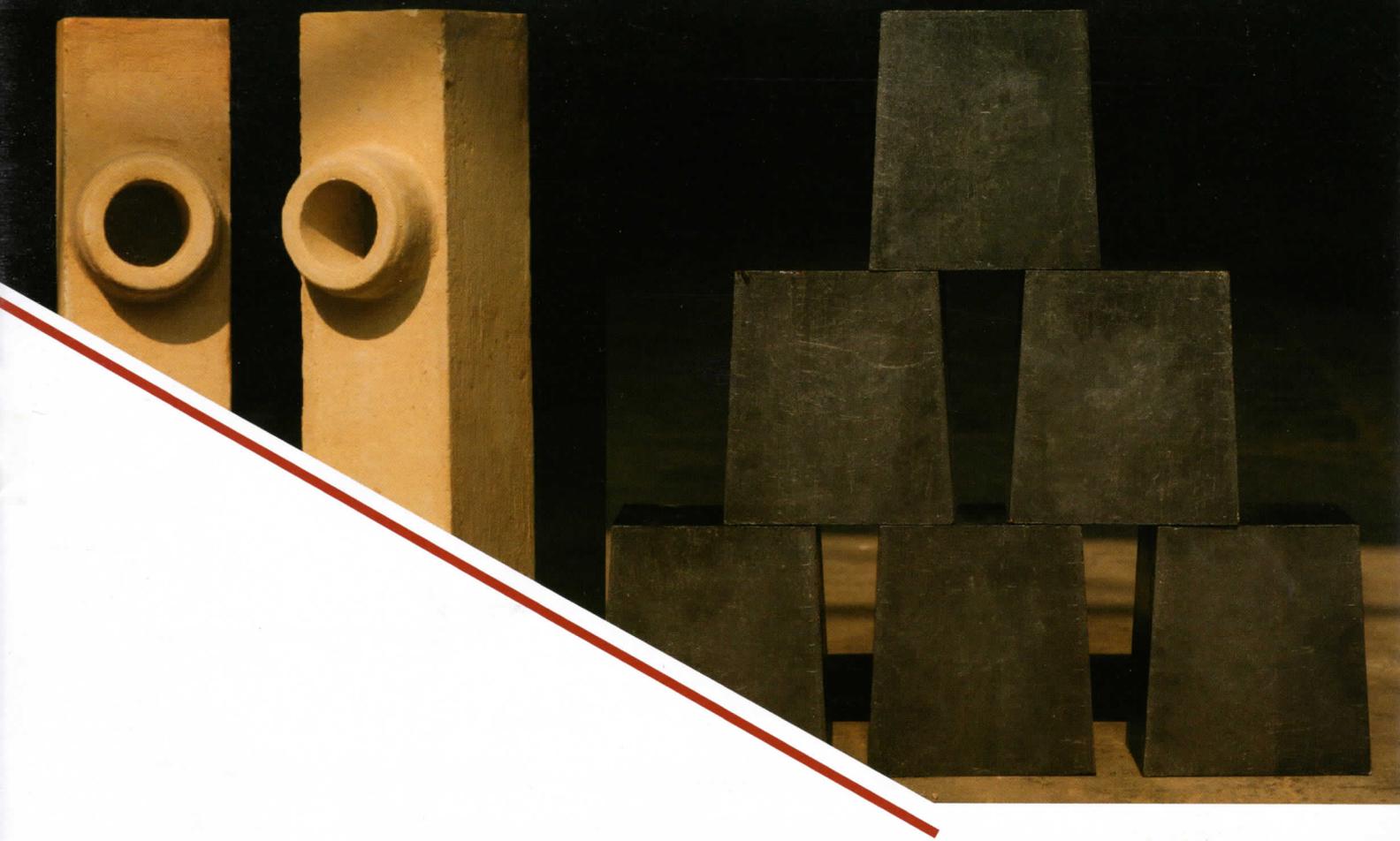


RAJ CERAMICS
Refractories, Dolomite,
Fluxes

An ISO 9001:2015 certified company



Raj Ceramics, a unit of Raj Refractories Private Limited, was established in the year 1983 with setting up its manufacturing unit at Hardag, District Ranchi, Jharkhand.

In 1994, we started manufacturing 50 mt per month of Magnesia Carbon Bricks for EAF and LRF. The sales turnover of this company has been increasing gradually. This has been possible only because Raj Ceramics is able to maintain the highest quality to provide overall economy to its customers.

In the year 1996, we started our exports and since then there has been no looking back. It has a regular exports to West European and African countries.

In the year 2003, Raj Ceramics was also awarded highest exporter reward from the state government.

In 2015, Raj Ceramics started waste to wealth management for various byproducts of steel, power plant and aluminium plants. Equipped with all latest

manufacturing facilities, services and excellent research and development. Today the plant has a total capacity of 600 mt shaped refractory and 150 mt unshaped refractory per month.

Raj Ceramics produces wide spectrum of sophisticated refractories:-

- Fireclay and high alumina bricks; pre-cast shapes; mortars; low cement castables for steel, non-ferrous and glass industry.
- Basic bricks: magnesia carbon bricks; chemically bonded mag-chrome bricks; gunning mass; ramming mass; spraying mix for tundish metallurgy.
- Blast furnace trough mass and tap-hole clay.
- New generation high performance castables and pre-cast blocks for various applications.
- Gas purging refractories/ porous plug, well block, nozzles etc. Special monolithics.
- Slag conditioner and reducer for steel making.

ALUMINA BRICKS

Brand	Al ₂ O ₃ % min	Fe ₂ O ₃ % max	P.C.E. OC min	A.P.% max	B.D. gm/ cc min	C.C.S. kg/ cm ² min	RUL °C min at 2 kg	PLC at °C/hrs % max
RC 42	42	2.5	32	22	2.1	300	1420	1400/2/±1.0
RC 45	45	2.5	32	22	2.15	400	1430	1400/2/±0.5
RC 50	50	2.5	32.5	23	2.2	400	1450	1400/2/±2.0
RC 55	55	2.5	33	23	2.25	400	1460	1350/2/±1.0
RC 60	60	3.0	33	23	2.35	400	1470	1400/2/±1.0
RC 62	62	3.0	34	23	2.4	450	1480	1400/2/±1.0
RC 70 B ✓	70	3.5	35	23	2.5	500	1470	1350/2/+3.0
RC 72	72	2.5	36	21	2.5	500	1500	1350/2/±1.0
RC 80	78	2.5	36	22	2.6	500	1480	1350/2/+1.0
RC 90	88	2.0	36	22	2.7	500	1490	1350/2/±1.0
RC 50 Mull	50	1.8	33	22	2.25	600	1480	1350/2/±1.0
RC 90 X	88	0.5	37	18	2.8	800	1650	1500/2/±0.2
RC 95	94	0.5	38	20	2.85	600	1680	1500/2/±0.2
RC 99 P	97	0.2	38	16	2.85	400	1550	1500/2/±0.5

DENSE BRICKS

Brand	Al ₂ O ₃ % min	Fe ₂ O ₃ % max	P.C.E. OC min	A.P.% max	B.D. gm/ cc min	C.C.S. kg/ cm ² min	RUL °C min at 2 kg	PLC at °C/hrs % max
RC- 42 D	42	2	32.5	19	2.15	500	1450	1450/2/±0.3
RC- 45 D	45	1.8	33	18	2.2	500	1460	1480/2/±0.5
RC- 55 D	55	1.7	34	18	2.35	500	1500	1550/2/±0.5
RC- 60 D	60	1.3	34	18	2.45	450	1520	1500/2/±0.5
RC- 62 D	62	1.5	36	16	2.5	600	1550	1600/2/±0.5
RC- Mull S	70	1.0	36	20	2.45	500	1650	1600/2/±0.2
RC AC (Alumina Chrome)	75	1.0	-	-	-	-	-	-

POURING REFRACTORIES (Ingot casting & Foundary)

Brand	Al ₂ O ₃ % min	Fe ₂ O ₃ % max	PCE OC min	A.P.% approx	B.D. gm/cc min	CCS Kg/cm ² min BLOCK	SiO ₂ max	TiO ₂ max
RC- BPR (S)	50	2.5	32	24	2.15	400	48	2.5
RC- BP (MHA)	55	2.0	33	24	2.25	400	43	1.5
RC- BP (HA)	60	3.0	34	24	2.35	500	38	1.8
RC- BP (HA-S)	70	2.0	34	24	2.45	600	27	2.0
RC- BP (HA-M)	72	1.8	35	23	2.50	600	24	1.5
RC- BP (P)	80	1.2	36	23	2.55	600	15	1.8
RC- BP (LI)	45	1.0	33	22	2.20	500	18	1.5

MAGNESIA CARBON BRICKS

Brand	MgO (%) (in magnesite used)	Fixed Carbon % (Approx)	A.P. % max	C.C.S kg/cm ² min	B.D. gm/cc min	Application Area
RC MCB Safety	90	9.0	7	200	2.7	Safety, low thermal conductivity
RC MCB MZ	92	8.0	5	300	2.85	Metal zone for ladle
RC MCB SZ	94	12.0	4	300	2.90	Slag zone for ladle
RC MCB FB	91	7.0	5	250	2.80	Free board for ladle
RC MCB SZS	95	14.0	4	300	2.95	Special slag zone
RC MCB MZS	93	7.0	4	300	2.90	Special metal zone
RC MCB SZ (OS)	97	16.0	3	350	2.95	EAF/ EBT
RC MCB SZ (O)	96	18.0	3	350	3.00	Furnace with high oxygen lance
RC MCB LF SS	94	5.0	4	300	2.85	AOD to caster ladle for SS

MAGNESIA CHROME BRICKS

Brand	MgO% min	Cr ₂ O ₃ % max	A.P.% max	CCS kg/cm ² min	RUL°C min	Application Area
RC CMN	35	15	22	250	1550	Backup lining
RC FRD	50	6	22	350	1600	Backup lining

ALUMINA MAGNESIA BRICKS

Brand	MgO% max	Al ₂ O ₃ % max	Fe ₂ O ₃ % max	A.P.% max	B.D. gm/cc min	CCS kg/cm ² min	Application Area
RC AMC 1	8	70	5	6	2.9	400	Ladle bottom
RC AMC 2	8	80	5	5	3	400	Ladle metal zone

MAGNESITE BRICKS

Brand	MgO% min W	Fe ₂ O ₃ % max	A.P.% max	B.D. gm/cc min	CCS kg/cm ² min	RUL°C min	Application Area
RC MGR	82	4	22	2.5	300	1500	Safety
RC MGD	88	1.5	20	2.8	500	1550	EAF, Lime kiln



PRECAST SHAPES

Brand	Al ₂ O ₃ % min	Fe ₂ O ₃ % max	PCE OC min	CCS kg/ cm ² min	Setting Temp.	B.D. gm/ cc min	PLC % max	Application
RC PCPF- 45	45	1.50	32	900	1550	2.30	±0.10 at 1500°C for 2 hrs	General cast shapes
RC PCPF- 55	55	1.80	34	950	1600	2.45	±0.10 at 1500°C for 2 hrs	Cast shapes for burner block
RC PCPF- 80	80	2.00	35	1100	1700	2.80	±0.80 at 1500°C for 2 hrs	Cast shapes for reheating furnace block, well block, seating block, weir dam
RC PCPF- 90	90	1.00	37	1200	1700	3.05	±0.60 at 1550°C for 2 hrs	Special shapes of critical use
RC PCPF- 70 UL	70	0.50	36	1100	1700	2.60	±0.60 at 1550°C for 2 hrs	-

DOLOMITE

Brand	MgO% Range/appr.	CaO% Range/appr.	Silica% Range/appr.	Iron % max	Other Acid Insolubles	LOI% Avg of CO ₂	Size mm Range	Loose Density Approx	Shelf life days from dispatch	Usages
RC BCD1	34-36	54-56	1.0-1.6	0.5	1	2	0-6	1.1	45	EAF/ EBT flux
RC LDSD	36-39	55-57	1.1-1.7	0.5	1	1	5-25/ 15-40	1.7	75	LRT/ AOD/ LD coating
RC DOLOFET	38	59	2	5.5	-	0.5	0-5	-	100	Hot repair of bank/ backfill
RC DOLOMIX KJ	60	36	3	2	-	0.5	0-4	-	90	Cold ramming
RC TAPENSOL	55	42	2.5	4	-	0.5	0-6	-	90	Hot & cold repair of hearth
RC RAM D1	75	20	4	4.5	-	0.5	0-8	-	120	Hot & cold repair of hearth
RC DOLOGUN	60	30	-	-	-	-	0-3	-	60	Gunning mass for thick coat

FLUIDIZERS

Brand	NaF	AlF ₃	CaF ₂	Al ₂ O ₃
RC- Ecospar (Replacement of Flourspar)	35% min	35% min	10% max	20% max
RC- SSR (Replacement of Synthetic Slag)	25% max	25% max	10% max	50% min



COMPOUNDS & FLUXES

Brand	Al ₂ O ₃ % min	CaO% min	MgO% max	Al% min	SiO ₂ % max	TiO ₂ % max	Alkali/ Fluorides % min
Almix	85	-	-	-	10	-	-
RC SC	70	-	-	10	10	-	-
RC SSC	65	35	5	-	4	0.2	-
RC SRC	60	20	10	10	10	-	-
RC Flux Al	40	-	-	35	3	-	-
RC RHD	65	25	1	-	3	0.3	-
RC CASOB	20	20	-	20	20	-	15
RC Melting Compound	40	10	5	-	0.02	-	30
RC Tundish Cover	15	-	-	-	80	-	-
RC Ladle Spread	15	-	-	-	80	-	-
RC Tailored	30-60	10-40	5-25	5-25	-	-	-
RC Readywhite	15	30	10	20	5	-	10

RAMMING MASS/ PLASTICS

Brand	Al ₂ O ₃ % min	Fe ₂ O ₃ % max	PCE OC min	Grading Range	Setting	Service Temp
RC- Ram- 40	40	2.0	33	0-4 mm	Ceramic	1450
RC- Ram- 60	60	2.5	34	0-4 mm	Chemical	1600
RC- Ram- 70	70	3.0	35	0-4 mm	Chemical/ Ceramic	1650
RC- Ram- 80	80	2	36	0-4 mm	Chemical	1700
RC- RAM - 90 (S)	90	1.5	37	0-4 mm	Chemical	1750

SPECIAL MONOLITHICS

Brand	Al ₂ O ₃ % min	Fe ₂ O ₃ % max	Additives % max	Water Addition %	Grading (mm)	Type of Setting	Sintering Temp.	Application
RC- LF 90 (LCC)	85	2	13	4-6	0-5	Hydraulic	-	Roof castable for furnace with high oxygen lance
RC- LF 92 (ULCC)	89	1	9	4-6	0-5	Hydraulic	-	Special ultra low cement castable for raaf & casting well block, seating block, flow modifier
RC- SRA 95H	91	-	-	15-20	0-5	Hydraulic	1400	Ramming mass for fixing well block
RC- SMA 90K	88	-	-	20-25	0-0.2	Chemical/ Ceramic	1200	Mortar for fixing nozzle



MORTARS

Brand	Al ₂ O ₃ % min	SiO ₂ % min	Fe ₂ O ₃ % max	PCE OC min	Type of Setting	Water for tro-welling consistency	Service Temp.	Max Grain Size
RC 30 M	30	-	2.5	29	Ceramic	36-40	1300	0.5 mm
RC 40 M	40	-	3	30	Ceramic	36-40	1350	0.5 mm
RC 45 M	45	-	2.5	31	Ceramic	36-40	1400	0.5 mm
RC 50 M	50	-	2	31	Ceramic	30-35	1450	0.5 mm
RC 55 M	55	-	2	32	Ceramic	30-35	1470	0.5 mm
RC 60 M	60	-	2.5	32	Ceramic	25-30	1480	0.5 mm
RC 65 M	62	-	3	32	Ceramic	20-24	1500	0.5 mm
RC 70 M	70	-	3.5	33	Ceramic	20-24	1550	0.5 mm
RC 70 Mull	72	-	2.5	34	Ceramic	20-24	1600	0.5 mm
RC 75 M	74	-	2	35	Ceramic	18-22	1580	0.5 mm
RC 80 M	78	-	1.5	36	Ceramic	18-20	1630	0.5 mm
RC 90 M	88	-	1	36	Ceramic	15-20	1650	0.5 mm
RC M Insulating	30	-	2.5	29	Ceramic	40-45	1250	0.5 mm
RC MIS (Special Insulating)	55	-	1.5	30	Air Setting	25-30	1500	0.5 mm
Racoset 50	50	-	2	31	Air Setting	25-30	1450	1.0 mm
Racoset 70	70	-	3	33	Air Setting	25-31	1550	1.0 mm

BASIC MONOLITHICS

Brand	MgO% min	SiO ₂ % max	CaO% max	Cr ₂ O ₃ % min	Type of Setting	Sintering Temp	Grading Range	Application Temp
RC- M 84	80	8.5	-	-	Chemical	1550	0-4	1700
RC- 1/3	82	8	-	-	Chemical	1550	0-4	1750
RC- M 95	94	2.5	1	-	Ceramic	1550	0-5	1750
RC- M 90	90	4	2	-	Chemical/ Ceramic	1550	0-5	1700
RC- GUN	78	6	1.7	1.5	Ceramic	1550	0-3	1750
RC- Supergun	86	3.5	1.4	1.5	Chemical/ Ceramic	1500	0-3	1800
RC- Hearth Mass	85	5	6	-	Chemical	1300	0-8	1750
RC- Tapensol	Proprietary Item	-	-	-	-	-	-	-
RC- IF Mass	88	-	-	-	Chemical	1450	0-10	1750
RC- MM	84	-	-	-	Ceramic	1400	0-0.5	1700
RC- CMM	40	-	-	25	Ceramic	1600	0-0.5	1650
RC- CMN	60	-	-	15	Ceramic	1650	0-0.5	1700
RC- Fettling	45	5	50	-	Ceramic	1450	0-5	1800

BASIC MONOLITHICS FOR INDUCTION

Brand	MgO% min	Cr ₂ O ₃ % max	Grading mm	Sint Temp °C	App Temp °C	Remarks
RC RAM LMCX	70	8	0-5	800	1720	For small crucible for SPL steel
RC- Coat M	88	-	0-0.5	-	Chemical	For coil coating

NEUTRAL RAMMING MASS

Brand	Al ₂ O ₃ % min	MgO % min	Others% min	Sint Temp °C	Grading mm	Application temp.
RC NRM	84	11	1.5	1300	0-5	1750

CONVENTIONAL CASTABLES

Brand	GENERAL PROPERTIES				PHYSICAL PROPERTIES		C.C.S. kg/cm ³		P.L.C. %	CHEMICAL ANALYSIS	
	Base Raw Material	Max Grain Size (mm)	Water Addition on Site (%)	Reversible Thermal Expansion at 1000° C (%)	Max Service Temp °C	Dry Density (Kg/m ³) min at 210° C	at 110° C/ 24 hrs	at 800° C/ 3 hrs	at 1500° C/ 3 hrs	Al ₂ O ₃ % min	Fe ₂ O ₃ % max
Rajcrete	Chamotte	5.0	10.5-12.0	0.55	1580	2100	250	240	±1.0	40	4.0
Rajcrete Special	Kaolin	5.0	10.0-12.0	0.6	-	-	-	90	±0.5	45	2.5
Rajcrete Super	Bauxite	5.0	11.0-12.0	0.65	1680	2400	350	300	±1.0	65	5.0
Rajheat M	Diaspore	5.0	9.0-10.0	0.75	1800	2600	550	450	±1.5	80	1.5
Rajheat A	Ch. Bxt.	5.0	9.0-11.0	0.75	-	-	-	-	5.0	85	2.5
Rajheat A Supreme	BFA	5.0	0.0-10.0	0.8	1820	2800	600	430	±1.0	90	0.8
RC-90 S	Corundum	5.0	10.0-12.0	0.6	1709	2700	500	400	±1.5	82	3.0
Rajheat K	Kyanite	5.0	10.0-11.0	0.6	1683	2200	350	280	±1.5	60	1.0
Rajheat C	Grog	5.0	10.0-11.5	0.55	1665	2100	350	280	±1.0	50	1.5

CEMENT

Brand	Al ₂ O ₃ % min	SiO ₂ % max	Cao% max	Fe ₂ O ₃ % max	MgO% max	PCE OC min	Specific Surface (cm ² /gm)	Specific Gravity	Final	CCS (Kg/cm ²)	
										After 6 hrs	After 24 hrs
RC- Cement 75	72	0.7	23.6	0.3	0.8	31	4000	2.90-2.95	400	125	350
RC- Cement 50	48	4	35	5	0.9	13-14	3000	-	400	150	450

ULTRA LOW CEMENT

Brand	Al ₂ O ₃ % min	Fe ₂ O ₃ % max	CaO% max	B.D. (gm/cc) On Blocks at 110° C/ 24 hrs	PLC (%) max at 1400° C/ 3hrs	PLC (Orton) min	C.C.S kg/cm ²			Water for Casting % max
							at 110° C/ 24 hrs	at 700° C/ 2 hrs	at 1400° C/2 hrs	
RC- 70 UL	70	0.6	0.5	2.70-2.80	+ 0.5	34	600	700	1000	4-5
RC- 70 Royal	70	0.5	0.5	2.80-2.90	+ 0.5	35	600	700	1200	4-5
RC- 90 UL	90	0.5	0.5	3.00-3.10	+ 0.5	37	600	700	1200	4-5

LOW CEMENT CASTABLES

Brand	GENERAL PROPERTIES				PHYSICAL PROPERTIES		C.C.S kg/cm ²			P.L.C %		CHEMICAL ANALYSIS	
	Max Service Temp. °C	Max Grain Size (mm)	Water Addition on Site (%)	Reversible Thermal Expansion at 1000° C (%)	PCE OC min	Dry Density (Kg/m ³) min at 110° C	at 110° C/ 24 hrs	at 800° C/ 3hrs	at 1000° C/3 hrs	at 800° C/3 hrs	at 1100° C/3 hrs	Al ₂ O ₃ % min	Fe ₂ O ₃ % max
Racmon 45	1550	6	5-6	0.55	32	-	-	-	0	±0.20	±0.30	45	1
Racmon 60	1600	6	5-6	0.60	33	2600	750	800	900	±0.20	±0.30	60	1.5
Racmon 70	1600	6	4.5-5.0	0.65	34	2700	750	800	900	±0.20	±0.30	70	1.5
Racmon 80	1700	6	4.5-4.8	0.75	35	-	-	-	-	-	-	80	1.8
Racmon 90	1700	6	4.2-4.5	0.85	36	3000	950	1000	1100	±0.20	±0.30	90	1





INSULATING PRODUCTS

Brand	Al ₂ O ₃ % min	Fe ₂ O ₃ % max	B.D. gm/cc min	Service Temp °C	PLC at deg/hr % max	Thermal Conductivity	
						at 800° C	at 1000° C
						W/mK	
RC P 23	50	1.2	0.6	10	1250/5/±1.0	0.3	0.35
RC P 26	55	1	0.9	18	1400/5/±0.8	0.4	0.5
RC P 28	65	0.8	1.15	45	1400/5/±0.6	0.45	0.5
RC T 10	40	1.9	1.3	60	1250/2/±1.5	0.55	0.65
RC T 12 (HFK)	40	1.2	1.2	40	1400/5/±1.5	0.5	0.6
RC HFI	30	2	0.9	20	1300/2/±2.0	0.33	-
RC CFI	30	2	0.8	15	1200/2/±2.0	0.33	-
Mica Insulation	-	-	0.65	9	950/5/±2.0	0.25	-
RC LWFB	30	2	1.1	70	1150/5/±1.5	0.45	-

INSULATING CASTABLES

Brand	GENERAL PROPERTIES				PHYSICAL PROPERTIES		COLD CRUSHING			P.L.C %		CHEMICAL ANALYSIS	
	Max Service Temp °C	Max Grain Size (mm)	Water Addition on Site (%)	Reversible Thermal Expansion at 1000° C (%)	Refractories °C/ Orton Cone min	Dry Density (Kg/m ³) min at 110° C	Strength (kg/cm ²)		at °C Hot Face	at 1100° C/3 hrs	at 300° C/ 3 hrs	Al ₂ O ₃ % min	Fe ₂ O ₃ % max
							at 110° C/ 24 hrs	at 800° C/ 3 hrs					
Raj Lite 4	1000	6.0	100-110	0.55	-	550	4	2	0.1	-	-	30.0	11.0
Raj Lite 7	1100	6.0	70-80	0.57	1337/12	850	12	4	0.18	+ 1.60	-	33.0	8.5
Raj Lite 9	1200	6.0	40-50	0.57	1398/14	1000	15	6	0.28	+ 1.00	-	33.0	6.0
Raj Lite 11	1300	6.0	35-40	0.57	1398/14	1250	35	25	0.31	+ 1.20	+ 1.0	34.0	3.5
Raj Lite 13	1350	6.0	30-35	0.60	1398/14	1450	50	30	0.33	+ 1.20	+ 0.60	39.0	3.5
Raj Lite 15	1350	6.0	30-35	0.60	1430/15	1600	90	60	0.44	+ 1.20	+ 0.60	39.5	3.2
Raj Lite 11LI	1350	6.0	30-35	0.60	1430/15	1250	40	30	0.32	+ 1.20	+ 1.00	43.5	1.5
Raj Lite 13 LI	1400	6.0	30-35	0.60	1430/15	1450	80	40	0.40	+ 1.20	+ 0.60	44.0	1.5
Raj Lite 15 LI	1400	6.0	25-30	0.60	1491/16	1600	130	75	0.42	+ 1.20	+ 0.60	46.0	1.5

NOZZLE

Brand	Al ₂ O ₃ % max	Fe ₂ O ₃ % min	PCE OC min	A.P.% max	B.D. gm/cc min	MgO% min	C% max
RC- HAN	70	1.5	35	20	2.5	-	-
RC- HANS	85	1	36	19	2.7	-	-
RC- HANSC	90	0.5	37	12	2.8	-	6
RC- MGTN	-	1	36	20	2.85	80	-

OTHER PRODUCTS

Brand	MgO% approx	CaO% approx	Mg(OH) ₂ approx	Ca(OH) ₂ approx	Al max	Size mm Range
Hydrated Lime	3	1.0	3	80	1.5	Powder
Hydrated Dolomite	20	1.0	20	50	1.5	Powder
Semi Hydrated Dolomite	25	1	5	55	1.5	Powder
Hydrated Lime Classified	3	1	-	90	1	Powder

BED MATERIAL

Brand	Al ₂ O ₃ % min	Grading Range (mm) 90% passing	B.D. gm/cc Loose	Initial Deformation °C
RC BM G	23-30	0.5-3	1.1-1.3	1350
RC BM NCFC	30-35	1-2.5	1.0-1.2	1400
RC BM NPC	-	0.86-2.36	1.05-1.15	1450
RC BM FA	-	4-15	-	-

