



ASTRAL MATERIAL INDUSTRIAL CO., LTD.

中 徽 工 业 材 料 有 限 公 司
佛 山 市 星 弘 贸 易 有 限 公 司

Mining Exploitation & Oil Drilling/Structural Ceramics/Wear Resistant Ceramics

Wear Resistant Ceramics | 耐磨陶瓷 | رسسنتتتور خزف | مقاوم های سفال پوشش |
Desgaste – resistente cerámica | Износоустойчивая керамика

Wear Resistant Ceramics include lining plate, lining slice, welding brick, piping brick, circle brick, sleeve, axle sleeve and fashion parts. They are produced from high purity alumina, zirconia or silicon nitride, under process of high pressure molding and high temperature sintering.

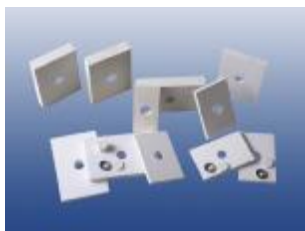
Wear Resistant Ceramics are with superexcellent properties of wear resistant, corrosion proof, high temperature resistant and super long working life. They are easily installed onto the components which require abrasion proof and corrosion proof for various industrial equipments by mechanical welding or binder sticking, especially for the usage of feeding and gathering the high temperature flue gas and granule materials, and sewerage treatment. They are widely applied for electric power, petrochemical, metallurgy, mining, cement, sewage disposal, logistic, coal, foodstuffs and tobacco industries.

Main Properties:

- High wear resistance
- High strength
- High Temp. resistant
- Corrosion proof
- High tenacity
- Light deadweight

Main Technical Parameters

Items		Material	Al ₂ O ₃				ZrO ₂	Si ₃ N ₄
Main Chemical Composition	Al ₂ O ₃ >		90%	92%	95%	99%	-	-
	ZrO ₂ >		-	-	-	-	95%	-
	Si ₃ N ₄ >		-	-	-	-	-	20%
Density (g/cm ³)	>		3.5	3.6	3.7	3.9	6.0	3.2
Bending Strength (MPa)	@20°C		340	345	350	520	1000	600
Compressive Strength (MPa)	@20°C		>2.5					
Young's Modulus (GPa)	@20°C		300	310	320	380	210	260
Rockwell Hardness (kg/mm ²)	20°C		90	92	94	98	—	—
Vickers Hardness (kg/mm ²)	@20°C		—	—	—	—	1100	1300
Rupture Strength (MPa)	@20°C		4	4	4	5	6	4
Thermal Shock Resistance (°C)			160	160	160	160	300	480



Characteristic:

- Hardness equal to diamond, higher than all the wear resistant metal.
For the sliding wear, it is 5 times higher than the nickel-chromium hard cast iron.
- Easy operating and installing, 3 times thinner than metal wearable materials.
- Wear Resistant Ceramics can bear temperature higher than 1300°C.
- By selecting suitable material and thickness, the wearable ceramics' working life can be 8-30 years.

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Available Type and Specification

1). Flat Brick / Holed Brick | 平板砖/孔砖 2). Circle Brick | 弧形砖

Type	Length	Width	Thickness
Flat Brick (mm)	10	10	3-10
	17.5	17.5	4-10
	23.7	23.7	5-15
	50	25	5-10
	50	50	5-15
	100	100	6.5-15
	150	60	10-25
	150	100	6-25
Holed Brick	120	80	6-20
	150	100	12-50

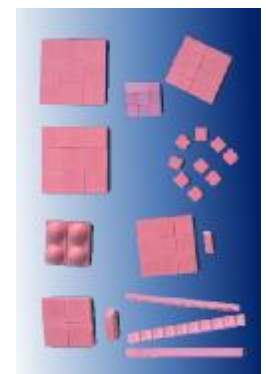
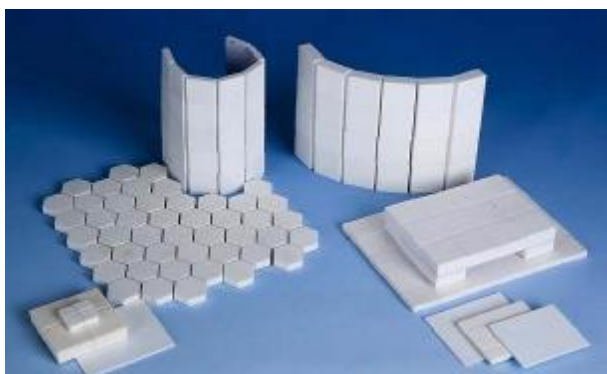
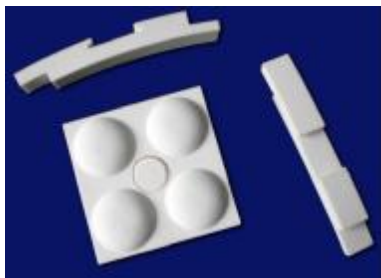
Customized Specifications available

Conduit ID 管道内径	Unilateral Angle 单边角度	Length	Width	Thickness
152-228	9°	230	35	12.7
228-413	6°	230	42	12.7
413-510	5°	230	50	12.7
510-641	5°	230	60	12.7
152-228	9°	150	35	12.7
228-413	6°	150	42	12.7
413-510	5°	150	50	12.7
510-641	5°	150	60	12.7
203-254	9°	230	40	25.4
254-356	6°	230	50	25.4
356-438	6°	230	57	25.4
438-641	6°	230	65	25.4
203-254	9°	150	40	25.4
254-356	6°	150	50	25.4
356-438	6°	150	57	25.4
438-641	6°	150	65	25.4

Customized Specifications are available

3). Fashioned Brick | 异型砖

Customized Specifications available.



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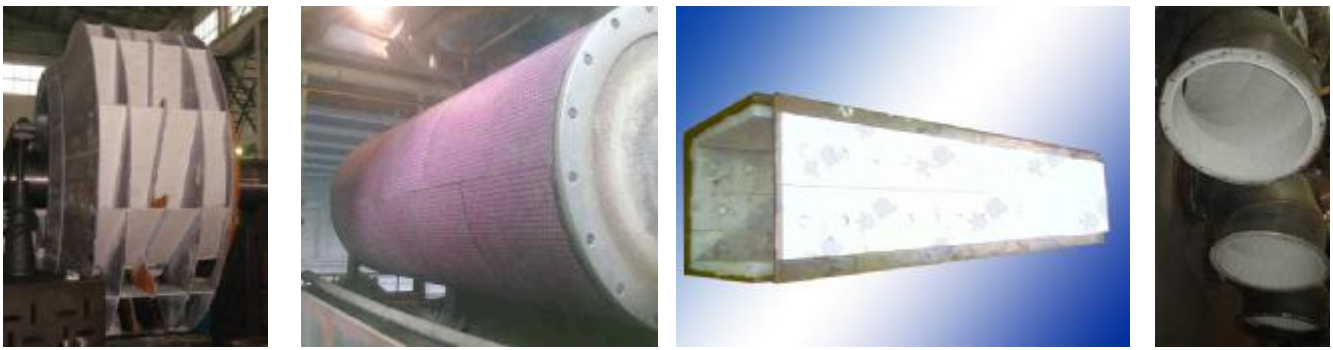
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The Style of Wear Resistant Ceramics | 耐磨陶瓷制品的各种形式

Sketch Map			
Style	Lining Plate	Flat Brick	Flat Welding Brick
Specification	L x W x H	L x W x H	L x W x H Welding Hole*: d1xd2xh1xh2
Application	Narrow dimension or Heterotype surface	Non-vibrational surface	Vibrational surface / surface with special requirement
Sketch Map			
Style	Piping Brick	Piping Welding Brick	Circle Brick
Specification	LxW1/W2xH	LxW1/W2xH Welding Hole*: d1xd2xh1xh2	LxR1xR2x α
Application	Round or polygon wear resistant conduit	Wear resistant conduit with high requirement	Wear resistant conduit and cambered surface
Sketch Map			
Style	Circle Welding Brick	Sleeve	*Sketch Map for Welding Hole On Welding Brick
Specification	L x R1 x R2 x α Welding Hole*: d1xd2xh1xh2	D x d x H	d1 x d2 x h1 x h2
Application	Wear resistant conduit and cambered surface	High grade or special requirement conduit	With ceramic plunger and Metal welding slice.