

BEING A FORERUNNER IN THE FIELD OF WEAR RESISTANT CERAMIC



Pingxiang Chemshun Ceramics Co.,Ltd

Company Introduction · Product · Producing Process · Quality Control · Market/Sales/Service · Company Culture



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01



Company Introduction



1.1. Company Information

- Chemshun was founded in 2002, It is a professional manufacturer of wear resistant ceramic liners, Ceramic thermocouple Tube, ceramic grinding media and wear protection solution. Chemshun's major raw material is imported from Australia ,Japan and France.Chemshun was certificated by ISO9001, ISO14000, ISO18000 and SGS. 60% products are exported to South America,American, South Africa,Australia,and South East Asia countries.
- With 19 years experience in the wear field,chemshun successfully solve the customer's problem of :wear in bulk materials handling and help customers reduce the maintenance costs and minimize downtime to prolong the equipment usage life and improve the factory performance.



1.2. Base Data Company Information

Item	Date
Company Founded	2002
Staffs	120
Company Area	15,000m ² +15,000m ² (New Factory under construction)
International Trade Experience	19 years
Factory	2
Production Capacity	5,000 Tons/ Year (Current factory)+ 5,000 tons/Year (New factory built)



01

Company Introduction



Chemshun Ceramics

1.3 Organizational Structure





1.4. Chemshun Ceramics Advantage

- ◆ With experience of the exporting for 19 years.
- ◆ Audit by ISO9001 and strictly do according to this during the whole production.
- ◆ Chemshun pays attention to environment control and Employee's occupational health and safety. Be audit by ISO14000,ISO18000.
- ◆ Superior quality of the product compared with other competitors. Especially the wear resistance.
- ◆ Can do the CAD drawing, and recommend the suitable products according to the client's different application.
- ◆ Can do the installation on site.
- ◆ Excellent after sale service to follow up the performance of each batch of goods.
- ◆ Have R&D department to make innovation and design new product.



01

Company Introduction



Chemshun Ceramics

1.5. Company View



Chemshun Chairman
Mr. Zhong Shengbo



Chemshun Staffs



02



Product



02

Product



Chemshun Ceramics

Flagship Products



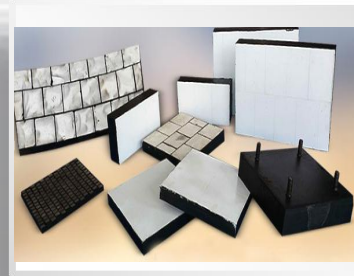
Series 1

Wear Resistant Ceramics
ceramic tile;
ceramic cylinder;
ceramic segments
ceramic block
ceramic tile mesh
Pre-engineered ceramics



Series 2

Ceramic Beads for Mining Industry



Series 3

Rubber Ceramic Wear Liner
rubber ceramic wear plate
ceramic hose



Series 4

Ceramic thermocouple tube
(Alumina Insulated Tube)



2.1 Series-1 : Wear resistant ceramics

◆With good wear resistance and impact resistance,the wear alumina ceramics are widely used in the mining,power plant,steel plant and cement industries,it can increase operational efficiencies by extending plant and equipment life ,reduce the unnecessary down-time and maintenance cost.

◆Types of the wear resistant ceramics

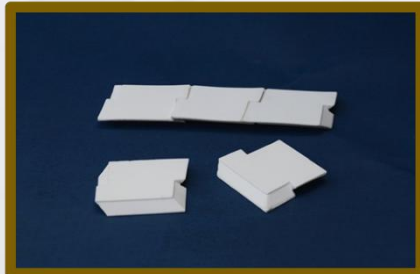
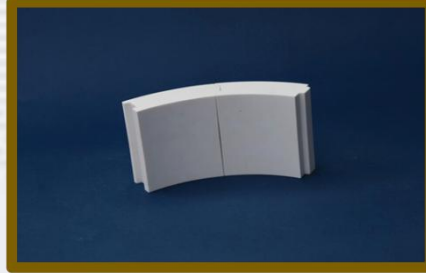
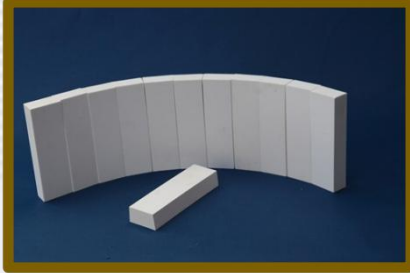
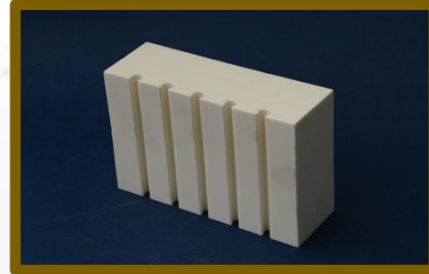
- ✓Ceramic tiles
- ✓Ceramic lining pieces
- ✓Ceramic pipe liner
- ✓Engineered Ceramic lining

★ **New-ZTA Ceramic**



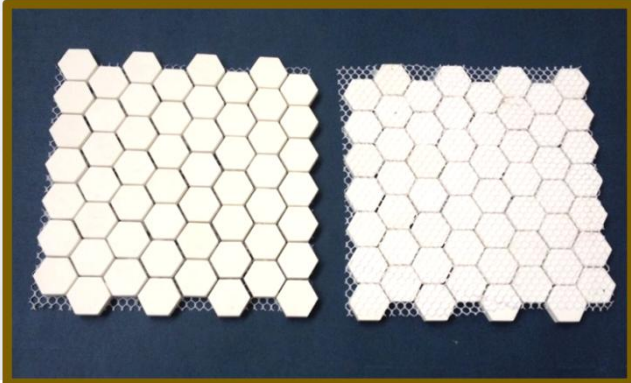
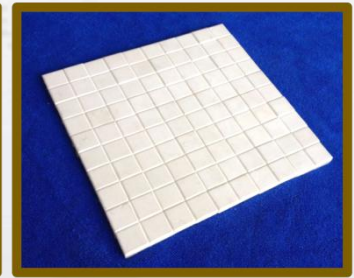
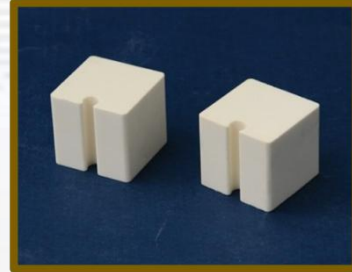


2.1.1 Series 1- pictures of Alumina ceramic tiles



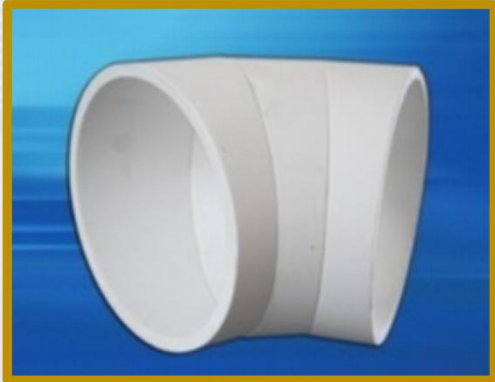


2.1.2. Series-1 : Pictures of Lining pieces and blocks





2.1.3. Series-1 :Pictures of alumina ceramic tube





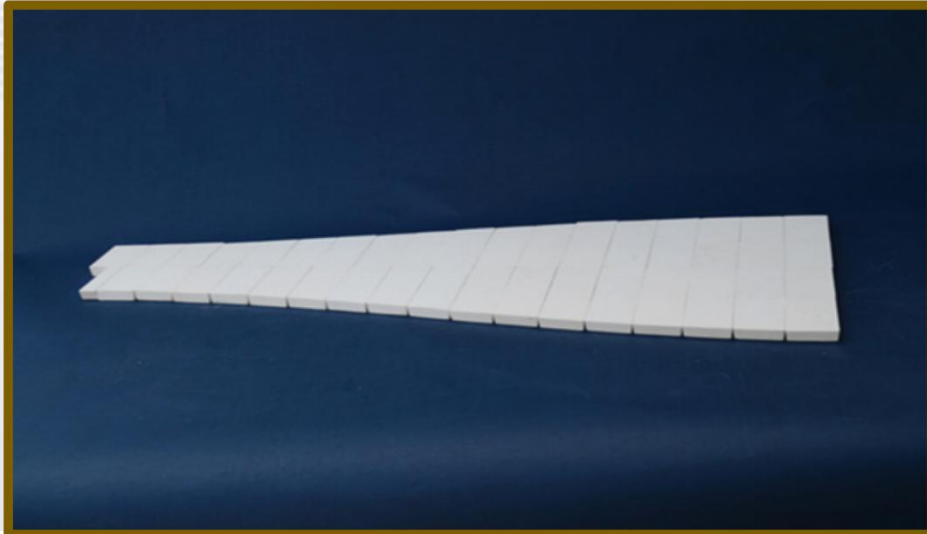
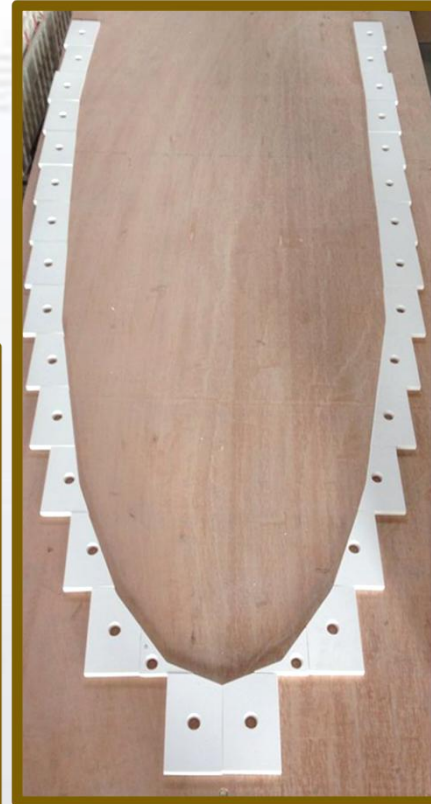
02

Product



Chemshun Ceramics

2.1.4. Series-1 : Engineering ceramics





2.1.4. Types of Chemshun Products

- We have two types of the wear ceramics ,**92% Al₂O₃** and **95% Al₂O₃** and **99% Al₂O₃**.
- In 2016 year,we have developed a new product **ZTA (Zirconia toughed Alumina)** which has better wear resistant and impact resistant compared with 92%, 95% and 99% product.

Character of the alumina ceramics:

- ✓Excellent abrasion resistance.
- ✓Excellent impact resistance
- ✓Excellent High hardness
- ✓Excellent heat resistance up to 1500 degree centigrade.
- ✓Excellent corrosion resistance (Resist the strong alkaline, strong acid slag and liquefied materials)
- ✓Smooth Surface can reduce barrage and friction coefficient to prolong the device working life
- ✓Low density reduce the lined equipment weight and improve the equipment working effectiveness.
- ✓Easily and quickly installed



2.1.5. Technical Data of Chemshun Wear Resistant Ceramics

Item	Chemshun 92 I	Chemshun 92II	Chemshun 95	Chemshun ZTA
Al ₂ O ₃ (%)	92	92	95	75-80%
ZrO ₂ (%)	-	-	-	20-25%
Density (g/cc) Densidad	3.60	3.60	3.65	4.2
Vickers hardness (HV10) Dureza Vickers (HV10)	1000	1150	1200	>1300
Rockwell hardness (HRA) Dureza Rockwell	80	85	87	>90
Flexural strength(20°C, Mpa)	270	300	320	350
Fracture Toughness (Mpa.M ^{1/2}) Resistencia a la fractura	3-4	3-4	3-4	3.7
Maximum operation temperature (°C) Temperatura maxima de operacion	1450	1450	1500	1600



2.1.6. The Advantages Chemshun Wear Resistant Ceramics Compared to Other Materials

1. Higher Hardness

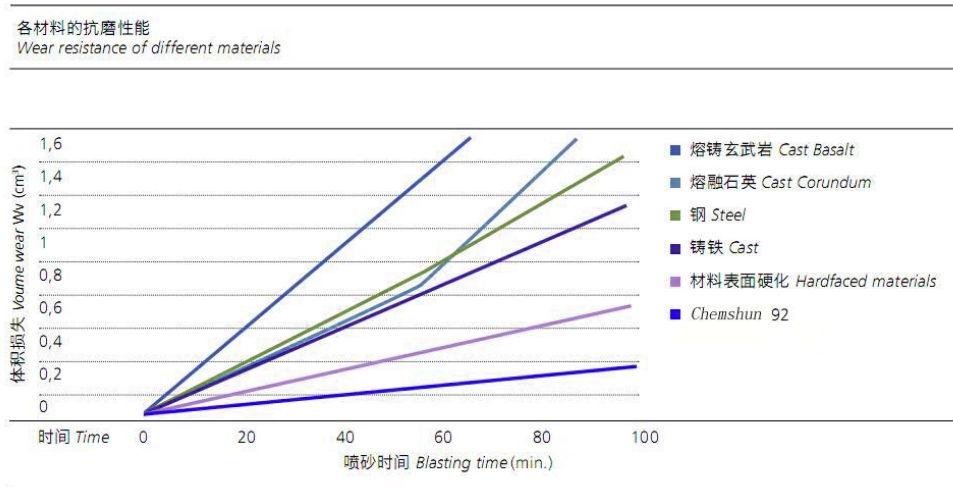
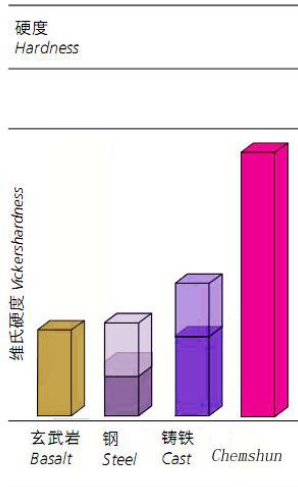
Its rockwell hardness is HRA80-90 and the Moh 's hardness is up to 9 grade with is only less than diamond.

2. Superior Abrasion-resistance

Its abrasion-resistance is 171.5times of Chrome steel and 260 times of manganese steel materials.

3. Light weight

Its density is 3.6-3.75g/cm³, it is only half weight of steel, and could reduce the load on equipments.

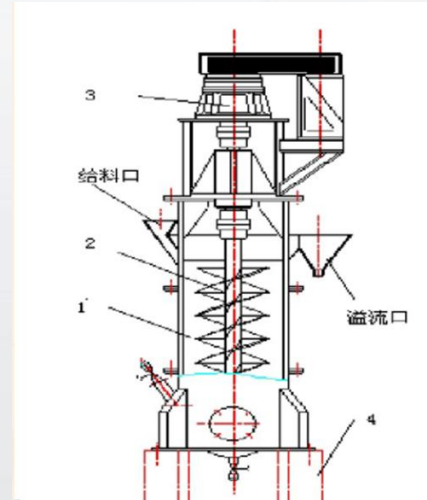




2.6.1 Series-2 : Ceramic Beads for Milling and Mining Industry



Chemshun ceramic grinding media for mining is small size ceramic balls or ceramic beads, used in high intensity stirred mills for fine and ultra fine grinding. The ceramic grinding media with different composition and size, and good feature of high impact resistance, the property of inert and no pollution, the media can replace the traditional steel and chrome steel grinding media for applications where downstream processes are sensitive to surface and can also avoid the generation of slimes which combined with the traditional media and high wear rates.





2.6.2. TDS of Chemshun 95% Purity Alumina Ceramic Beads for grinding and Milling Industry

Technical:

No.	Attributes	Unit	CHEMSHUN
1	Alumina Content	%	95
2	Density	g/cc	≥3.65
3	Color	-	White
4	Water Absorption	%	0
5	Flexural Strength	Mpa	320
6	Moh's Density	Grade	9
7	Rock Well Hardness	HRA	87
8	Vickers Hardness(HV10)	Kg/mm2	1200
9	Fracture Toughness (Min)	MPa.m ^{1/2}	3-4
10	Thermal Expansion Coefficient	1x10 ⁻⁶ /°C	8.1
11	Maximum operation	°C	1500



2.6.3. TDS of Chemshun Ceramic grinding Beads for Milling plant and Mining Industry

Item	Main Composition	Diameter Range (mm)	Density (g/cm ³)	Color	Vickers Hardness (kgf/mm ²)	Application Suggestion
CS -26	Al ₂ O ₃ :45~60% SiO ₂ :34~45%	0.5~20	2.6~2.8	White	700-800	It's suitable for the stirred mill such as Metso's SMD and fine milling process of soft materials with low slurry density.
CS-32	Al ₂ O ₃ , SiO ₂ ZrO ₂	0.5~20	3.2~3.3	White	900-1000	It's suitable for the stirred mill such as Metso's SMD and milling the hard minerals.
CS- 36	Al ₂ O ₃ :>90%	0.4~25	3.5~3.75	White	1300~1350	It suitable for the Nano-size material grinding.
CS- 40	ZrO ₂ :55~65% SiO ₂ :30~35%	0.4~5.0	4.0~4.2	White	1000~1050	It's suitable for the high linear velocity conditions. Example, vertical and horizontal stirred mill, such as Outotec's HIGMill, Glencore's Isa mill. FLSmidth's VXP mill. It can grind the high density slurry of minerals.
CS-52	ZrO ₂ :80~90% Al ₂ O ₃ :10~20%	0.4~5.0	5.1-5.3	White	1350~1450	It suitable for the hard materials's superfine mills with high speed (up to 14m/S) and high energy input. For example: Outotec's HIG mill. FLSmidth VXP.
CS -60	ZrO ₂ :94~96% Y ₂ O ₃ :4-6%	0.2~40	5.95~6.05	White	1300~1400	1. Chemical materials, paint, printing, ink, pigment. 2. Advanced ceramics pastes or powder.
CS-62	ZrO ₂ :93~94% CeO ₂ :6~7%	0.6~4.0	6.1~6.2	Yellow Or Brown	1200~1250	3. Electronic pastes: gold platinum, silver, cuprum, nickel. 4. Food stuff, pharmaceuticals, cosmetics.



2.2.1 Series-3: Rubber ceramic liner

Technical data:

	Item	Value
Ceramics	Alumina Content	92%
	Density	3.60g/cm ³
	Moh's Hardness	9 Scale
	Rockwell A hardness	≥80HRA
	Impact strength	≥850Mpa
	Bending strength	≥270Mpa
Rubber	Tensile strength	14Mpa
	Tensile elongation rate	>450%
	Shore Hardness	60+/-5
	Tear Strength	30%
	Bond strength between rubber and ceramic	4Mpa
	Using Temperature	-40°C~100°C



The rubber ceramic liner is with high wear resistant ceramics vulcanized in rubber. The ceramics provide excellent resistance to wear, while the elasticity of rubber effectively dampens impact forces. This combination well solves the problem of the wear and impact areas.



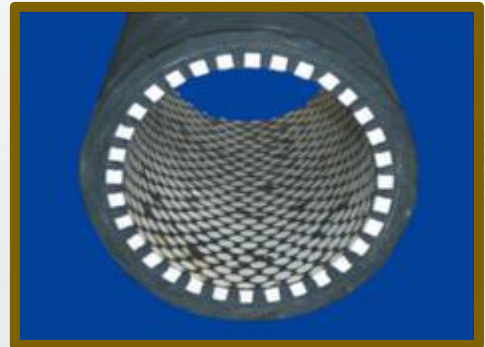
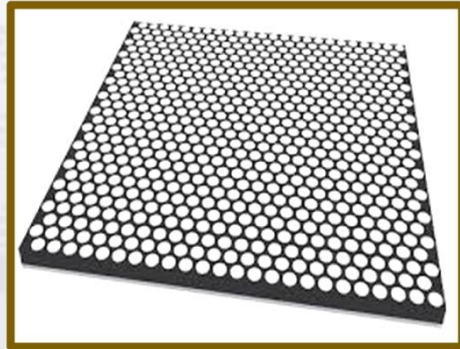
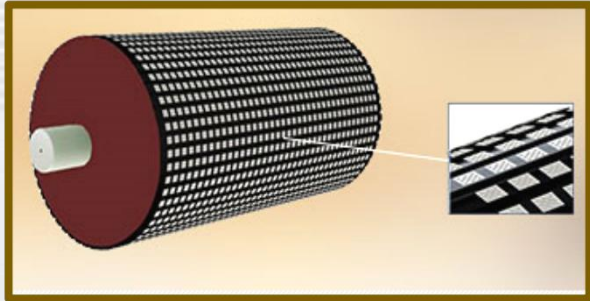
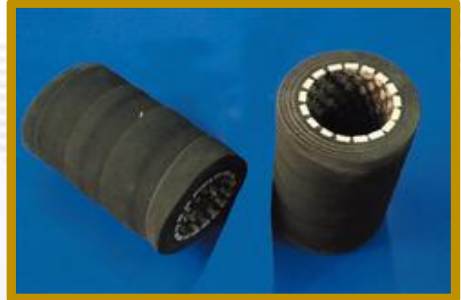
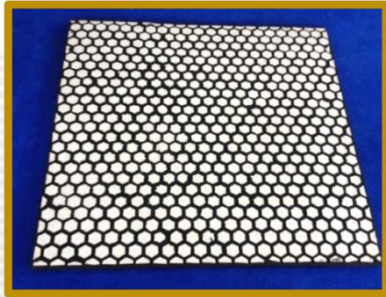
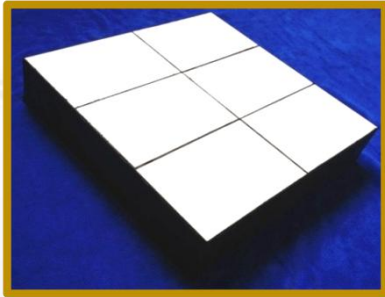
02

Product



Chemshun Ceramics

2.2.1 Series-3: Rubber ceramic liner





Application of wear ceramic liner

◆ Mining, Steel, Thermal power plant, cement, Chemical, port, other industries

Industry	System	Equipment parts
Mining	Material feeding	Hopper, bunker, chute
	mineral separation	Magnetic separation equipments
	Classifier system	Cyclone, Cyclone group,
	Material conveyor system	pipe, elbow, hopper, bunker, distributing outlet, Drive pulley
	Grinding system	Ball mill, sand mill, stirred mill
Thermal power plant	Coal feeding system	Wheel stacker reclaimer, hopper, coal feeder, coal feeding machine
	Powder system	Elbow, pipe, coal bunker, coal powder mixer, mill fan,
	Combustion system	Tangentially-fired burner,
	Ash service system	Fine ash pipe, waterpower jet, Valve
	Dust removal system	Wall of flue, support bar, baffle of air preheater

Products available for cement industry, steel plant, port, smelting industry, chemical industry.

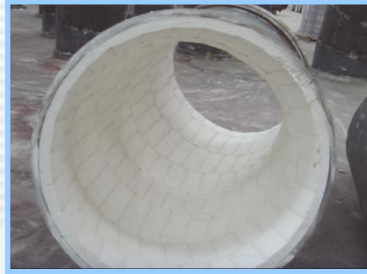
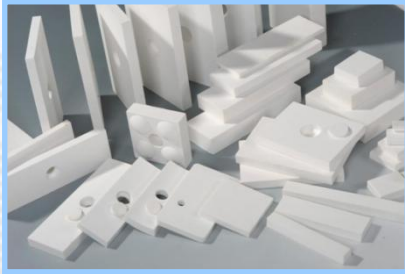


Applications-1

1) Alumina Ceramic Tile

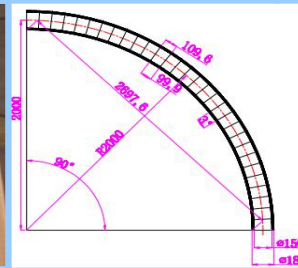
Application: pipe industry, coal mining, power plant, steel plant

Usage: Fixing on the surface of the equipment to wear resistance and strong impact to protect equipment and prolong the use-life of the equipment.



2) Alumina ceramic pipe

Usage: Installed into the steel pipe.





Applications-2

3) Wear Solution for Pulley

Application: power transmission. (transporting the mixture of coal and ore and usually under continuous operation for long time)

Usage: Put the dimple tiles into rubber belt, this could protect the pulley away the abrasion.



4) Alumina Tile Embedded in Rubber & Steel

Application: power plant, steel plant.

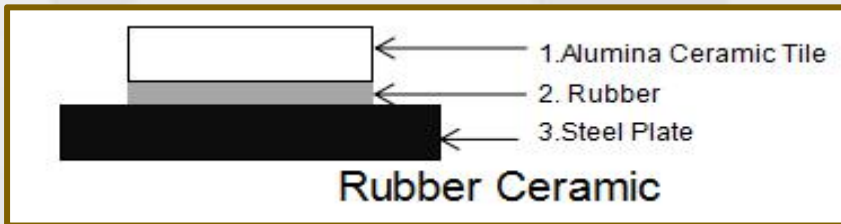
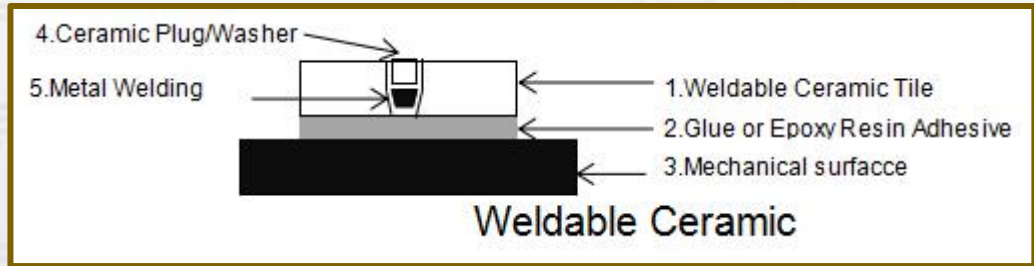
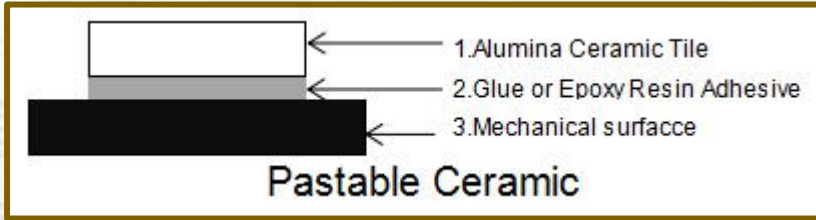
Usage: First embedding the tile into rubber, after vulcanize, fixing them on steel plate. then fix the products on the equipment such as coal chute, concrete bunkers. etc. this could protect the strong impact of the media and then could protect the equipment to prolong the use-life to save more cost.





Installation Guide

Normal methods for installation as below:





2.2.1 Series-4 : Pictures of Ceramic Thermocouple Tube (Alumina Insulated Tube)



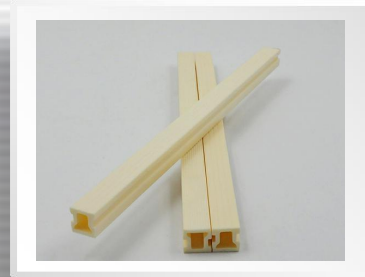
Picture 1



Picture 2



Picture 3



Picture 4



Detail

Alumina Insulated Tube

Alumina insulated tube is made of materials with good insulation, the main function is to separate the different pole items of the temperature measuring element, to avoid interference of the two poles or contact short circuit. When in use, the two poles of the temperature measuring element can be inserted into different holes in the same direction. After installation, protect with protective tube set.

Due to different use temperatures, it is subdivided into 99.7 porcelain (corundum), 99 porcelain (corundum), 95 porcelain (corundum), 85 porcelain (high-aluminum porcelain), 75 porcelain (mullite porcelain), and chemical porcelain with different alumina content. 40 aluminum, the higher the aluminum oxide content in the above materials, the higher the use temperature, the highest aluminum content vertical use 1710 degrees Celsius, the lowest aluminum content uses 1100 degrees Celsius.

Normal size: The conventional size of the insulating tube is 1mm to 8mm in outer diameter, the hole is divided into single hole, double hole, four hole and porous, the minimum hole diameter is 0.5mm, the longest length is 2500mm, other sizes can also be made according to user requirements



2.2.1 Series-4: Ceramic Thermocouple tube

Physical Properties kindly please find the right side:



Material		Alumina Content			
Characteristic	Unit	AL99.7	AL99.5	AL99	AL95
Content		99.7%	99.5%	99%	95%
Color		Ivory white	Ivory white	Ivory white	Ivory white,
Density	g/cm	3.94	3.9	3.8	3.75
Straightness		2‰	2‰	2‰	2‰
Hardness	Mohs hardness	9	9	9	8.8
Water absorption		≤0.2	≤0.2	≤0.2	≤0.2
Flexural strength	(20°C) Mpa	375	370	340	304
Compressive strength	(20°C) Mpa	2300	2300	2210	1910
Thermal expansion coefficient	10/°C	7.6	7.6	7.6	7.6
Dielectric strength	AC.kv/mn	10	10	10	10
Dielectric loss		<0.0001	0.0006	0.0004	0.001
Volume resistivity					
(20°C)	ΩNaN3	>1014	>1014	>1014	>1014
(300°C)		2*1012	2*1012	4*1011	2*1011
Dielectric constant	25°C@1HM	9.8	9.7	9.5	9.2
Thermal conductivity	W/m.k	35	35	34	20
Long-term use temperature	°C	1700	1650	1600	1400

03



Producing Process



3.1. Main Equipment for Production

Producing machine	Quantity
Grinding Ball Mill	10
Spray Granulating Tower	2
Ball Making Machine	8
Pressing Machine	25
Shuttle Kiln (furnace)	2
Tunnel Kiln (furnace)	1
Electric Kiln (furnace)	1
Vibrate Machine	1
Vulcanization Machine	10





3.2. Producing Process of Ceramic

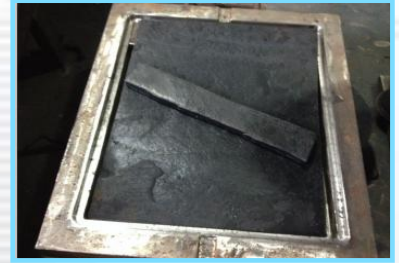




3.3. Producing Process of Ceramic Lined Rubber Plate



1. Prepare the ceramics, applied with adhesive



2. Put the ceramics into the steel frame

3. Put the rubber on the top

4. Put it into the vulcanization machine to vulcanize

5. Finish product

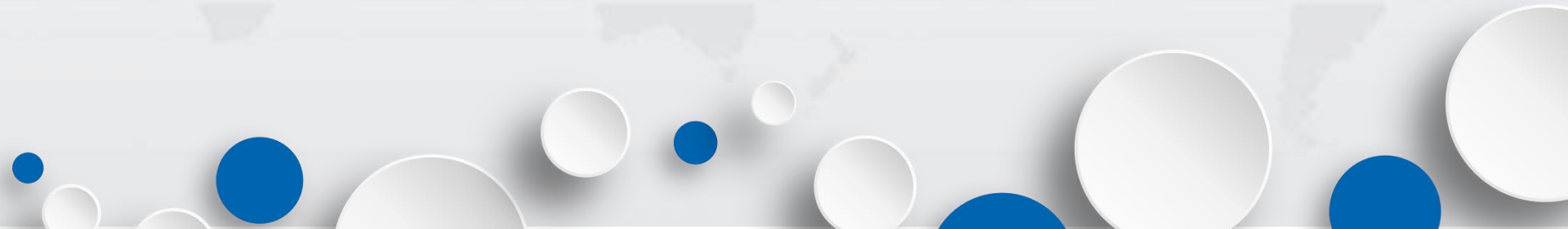
6. Pack into wooden case

7. Ready for delivery

04



Quality Control





4.1. Quality Control System

- ◆ Chemshun have the quality department, which is independent of producing department .
- ◆ Chemshun carries out the Management Systems ISO9001.
- ◆ Chemshun also pay attention to the environment management and employee's health ,safety,and passed the ISO18000 and ISO 14000 audition.
- ◆ Chemshun has the advanced inspection instruments to inspect the quality in each Producing process.
- ◆ Chemshun hold trains to strengthen our quality sense all the time .





4.2. Control During Producing Process



1. The raw material (alumina powder) must be inspected by Particle Size Analyzer.

2 After grinding the raw material, the slurry will also be inspected by Particle Size Analyzer.



3. After firing , we will get samples from up, middle , bottom of kiln randomly for inspection. Impact strength , also get the finished samples to national Inspection Organization for chemical inspect.



4.3. Control During Producing Process

- ✓ Raw material : Testing size and liquidity every batch of raw material by particle size analyzer.
- ✓ Semi-finished product: before firing, QC will randomly check each batch semi-finished products
- ✓ Finished product: After firing, product still on the kiln car, QC will randomly pick up the sample from the bottom, middle, up situation of kiln car and do the relative testing. After the cargo packaged well, the QC will inspect from the package well products.



05



Market · Sales · Service



5.1. Market





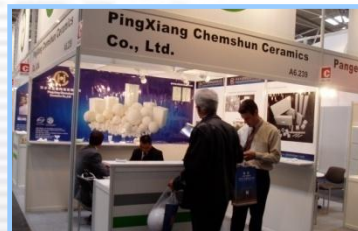
5.1. Chemshun Ceramics Attended Exhibitions



2004 Thailand



2005 Guangzhou



2006 Germany



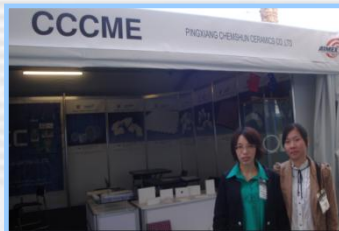
2007 Beijing



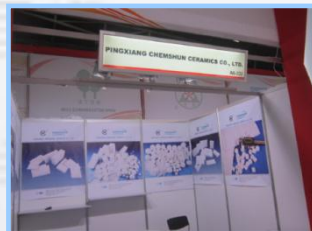
2008 Singapore



2009 Germany



2011 Australia



2012 Beijing



2012 Dubai, SA



2013 Peru



2014 South Africa



2016 America



2018 Germany



2018 Chile



2018 Australia



05

Market · Sales · Service



Chemshun Ceramics

5.1. Visiting Customers





05

Market · Sales · Service



Chemshun Ceramics

5.2. Part of Chemshun Ceramics Customers



TH. SCHOLTEN GMBH & CO. KG



景焦集团
景德镇焦化工业集团



5.3. Service

◆ *Site Surveys*

we have experienced engineers that are available for site visits to assess wear problems and take detailed measurements.

◆ *Design & Specification of linings*

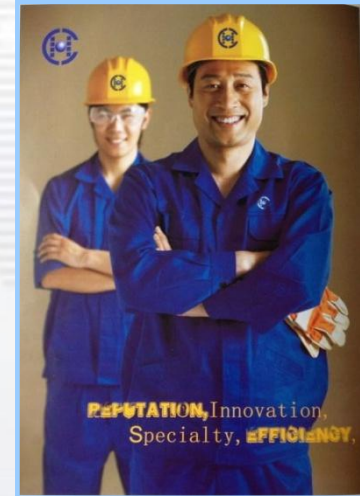
Once we has the application parameters, the design and specification of lining can proceed. we will assess potential or present wear to optimise the type and design of lining and/or fabrications needed.

◆ *Full installation service*

We offers full installation service for all wear products on-site and in-house.

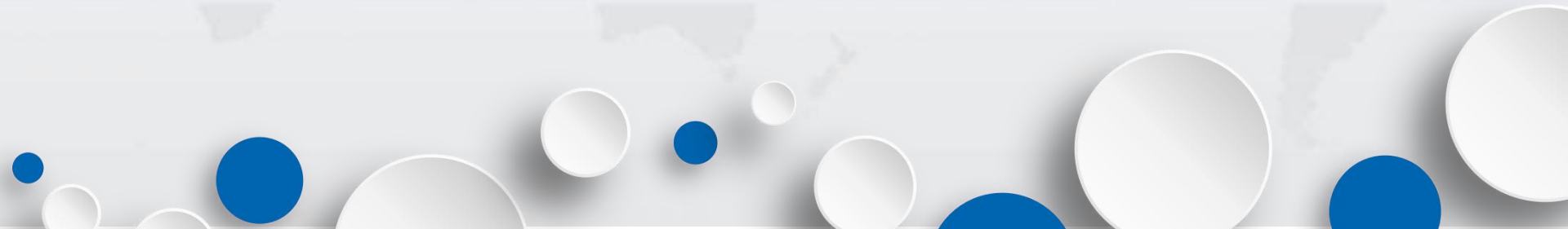
◆ *Steel fabrication*

◆ *Product sales*





Company Culture





6.1. Company Culture

✓Company mission:

Being a forerunner in the field of wear resistant ceramics

✓Company core values:

Reputation, Creating, Growth, Share, Pleasure

✓Company welfare and activities:

- Provide the trains for every member including skill, safety knowlegde,etc.
- Provide five insurance and house fund payments to every member
- Go out for tour every year
- Hold game and sport matches every month
- Send birthday gift to every member
- Invite members' family to company party
- Reward advanced workers
- Provide the festival benefits to every member
- Out for extended training





06

Company Culture



Chemshun Ceramics

6.3. Our Team





in English



Contact Us

Pingxiang Chemshun Ceramics Co.,Ltd

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