Arora Refractories

Manufacturer and Supplier of Refractories

(MUMBAI, INDIA)









CHANNEL PARTNER OF

calderys®

Morgan ThermalCeramics

Unless you have 100% customer satisfaction...you must improve.

About us



We would like to introduce our self as leading manufacturer, Supplier and Stockiest of Refractory and insulation products since 1977 having corporate office at Mumbai, India.

We have more than 400 satisfied customers spread across different segments like Boilers, Ferrous and Non Ferrous foundry, Steel Rolling Mills, Forging furnace, Heat treatment furnace, Steel Manufacturers, Cement, Glass, Sponge iron and Pig iron plants, Lime Kilns, Coke Oven plants, Petrochemical and Fertilizers.

Our highly motivated and dynamic team is headed by Shri. Ramesh Arora (Founder & Senior Partner) who has more than 50 years of experience in Refractory Design, Energy Saving by using insulation products and refractory application.

We have large number of reference where in Arora Refractories has become a long term partner with the customers by providing them cost effective solutions to bring down the operation cost.

Besides manufacturing, we also trade in all kinds of Refractory products such as Firebricks , Castables & Mortars , Ceramic Fiber Products , Calcium Silicate Blocks & Pipe coverings , Insulations, etc.

We also manufacture Ceramic and Metallic Anchors for lining of castables, ceramic fibre and roof anchors.

Our long experiences confronting and resolving numerous problems during and after Refractories linings have entailed us with rich experiences. The low cost can be achieved for you by selecting proper materials available at low cost from re-known sources producing quality products through suggestions of proper configuration of refractory lining works. We have achieved expertise because of involvements with various furnace manufacturers and consultants at furnace design stage. The market experience and in depth survey of various refractory manufacturers products and capabilities also can be of great advantages in economizing your refractory cost. Besides above, we are also supported with team of refractory lining contractors and undertake refractory lining works on in situ basis.

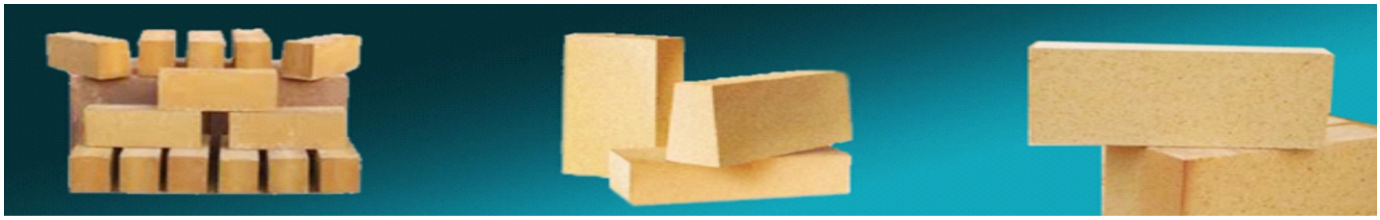
We have facility like Batch Type heating Furnace , 2 sets of Pan Mixer, Needle & Table Vibrator, large number of moulds collection, Storage yard to facilitate the lining and pre heating.

We are authorized dealer & stockiest of reputed manufacturers like M/s. Calderys India Refractories Ltd,, M/s. Murugappa Morgan Thermal Ceramics Limited and representing many other quality manufacturers.

Our product range are Refractory Bricks of alumina silicate, basic refractories, Castables , Mortars, Ceramic Fiber Products and its anchoring systems, Calcium Silicate Blocks, Silicon Carbide shapes, electric heating element bricks, etc.

We can considerably bring down your inventory cost, as we normally maintain substantial stocks to meet your urgencies.

FIREBRICKS & INSULATION BRICKS



Product	Al_2O_3 % Min	Fe_2O_3 % Max	PCE O.C.	B.D Gm/Cc Min	AP % Max.	CCS Kg/Cm^2	R.U.L Ta°C Min	PLC % Max AT/ 2 Hrs	Characteristics & Uses
AR-30	30	2.5	30	2.0	25	200	1300	1350±1.0	General Purpose Medium Heat Duty Bricks
AR-40	40	2.5	32	2.05	25	200	1400	1400±1.0	General Purpose High Heat Duty Bricks
AR- IS-8 Commercial	36-38	2.5	31	2.0	24	200	1400	1400±0.5	Fireclay Blocks / Bricks For Glass Melting Furnace
AR-45	45	2.5	34	2.25	23	300	1450	1450±1.0	Super Duty Brick For General Purpose
AR-45D	45	1.5	33	2.3	20	450	1470	1480±0.5	General Purpose Coke Oven, Blast Furnace
AR-50B	50	2.5	35	2.3	22	350	1430	1450±1.0	Suitable For Burning Zone of Cement Rotary Kiln, Ladle Lining
AR-60B	60	3.0	36	2.5	23	350	1430	1600±1.0	Suitable For Burning Zone of Cement Rotary Kiln, Ladle Lining
AR-62D	62	1.2	-	2.55	16	650	1580	1600±0.3	Blast Furnace, Coke Oven, Calcination & Ceramic Industry
AR-70B	70	3.0	36	2.65	23	400	1470	1600±0.3	Suitable For Burning Zone of Cement Rotary Kiln, Ladle Lining
AR-80B	80	3.5	36	2.75	23	400	1500	1600±1.0	Special Application In Refineries Petro-Chemicals Etc.
AR-SMT	56	1.5	36	2.35	21	450	1500	1500±0.5	For Glass Tank Furnace, Blast Furnace, Stove Checkers

INSULATION BRICKS

	CFI	HFI (II)	HFI	HFK	MICA
BD (Gm/Cc)	0.75 - 0.80	0.85 - 0.95	0.9 - 1.1	1.0 - 1.1	0.48 - 0.53
CCS (Kg/Cm^2)	15	18	40	40	7
Al_2O_3 (%)	28	30	30	40	-
SiO_2 (%)	60	62	50	50	-
Fe_2O_3 (%)	2	2	2	1.5	-

*Insulating Mortar Suitable to above specs available

- The technical data pertains to machine pressed standard bricks in compliance with the testing standard. These data are typical approximate guide value. Not to be construed as a binding specification.
- Size tolerance ±1.% or 1.5mm whichever is greater.
- Bricks with properties of higher values available where applications require the same.



Product Type	Whytheat A	COILCOAT A INDUCTION	Whytheat K	INSULYTE 11	ACCMON 70	FIRECRETE SUPER	BOILERCRETE	THERMOCRETE SUPER	ACCOSET 50
Max. Service Temperature	1700°C	1650°C	1600°C	1300°C	1600°C	1450°C	1000°C	1350°C	1500°C
Max Grain Size	5 mm	0.5 mm	5 mm	6 mm	6mm	5 mm	5 mm	5 mm	1.5 mm
Al_2o_3 (%)	85 - 88	82 - 87	56 - 60	--	68 - 71	68 - 72	–	52 - 57	45 - 50
CaO (%)	5.8 - 6.5	5.8 - 6.8	4.00 - 4.70	--	2.0 - 2.50	5.2 - 6.0	–	--	0.8 - 1.0
Fe_2o_3 (%)	1.2 - 1.8	1.0 - 1.7	1.00 - 1.25	3.0 - 3.5	1.40 - 2.0	4.5 - 5.5	–	4.5 - 5.8	3.6 - 4.0
Avg Bulk Density (gm/cc)	2.65 - 2.80	--	2.15 - 2.25	1.2 - 1.35	2.60 - 2.70	2.50 - 2.65	2.0 - 2.15	2.4 - 2.5	--
CCS (1550°C / 3 hrs) (kg / cm^2)	650 - 800	--	350 - 500	25 - 40	800 - 1100	350 - 470	170 - 250	160 - 230	--
Refractoriness (OC at t_a°C)	+37 / + 1820	+37 / + 1820	+31 / + 1683	+14 / + 1398	+36 / + 1804	+31 / + 1683	–	20 / + 1564	32 / + 1717
Water Required (%)	8.0 - 10.0	14 - 17	10.60 - 11.80	29 - 36	4.5 - 5.5	10 - 11	11.0 - 13.0	9.5 - 12	24 - 28

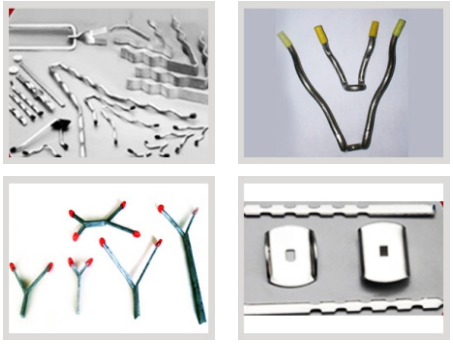
PCPF DURA BLOCKS

	For Coal Fired	RFA 90%	RFA Super 95%
Service Temp°C	1700	1700	1800
Al_2o_3 (%)	88	88	92
Fe_2o_3 (%)	0.50 to 1.00	0.9 to 1.10	0.16
CCS (kg / cm^2)	1000	1190	1100



ANCHORS OF DIFFERENT GRADES & QUALITY

METALLIC ANCHOR

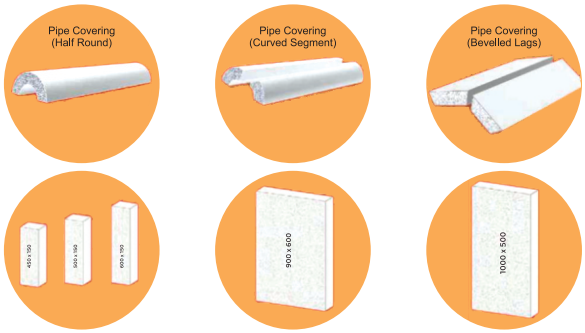


CERAMIC ANCHOR



CALCIUM SILICATE PRODUCTS
ACID RESISTANT BRICKS & TILES





Physical Properties

Product	Size mm	Thickness mm	BD Kg./m3	Flexual Strength MPa	Temp. °C
Calcium Silicate Blocks	900 x 600	25 - 100	250	0.87 - 090	800/1000/1100
	600 x 150	25 - 100	250	0.87 - 090	800/1000/1100
Rigid Pipe Covering	600 / 450	25 - 75	250	0.8 - 0.9	800

Chemical Composition

Characteristics	H-800 Grade	H-1000 Grade	H-1100 Grade
SiO2 %	40 - 44	42 - 46	44 - 48
CaO %	34 - 38	34 - 38	35 - 38
Al2O3 %	3.2 - 4.5	3.2 - 4.5	3.5 - 4.5
Fe2O3 %	~ 0.7	~ 0.7	~ 0.7
MgO %	~ 1.3	~ 1.3	~ 1.3
LOI	< 15 at 800°C	< 14 at 950°C	< 11 at 1025°C

TECHNICAL SPECIFICATIONS

S. No.	Properties	Units	BLOCKS H-800 Grade	BLOCKS H-1000 Grade	BLOCKS H- 1100 Grade	PIPE SECTION H- 800 Grade
			Typical Values	Typical Values	Typical Values	Typical Values
1	Temperature, max service	°C	800	1000	1100	800
2	Average Bulk Density, dry	Kg/m^3	220 - 280	240 - 280	260 - 300	220 - 280
3	Flexual strength, (min.)	KN/m^2	300	350	600	300
4	Compressive Strength, reduction in thickness not to exceed under a load of : i) 415 KN/M^3, dry ii) 170 KN/M^2, after 18 hrs immersion in water	 % %	 5.0 5.0	 5.0 5.0	 5.0 5.0	 5.0 5.0
5	Heat Resistance, under seeking i) Linear Reheating Shrinkage (max), 12 Hours ii) Loss in Mass (max.) iii) Compressive Strength, reduction in thickness not to exceed under a load of 345 KN/m2 (max.)	 % % %	 2 of 800°C 14.0 5.0	 2 of 950°C 12.0 5.0	 1.5 of 1050°C 10.0 5.0	 2 of 800°C 14.0 5.0
6	Thermal Conductivity at mean temperature (max.) 300°C 400°C 500°C 550°C	W/m-K	 0.078 0.097 - -	 0.078 0.097 0.118 -	 0.076 0.090 0.110 0.114	 0.078 0.097 - -
7	Moisture contents, by weight, (max)	%	5.0	5.0	5.0	5.0
8	Alkalinity	pH	8-11	8-11	8-11	8-11

*Tested in accordance with BS-874 Cold Face 40 deg. C. Also as per IS 9490, water colorimeter apparatus.

Acid Resistant Bricks & Tiles

PRODUCT	Chemical SiO_3 %	AL_1O_3 %	Fe_1O_3 %	TiO_2 %	CaO + MgO %	$NA_2O + K_2O$ %	Water Absorbtion %	Physical C.C.S. Kg / cm^2	Flexural Strength Kg / cm^2	Acid Resistance % loss in Wt.
ACID PROOF 230x115x75 mm	68.2	24	1.8	2.1	0.5	3.4	3	730	125	0.4
ACID PROOF 230x115x38 mm	68.2	24	1.8	2.1	0.5	3.4	3	730	125	0.4

- Sodium Silicate Base Powder & Solution • Potassium Silicate Base Powder & Solution
- Furan Resin Powder & Syrup • Bitumin 90/15 Grade & Grade & Primer • Mastik Powder (A.R.) also available

	PRODUCTS	GRADES	CLASSIFICATION Temperature (0C)	Thickness (mm)	Dimension (mm)	Density (kg/m^3)	Thermal Conductivity (w/mk) (at mean temperature of 600° depending on density)	APPLICATION AREA (More information is available in product data sheets & application sheets
	BULK FIBRE	(1) Cerafiber, Standard (2) Cerachem Fiber, Zirconia	(1) 1260 (2) 1425	N.A.	N.A.	N.A.	N.A.	Expansion joints, packing & sealing, fillers for other materials, secondary processing to vacuum formed products.
	SUPERWOOL PLUS BLANKET	(1) Standard,	(1) 1200	(1) 12 & 25 Other thickness such as 6,38, 50 etc on request	(1) 610 x 7300-Roll size, Other sizes on request	(1) 64, 96 & 128 160 on request	(1) 0.126 - 128 kg/m^3	Power generation especially HRSG duct insulation , Chimney Insulation, Process Heater Linnings,Pipe Wrap,Annealing Furnace Linning, Furnace & Kiln backup insualtion,Storage heater insulation, Domestic oven insulation, Aluminium transfer launders covers, Welding stress relief.
	CERABLANKETS CERACHEM BLANKETS	(1) Cera (2) Cerachem	(1) 1260 (2) 1425	(1) 13, 25, 38, 50 (2) 13, 25, 38, 50 Other thickness on request	(1) & (2) 610 x 7300-Roll size, Other sizes on request	(1) & (2) 96, 128 Other densities on request	(1) 0.150 - 128 kg/m^3 (1) 0.150 - 128 kg/m^3	Furnace, Kiln, Fired Heaters, Hydrogen Reformer linings, Also insulation of Steam and Gas Turbines' Investment casting moulds, reusable insulation tor field stress relieving, fire protection and acoustic insulation at high temperatures.
	SABER BLOCS / PYROFOLD / Z-BLOC MODULES	(1) Cera, Standard (2) Cerachem, Zirconica	(1) 1260 (2) 1425	(1) 150, 200, 250, 300 (2) 200, 250, 300 Other thickness on request.	(1) & (2) 305 x 305	(1) & (2) 128, 160,190	(1) 0.149 (2) 0.139	High Temperature Furnace, Kiln and Heater linings where modular construction is preterred. Quick installation and easy maintenance are the advantages to using modules.
	VENEERING MODULES	(1) Cera, (2) Cerachem	(1) 1260 (2) 1425 (3) 1500 & 1600 on request	(1) & (2) 50 Other thickness on request	(1) & (2) 300 x 300 Other thickness on request	(1) & (2) 160		Hot face veneering for existing furnaces, kilns and heaters where the lining is in a reasonably good condition and does not require immediate replacement. Veneering offers reduction in heat loss, leading to fuel savings. Further, the life of refractory lining is extended due to protection offered by ceramic fibre.
	MOIST FELT	(1) Standard	(1) 1260	6, 12	610 x 915 Other size on request	Wet - Min 900 Dry - Min 386		Hot face layers where gas velocities are encountered in furnaces, heaters and kilns, Launder linings in aluminum plants. Hot face linings in duct work carrying gases. Note: The product has a normal shelf life of 6 months if not exposed to atmosphere, and is therefore supplied in airtight packing.
	BOARD & SHAPES	(1) 1260 (2) "Strong" (3) 1400 (4) 1600 (5) HS - 45 (6) SS 800	(1) 1260 (2) 1260 (3) 1400 (4) 1600 (5) 1260 (6) 1260	(1) 5,10,15, 20, 25, 38 & 50 (2) 5,10,15, 20, 25, 38 & 50 (3) 5,10, 15, 20, 25, 38 & 50 (4) 15, 25 (5) 5,10, 15, 20, 25, 38 & 50 (6) 5,10, 15, 20, 25, 38 & 50 other sizes on request.	500 x 1000 600 x 1000 Other size on request	(1) 260 (2) 330 (3) 230 (4) 200 (5) 720 (6) 800 Above densities are minimum	(1) 0.113 (2) 0.125 (3) 0.102 (4) 0.079 (5) 0.147 (6) 0.147	Hot face linings in laboratory type and other small Furnaces & Kilns. Hot face linings at LTM Kiln cars. Combustion chamber linings. Molten aluminum handling applications. Back up insulation in glass tanks, aluminum furnaces and ceramic kilns. Backup installation in steel ladles.
	TEXTILES	(1) Fiber Glass Reinforced (2) S. S. wire Reinforced	(1) 1260 (2) 1260	Cloth - 2.3 mm. Rope is available it in diameters 6, 12, 19, 25, 38 & 50. Other diameters on request. Tape - 3mm. Available in 25, 50, 75, 100, 125, 150 mm width. Other widths on request.	Cloth - 1 mtr Wide 10 mtr. long. Rope & Tape - 25 mtr. Coils	Cloth & Tape 1.1 kg / m^2 Rope 330 kg /m^2 Depending on diameter		Cloth is used as thermal curtains, welding curtains, Tape and rope are used tor inspection door seals, gaskets, flange seals, expansion joints, pipe lagging, cable protection, Gas turbine insulation.
	PAPER	(1) Cerafibre, Standard (2) Cerachem fibre Zirconia	(1) 1260 (2) 1400 (3) 1600 on request	(1) 3, 5, 6, 8, 10 (2) 3, 5, 6, 8, 10 (3) On special request (4) Lower thickness available on specific request	500 x 1000 1000 x 1000 Other sizes on specific request	Min 150		Gaskets. Induction furnace coil back-up insulation. Thermocouple insulation and packing. Replacement tor asbestos paper. Ceramic Ferrule separator.
	1) VENEERING CEMENT (2) MASTIC		(1) 1450 C	(1) & (2) Supplied In 5,10, 25 & 50 kgs.		(1) Wet - Min 1500 Dry - Min 386 (2) Wet - Min 1300 Dry - Min 700		(I) Bonding Ceramic Fibre modules with the existing retractory linings (2) Expansion joints packing & seating and cuplock filing Note: The product has a normal shelf life of 6 months if not exposed to atmosphere

TYPICAL PROPERTIES

CERAFIBER	Cera Grade	Cerachem Grade	SUPERWOOL Standard
Classification temp.	1260°C	1425°C	1200°C
Continuous maximum* operating temp.	1175°C	1325°C	1000°C
Fibre Diameter (Arthmetic mean)	3 - 4 microns	3 - 4 microns	3 - 4 microns
Specific Heat Capacity KJ/KGK at 1090°C	1.13	1.13	1.13
Tensile Strength (Kpa) (for 128 Kg/M^3 blanket)	60 min	60 min	60 min
Linear shrinkage (% after 24 hrs firing)	3% max at 1200°C	3.5% max at 1400°C	1% max at 1200°C
Leachable Chloride content	< 10 ppm	< 10 ppm	< 10 ppm

CHEMICAL ANALYSIS

	Cerafiber	SUPERWOOL Standard
Al_2O_3	42-46&	—
SiO_2	54-58%	62-68%
Others	Traces	Traces
	Cerachem	
Al_2O_3	33-37%	—
SiO_2	48-52%	—
ZrO_2	13-17%	—
Others	Traces	—

Manufacturing Division
Pre Cast Pre Fired Blocks

We are actively involved in manufacturing and supplying Pre Cast, Pre Fired Blocks of refractory castables for large number of applications, mainly **Aluminium Launder Blocks, Aluminium Hearth Blocks Reheating furnace Bottom Block & Burner Blocks** and various shapes and sizes as per the customer's requirement.

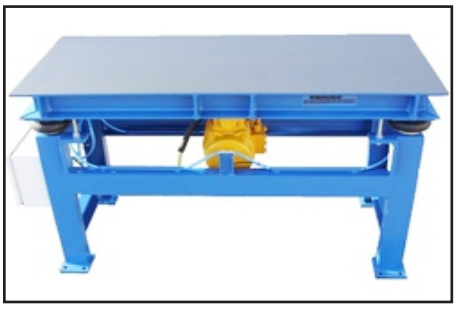
Why Pre Cast Pre Fired Blocks (PCPF)?

- Since PCPF is manufactured in Control Casting environment , it is easier to control the mix, placement and Curing.
- Homogeneous Dry-out gives optimum physical property.
- Faster Installation at site.

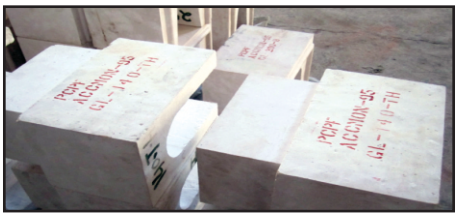
Why Arora Refractories for Pre Cast Pre Fired Blocks (PCPF)?

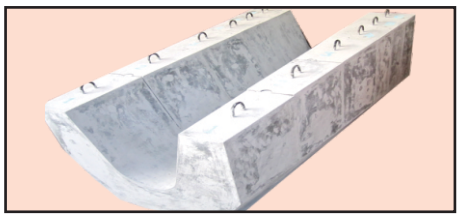
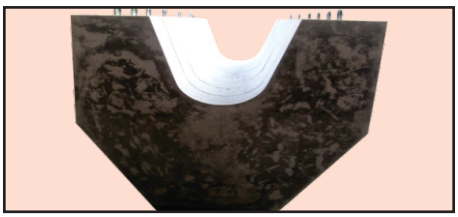
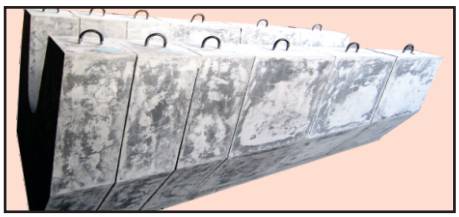
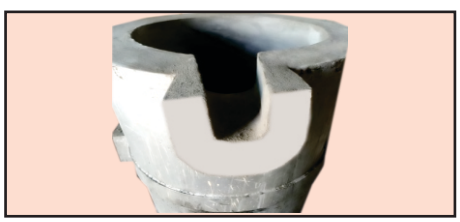
- Fully fledged facility for for Casting and curing large size of Pre Cast Pre Fired Blocks.
- Batch type heating furnace with max. temperature upto 1300 Deg C.
- Highly skilled and experienced team .
- Large no of references for supply and application of Refractory and Blocks.
- We provide Tailored Solutions as per the customer's requirement.

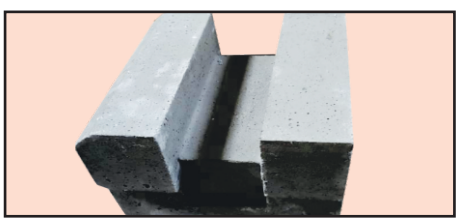
We have facility like Batch Type heating Furnace , 2 sets of Pan Mixer, Needle & Table Vibrator, large number of moulds collection, Storage yard to facilitate the lining and pre heating.


A glimpes of few of our projects are as follows..



Arora Refractories

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