



SANJAY

CERAMIC INDUSTRIES





COMPANY PROFILE

SANJAY CERAMIC INDUSTRIES & VAISHALI CERAMIC INDUSTRIES TWO YOUNG NAME IN THE FIELD OF REFRACTORIES IN INDIA ESTABLISHED IN THE YEAR 1980 BY KESHAVLAL AMBALIYA AND FOLLOWED BY **SANJAY AMBALIYA AND RAMESH AMBALIYA**.

One more plant was added name **SANJAY CERAMIC-II** to expand the capacity of production with Hi-Tech facilities, more varieties, and specialized shape and size in Refractories.

The plant is located on national highway-8A with the close proximity to all important ports namely Mundra, Kandla & Pipava catering to International markets in Asia, Middle East, Sri Lanka and African continent.

This HI-TECH plant will produce basic Refractories, Ramming mass, High Alumina Castable, PCPF Blocks, Special Shapes & bricks Ranging from 40% TO 95 % along with tailor made Refractory Solutions to meet the requirements of Steel, Cement, Textile, Glass, Petrochemical, Non-Ferrous, Electric plants & other related industries.

Well Equipped with ultra Modern machinery like high temperature tunnel kiln, High capacity microprocessor controlled presses, Modern mixers, Grinders & Ball Mills, this HI-TECH unit has advanced and highly qualified Engineers. A committed and efficient work force handling production, Quality Control, Packing & logistics enables the company to meet its targets, maintaining consistent quality standards, to satisfy and cater to our esteemed clients.

The company's product range confirms to the most stringent National and International Standards, which truly offers the best Refractory solutions scaling new heights in the domestic and overseas markets.

For **SANJAY CERAMIC INDUSTRIES** Quality matters the most and therefore the best material and products are supplied to our valuable customers.

QUALITY ASSURANCE

- QUALITY MANAGEMENT
- CUSTOMER ENGAGEMENT
- POLICIES AND PROCEDURES
- ROLES AND RESPONSIBILITIES
- RECORDS AND REPORTING
- MAINTAINING QUALITY AND CONTINUOUS IMPROVEMENT

SPECIFICATION OF HIGH PURITY DENSE CASTABLES

PARTICULARS	WHITE HEAT A	WHITE HEAT K	WHITE HEAT C	FIRE CRETE SUPER	FIRE CRETE NORMAL	CASTABLE 94	CASTABLE 97	ACCOSET-50 (FINE)
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GENERAL PROPERTIES

Service Temp C(Max)	1750	1600	1500	1450	1400	1800	1850	1500
Grain Size mm (Max)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	0.5
Water Required + for Casting (%)	7.5-8.5	9.5-10.5	9.5-10.5	10-11	10.5-11.5	8.5-9.5	8.5-9.5	8.5-9.5

CHEMICAL PROPERTIES

Al ₂ O ₃ (Min)	90.00	60.00	50.00	70.00	45.00	94.00	96.00	50.00
Fe ₂ O ₃ (Max)	0.8	1.00	1.30	5.00	4.00	0.30	0.30	4.00

PHYSICAL PROPERTIES

Bulk Density (gm/cc) (Dried at 110 °C for 24 hrs.) (Min)	2.75	2.20	2.1	2.50	2.10	2.8	2.8	-
Cold Crushing Strength (Kg/Cm ²) 110 °C	600	350	350	350	250	600	400	-

THERMAL PROPERTIES

REFRACTORINESS Under Load °C (Min)	1820	1683	1665	1683	1564	1835	1835	1835
Permanent Linear Change (%) (Temp.x3 hrs.) At 1550 °C (Max.)	± 1.00 (1150°C)	± 1.50 (1150°C)	± 1.00 (1150°C)	± 1.00 (1150°C)	± 1.00 (1150°C)	± 0.50 (1150°C)	± 0.80 (1150°C)	- (1150°C)

NOTE : We Can Manufacture And Supply Any Related Product As Per Customers Specification.

INSULATING CASTABLES

PARTICULARS	INSULYTE 4	INSULYTE 7	INSULYTE 9	INSULYTE 11	INSULYTE 13	INSULYTE 15	INSULYTE 11LI	INSULYTE 11LI	INSULYTE 11LI
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GENERAL PROPERTIES

Service Temp °C(Max)	1000	1600	1200	1300	1350	1350	1350	1400	1400
Grain Size mm (Max)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Water Required + for Casting (%)	80-100	60-65	38-43	29-34	26-31	23-28	30-35	27-32	23-28

CHEMICAL PROPERTIES

Fe ₂ O ₃ (Max)	11.00	8.50	6.00	3.50	3.50	3.20	1.50	1.50	1.50
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PHYSICAL PROPERTIES

Bulk Density (gm/cc) (Dried at 110 °C for 24 hrs.) (Min)	550	850	1000	1250	1450	1600	1250	1450	1600
Cold Crushing Strength (Kg/Cm) 110°C	4	12	15	35	50	90	45	80	130
800°C	2	4	5	25	30	60	30	40	75
1100°C	2	6	10	25	30	60	30	40	75
1300°C	-	-	-	40	50	70	50	50	90

THERMAL PROPERTIES

REFRACTORINESS Under Load °C (Min)	-	1337	1398	1398	1398	1430	1398	1430	1430
Permanent Linear Change (%)									
800(Temp.x3 hrs.) (Max)	± 0.40	± 0.80	± 0.60	-	-	-	-	-	-
1100°C	± 0.60	± 1.20		± 0.20	± 0.20	± 0.20	± 0.20	± 0.20	± 0.20
1200°C			± 1.00						
1300°C				± 1.00	± 0.80	± 1.00	± 1.00		
1350°C								± 0.80	± 1.00

NOTE : We Can Manufacture And Supply Any Related Product As Per Customers Specification.

MORTARS

PARTICULARS	Al ₂ O ₃ (%)	Fe ₂ O ₃ (%)	PCE Orton code (°C)	Service Temp (°C)	Application Area
Mortar-IS-6	22.0	2.5	2.5	20/1564	For laying of 30% Al ₂ O ₃ BRIKS
Mortar-Special	26.0	2.8	2.8	26/1621	For laying of 35% Al ₂ O ₃ BRIKS
Mortar-40	38.0	2.8	2.8	31/1683	For laying of 40% Al ₂ O ₃ BRIKS
Mortar-45	42.0	2.8	2.8	31½/1699	For laying of 45% Al ₂ O ₃ BRIKS
Mortar-50	48.0	3.0	3.0	32/1717	For laying of 50% Al ₂ O ₃ BRIKS
Mortar-60	55.0	3.5	3.5	33/1743	For laying of 60% Al ₂ O ₃ BRIKS
Mortar-70	65.0	3.5	3.5	34/1763	For laying of 70% Al ₂ O ₃ BRIKS
Mortar-70L	68.0	3.0	3.0	35/1783	For laying of 70% Al ₂ O ₃ BRIKS
Mortar-80	75.0	2.5	2.5	36/1804	For laying of 80% Al ₂ O ₃ BRIKS
Mortar-85	80.0	2.0	2.0	37/1824	For laying of 85% Al ₂ O ₃ BRIKS
Mortar-40S	40.0	2.2	2.2	36/1717	For laying of 40% Al ₂ O ₃ BRIKS
Mortar-45S	45.0	2.2	2.2	32½/1724	For laying of 45% Al ₂ O ₃ BRIKS
Mortar-50S	50.0	2.2	2.2	33/1743	For laying of 50% Al ₂ O ₃ BRIKS
Mortar-55S	55.0	2.2	2.2	33½/1724	For laying of 55% Al ₂ O ₃ BRIKS
Mortar-60S	60.0	2.2	2.2	34/1763	For laying of 60% Al ₂ O ₃ BRIKS
Mortar-42D	42.0	1.8	1.8	32/1717	For laying of 42% Al ₂ O ₃ BRIKS
Mortar-30D	30.0	1.8	1.8	31/1717	For laying of 30% Al ₂ O ₃ BRIKS
SILL	50-52	1.5	1.5	34/35	Ceramic
SILL (SPL)	54-56	1.5	1.5	35/36	Ceramic

Grain Size : 0-0.5 mm Workability : Good

LOW CEMENT CASTABLES

PARTICULARS	LC 45	LC 60	LC 60A	LC 70	LC 80	LC 90	LC 95
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GENERAL PROPERTIES

Service Temp °C(Max)	1500	1600	1600	1600	1700	1700	1800
Grain Size mm (Max)	6.0	6.0	10.0	6.0	6.0	6.0	6.0
Water Required + for Casting (%)	4.8-5.5	4.7-5.4	5.0-5.5	4.7-5.4	4.5-5.2	4.0-4.8	4.2-5.0

CHEMICAL PROPERTIES

Al ₂ O ₃ (Min)	45.00	60.00	60.00	70.00	80.00	90.00	94.00
Fe ₂ O ₃ (Max)	1.00	1.50	0.80	1.50	1.80	1.00	0.30

PHYSICAL PROPERTIES

Bulk Density (gm/cc) (Dried at 110°C for 24 hrs.) (Min)	2.5	2.6	2.6	2.7	2.9	3.1	3.0
Cold Crushing Strength (Kg/Cm) 110°C	700	750	700	750	800	950	1000
800°C	800	800	-	800	900	1000	1050
1100°C	900	900	-	900	1000	1100	1100
1500°C	1000	1000	900	1200	1200	1250	1200

THERMAL PROPERTIES

REFRACTORINESS Under Load C (Min)	-	1337	1398	1398	1398	1430	1398	1430	1430
Permanent Linear Change (%) 800°C	± 0.40	± 0.80	± 0.60	-	-	-	-	-	-
1100°C	± 0.60	± 1.20		± 0.20	± 0.20	± 0.20	± 0.20	± 0.20	± 0.20
1500°C			± 1.00						

NOTE : We Can Manufacture And Supply Any Related Product As Per Customers Specification.



HIGH ALUMINA CEMENT

PARTICULARS	cem-50	cem-70	cem-75
Al.O.% Min	45.0	68.0	72.0
Fe.O.% Max	4.5	0.30	0.25
CaO% Max	34.0	30.0	26.0
SiO.% Max	5.5	1.0	0.5
PHYSICAL			
Setting time (in minutes)			
Initial, max	50.0	30.0	40.0
Final, max	400.0	400.0	400.0
CCS (kg/cm ²)			
After 1 day	350.0	450.0	400.0
After 1 Day curud+1100c/24hrs		650	600.0
After 3 Day	450.0		
Refractoriness Under Load (orton/°C) Min	13/1349	20/1564	31/1683
Application Area	For Manufacturing of general purpose Castable	For Manufacturing of high purity and high density castable	For Manufacturing of high purity and high density castable

FIRE CLAY BRICKS AND HIGH ALUMINA BRICKS

PARTICULARS	Al.O. % Max	Fe.O. % Max	P.C.E. (O.C.) Min	APPARENT POROSITY (%)Max	CCS (kg/cm ²) No	RUL (Ta °C) Max.	BULK DENSITY (gntx) Me.	PLC (%) Max.	APPLICATION AREA
IS 6	30	2.5	29	26	200	1300	2.00	±1.0 at 1300°C/2hrs	For Chimney flut, Boiler & Sugar industry
Spc.	34	2.5	30	25	250	1350	2.05	±1.0 at 1350°C/2hrs	For Chimney flut, Boiler, Cupola & Steel Foundry
40	40	2.8	32	24	300	1400	2.15	±1.0 at 1400°C/2hrs	For Cement Preheater, Cyclone, Silicate furnace & other moderate heat duty Applications.
45	45	3.0	32	24	350	1400	2.20	±1.0 at 1450°C/2hrs	For Cement Preheater, Cyclone, Silicate furnace & other moderate heat duty Applications.
40S	40	2.0	33	22	300	1420	2.20	±0.75 at 1450°C/2hrs	Special purpose Low Iron high duty Bricks for Cement Preheater & Cyclone.
45S	45	2.0	33	21	350	1440	2.25	±0.8 at 1450°C/2hrs	Special purpose Low Iron high duty Bricks for Cement Preheater & Cyclone. Chemical plant & Blast furnace
42D	42	1.5	34	18	500	1470	2.30	±0.5 at 1450°C/2hrs	Special purpose Low Iron high duty Bricks for Cement Preheater & Cyclone. Chemical plant & Blast furnace
50	50	3.0	33	24	400	1400	2.30	±1.0 at 1450°C/2hrs	Low porosity dense bricks for Abode, backing furnace & Blast furnace.
55	55	3.5	33	24	400	1410	2.45	±1.5 at 1450°C/2hrs	For Cement kiln preheating zone & Reheating furnace wall.
60	60	3.5	35	24	450	1450	2.50	±2.0 at 1450°C/2hrs	Calcination zone of Cement rotary kiln & Copper melting furnace.
70	70	3.5	36	23	550	1460	2.65	±2.5 at 1500°C/2hrs	Reheating furnace wall. Burning zone of Cement rotary kiln & Ladle Backup.

HIGH ALUMINA BRICKS (SPECIAL)

PARTICULARS	Al.O. % Max	Fe.O. % Max	P.C.E. (O.C.) Min	APPARENT POROSITY (%)Max	CCS (kg/cm ²) No	RUL (Ta °C) Max.	BULK DENSITY (gntx) Me.	PLC (%) Max.	APPLICATON AREA
80	80	1.8	37	20	600	1520	2.75	±0.5 at 1500°C/2hrs	EAF Rest, Ladle lining & other High heat duty Special application
85	85	1.5	38	19	700	1550	2.80	±0.5 at 1500°C/2hrs	Special type of high temperature & High abrasion application.
80 P	80	1.8	37	17	750	1500	2.80	±0.8 at 1500°C/2hrs	Phosphate bonded bricks for reheating furnace bottom and other special applications where abrasion is high
85 P	85	1.5	38	17	900	1530	2.85	±0.8at 1500°C/2hrs	Phosphate bonded bricks for Aluminium melting, Holding furnace & Reheating furnace bottom.
88 RFB	88	1.8	38	15	1000	1580	2.90	±0.5 at 1500°C/2hrs	An excellent material for Coal fired reheating furnace bottom.
50 S	50	2.0	34	21	400	1450	2.30	±1.0 at 1500°C/2hrs	Dense bricks for Petroleum, Fertilizer & Aluminium Industries.
55 S	55	2.0	35	22	450	1460	2.35	±1.0 at 1500°C/2hrs	Dense volume stable bricks for Reheating furnace reaf & Petroleum Plants.
Sill	58	1.5	36	22	400	1520	2.35	±0.5 at 1500°C/2hrs	For Glass industries & Frit Furnace applications.
60 S	60	2.0	36	22	450	1500	2.40	±0.8 at 1500°C/2hrs	For Cs ₂ furnace, Sulphur furnace, Alkali resistant bricks for Cement rotary kiln.
62 D	62	1.5	36	16	600	1520	2.55	±0.5 at 1500°C/2hrs	Low porosity dense bricks for Blast furnace, Glass tank furnace & Frit furnace.
70 S	70	3.0	36	23	500	1460	2.65	±2.0 at 1500°C/2hrs	For Burning zone of Cement rotary kiln.
70 L	70	2.5	36	22	500	1480	2.60	±2.0 at 1500°C/2hrs	For Burning zone of Cement rotary kiln.
70 LI	70	1.5	37	22	600	1520	2.55	±0.5 at 1500°C/2hrs	Lime kiln & Burning zone of Cement rotary kiln.

Note : (1) The above data relates to machine pressed bricks only.
(2) Size tolerance ± 1.5% or ±2mm whichever is greater.

SPECIFICATION SHEET FOR BASIC REFRACTORIES

PARTICULARS	MgO % (Min.)	Cr ₂ O ₃ % (Min.)	SiO ₂ % (Min.)	A.P. % (Min.)	B.D. gm/cc (Min.)	C.C.S. Kg/cm ² (Min.)	R.U.L. Ta°C (Min.)	APPLICATION AREA
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MAGNESITE BRICKS

MGB-87	85		6.5	22		350	1550	Used in Open hearth furnace, Electric arc Steel melting furnace, Hot metal mixer, Permanent lining of LD converter, Copper feigning furnace and General applications.
MGB-87	87		5.5	22		350	1600	
MGB-91	91			23		400	1500	Used in Electric arc steel melting furnace, B.O.F.
MGB-91	97		0.5	18		450	1700	Suitable for Glass & Chemical Industries.

MAGNESITE CHROME BRICKS

MCB-1	60	12	-	24	-	250	1550	Open hearth furnace, B.O.F., Secondary steel refining, Rotary kiln for Cement and Dolomite Calcination & General application
MCB-2	72	6	-	23	-	250	1550	
MCB-3	63	11	-	22	-	300	1580	

MAGNESITE CHROME BRICKS

CHMB-1	35	22	-	25	-	200	1580	Open hearth furnace front & back walls, Gus ports & uptakes etc.
CHMB-2	35	18	-	24	-	250	1550	Rotary kiln, Open hearth furnace & Electric arc furnace.

MAGNESITE CHROME BRICKS

CH-D	-	40	-	20	-	500	-	Used in Hearth of Reheating furnace, Soaking pits, Rolling Mills & Where High abrasion resistance at hearth is required.
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MAGNESITE CARBON BRICKS

PARTICULARS	MgO% Calcined Basic	C% Residual Carbon	A.P.% (Max.)	B.D. cc/mm (Min)	C.C.S. Kg/cm ² (Min.)	M.O.R. Kg/cm ² at room temp	APPLICATION AREA
MGCRB	97	8-11	3-6	2-95	500	125	Used in Hearth of Reheating furnace, Soaking pits, Rolling Mills & Where High abrasion resistance at hearth is required.

SPECIFICATION SHEET FOR BASIC REFRACTORIES & RAMMING MASS

PARTICULARS	MgO % (Min.)	Fe.O. % (Max.)	SiO. % (Max.)	Grading (mm)	Setting	Sintering Temp °C	Service Temp °C	APPLICATION AREA
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BASIC MORTARS

MGMOT	85	-	-	0-0.5	Ceramic	1600	-	Mortar for laying magnesite bricks.
MCMOT	50	15	-	0-0.5	Ceramic	1650	-	Mortar for laying magnesite Chomite bricks.
MCMOT	20	30	-	0-0.5	Ceramic	1650	-	Mortar for laying magnesite Magnesite bricks.
MCMOT	-	40	-	0-0.5	Ceramic	1650	-	Mortar for laying chromite bricks & as a neutral layers for silica bricks

BASIC RAMMING MASS

PARTICULARS	PCE (OC) Min	MgO % (Min)	C O % (Max)	CaO % Max.	C.C.S.(kg/cm ²)		Grading	Service Temp. °C	APPLICATION AREA
					At 110°C	At 1500°C			
CAST-MCH	38	30	20	8	450	250	0.5	1500	Mag-Chrome castables used in reheating furnace hearth & for general purposes.
CAST-CHM	38	20	25	8	200	250	0.5	1500	Chrome-Mag castables used in reheating furnace boilers & aluminium furnace (Below metal line)
CAST-CHM	38	8	35	8	450	250	0.5	1500	Chrome base castables resistant to chemical Attack of basic fluxes slag and used in paper. Non-ferrous & Petrochemical industries.

INSULATING BRICKS

PARTICULARS	CFI	HFI	HFK
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CHEMICAL :

SiO ₂ (%)	69.7	61.5	54.1
Al ₂ O ₃ (%)	24.3	33.2	41.5
Fe ₂ O ₃ (%)	2.2	1.9	1.8
TiO ₂ (%)	2.0	2.5	1.9
CaO + MgO (%)	0.5	0.3	0.2
Others (%)	0.9	0.6	0.5
Max. Service Temp. (°C)	0.9	0.6	0.5
Nature of Bond	1000	1350	1400
Raw Material Base	Fire Clay & Mica	Fire Clay & Kyanite	Fire Clay & Kyanite

PHYSICAL :

Reversible Thermal Expansion (% at 1000°C)		0.50	0.50
BD (gm/cm ³) Max	0.90	1.05	1.0
Ap (%) Min	60	55	55
CCS (kg/cm ²) Min	10	25	25
PCE (orton) Min	20	29	30
PLC (%) Max	±1.5 at 1000 °C/S hr	±1.5 at 1350 °C/S hr	±1.5 at 1400 °C/S hr
Thermal Conductivity (Kca/m/hr/°C)			
300°C		0.24	0.26
500°C		0.26	0.29
800°C		0.28	0.31
Weight of Std Brik (approx) (Kg.) Size : 230x114x76mm	1.70	2.10	2.00
Application area	Backup lining for Boiler & Reheating Furnace.	Backup lining for Glass tank Furnace & Blast furnace.	Backup lining for Glass tank Furnace & Blast furnace.

INSULATING BRICKS

BRICKS & TILES

PARTICULARS	AR (230X115X75MM)	AR (230X115X38MM)	AR (230X115X20MM)
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PHYSICAL PROPERTIES

Water Absorption (%)	2.0	2.0	2.0
Cold Crushing Strength (N/mm ²)	70	70	75
Flexural Strength (N/mm ²)	10	10	10
Acid Resistance (% loss in weight)	2.5	2.5	2.5

CHEMICAL PROPERTIES :

SiO ₂ (%)	68.20	68.20	67.90
Al ₂ O ₃ (%)	24.00	24.00	24.20
Fe ₂ O ₃ (%)	1.80	1.80	1.90
TiO ₂ (%)	2.10	2.10	2.90
CaO+MgO (%)	0.50	0.50	0.60
Na ₂ O+K ₂ O (%)	3.40	3.40	3.60
Weight of Brick (Kg.)	4.35	4.35	0.90
	For Thermal Power Plant Chimney & Acid Storage Tank & Floor.	For Acid Storage Tank, Floor & Acid Digester.	For Battery Room, Acid Handling Floor & DM Plant.

MORTARS

PARTICULARS	Sodium Silicate base Mortar	Potassium Silicate base Mortar
Working time (Min at 270±2°C) (minutes)	15	20
Flexural strength (Min. Kg/cm ²) (at 7 day)	35	40
Compressive strength (Min. Kg/cm ²) (at 7 day)	100	150
Bond strength (Min. Kg/cm ²)	5	5
Absorption of tolerance (Max. Percent by weight)	18	18
Application area	For Laying of Acid Resistant Bricks & Tiles.	For Laying of Acid Resistant Bricks & Tiles.

INSULATING BRICKS

PARTICULARS	Acidic Ramming Mass Super Semi Snow White SL 165/167	Acidic Ramming Mass Super Snow White SL 165/167
SiO	99.230%	99.530%
Al ₂ O ₃	Trace	Trace
Fe ₂ O ₃	00.020%	00.020%
CaO	Trace	Trace
MgO	Nil	Nil
LOI	00.540%	00.240%
Na ₂ O	Nil	Nil
K ₂ O	Nil	Nil

NOTE : Acidic ramming mass is available without acid.

Also with boric acid premix :- 1%, 1.1%, 1.2%, 1.3%, 1.4%, 1.5%, 1.8%, and 2% respectively as per your requirement and specification.