



UHMWPE PIPE

Ultra-high molecular weight polyethylene (UHMWPE) is a new kind of engineering thermoplastics with more than 3 million viscosity-average molecular weight. Ultra-high molecular weight polyethylene pipe has superior performance over conventional HDPE pipe such as very high wear resistance, impact resistance, excellent resistance to internal pressure strength, resistance to environmental stress cracking, intrinsically self-lubricating, anti-adhesion, low temperature resistance and excellent chemical resistance.

What is UHMWPE?

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Ultra-high molecular weight polyethylene (UHMW full name is ultra-high molecular weight polyethylene pipe) is a thermoplastic engineering plastics with an average molecular weight greater than 1.5 million, which is polymerized by ethylene and butadiene monomer under the action of a catalyst.

Ultrahigh-molecular-weight polyethylene (UHMWPE) has been the material of choice for the polymeric component in total joint replacements primarily because of its excellent combination of wear resistance, structural strength and biocompatibility and remains the gold standard thus far. Nevertheless, wear of UHMWPE prostheses produces billions of submicron particles annually,¹ which may cause a foreign-body response, leading to extensive bone resorption and gross loosening of the implants.^{2–5} UHMWPE wear is of particular concern for young or active patients who may face one or more revisions with accumulative bone loss in their lifetime. Thus, improving the wear resistance of UHMWPE and, thereby, reducing the volume of wear particles released to the periarticular tissues should reduce the adverse biological responses and substantially extend the clinical lifespan of total joint replacements.

Ultra-high molecular weight polyethylene is a polymer compound, which is difficult



to process, and has excellent wear resistance, self-lubricating properties, high strength, stable chemical properties, and strong anti-aging properties. When it comes to ethylene, be sure to pay attention to these characteristics. The specific methods are as follows:

- 1. Weighing rule:** The product made of pure ultra-high molecular weight polyethylene has a specific gravity of 0.93-0.95, and the density is small, and it can float on the water surface. If it is not a pure polyethylene material, it will sink to the bottom.
- 2. Temperature measurement:** Pure ultra-high molecular weight polyethylene products will not melt at 200 ° C, will not deform, but will become soft. If it is not pure ultra-high molecular weight polyethylene material, it will be deformed at 200 degrees Celsius.
- 3. Visual method:** The true ultra-high molecular weight polyethylene surface is flat, uniform, smooth and the density of the cut surface is very uniform. If it is not pure polyethylene material, the color is dim and the density is uneven.
- 4. Edge test method:** The pure UHMWPE flanging end face is round, uniform and smooth. If it is not a pure polyethylene material, there will be cracks on the flanged end face, and the slag phenomenon will occur when the flanging is heated.
- 5. Due to its many excellent properties, UHMWPE has shown great advantages in the high performance fiber market, from mooring ropes in offshore oil fields to high performance lightweight composites, in modern warfare and aviation, Aerospace, marine defense equipment and other fields play a pivotal role.**

Ultra-high molecular weight polyethylene can be used as a lining for trailers, silos, and chutes for loading coal, lime, cement, mineral powder, salt, grain, etc., because it has excellent self-lubricating properties and non-stickiness. The above-mentioned powder file can prevent the adhesion scene from being stored and transported, and the guarantee is guaranteed.



1. Ultra-high molecular weight polyethylene is used for liquid-supporting pipelines such as sand flow. Compared with other pipelines, the outstanding performance is as follows: the life expectancy is increased by 18 times compared with the bamboo tube, and the interest rate is reduced to 1/25, compared with the nylon tube. The number is increased by 3 times and the interest is reduced to 1/8. At the time of sponsorship, the inner barrier is 25% smaller than the non-metallic tube, which greatly increases the frequency of sponsorship.
2. In the range of linings of chutes, buckets and ore compartments, when using traditional non-metallic documents, in cold and humid weather, the items will be thawed on non-metal, and the adoption of high-molecular polyethylene sheets will never , which greatly reduces the cost of unloading. After lining a layer of high-molecular-weight polyethylene sheet on the self-unloading leaker of the bulk carrier, the uniform unloading time was reduced from the original 16~20h to 8h.
3. In the defense military equipment, due to its good impact resistance and greater energy absorption, it can be made into protective clothing, helmets and bulletproof materials in the military, such as helicopters, tanks and ships. Protective cover, missile cover, body armor, stab-resistant clothing, shield, parachute, etc.
4. In aerospace engineering, due to its light weight, high strength and good impact resistance, it is suitable for wingtip structures, spacecraft structures and buoy aircraft of various aircraft. At the same time, it can also be used as a speed-reducing parachute for space shuttle landings and as a rope for hanging heavy objects on the aircraft, replacing traditional steel cables and synthetic fiber ropes, and its development speed is extremely rapid.
5. In the civil field, ropes, cables, sails and fishing gears are suitable for marine engineering. The length of the break under self-weight is 8 times that of steel rope and twice that of aramid. The rope is used for fixed anchor ropes of supertankers, marine operating platforms, lighthouses, etc., which solves the corrosion and the corrosion and hydrolyzed degradation of the nylon and polyester cables caused by the corrosion of the steel cables used in the past. , the problem of frequent replacement.
6. In industrial applications, it can be used as pressure-resistant containers, conveyor belts, filter materials, automobile buffer boards, etc.; construction can be used as wall,



partition structure, etc., it can be used to strengthen cement composite materials to improve the toughness of cement. Improve its impact resistance. Due to its excellent wear resistance and impact resistance, it is widely used in the mechanical manufacturing industry to produce a variety of gears, cams, impellers, rollers, pulleys, bearings, bushings, bushings, shafts, gaskets, Mechanical parts such as gaskets, elastic couplings, and screws.

7. In sports goods, helmets, snowboards, sail boards, fishing rods, rackets and bicycles, glides, ultra-lightweight aircraft parts, etc. have been made, which are superior to traditional materials.
8. In medicine, it is used in the fields of tray materials, medical implants and plastic sutures. It has good biocompatibility and durability, high stability, no allergies, and has been used clinically.

This ceramic tile is usually directly bonded on the inner wall of equipment by our high-strength-temperature-resistance inorganic epoxy adhesive.

Item	Data
Al ₂ O ₃ (content)	≥92%
Density	≥3.6 g/cm ³



Rockwell hardness	HRA85-95
Compressive strength	≥850 Mpa
Fracture toughness (KIC)	≥4.8MPa·m ^{1/2}
Flexural strength	≥290MPa
Thermal conductivity	20W/m.K
Coefficient of thermal expansion	7.2×10 ⁻⁶ m/m.K



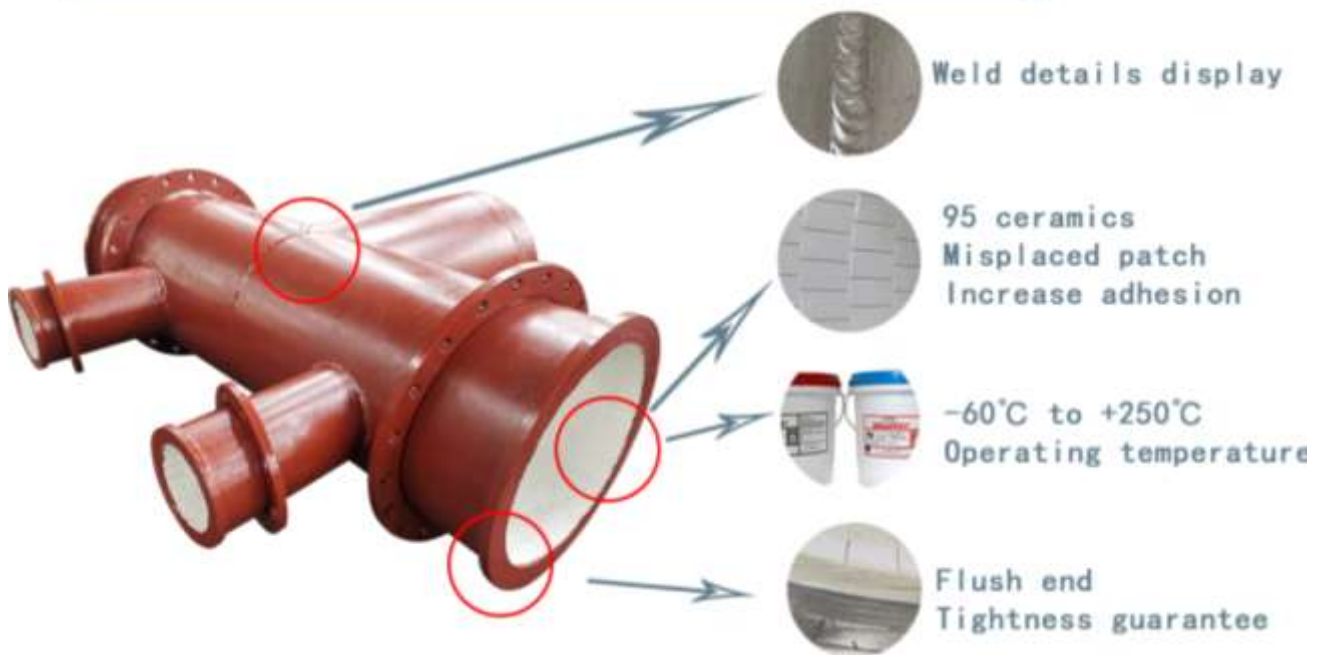
Advantage of ceramic tile lined pipes

- Super wear-resistant, high density: we use 95% of chromium corundum, 100 tons dry-pressing.
- Elbows formed by hot-bending, the outside of the bending part are seamless which is wear-resistant and can prolong the service life.
- Firmly bonding without peeling: we use epoxy adhesive and miss-match installation technology, so that there is no straight-seam.
- High temperature and ageing resistance: we abandon the traditional organic bond, and use inorganic bond which is ageing resistance.



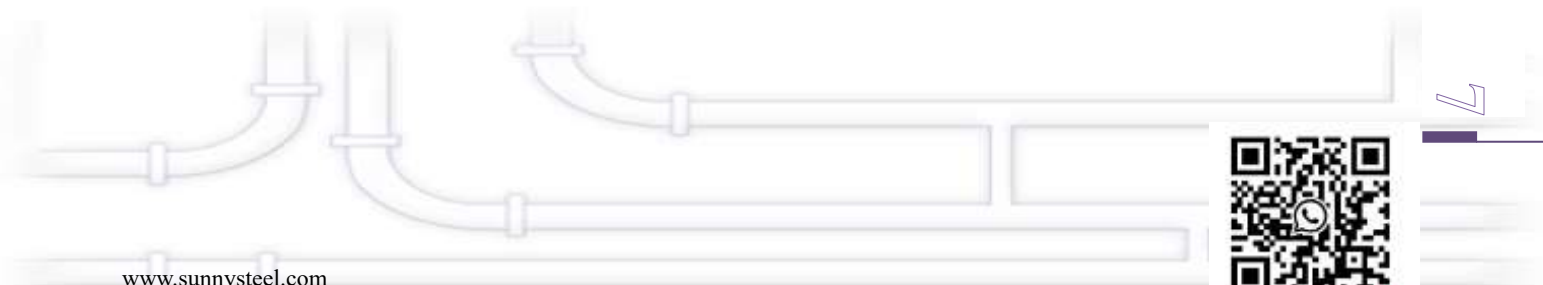
- High pressure resistance: We use 20# seamless steel pipe, which is high pressure resistance and avoiding welding leakage.
- The pipe with smooth inner wall which can make the materials flow smoothly: we use seamless steel pipes which has smooth inner wall that can reduce weariness, and the height tolerance of ceramics is below 0.5mm.

Understand the manufacturer's product details

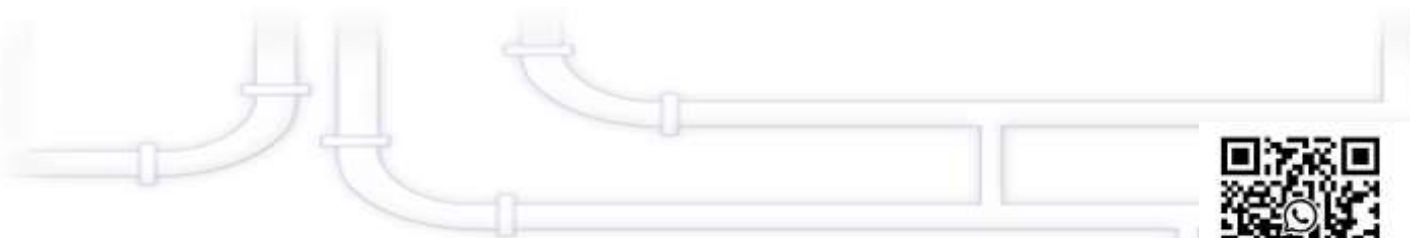


This method mainly applied in the severe applications like both high temperature and serious abrasions. We widely used in the power plant mill pipe and elbow and steel plant dust conveying pipes, elbows, reducer, T pipe and laterals pipes. It helped customers reducing the shutdown time a lot and saved lots of cost. The diameter of this type pipe fittings has to be more than 400mm.





Weldable Ceramic tiles lined pipe fittings

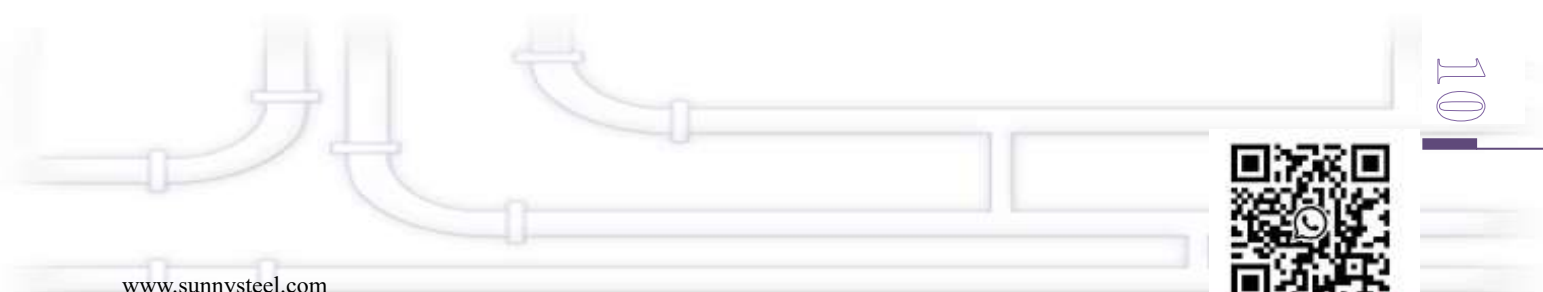


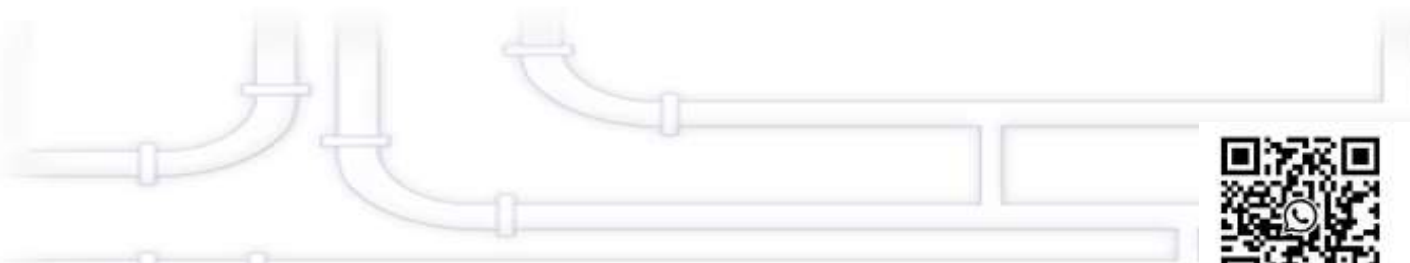
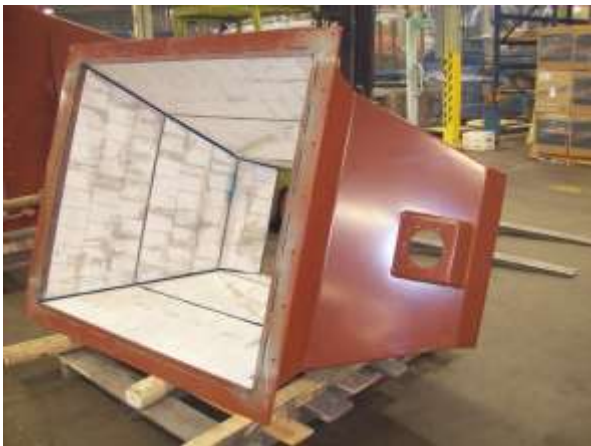
Ceramic Tile lined elbow



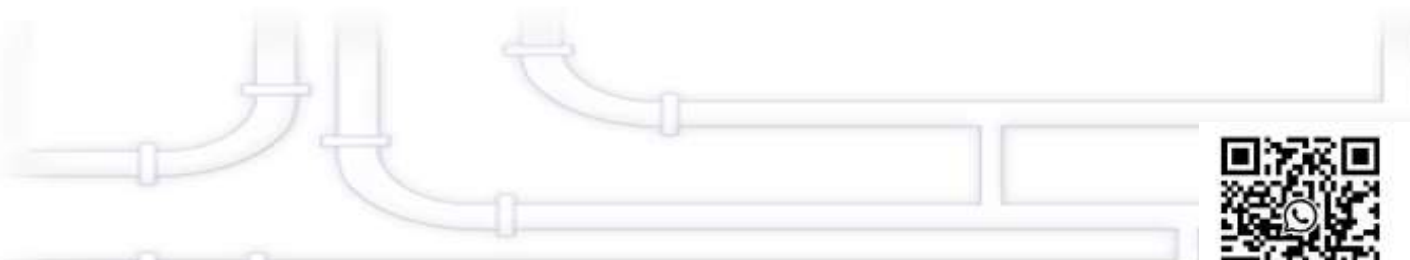
Ceramic Tile Lined Elbow has very uniform coating of specially formulated ceramic material that is affixed to the inner of the pipe and gives a very smooth surface.

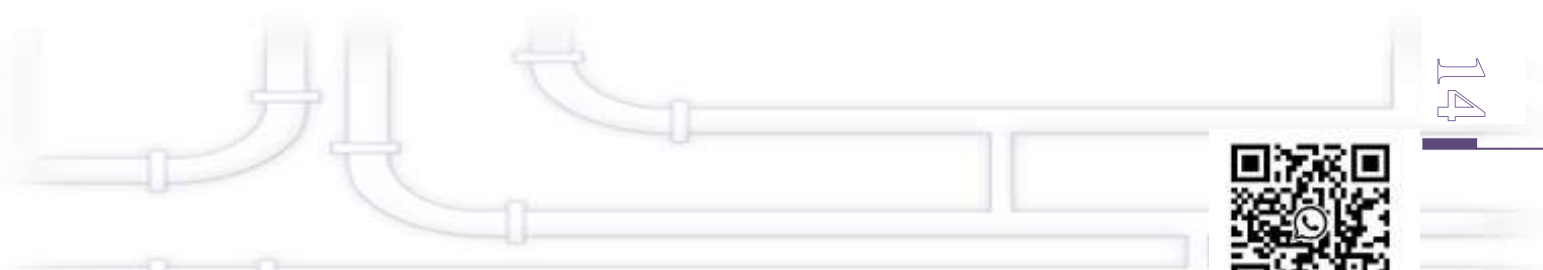
More Sharpe



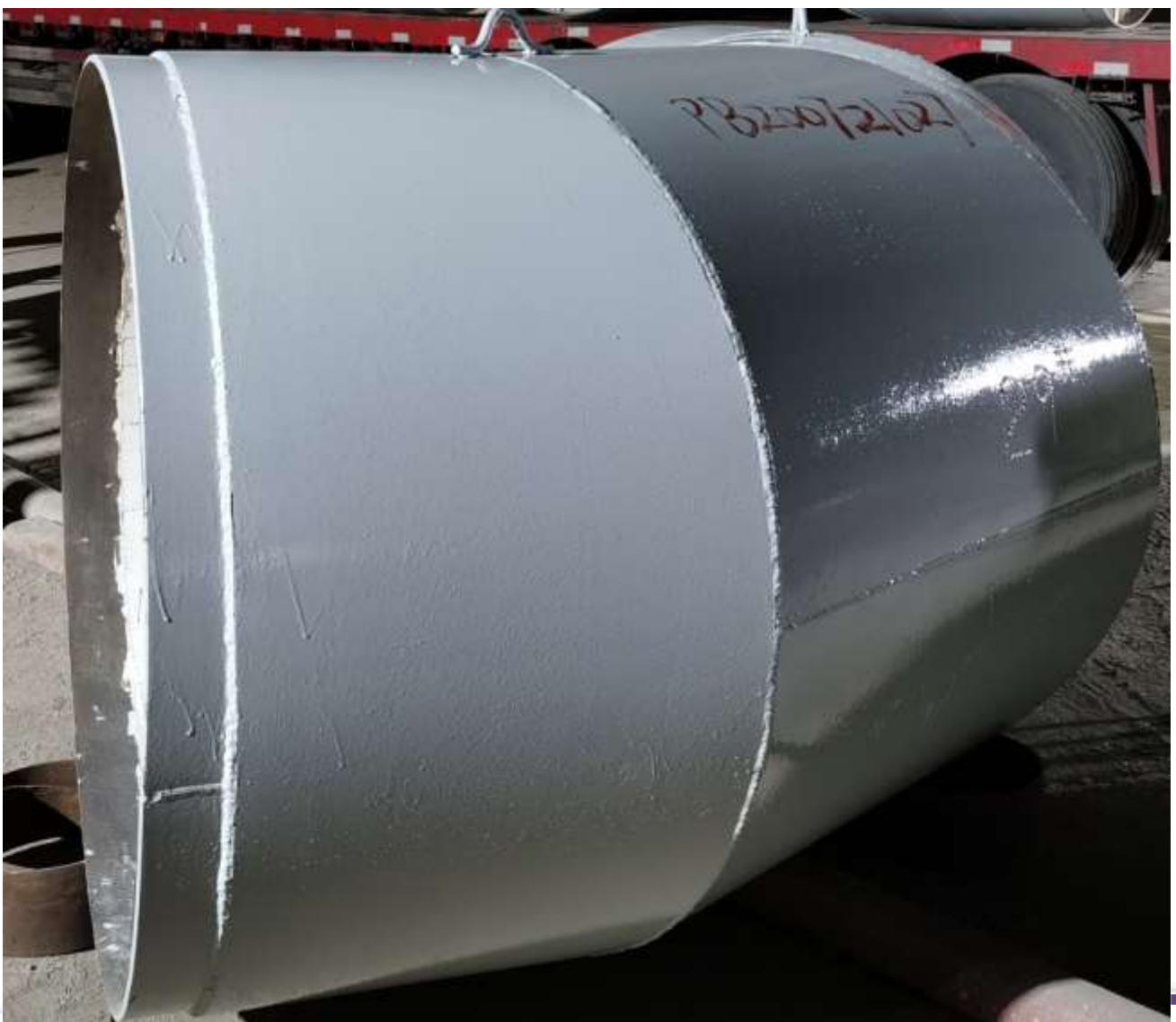


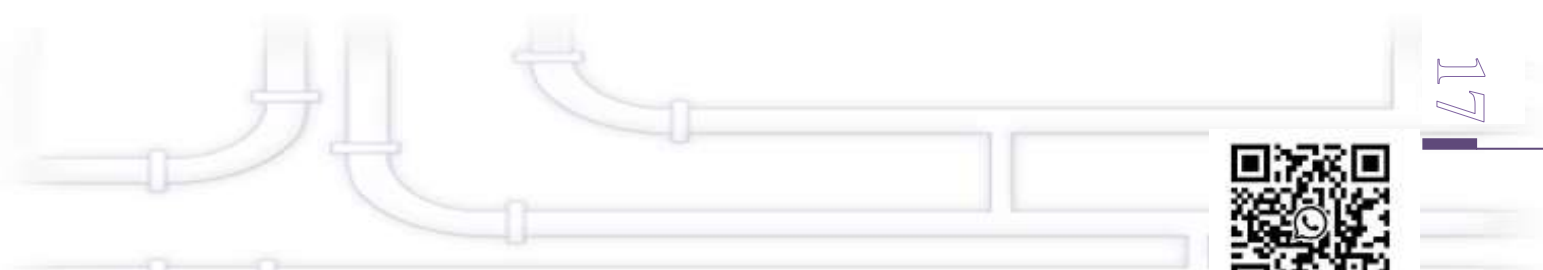


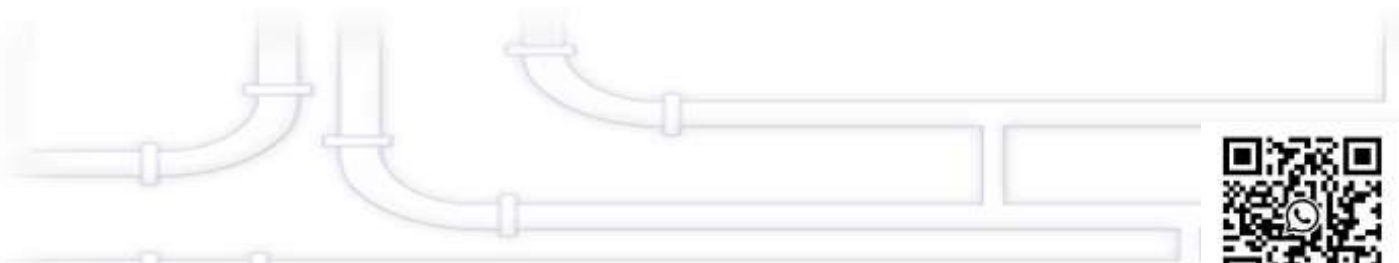


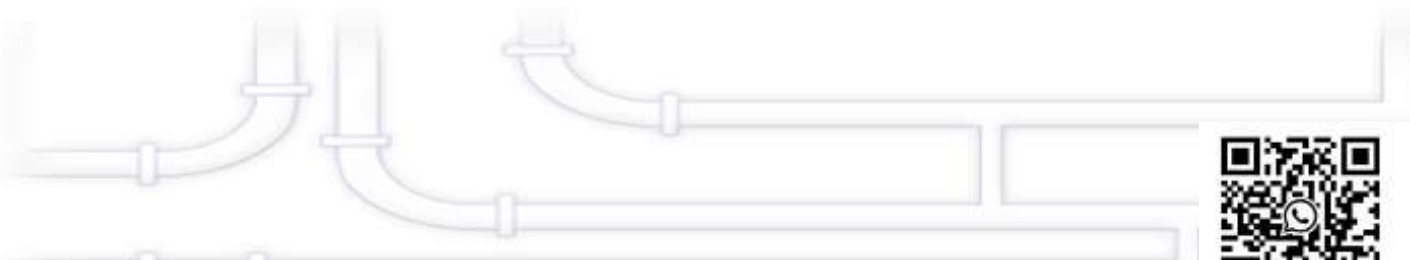














Suggested usage of the ceramic tile lined pipe:

Rare high-strength low-alloy heat-resistant, wear-resistant steel parts for the power plant boiler systems in coal, powder, ash slagging pipeline.

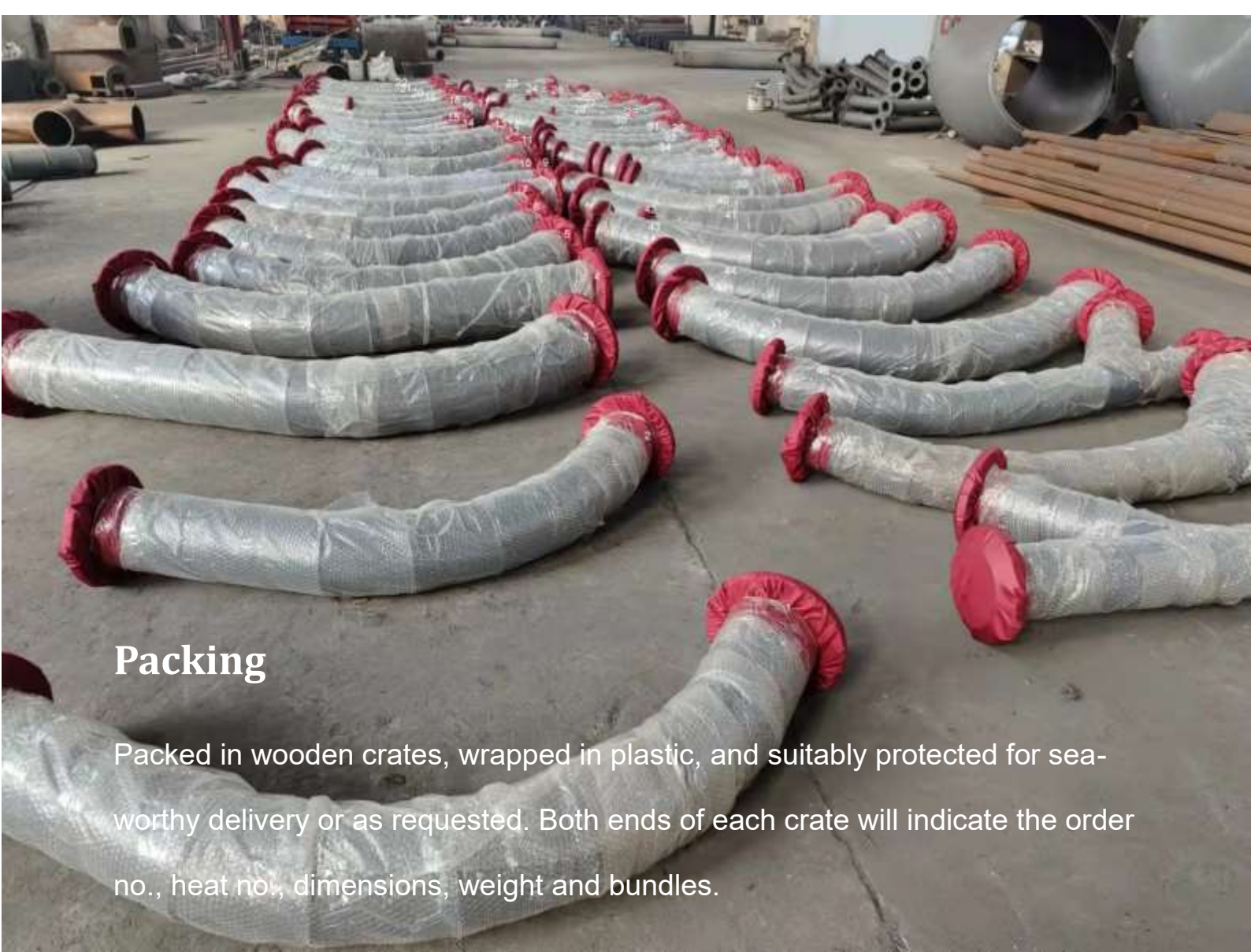
Ceramic tile lined pipe and bend can be cut and welded as you like.



The Ceramic Tiles could protect Industrial Components against abrasion, impact wear and high temperature of above 1000°C.

Standard Flat Tiles of Square & Rectangular Shape having thickness of 6 to 50 mm, with or without central hole are available.





Packing

Packed in wooden crates, wrapped in plastic, and suitably protected for sea-worthy delivery or as requested. Both ends of each crate will indicate the order no., heat no., dimensions, weight and bundles.





List of Core values

Professional, Reliable, Efficient

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Collect steel pipes and fittings

