Refractory Cement

Description:

Refractory cement is made from high-quality bauxite and lime as raw materials, blended in a certain proportion to form a mixture. After sintering, the resulting clinker, which is primarily composed of aluminates, is ground into fine powder to produce a refractory hydraulic cement with excellent fire resistance. The refractoriness of refractory cement is no less than 1580°C. Depending on the composition, it can be classified into alumina refractory cement, low-calcium aluminate refractory cement, calcium-magnesium aluminate cement and dolomite refractory cement,etc.

Technical Data:

Item	Grade					
	CA50-G6	CA50-G7	CA50-G9	CA-65P	CA-70	CA-80
Refractoriness (℃)	≥1420	≥1450	≥1480	≥1610	≥1650	≥1750
Al_2O_3 (%)	≥50	≥50	≥51	≥64	≥68	≥77
CaO (%)	≥33	≥33	≥33.5	≤35	≤30	≤20
Specific Surface Area (Blaine method) m^2/kg	≥300	≥300	≥400	≥450	≥500	≥550
Initial Setting Time (min)	≥30	≥30	≥90	≥30	≥30	≥30
Final Setting Time (min)	≤360	≤360	≤360	≤360	≤360	≤360
24h Modulus of Rupture (MPa)	≥6.5	≥7.5	≥9.5	≥9.0	≥8.0	≥5.0
24h Crushing Strength (MPa)	≥50	≥60	≥70	≥60	≥50	≥35

Refractory Mortar

Description:

Refractory mortar is an unshaped refractory material composed of refractory powders, binders, and additives. It has characteristics such as high-temperature stability, good bonding properties, resistance to chemical corrosion and wear resistance.According to their chemical composition, refractory mortars can be classified into siliceous, aluminous, alumino-silicate, magnesian, and other types.

Technical Data:

Aluminum-silica refractory mortar:

Item		Grade						
		NN-30	NN-38	NN-42	NN-45	LN-55	LN-65	LN-75
$\omega(Al_2O_3)$ / %		≥30	≥38	≥42	≥45	≥55	≥65	≥75
Refractoriness/℃		1620	1680	1700	1720	1760	1780	1780
Flexural Bonding Strength/MPa	110℃×24h	≥1.0	≥1.0	≥1.0	≥1.0	≥1.0	≥1.0	≥1.0
	1200℃×3h	≥3.0	≥3.0	≥3.0	≥3.0	-	-	-
	1400℃×3h	-				≥4.0	≥4.0	≥4.0
HPLC / %	1200℃×3h	-5~+1					-	
	1400℃×3h	-					-5~+1	
Bonding Time/min		1~3						
Particle Size/ %	< 1.0mm	100						
	> 0.5mm	2						
	< 0.075mm	50						

Remarks: If there are special requirements, the bonding time shall be determined through negotiation.

Phosphate-bonded Aluminum-silica refractory mortar:

Item		Grade				
		NN-45P	LN-65P	LN-75P	GN-85P	GN-90P
$\omega(Al_2O_3)$ / %		≥45	≥65	≥75	≥85	≥90
Refractoriness/℃		≥1720	≥1780	≥1780	≥1780	≥1800
Flexural Bonding Strength/ MPa	110℃×24h	≥2.0	≥2.0	≥2.0	≥2.0	≥2.0
	1400℃×3h	≥6.0	≥6.0	≥6.0	-	-
	1500℃×3h		-		≥6.0	≥6.0
Refractoriness Under Load / 0.2 MPa $T_{0.6}$/℃		1200	1400	1400	1600	1650
Permanent Linear Change on Heating/ %	1400℃×3h		-5~+1			
	1500℃×3h		-		-5~+1	
Bonding Time/min				1~3		
Particle Size/ %	< 1.0mm			100		
	> 0.5mm			2		
	< 0.075mm		50			40
Remarks: If there are special requirements, the bonding time shall be determined through negotiation.						

Magnesia and magnesia-alumina refractory mortar:

Item		Grade				
		MN-91	MN-95	MN-97	MLN-70	MLN-80
ω(MgO / %		≥91	≥95	≥97	≥70	≥80
$\omega(Al_2O_3)$ / %			-		8~20	5~10
Flexural Bonding Strength/ MPa	110℃×24h			≥1.5		
	1500℃×3h			≥3.0		
Permanent Linear Change on Heating/ %	1500℃×3h			-4~+1		
Bonding Time/min				1~3		
Particle Size/ %	< 1.0mm			100		
	> 0.5mm			2		
	< 0.075mm			60		
Remarks: If there are special requirements, the bonding time shall be determined through negotiation.						

Magnesia chromite refractory mortar:

Item		Grade			
		MGN-8	MGN-12	MGN-16	MGN-20
ω(MgO / %		70~80	≥60	≥55	≥50
ω(Cr_2O_3) / %		4~9	≥12	≥16	≥20
Flexural Bonding Strength/ MPa	110℃×24h	≥1.0			
	1500℃×3h	≥2.0			
Permanent Linear Change on Heating/ %	1500℃×3h	-4~+1			
Bonding Time/min		1~3			
Particle Size/ %	< 1.0mm	100			
	> 0.5mm	2			
	< 0.075mm	60			

Remarks: If there are special requirements, the bonding time shall be determined through negotiation.

Refractory Concrete

Description:

Refractory concrete is a special type of concrete made by mixing aggregates, binders, and additives in specific proportions, which is then directly poured to form the final product. Depending on the type of binder, refractory concrete can be classified into alumina refractory concrete, water glass refractory concrete, phosphate refractory concrete, and alumina sulfate refractory concrete, among others. Its fire resistance is similar to that of refractory bricks made from the same materials. It has high compressive strength at room temperature and good thermal stability. In addition, its production process is simple and can be made into various prefabricated blocks, which not only makes it convenient to use but also improves efficiency.

Technical Data:

Item		Grade			
		NRH-300	NRH-600	NRH-900	NRHS-900
$\omega(Al_2O_3)$ / %		≥30	≥35	≥40	≥40
Bulk Density/ (g/cm^3)	110℃×24h	≥2.0	≥2.0	≥2.0	≥2.0
CCS / MPa	72h Maintenance	≥30	≥30	≥30	≥15
	110℃×24h	≥40	≥40	≥40	≥40
	300℃×3h	≥50			
	600℃×3h		≥50		
	900℃×3h			≥50	≥40
HPLC / %	300℃×3h	±0.5			
	600℃×3h		±0.5		
	900℃×3h			±0.5	±0.5

Alkali Resistant Refractory Castable

Description:

Alkali-resistant refractory castable is made of silica alumina materials as aggregates and powders, aluminate cement as a binder, and appropriate additives. They are hydraulic refractory castables with good alkali resistance.

Technical Data:

Items		Grades		
		ARC-1	ARC-2	ARC-3
Alkali Resistance / Grade		≥1	≥1	≥1
CCS / MPa	Dried 110℃×24h	≥100	≥80	≥70
	Burned 1100℃×3h	≥100	≥80	≥70
CMOR / MPa	Dried 110℃×24h	≥10	≥8	≥7
	Burned 1100℃×3h	≥10	≥8	≥7
HPLC / %	Burned 1100℃×3h	±0.5	±0.5	±0.5
Note: Alkali Resistance Grade is tested by the standard JC/T 808-2013				

Silicon Carbide Low-cement Castable

Description:

The main components of silicon carbide low-cement castable include high-purity silicon carbide (SiC) as the aggregate, along with pure calcium aluminate cement and micro-powder as the binder. This material offers excellent strength and wear resistance, making it suitable for environments with high temperatures, high pressure, and corrosive conditions.

Technical Data:

Item		Grade		
		TDJ-40	TDJ-80	TDJ-85
ω(SiC) / %		≥40	≥80	≥85
CMOR/MPa	110℃×24h	≥9	≥9	≥9
	1000℃×3h	≥13	≥14	≥14
CCS/ MPa	110℃×24h	≥70	≥75	≥75
	1000℃×3h	≥100	≥100	≥107
Bulk Density/ （g/cm^3）		≥2.5	≥2.6	≥2.6
HPLC/ %（Carbon-bed method）	1000℃×3h	-0.3~+0.2	-0.3~+0.2	-0.3~+0.2
Thermal Conductivity W/(m·k)	400℃	3~6	7~10	8~13

Alumina low-cement Castable

Description:

Alumina low-cement castable is an unshaped refractory material made primarily from alumina, with a special formula designed to significantly reduce the amount of cement used. It also contains appropriate additives and admixtures and is prepared by mixing and stirring. Its characteristics include high refractoriness, high softening temperature under load, high strength, strong thermal shock resistance and excellent corrosion resistance. Additionally, it has good flowability and plasticity, making it easy to apply during construction.

Technical Data:

Item		Grade		
		ADJ-85	ADJ-90	ADJ-95
$\omega(Al_2O_3)$ / %		≥85	≥90	≥95
$\omega(CaO)$ / %		≤1.8	≤1.7	≤1.7
Cold Modulus of Rupture/MPa	110℃×24h	≥6	≥7	≥7
	1100℃×3h	≥8	≥8	≥9
	1500℃×3h	≥10	≥11	≥11
Cold Crushing Strength/ MPa	110℃×24h	≥40	≥45	≥50
	1100℃×3h	≥55	≥60	≥65
	1500℃×3h	≥80	≥85	≥90
Bulk Density/ （g/cm^3）		≥2.9	≥3.0	≥3.1
Permanent Linear Change on Heating/ %	1500℃×3h	±0.4	±0.4	±0.4

Zirconia low-cement Castable

Description:

Zirconia low-cement castable is a special refractory material with a low cement content. It typically uses Corundum, zirconia, and ultra-high-performance additives to enhance its performance. This material performs excellently in high-temperature environments, offering outstanding refractoriness, high-temperature strength and resistance to molten slag erosion.

Technical Data:

Item		Grade	
		AKZJ-9	AKZJ-5
$\omega(Al_2O_3)$ / %		≥75	≥75
$\omega(Cr_2O_3)$ +$\omega(ZrO_2)$ / %		9	5
Bulk Density/ （g/cm^3）	110℃×24h	≥2.85	≥2.8
CMOR/ MPa	110℃×24h	≥9	≥8
	1000℃×3h	≥13	≥12
CCS/ MPa	110℃×24h	≥75	≥70
	1000℃×3h	≥110	≥100
TSR(1000℃~cold) / %	110℃×24h	25	20
HPLC / %（Carbon-bed method）	1000℃×3h	-0.3~+0.3	-0.3~+0.3
λ [W/(m·K)]	400℃	3~4	2~3

Alumina Magnesia Refractory Castable

Description:

Alumina magnesia castable is a high performance amorphous refractory materials made of high alumina bauxite clinker, corundum, magnesia, alumina magnesia spinel and other main raw materials, with binders and additives. Alumina magnesia castables have the characteristics of high temperature resistance, good thermal shock resistance, strong corrosion resistance, high mechanical strength and wear resistance.

Technical Data:

Items		Grades				
		AlMg95	AlMg90	AlMg85	AlMg80	AlMg70
$\omega(Al_2O_{3+}MgO)$ / %		≥95	≥90	≥85	≥80	≥70
$\omega(MgO)$ / %		≥2	≥4	≥5	≥8	≥10
Bulk Density / (g/cm^3)	110℃×24h	≥3.05	≥2.90	≥2.85	≥2.80	≥2.60
CCS / MPa	110℃×24h	≥40	≥40	≥40	≥40	≥40
	1000℃×3h	≥50	≥50	≥40	≥40	≥40
	——	≥70 1600℃×3h	≥60 1550℃×3h	≥60 1550℃×3h	≥30 1550℃×3h	≥30 1500℃×3h
CMOR / MPa	110℃×24h	≥8	≥4	≥4	≥4	≥4
	1000℃×3h	≥10	≥6	≥6	≥4	≥4
	——	≥12 1600℃×3h	≥10 1550℃×3h	≥6 1550℃×3h	≥4 1550℃×3h	≥3 1500℃×3h
HPLC / %		0~+1.5 1600℃×3h	0~+1.5 1550℃×3h	0~+2.0 1550℃×3h	0~+2.0 1550℃×3h	0~+2.0 1500℃×3h

Corundum Refractory Castable

Description:

Corundum castable is mostly used for working linings in the tapping yard of large and medium-sized blast furnaces, with good wear resistance, thermal shock resistance and corrosion resistance.

Technical Data:

Items		Properties
Composition（%）	Al_2O_3	≥62.0
	SiC+C	≥16.0
Bulk Density（g/cm^3）	110℃×24 h	≥2.90
	1450℃×3h	≥2.85
CCS /（MPa）	1450℃×3h	≥20.0
	1450℃×3h	≥40.0
HPLC /（%）	1450℃×3h	0～+0.3

Alumina–Silicon Carbide-Carbon Ultra-low Cement Castable

Description:

Alumina–Silicon Carbide-Carbon ultra-low cement castable is a kind of refractory material composed of sintered or fused corundum and silicon carbide as aggregates, sintered/fused corundum powder, silicon carbide powder, and graphite as the substrate, and ultra-low cement as the binder. This castable exhibits excellent high-temperature performance, especially the resistance to molten iron and slag penetration and corrosion.

Technical Data:

Item		Grade							
		ASC-1	ASC-2	ASC-3	ASC-4	ASC-5	ASC-6	ASC-7	ASC-8
$\omega(Al_2O_3)/\%\geq$		70	55	65	60	55	55	60	55
$\omega(SiC+F.C)/\%\geq$		12	25	16	12	10	14	12	15
Bulk Density (g/cm^3) ≥	110℃×24h	2.85	2.80	2.80	2.70	2.65	2.65	2.70	2.45
	1450℃×3h (Carbon-bed method)	2.80	2.75	2.75	2.65	2.60	2.60	2.65	2.40
CCS MPa≥	110℃×24h	25	20	20	20	20	20	20	12
	1450℃×3h (Carbon-bed method)	50	45	50	45	45	45	50	20
HPLC / %	1450℃×3h (Carbon-bed method)	-0.1~0.5	-0.1~0.5	-0.1~0.5	-0.1~0.5	-0.1~0.5	-0.1~0.5	-0.1~0.5	-0.5~0.5
Recommended Use		≥2500m^3 Blast furnace main trench iron line	≥2500m^3 Blast furnace main trench slag line	1000m^3~2500m^3 Blast furnace main trench	1000m^3 Blast furnace main trench	Iron runner	Slag runner	Swing trough	Hot repair of iron runner

Phosphate Boned Corundum Castable

Description:

Phosphate bonded corundum castable is made of fused white corundum aggregate, white corundum fine powder, and activated alumina as main raw materials, with aluminum dihydrogen phosphate solution or phosphoric acid solution as binder, and solidified by pure calcium aluminate cement or heating.
Phosphate bonded corundum castable has the characteristics of high refractoriness, good corrosion resistance, high strength and strong wear resistance, strong adhesion, be baked quickly without bursting.

Technical Data:

Items		Grades		
		PA-80G	PA-85G	PA-90
$\omega(Al_2O_3)$ / %		≥80	≥85	≥90
CMOR/ MPa	110℃×24h	≥5	≥6	≥6
	1100℃×3h	≥6	≥7	≥7
CCS/ MPa	110℃×24h	≥40	≥45	≥50
	1100℃×3h	≥55	≥60	≥65
Density（g/cm^3）		≥2.8	≥2.85	≥2.9
HPLC / %	1100℃×3h	±0.4	±0.4	±0.4

Steel-Fiber Reinforced Refractory Castable

Description:

Steel fiber reinforced refractory castable is made of high alumina clinker or corundum as aggregate and powder, with binders, additives, and 0-4% by mass of heat-resistant steel fiber.

The main characteristic of steel fiber reinforced castables is strong thermal shock resistance, which can withstand rapid changes in temperature without cracking or peeling. Good toughness can improve the material's impact resistance. High strength including compressive strength and flexural strength, can withstand mechanical and thermal stresses at high temperatures.

Technical Data:

Items		Grades		
		SFC-1	SFC-2	SFC-3
$\omega(Al_2O_3)$ / %		≥80	≥70	≥65
CMOR / MPa	Dried 110℃×24h	≥12.0	≥10.0	≥9.0
	Burned 1100℃×3h	≥12.0	≥10.0	≥6.5
CCS / MPa	Dried 110℃×24h	≥90	≥80	≥70
	Burned 1100℃×3h	≥90	≥80	≥50
CMOR(5 cycles 1100℃ ~ cold water) / MPa		≥5.5	≥5.0	≥5.0
HPLC / %	Burned 1100℃×3h	±0.5	±0.5	±0.5

Mullite low-cement Castable

Description:

Mullite low-cement castable is a refractory material made primarily from mullite, combined with a small amount of cement and other additives. Its characteristics include high-temperature stability, high compressive strength, excellent volumetric stability, and outstanding resistance to molten slag.

Technical Data:

Item		Grade		
		MDJ-60	MDJ-65	MDJ-70
$\omega(Al_2O_3)$ / %		≥60	≥65	≥70
$\omega(CaO)$ / %		≤1.8	≤1.7	≤1.7
CMOR/ MPa	110℃×24h	≥6	≥6	≥8
	1000℃×3h	≥7	≥8	≥9
	1500℃×3h	≥12	≥13	≥13
CCS/ MPa	110℃×24h	≥40	≥45	≥55
	1000℃×3h	≥55	≥60	≥65
	1500℃×3h	≥60	≥80	≥95
Bulk Density/ (g/cm^3)		≥2.5	≥2.55	≥2.6
HPLC/ %	1400℃×3h	±0.8	±0.8	±0.8

Lightweight Thermal Insulation Castable

Description:

Lightweight thermal insulation castable refractory is made of silica & alumina lightweight aggregates and powders. This castable has the characteristics of low density, low thermal conductivity, high refractoriness, sound absorption and heat absorption, mainly used in kilns and related equipment that require insulation and heat preservation.

Technical Data:

Items	Grades				
	QJ-1.5	QJ-1.3	QJ-1.0	QJ-0.8	QJ-0.6
Al_2O_3/%	42	40	35	30	25
Density/(g/cm^3)	≤1.5	≤1.3	≤1.0	≤0.8	≤0.6
CCS/MPa	≥12	≥7	≥5	≥4	≥2.5
	10	5.5	4.0	3.0	2.0
HPLC / %	1300 ℃×3 h	1200 ℃×3h	1000 ℃×3h	800 ℃×3h	600 ℃×3 h
			±1.0		
λ / [W/(m·K)] (350±25)℃	≤0.6	≤0.55	≤0.50	≤0.40	≤0.35

Dense Fireclay and High Alumina Refractory Castable

Description:

Fireclay refractory castables are made of fireclay, binder and additives mixed evenly with low cost and certain fire resistance and thermal insulation.

High-alumina refractory castables are made of high-alumina bauxite as the main raw material, with high refractoriness, high refractoriness under load, good thermal shock resistance and mechanical strength.

Technical Data:

Items		Grades						
		Clay-40	Clay-45	AL-50	AL-60	AL-65	AL-70	AL-80
$\omega(Al_2O_3)$ / %		≥40	≥45	≥50	≥60	≥65	≥70	≥80
Refractoriness / CN		≥164	≥170	≥170	≥172	≥172	≥172	≥178
Density/(g/cm^3)		≥2.05	≥2.10	≥2.15	≥2.30	≥2.40	≥2.45	≥2.65
CMOR / MPa	110℃×24h	≥4.0	≥4.0	≥4.0	≥5.0	≥6.0	≥6.0	≥7.0
CCS / MPa		≥25	≥25	≥25	≥30	≥35	≥35	≥40
HPLC / %		±0.8 (1300℃×3h)		±0.8 (1350℃×3h)		±0.8 (1400℃×3h)		±0.8 (1500℃×3h)

Alumina Magnesia Ramming Mass

Description:

Alumina magnesia ramming mass is a kind of amorphous refractory material used in metallurgy and other industries. It is made of alumina and magnesia as the main raw materials, with appropriate amount of binder and additives added.

Alumina magnesia ramming mass has good refractoriness, thermal shock resistance and erosion resistance, withstanding the scouring and erosion of high temperature melt. It can be used on the lining of equipment of different shapes with ramming method.

Technical Data:

Items		Grades			
		AMD-95	AMD-85	AMD-80	AMD-70
$\omega(Al_2O_{3+}MgO)$ / %		≥95	≥85	≥80	≥70
$\omega(MgO)$ / %		≥2	≥5	≥8	≥10
Density / (g/cm^3)	110℃×24h	≥3.0	≥2.8	≥2.75	≥2.55
CCS / MPa	110℃×24h	≥35	≥35	≥35	≥35
	1000℃×3h	≥40	≥40	≥40	≥40
	——	≥60 1600℃×3h	≥50 1550℃×3h	≥30 1550℃×3h	≥30 1500℃×3h
CMOR / MPa	110℃×24h	≥6	≥4	≥4	≥4
	1000℃×3h	≥8	≥6	≥4	≥4
	——	≥10 1600℃×3h	≥6 1550℃×3h	≥4 1550℃×3h	≥3 1500℃×3h
HPLC / %		0~+1.5 1600℃×3h	0~+2.0 1550℃×3h	0~+2.0 1550℃×3h	0~+2.0 1500℃×3h

Magnesia Ramming Mass

Description:

Magnesia ramming mass is made of magnesia sand or fused magnesia sand and magnesia fine powder as the main raw materials, and added with binders and additives.

Magnesia ramming mass has the characteristics of high temperature resistance and good slag resistance. Magnesia ramming mass also has high mechanical strength and good wear resistance, good material erosion resistance, thereby extending the service life of the furnace lining and reducing maintenance costs.

Technical Data:

Items		Grades			
		MD-95	MD-90	MD-85	MD-80
ω(MgO) / %		≥95	≥90	≥85	≥80
Density / (g/cm^3)	110℃×24h	≥2.8	≥2.75	≥2.7	≥2.65
CCS / MPa	110℃×24h	≥35	≥35	≥35	≥35
	1000℃×3h	≥40	≥40	≥40	≥40
	——	≥60 1550℃×3h	≥50 1500℃×3h	≥30 1500℃×3h	≥30 1450℃×3h
CMOR / MPa	110℃×24h	≥6	≥4	≥4	≥4
	1000℃×3h	≥8	≥6	≥4	≥4
	——	≥10 1550℃×3h	≥6 1500℃×3h	≥4 1500℃×3h	≥3 1450℃×3h
HPLC / %		0~+1.5 1550℃×3h	0~+2.0 1500℃×3h	0~+2.0 1500℃×3h	0~+2.0 1450℃×3h

Al-SiC-C Ramming Mass

Description:

Al-SiC-C ramming mass is a high-performance refractory material made of corundum powder, silicon carbide powder, graphite powder and high-quality composite binder. Al-SiC-C ramming mass can achieve rapid repair within 50 minutes with fast construction and no need for baking.

Technical Data:

Items		Dropping point	Main trough	Branch trough	Slag trough
Composition（%）	Al_2O_3	≥65.0	≥60.0	≥55.0	≥50.0
	SiC+C	≥15.0	≥15.0	≥12.0	≥18.0
Bulk Density（g/cm^3）	200℃×24 h	≥2.55	≥2.50	≥2.45	≥2.40
	1450℃×3h	≥2.55	≥2.50	≥2.45	≥2.40
CCS /（MPa）	200℃×16h	≥20.0	≥15.0	≥14.5	≥10.0
	1450℃×3h	≥15.0	≥12.0	≥10.0	≥8.0
HPLC /（%）	1450℃×3h	+0.5	+0.5	+0.5	+0.5

AZS Ramming Mass

Description:

Zirconia corundum ramming mass (short for AZS ramming mass) is an amorphous refractory material made of zirconium corundum as the main raw material, with high refractoriness, good thermal shock resistance and erosion resistance, withstanding the erosion of high-temperature melt.

Technical Data:

Items	Grades		
	AZS-Z30	AZS-Z60	AZS-Z90
ZrO_2 / %	30%	60	90
Al_2O_3 / %	48%	-	-
SiO_2 / %	21%	32	5
Fe_2O_3 / %		0.5	0.5
Particle Size /mm	0-0.5	0-0.5	0-0.5

Silicon Carbide Low-cement Gunning Mix

Description:

Silicon carbide low-cement gunning mix is an unshaped refractory material composed of refractory materials with a specific particle size distribution, chemical binders, and additives, used for repairing the linings of thermal equipment through spray application. Its main components include silicon carbide, low-cement binders and additives. It is characterized by high refractoriness, excellent thermal shock resistance and corrosion resistance, high strength and wear resistance, good adhesion, easy to fast construction and efficient protection.

Technical Data:

Item		Grade		
		TP-40	TP-60	TP-70
ω(SiC) / %		≥40	≥60	≥70
CMOR/ MPa	110℃×24h	≥6	≥8	≥9
	1000℃×3h	≥8	≥9	≥10
CCS/ MPa	110℃×24h	≥40	≥50	≥60
	1000℃×3h	≥60	≥70	≥80
Bulk Density/ （g/cm^3）		≥2.4	≥2.45	≥2.5
HPLC / %（Carbon-bed method）	1000℃×3h	-0.4~+0	-0.5~+0	-0.6~+0
Thermal Conductivity W/（m·k）	400℃	3~5	5~7	6~8

Zirconia low-cement Gunning Mix

Description:

Zirconia low-cement gunning mix is an unshaped refractory material composed of refractory materials with a specific particle size distribution, chemical binders, and additives, used for repairing the linings of thermal equipment through spray application. Its main components include Corundum, zirconia, low-cement binders, and additives. It is characterized by high refractoriness, excellent thermal shock resistance and corrosion resistance, high strength, strong wear resistance, good adhesion, easy to fast construction for efficient protection.

Technical Data:

Item		Grade	
		AKZP-9	AKZP-5
$\omega(Al_2O_3)$ / %		≥75	≥75
$\omega(Cr_2O_3)+\omega(ZrO_2)$ / %		9	5
Bulk Density/ (g/cm^3)	110℃×24h	≥2.8	≥2.75
Cold Modulus of Rupture/ MPa	110℃×24h	≥8	≥7
	1000℃×3h	≥11	≥10
Cold Crushing Strength/ MPa	110℃×24h	≥70	≥65
	1000℃×3h	≥100	≥90
TSR (1000℃ ~ Cold) / %	110℃×24h	25	20
HPLC / % (Carbon-bed method)	1000℃×3h	-0.6~0	-0.6~0
Thermal Conductivity W/ (m·K)	400℃	3~4	2~3

Alumina low-cement Gunning Mix

Description:

Alumina low-cement gunning mix is an unshaped refractory material composed of refractory materials with a specific particle size distribution, chemical binders, and additives, used for repairing the linings of thermal equipment through spray application. Its main components include alumina, low-cement binders, and additives. The material is characterized by high refractoriness, excellent thermal shock resistance and corrosion resistance, high strength, strong wear resistance, good adhesion, easy to fast construction and efficient protection.

Technical Data:

Item		Grade		
		ADP-80	ADP-85	ADP-90
$\omega(Al_2O_3)$ / %		≥80	≥85	≥90
CMOR/ MPa	110℃×24h	≥5	≥6	≥6
	1100℃×3h	≥6	≥7	≥7
CCS/ MPa	110℃×24h	≥40	≥45	≥50
	1100℃×3h	≥55	≥60	≥65
Bulk Density/ （g/cm^3）		≥2.8	≥2.9	≥3.0
HPLC / %	1100℃×3h	±0.4	±0.4	±0.4

Fireclay and High Alumina Plastic Refractory

Description:

The main components of fireclay and high-alumina plastic refractories are fireclay and high-alumina bauxite. It is suitable for industrial kilns with high temperatures and complex working conditions.

Fireclay and high-alumina plastic refractories are easy to construct, with high refractoriness, high refractoriness under load, strong thermal shock resistance and high erosion resistance.

Technical Data:

Items		Grades				
		KSL-35	KSL-40	KSL-60	KSL-75	KSL-80
$\omega(Al_2O_3)$ / %		≥35	≥40	≥60	≥75	≥80
Density(110℃×24h) / (g/cm^3)		≥2.15	≥2.20	≥2.35	≥2.50	≥2.65
CCS(110℃×24h) / MPa		≥6.0	≥7.0	≥7.0	≥8.0	≥8.0
CFS / MPa	110℃×24h	≥2.0	≥2.5	≥2.5	≥3.0	≥3.0
	1300℃×3h	≥3.0	≥3.5	≥3.5	≥4.0	≥5.0
Heating Linear Change / %		-1.5 ~ 0 (110℃×24h)				
		-1.5 ~ 0 (1300℃×3h)		-1.5 ~ +0.5 (1300℃×3h)		-1.0 ~ +0.5 (1500℃×3h)
Plasticity Index / %		12 ~ 35				
Moisture / %		≤ 10.0				