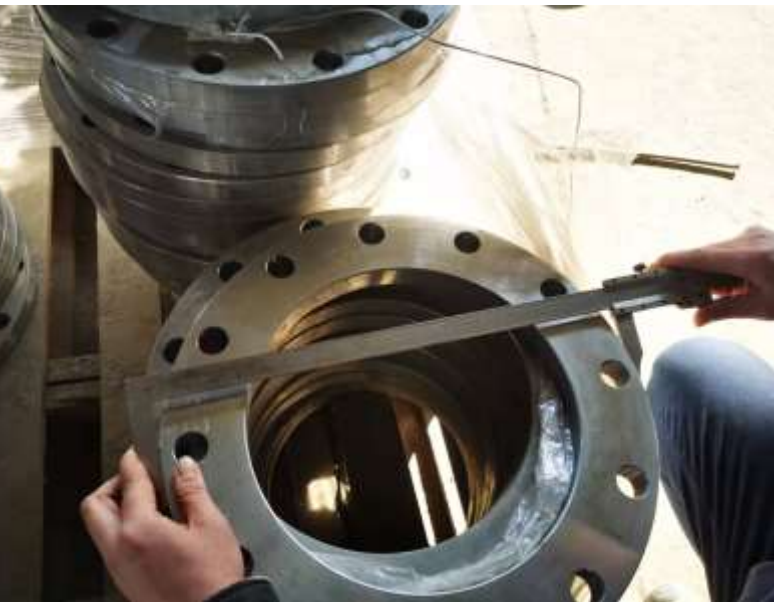
It suits short distance pipeline system without maintenance. It is one kind of common installation connections. It requires installation personnel higher welding ability. It also restricts by welding site, distance, welding positions. Welding connections is inconvenient in later maintenance.



# Final inspection

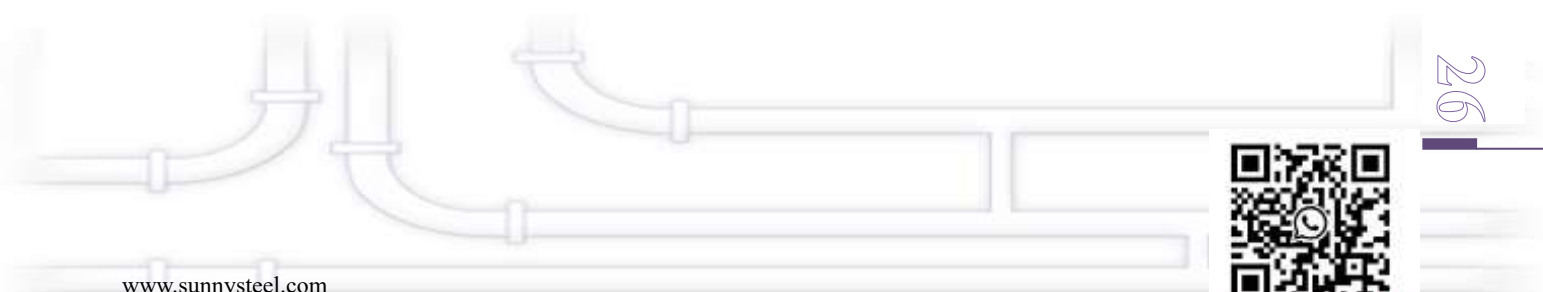
Basalt Pipe DN200X20 L4000 MADE IN CHINA

Flange size inspection >





Inside inspection >





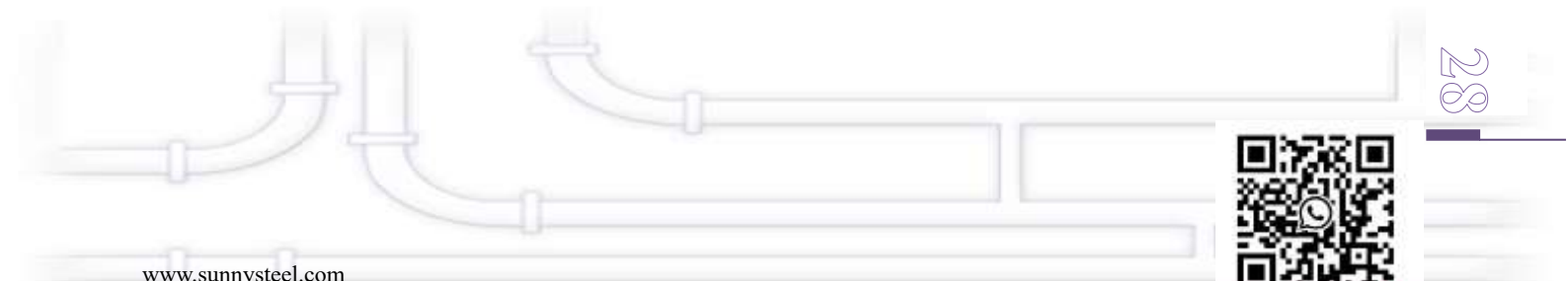
< Out side







Bundled





# Packaging and delivery of cast basalt products

Cast basalt pipe adopted foam packaging, then in accordance with the specifications to put them into wooden cases, sometimes they can be directly loaded into the compartment or container.

Bare packaging >



< Packing in container

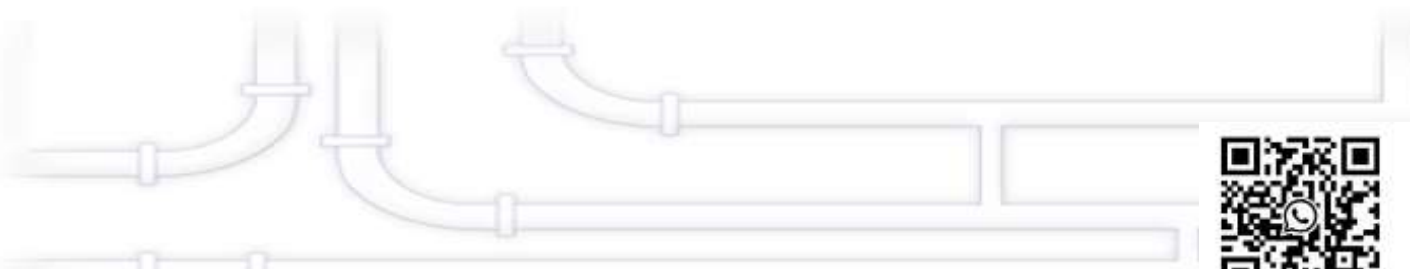




Bundled packaging >



Channel steel frame case











**Packed in containers**





NLLU 900086 7  
2261

MAX. GROSS	30,480 KGS 67,200 LBS
TARE	2,185 KGS 4,820 LBS
NET	28,295 KGS 62,380 LBS
CU. CAP.	33.2 CU.M 1,173 CU.FT.





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