

ABOUT COMPANY

We take immense pride in presenting ourselves as a forefront manufacturer of Refractories located strategically in the eastern part of India. Positioned strategically amid India's key steel production hubs in Belpahar of Jharsuguda district, Odisha, India our site offers exceptional connectivity, situated a mere 20 km away from Veer Surendra Sai Airport and enjoying direct access to NH49, a convenient 60 km from Raigarh.

Our Journey

Since our inception in the year 2000, we have been on an unwavering quest for excellence in monolithic refractory solutions. With a tenure steeped in expertise and experience, we have consistently pioneered new frontiers, setting benchmarks for reliability and performance.

Specialization in Monolithics

- We take pride in our specialization in monolithic refractories, offering an extensive range of products meticulously formulated to meet the diverse and stringent demands of various industries.
- From castables to gunning mixes, spray masses to special mortars, our monolithic solutions cater to the unique needs of industries such as steelmaking, cement, petrochemicals, and more.

Innovation and Quality

- Innovation is the cornerstone of our operations. Our state-of-the-art manufacturing processes are guided by stringent quality control measures, ensuring that each monolithic product surpasses industry benchmarks for durability, heat resistance, and performance.
- Our commitment to innovation drives us to constantly evolve and adapt, staying ahead of industry trends and technological advancements.

Customer-Centric Approach

- We prioritize understanding our customers' distinct challenges and needs, forming the core of our values.
- By closely collaborating with our clients, we provide customized solutions and specialized technical expertise to fulfill their specific refractory requirements.
- This customer-focused approach cultivates long-lasting partnerships founded on trust, reliability, and exceptional service.



"To Empower Industries globally with Exceptional Refractory Solutions"

MISSI@N

Looking ahead, our mission is to continue being a trailblazer in the monolithic refractory sector. We aim to further expand our product offerings, enhance our manufacturing capabilities, and fortifying our position as a trusted partner for industries seeking top-tier monolithic refractory solutions.

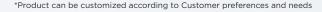
Join us on this journey as we redefine the landscape of monolithic refractories, where innovation, precision, and excellence converge to exceed expectations.



Conventional Castable

Conventional alumina castable is a type of refractory material used in high-temperature applications where resistance to heat, wear, and corrosion is essential. It is composed of various raw materials, including alumina aggregates, binders, and additives, formulated to create a castable mixture that can be shaped and installed to form linings and structures.

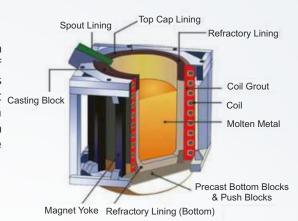
	Flexibility in	installation <mark>:</mark>	Corrosior	n Resistance	e High-Te	emperature	Resistance	Mechanical Strength			
BRAND NAME	SM COIL COAT	SM CAST A(PATCH)	SM CAST A	SM CAST K	SM CAST 60s	SM CAST C	SM CAST SPL	SM CAST 94	SM CAST 97		
Base Material	WTA AND WFA	Calcined and Brown Sintered Alumina	Brown Sintered Alumina	Calcined Diaspore /Alumina	HIGH PURITY DENSE	Calcined Non- Plastic Clay	Calcined Non- Plastic Clay	WTA AND WFA	White Fused Alumina		
Installation	Vibro Casting	Vibro Casting	Vibro Casting	Vibro Casting	Vibro Casting	Vibro Casting	Vibro Casting	Vibro Casting	Vibro Casting		
Shelf Life (Months)	9	9	9	9	9	9	9	9	9		
Max Service Temp (°C)	1750	1700	1750	1650	1600	1500	1500	1750	1750		
Water Required for Casting (%)	8-9.5	13-15	9.5-11.5	11-12.5	11.5-13	12-13	12-13	8-9.5	8-9.5		
Packing in PP Bag	25/50Kg	25/50Kg	25/50Kg	25/50Kg	25/50Kg	25/50Kg	25/50Kg	25/50Kg	25/50Kg		
Delivery State	Powder	Powder	Powder	Powder	Powder	Powder	Powder	Powder	Powder		
			Ch	emical An	alysis						
Al ₂ O ₃ %	90-91	76-78	87-89	57-61	52-57	48-52	48-52	93-95	95-96.5		
Fe ₂ O ₃ %	0.2-0.4	1.8-2.2	1.2-1.5	1.5-1.8	1.6-2.0	1.5-18	1.6-1.8	0.1-0.35	0.1-0.3		
			Phy	sical Prop	erties						
Bulk Density(g/cc) Min after drying at 110°C/24h	2.90	2.70	2.75	2.2	2.15	2.1	2.1	2.9	2.9		
			Mech	anical Pro	perties						
CCS (Kg/cm² After Drying at 110°C/24h	650-700	450-550	600-700	400- 500	350-500	350-450	300-400	650-700	650-750		
Application Area	Steel Ladle, Coil Coating, Lead Industry	Steel Ladle, Tundish	Steel Ladle, BOF, ETC	Boiler, Non- Ferrous	Rolling Mills, Non- Ferrous	DRI, Foundry, Non- Ferrous	DRI, Foundry, Non- Ferrous	Copper Industry, Petro- Chemical	Copper Industry, Petro- Chemical		





Neutral Ramming Mass

Neutral ramming mass is a refractory lining material used in induction furnaces and other smelting vessels. It is a mixture of refractory aggregates, binders, and additives. This mass is characterized by its neutral chemical composition, making it Casting Block suitable for use with acidic, basic, and neutral slags. Its high refractoriness and thermal stability enable it to withstand high temperatures and thermal shocks, ensuring optimal furnace performance and longer service life.



- Unlock Extended Furnace Longevity: Choose Neutral Ramming for 5-7x Longer Lifespan Compared to Silica and 3-4x More Than MgO Ramming Mass
- **Boost Productivity and Efficiency:** Experience Reduced Downtime, Lower Electricity Costs (Less Sintering Heat), and Decreased Usage of Steel Fixtures with Extended Service Life.
- Accelerate Heat Preparation Time: Outperform Silica and Magnesite Ramming Masses with Swift Efficiency.
- Enhance Steel Quality: Minimize Non-Metallic Inclusions for Superior Product Integrity
- Optimize Cost Efficiency: Reduce Expenses on Transportation and Storage
- **Environmental Advancement:** Achieving Net Zero Carbon Footprint, Minimizing Environmental Impact.

BRAND NAME	SM-NeutraForge
DESCRIPTION	90 % Alumina High Purity Ramming Mass
MAX. SERVICE TEMPERATURE, °C	1800°C
MAX. GRAIN SIZE, MM	5
CHEMICAL ANALYSIS	
Al ₂ O ₃ , %	86-88%
MgO	11-12%
Fe ₂ O ₃ , %	0.08% Max
PHYSICAL PROPERTIES	
BD, g/cc after drying at 110°C / 24 hrs	2.00 Min

[&]quot;Elevate Efficiency, opt for Superiority: Neutral Ramming Mass Prevails"

ForgeArmor 80C

Description

ForgeArmor 80C is a composite material composed of chemically bonded components, including chrome-enriched alumino-silicate, forming a plastic-like substance.



More About ForgeArmor 80C

- Forgearmor 80C is an advanced refractory material meticulously designed to fortify and protect industrial furnaces, foundry ladles, and related equipment.
- This specialized compound offers superior resistance to slag penetration and metal corrosion, ensuring prolonged durability and heightened operational efficiency.
- Its high-refractory properties effectively shield against extreme temperatures, thereby extending the longevity of furnaces and optimizing their performance.

Property	Value
BRAND NAME	ForgeArmor 80C
Туре	Ramming Mix
Type of Bond	Chemical
MAX. SERVICE TEMPERATURE, °C	1750°C
MAX. GRAIN SIZE, MM	5
Packing	25Kg Bag / Buckets
Water Addition (If supplied Dry)	8.0-8.5% Water.
Self Life	6 Month
CHEMICAL ANALYSIS	
Al ₂ O ₃ , %	78-80%
Fe ₂ O ₃ , %	0.7% Max
Cr ₂ O ₃	4.8% Max
PHYSICAL PROPERTIES	
BD, g/cm³ As Applied	2.70 Min
BD, g/cm³ after drying at 150 °C / 24 hrs	2.75 Min
BD, g/cm³ After Fired at 1600 °C / 24 hrs	2.50 Min

Available in both wet and dry forms for versatile on-site application and customization

^{*}Store in a Dry Cool shaded frost-free environment.



Low Cement Castable

The term "low cement" refers to the reduced amount of cement binder used in the formulation of the castable. Traditional castable contain a significant amount of cement as a binder, which helps hold the refractory aggregate particles together when the castable is installed and cured. However, excessive cement can lead to problems such as reduced high-temperature performance, increased thermal shrinkage, and decreased resistance to thermal shock.



The reduced cement content is typically compensated by using advanced refractory additives that promote particle packing and sintering of the refractory aggregates during the curing process.

Advantages:

High-temperature properties,

Better resistance to thermal shock

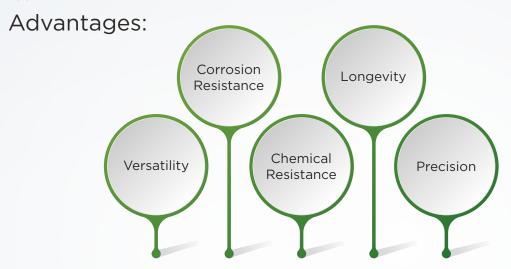
Reduced porosity

Brand	Al ₂ O ₃ (%)	Fe ₂ O ₃	(%) B.D. cm²) Min. (%) Tem		Services Temp.	Refractor			Application				
Name	Min	Max	(gm/ cc) 24	110°C	800°C	1100°C	1500°C	Max	(°C)	iness (°C)		Size (mm)	Area
			hrs. Min	24 hrs. Min	3 hrs. Min	3 hrs. Min	3 hrs. Min		Max	Min	(,,,,	 ,	
SM Cast LC 45	45	1.5	2.2	700	800	900	1000	±1.0 (1500° C/3h)	1500	1720	6-6.5	0-5	Cement Kiln, DRI kiln, Incinerators.
SM Cast LC 60	60	1.5	2.4	700	800	900	1000	±1.0 (1500° C/3h)	1600	1800	5.5-6	0-5	Cement Kiln, DRI kiln, Incinerators.
SM Cast LC 70	70	1.5	2.6	700	800	900	1000	±1.0 (1500° C/3h)	1600	1800	5-5.5	0-5	Cement Kiln, DRI kiln, Tundish ladle back up
SM CAST LC 80	80	1.5	2.7	800	900	1000	1200	±1.0 (1500° C/3h)	1650	1800	5-5.5	0-5	DRI KILN, Alumina Kiln, Sponge Kiln
SM CAST LC 90	90	1.00	2.9	950	950	1100	1200	±1.0 (1500° C/3h)	1650	1800	4 - 4.5	0-5	Launders, Striking pads

Fire clay and High Alumina Mortar

Fire clay is heat-resistant clay used for its thermal insulation.

High alumina mortar, made from alumina aggregates, is used to bond refractory bricks in high-temperature applications due to its excellent resistance to heat and chemicals.



Brand Name	Al ₂ O ₃ (%) Min.	Fe ₂ O ₃ (%) Max.	Grain Size (mm)	Setting	PCE SOFTING POINT °C (MIN)	Sintering temp °C	Services temp°C (Max)	Application area
SM MOAT-45	45	4	0-0.3	AIR	1680	1200	1400	GENERAL PURPOSE USE
SM MOAT-60	55	3	0-0.5	AIR	1700	1100	1600	Steel Ladles (slag zone), calcining zone, RHF walls, roof and general purpose
SM MOAT-70M	69	2.5	0-0.3	CHEMICAL	1750	1200	1650	For fixing ladle nozzle, well block, collecting nozzle
SM MOAT- 80M	75	2	0-0.3	CHEMICAL	1750	1300	1600	VAD, VOD Ladles, Burning Zone, Working lining steel ladles and general purpose
SM MOAT - 90K	89	0.5	0-0.2	CHEMICAL/ CERAMIC	1750	1200	1750	For jointing S G Plate / Nozzle



Insulation Castable

Insulation castable are a type of refractory material designed for use in applications where thermal insulation is crucial. These castable are formulated to have low thermal conductivity, which means they can effectively reduce heat transfer through the material

Advantages:

Insulation castable play a critical role in industries requiring both high-temperature resistance and effective thermal insulation. They help optimize processes, reduce energy consumption, and enhance the longevity of refractory linings in various industrial settings.

PRODUCT	Al ₂ O ₃ (%) Min.	Fe ₂ O ₃ (%) Max	DRY B.D (gm/CC) 110°C/24 hrs. Max.	CCS Kg/cm² @110°C	Water Addition (%)	PLC % @1300°C/3 h Max.	Thermal Conductivity @500°C hot face temp. (kcal/m/hrC) Max.	SERVICE TEMP°C By wt. Max	APPLICATION AREA
SM INS 11	35	4	1.3	35-45	50-60	+/-1.0	0.31	1300	Metallurgy, boilers, rotary kilns,
SM INS 13	35	3.5	1.4	40-50	40-50	+/-1.0	0.33	1350	furnaces
SM INS 15	38	3.5	1.5	45-55	30-40	+/-1.0	0.43	1400	





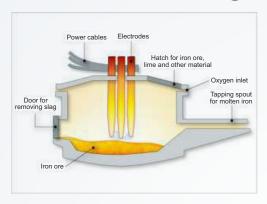








Basic Gunning Mass



Our manufactured Refractory Gunning Masses are produced from granular aggregates of Dead Burnt Magnesite along with high MgO content ranging from (88-94%) with minimal silica content with suitable binder to minimize rebound loss



and applied by spraying on area with an air placement gun. It is mainly used for patching and maintenance applications for furnaces.

Advantages:

- Gunning helps us to repair the refractory lining in difficult area with lesser downtime.
- Gunning creates a Monolithic Structure This structure contributes to better thermal insulation and reduced heat loss and immediate benefit in life extension of refractory materials at more reasonable cost.

Brand Name	MgO (%) Min.	SiO ₂ (%) Max.	Setting	Grading (mm)	PCE (SK) Min.	After drying at 110°C			firing at C / 2 hrs.	Amplication
						B.D. (gm/cc) Min	CCS (Kg/cm²) Min	PLC (%) Max	CCS (Kg/cm²) Min	Application area
Shree Gun-85	85	4-5	Chemical	0-3	38	2.70	350	-1.5	300	Steel ladle, for EAF making mild & low alloys
Shree Gun Superior	90	3-3.5	Chemical	0-3	38	2.75	350	-1.5	200	BOF and EOF stadium and mouth making high quality steel
Shree Gun Superb	94	2.0	Chemical	0-3	38	2.80	400	-1.5	200	EOF high capacity, convertor tuyer zone

^{*}Grading: 95% Min will pass through the maximum grain size mentioned.

Basic Spray Mass

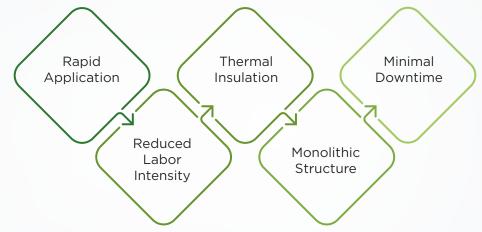


Spray mass, also known as gunning mix or gunning refractory, is a type of refractory material designed to be applied using a spraying or gunning process. It's used to quickly and efficiently repair, line, or coat the interiors of tundishes to give ample protection to the permanent lining.



The spray mass is formulated to have the right balance of properties that make it suitable for the gunning application method.

Advantages:



Brand Name	MgO (%) Min.	SiO ₂ (%) Max.	Fe ₂ O ₃ (%) Max.	Setting	Grading (mm)	Sintering Temp (°C) Min.	Appln Temp (°C) Max.	PLC (%) at 1525°C/ 3 Hrs. Max.	B.D. (gm/cc) after drying at 110°C Max.	B.D. (gm/cc) after firing at 1525°C/ 3hrs Max.	Application Area
SML-70	69	25	5.5	Chemical	0-0.5	750	1600	-3.0	1.80	1.85	Spraying of bottom and
SML-80	79	14	5.0	Chemical	0-0.5	750	1650	-5.0	1.85	1.9	walls of tundish
SML-90	88	7	3.0	Chemical	0-0.5	750	1650	-5.0	1.85	1.9	

 $^*\mbox{Grading}$: 95% Min will pass through the maximum grain size mentioned.



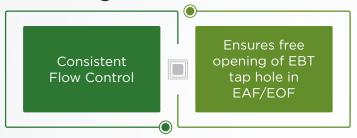
Eccentric Bottom Tapping (EBT) Mass

Eccentric Bottom Tapping (EBT) mass, is a type of refractory material specifically formulated for use in the tap hole area of steelmaking ladles equipped with Eccentric Bottom Tapping systems. The EBT system is a modern technology used to facilitate controlled and efficient tapping of liquid steel from the ladle.

The tap hole in a steelmaking ladle is a critical point where molten steel is released for further processing. EBT mass is designed to withstand the extreme conditions encountered in this area, including high temperatures, rapid temperature changes, and the erosive and corrosive effects of molten steel and slag.



Advantages:





Brand	MgO%	SiO ₂ % (Max)	Fe ₂ O ₃ (Max)	Carbon %	Setting	Grading in mm	LOI @ 900°C %	Service Temperature	Application Area
SM TAP 45	44 to 45	40	5 -8	2-4	Free Opening	2-8mm	4 Max	1600° C	Furnace
SM TAP 75	76-80	5	3	2-4	Free Opening	2-8mm	2 Max	1650°C	Furnace

Back Filling Mass:

Backfilling mass, also known as backfill refractory or backfill material, is a type of refractory material used to fill voids, gaps, or cavities in the lining of industrial furnaces, ladles, and other high-temperature equipment. It serves several important purposes in the maintenance and repair of refractory linings

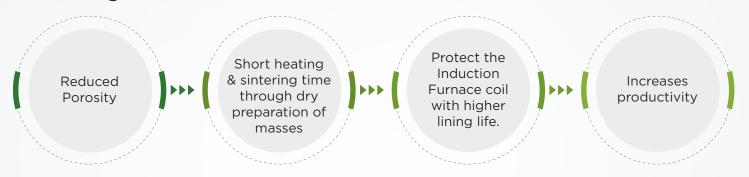
The choice of backfilling mass depends on factors such as the location of the repair, the type of equipment, the operating temperature, and the specific needs of the application. Proper installation techniques, including appropriate compaction, curing, and adherence to manufacturer guidelines, are essential to ensure the desired results and longevity of the repaired lining

Brand Name	MgO% min	SiO ₂ % max	Grading	Appl. Temp °C	Setting	Application Area
SM-BACK FILL	45-60	25	0 to 5 mm	1700	Chemical	LADLE & FURNACE

Ramming Mass

Ramming mass is another type of refractory material used in high-temperature applications, particularly in the lining of various industrial furnaces and kilns to prevent it from anti coating, corrosion & erosion. Unlike gunning mass, which is applied using a gunning machine, ramming mass is manually placed and compacted (rammed) into the desired shape within the refractory lining. It is commonly used for creating furnace linings, induction furnace linings, and other areas where a compacted refractory lining is required.





Brand Name	MgO% (Min)	Fe ₂ O ₃ (Max)	_	Grading (mm)	Service Temp °C	Sintering Temp. °C	Setting	Application Area
SMR-84	84	1.5	8.5	0 to 5	1750	1550	Chemical	For construction and repair of steel operating basic slags furnace(EAF)
SMR-92A	90	1	4.5	0 to 2 or 0 to 5	1750	1550	Chemical	Ferrous & non ferrous industries , AOD
SMR-M95	94	0.85	1.1	0-6	1750	1550	Chemical	Ramming of taphole of BOF, EAF, Convertor etc
SM-FET65	65	3	10	0-5	1650	1400	Chemical	Fettling of slag line of EAF Tundish Coating,Steel launder coating patching of slag line of steel ladle etc

 $^{^*\}mbox{Grading}$: 95% Min will pass through the maximum grain size mentioned.



Magnesite Mortars

Basic magnesite mortar is a refractory material used to bond and repair basic refractories in high-temperature environments like steelmaking. It's primarily composed of magnesia and other additives, offering excellent resistance to high temperatures and basic slag. It's applied as a paste to construct or fix linings in furnaces and vessels, enhancing their durability and withstanding chemical erosion

Advantages:



QUALITY	Mgo	Cr ₂ O ₃	Fe ₂	Sio ₂	Al ₂ O ₃	ZrO ₂	PCE	Grading	Limit of Application	Setting	Description	Area of Applcation
	Min%	Min%	Max%	Max%	Max%	Min%	SK	mm	Temp°C			
SM M MGT	85	ı	-	6	-	ı	38	0-1	1700	Ceramic	Magnesite mortar	For Magnesite Bricks
SM M MCH	60	12	10	7	6	ı	38	0-1	1750	"	Mag chrome mortar	For Magnesite Chrome Bricks
SM M CHM	35	18	10	7	10	-	38+	0-1	1750	"	chrome mag mortar	For Chrome Magnesite Bricks
SM M MGT 91	90	-	2.5	5	1	-	38	0-1	1750	"	SPL Magnesite Mortar	For High Grade Magnesite Bricks
SM FIX 90	85- 90	-	5	3	5	-	38	O-1	1750	"	Special fixing	For KORF Tuyere Brick
SM M SMC MC	60	16	8	3	6	-	38	O-1	1750	"	Special Magchrorme	For High Grade MagnesiteChrome bricks
SM M CMDB	58	18	4	1.8	2.5	-	40	O-1	1750	"	Special chrorme Mag motar	For High GradeChrome Magnesite bricks
SM M MCH (DB)	80	5	4	1.8	2.5	-	40	O-1	1750	"	Special Mag chrorme	For High Grade Magnesite Chrome bricks
SM M MAG- ZIR TY-1	77	-	-	-	-	12	-	0-1	-	"	Special Mag-Zir Mortar	For Glass Tank Furnace Regenerator

^{*}Grading: 95% Min will pass through the maximum grain size mentioned.

RM-25 (Basic Slag Conditioner)

Our advanced slag conditioning product is meticulously engineered to optimize the performance and extend the lifespan of steel melting furnaces.

The composition includes magnesium oxide (MgO), carbon, and a carefully formulated binder, resulting in aggregates that can take the form of briquettes.

Why Choose Our Advanced Slag Conditioner?



Enhanced Efficiency:

Power consumption reductions ranging from 10% to 30%, while simultaneously curbing refractory consumption by 25% to 60%. This leads to substantial cost savings and operational benefits.

Prolonged Furnace Life:

Our solution contributes to doubling the lifespan of your furnace, thereby significantly reducing refractory expenditures, downtime, and ultimately boosting productivity.

Improved Steel Quality:

It creates foam, facilitating the removal of impurities from liquid steel and the recovery of valuable metal from slag. This process ensures cleaner steel and consistent quality, resulting in increased yield and higher product value.

Enhanced Thermal Efficiency:

Implementing our advanced slag conditioner enhances the overall thermal efficiency of your steel melting process, contributing to energy savings and improved sustainability.

Reduced Corrosion Potential:

Our product effectively reduces the corrosion potential within your furnace, enhancing its longevity and reliability.

Seamless Integration:

The conveying and batching processes seamlessly integrate into your existing material handling systems, ensuring a hassle-free transition and minimizing disruptions to your operations.





Technical Specification:

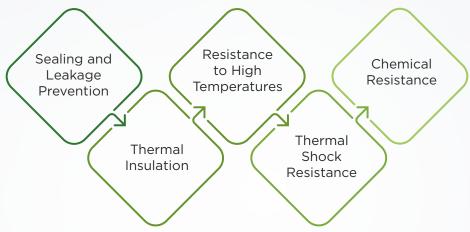
RM-25 (Basic Slag Conditioner)										
Chemical Che										
Particulars	Range	Typical								
MgO	50-68	64.4								
SiO ₂	< 6.0	4.2								
CaO	< 5.0	2.2								
Al_2O_3	<1.0	0.7								
Carbon	16-12	10.5								
Physical										
C.C.S (MPa)	>2	4.0								
BD. (g/cc)	1.2-1.6	1.5								
LOI	<20	18								
Grain Size	30-60mm									

In conclusion, our advanced slag conditioning solution offers a comprehensive package of benefits, ranging from efficiency enhancements to cost savings and increased steel quality.

Elevate your steel melting process with our cutting-edge product and experience the advantages firsthand.

Nozzle Filling Mass

Nozzle filling mass" typically refers to a refractory material used for filling the nozzles or openings in a refractory lining, particularly in steelmaking processes such as in steel ladles, tundishes, or other molten metal-containing vessels.



Brand Name	ZrO ₂	SiO ₂ %	Cr ₂ O ₃	LOI %	PCE (SK) Min.	SETTING	Grading	Application Temp C
SM NFC S98	-	95	-	2	36-38	Ceramic/Chemical	0-1mm	1650
SM NFC ZR34	34-35	28-30	18-20	2	38-40	Ceramic/Chemical	0-1mm	1750
SM NFC ZR30	30-31	29 - 30	22-23	2	38-40	Ceramic/Chemical	0-1mm	1750
SM NFC ZR25	25-26	37-38	19-20	2	38-40	Ceramic/Chemical	0-1mm	1750







Shree Minerals & Metals

Manufacturer of Monolithic Refractories

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