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REFRACTORY

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Zinfon Refractory Technology Co.,Ltd

About Us

Zinfon Refractory Technology Co., Ltd. is a refractory material supplier integrating R&D, production, processing, construction, warehousing and commerce. It has invested two manufacturing plants: **Liaoning Xinfeng Refractory Plant and Liaoning Yixing Refractory Technology Co.,Ltd.**, and offering various magnesia and alumina refractories including both shaped and unshaped products, raw materials and related chemical products. Those are widely used for steel-making, metallurgy, construction, nonferrous, power plant, mechinery, petroleum, chemical and other industries. We are offering premium solutions for high-temperature applications and industries.

Liaoning Xinfeng Refractory Plant locates in Fushun city of Liaoning Province, it has over 20 years' experience in technological research and production management of alumina refractory materials, a full-automatic batching and filling production line and a manufacturing workshop of castables, covering all the alumina refractories including: shaped products of high alumina series, mulite series, silicon series, phosphate series and light insulation series etc., and unshaped products of castable, self-flow, plastic materials and precast blocks, etc., as well as a a variety of raw refractories and chemical products.

Liaoning Yixing Refractory Technology Co.,Ltd., locates in Dashiqiao city of Liaoning Province, replying on the "China Magnesia Capital" - Dashiqiao city' s rich magnesite mineral resource, and the local industrial cluster of refractories, we have invested two production lines of 120-meter ultra-high temperature tunnel kiln, a full-automatic crushing and grinding workshop for raw materials, with more than 100 employees and an annual output of 100,000 tons of various refractory products. Its magnesia product line covers all grades of Mg, Mg-Cr, Mg-C, Mg-Zr, Mg-Fe spinel, Mg-Al spinel, forsterite and other sintering brick products, expecially the directly bonded and semi-directly bonded Mg-Cr bricks have been successfully applied on the AOD (Argon Oxygen Decarburization), VOD (Vacuum Oxygen Decarburization), and RH (Ruhrtahl Heraeus) refining furnaces of steel mills.

We prioritize technological innovation and product development, and have established a technological R&D center and laboratory with complete sets of physical and chemical testing device for refractory materials. Additionally, we have passed the quality management system certifications, our product have been exported to the USA, Australia, Vietnam, South Korea, and Russia, and many other countries of Africa, Europe, and America.

Refractory Castables

Introduction

Castable refractories is product that is used in various part of furnace as Monolithic Refractories that added hydraulic alumina cement to refractory aggregate, Jucos is producing suitable product to installation and working condition through a quality control, this product which is minimizing alumina cement for using various dispersants and ultra fine powder so it has excellent abrasion resistance, erosion resistance, spalling resistance and chemical resistance. It widely used in part of various industrial furnace including incinerator, nonferrous metal furnace etc.

Self–flow Castables (SFC)

The self-flow castables are made of corundum, spinel and ultra-fine powder and is matched with suitable binders, water-reducing agents and admixtures. Under its self-weight, it could be degassed and leveled without vibration so as to become compact. The product has an appropriate setting and hardening time. It saves labor and effort. Its handling easy and convenient and it has high strength, long service life, high-temperature resistance, good thermal shock stability, corrosion resistance and erosion resistance. Corundum self-flow castable is divided into low cement, ultra-low cement and non-cement castables. This product is widely applied. It is suitable for filling the ladle bottoms, around the well blocks, and the EAF roof. Mullite self-flow material and high-alumina self-flow material are suitable for ladle and tundish permanent linings, sealing up water-cooling tubes, roof and sidewall of heating furnace. In addition, self-flow materials could also be applied in mechanized construction.

Specfications \ Grade		ZL–G1	ZL–G2	ZL–G	ZL–1	ZL–2	ZL–3
Al_2O_3 % ≥		65	75	85	65	70	80
BulkDensity(g/cm3) ≥	110℃ x 24 hr	2.35–2.40	2.50–2.60	2.70–2.80	2.30–2.40	2.50–2.60	2.60–2.80
	1100℃ x 3 hr	2.45	2.60	2.70	2.35	2.55	2.70
LinearChange(%)	1100℃ x 3 hr	–0.5–0	–0.5–0	–0.3–0	–0.5–0	–0.5–0	–0.5–0
CrushingStrength (Mpa) ≥	110℃ x 24 hr	30	45	50	30	40	45
	1100℃ x 3 hr	70	70	80	45	55	55
HMOP (Mpa) ≥	110℃ x 24 hr	5	6	8	5	6	8
	1100℃ x 3 hr	10	11	>11	8	9	10
Refractoriness ℃		1750	1790	1790	1730	1770	1790
Classification Temperature (℃)		1350	1450	1500	1350	1400	1500

Mullite Castables

Mullite castables are used at high temperature and can be used as working lining in direct contact with flame. It is suitable for petrochemical industry tubular heating furnace, light diesel oil, ethane cracking furnace lining, normal decompression furnace, sulfur recovery device, steam boiler, turtle net heat insulation layer, two ware barrel and pipe heat insulation single layer, other industrial furnace door, watch fire hole, observation hole door lining, etc.

Specfications \ Grade		NDM–60	NDM–65	GGM–70	GGM–75
Chemical Composition (%)	Al_2O_3 ⩾	65	75	85	65
	SiO_2 ⩾			20	17
Bulk Density (g/cm3) ⩾	110℃ x 24 hr	2.30	2.50	2.65	2.75
Linear Change (%)	1100℃ x 3 hr	± 0.3	± 0.3	± 0.3	± 0.3
Crushing Strength (Mpa) ⩾	110℃ x 24 hr	45	55	80	80
	1100℃ x 3 hr	80	80	100 (1400℃)	110 (1400℃)
HMOP Hot Modulus of Rupture (Mpa) ⩾	110℃ x 24 hr	6	7	11	11
	1100℃ x 3 hr	11	11	>11 (1400℃)	>11 (1400℃)
Classification Temperature (℃)		1400	1500	1550	1550

Magnesia–Aluminum Spinel Castables

Magnesia-Aluminum Spinel Castables with good high-temperature physical properties and chemical stability. Refractory castables added with spinel will offer higher resistance to slag erosion, resistance to slag, thermal shock or spalling resistance, high thermal strength and volume stability of micro-expansion at high temperature, suitable for large and medium-sized ladles. It' s also applied to other highly corrosive high-temperature equipment.

Specifications \ Grade		FMA–70	FMA–75	HMA–65	GMA–90
Chemical Composition(%)	Al2O3 ≥	70	75	65	90
	MgO ≥	10	10	28	5
Bulk Density(g/cm3)≥	110℃ x 24 hr	2.70	2.80	2.65	3.00
Linear Change (%)	1000℃ x 3 hr	0+0.3	0+0.3	0+0.3	0+0.3
	1500℃ x 3 hr	0+1.5	0+1.5	0+1.5	0+1.5
Crushing Strength (Mpa) ≥	110℃ x 24 hr	40	45	30	60
	1000℃ x 3 hr	50	60	50	80
	1500℃ x 3 hr	70	60	75	100
HMOP Hot Modulus of Rupture (Mpa) ≥	110℃ x 24 hr	6	7	6	8
	1000℃ x 3 hr	7	7	8	11
	1500℃ x 3 hr	9	9	11	>11
Classification Temperature (℃)		1500	1600	1600	1650

Baking–free anti–Explosion Refractory Castables

Non-Baking and Anti-Explosion Refractory Castables features fast drying, shortening the baking and installation time. Applicable for different parts of various kinds of furnaces.

Specfications \ Grade		NDM–60	NDM–70	NDM–75	NDM–80
Al_2O_3 % ≥		60	70	75	80
Bulk Density (g/cm3) ≥	110℃ x 24 hr	2.30–2.40	2.40–2.50	2.50–2.60	2.60–2.80
	1350℃ x 3 hr	2.35 (1350℃)	2.55	2.65	2.75
Linear Change (%)	1350℃ x 3 hr	± 0.5 (1350℃)	±0.5	±0.5	±0.5
Crushing Strength (Mpa) ≥	110℃ x 24 hr	30	35	40	45
	1350℃ x 3 hr	50 (1350℃)	55	60	65
HMOP HotModulus of Rupture (Mpa) ≥	110℃ x 24 hr	5	6	7	8
	1500℃ x 3 hr	7 (1350℃)	8	9	10
Classification Temperature (℃)		1350	1450	1550	1600

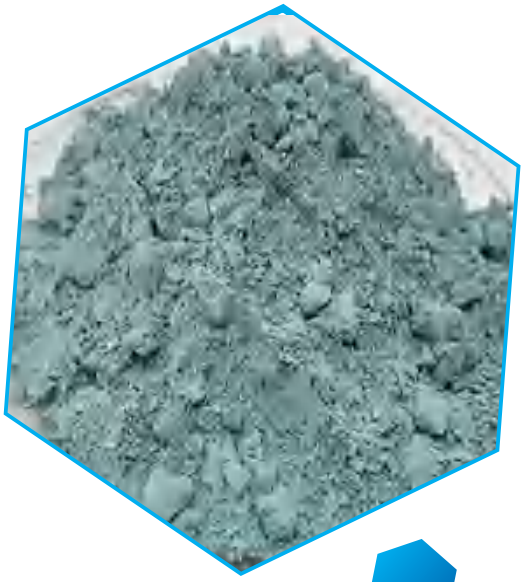
Corundum Castables

Corundum Castables are made from fused corundum and high purity of corundum after burning etc. Features high refractory performance, high thermal strength, low porosity and high thermal stability. Applicable for the top of large high-power electric furnaces and LF refining furnaces, and for the lining area of high temperature equipment with special requirements for chemical ingredients.

Specfications / Grade		GDG–1	GDG–2	GDG–3	GDG–4
Al_2O_3 % ≥		93.5	93.5	90	90
Bulk Density (g/cm3)≥	110℃ x 24 hr	3.10	3.10	3.00	3.00
Linear Change (%)	1500℃ x 3 hr	±0.5	±0.5	±0.5	±0.5
Crushing Strength (Mpa)≥	110℃ x 24 hr	30	60	70	70
	1500℃ x 3 hr	60	80	100	100
HMOP Hot Modulus of Rupture (Mpa)≥	110℃ x 24 hr	7	11	>11	>11
	1500℃ x 3 hr	11	>11	>11	>11
Classification Temperature (℃)		1700	1700	1600	1600

Chromium Corundum Castables

Chromium Corundum Castables are made from fused corundum, green chormium oxide and high purity of corundum after burning etc. Features high refractory performance, high thermal strength, low porosity and high thermal stability. Applicable for the top of large high-power electric furnaces and LF refining furnaces, and for the lining area of high temperature equipment with special requirements for chemical ingredients.



Specfications / Grade		GDC–1	GDC–2	GDC–3
Chemical Composition (%)	Al_2O_3 ⩾	90	93.5	96
	Cr_2O_3 ⩾	3	3	3
Bulk Density (g/cm3) ⩾	110℃ x 24 hr	3.05	3.10	3.15
Linear Change (%)	1500℃ x 3 hr	± 0.5	± 0.5	± 0.5
Crushing Strength (Mpa) ⩾	110℃ x 24 hr	75	95	115
	1500℃ x 3 hr	85	105	125
HMOP Hot Modulus of Rupture (Mpa) ⩾	110℃ x 24 hr	10	12	14
	1500℃ x 3 hr	12	14	16
Classification Temperature (℃)		1670	1690	1710

Steel Fiber Refractory Castables

Steel Fiber Refractory Castables are with heat-resistant steel fiber, offering high tensile strength and heat resistance impact, and anti-mechanical wearing, especially for mid and low temperature conditions. It is widely used for various industrial furnaces.

Specfications \ Grade		NDL–60G	NDL–70G	NDL–75G	NDG–80G	NDG–90G
Al_2O_3 % ≥		60	70	75	80	90
Bulk Density(g/cm3)≥	110℃ x 24 hr	2.30 ~ 2.40	2.40~ 2.50	2.50 ~ 2.60	2.60 ~ 2.80	2.90 ~ 3.10
Linear Change (%)	1100℃ x 3 hr	±0.5	±0.5	±0.3	±0.3	±0.3
Crushing Strength (Mpa)≥	110℃ x 24 hr	35	45	50	55	70
	1100℃ x 3 hr	50	60	70	80	100
HMOP HotModulus of Rupture (Mpa)≥	110℃ x 24 hr	6	7	8	9	>11
	1100℃ x 3 hr	8	10	11	>11	>11
Classification Temperature(℃)		1350	1400	1500	1500	1600

Low Cement Castable

Low cement castable is developed on the basis of clay and refractory castables. We offer low cement, super low cement, non-cement refractory castable. It provides high density, low apparent porosity, high strength, low abrasion, thermal shock resistance, corrosion resistance, etc.

Specfications \ Grade		NDL–60	NDL–70	NDL–75	NDL–80
Al_2O_3 % ≥		60	70	75	80
BulkDensity(g/cm3)≥	110℃ x 24 hr	2.30~2.40	2.40~2.50	2.50~2.60	2.60~2.80
	1500℃ x 3 hr	2.35 (1350℃)	2.55	2.65	2.75
Linear Change(%)	1500℃ x 3 hr	±0.5 (1350℃)	±0.5	±0.5	±0.5
Crushing Strength (Mpa)≥	110℃ x 24 hr	35	40	45	45
	1500℃ x 3 hr	60 (1350℃)	70	70	80
HMOP HotModulusofRupture (Mpa)≥	110℃ x 24 hr	5	6	7	8
	1500℃ x 3 hr	8 (1350℃)	10	10	10
Classification Temperature(℃)		1350	1450	1550	1600

Plastic Castable

Plastic castable are made from high quality refractory aggregate mixed and kneaded with a combination of clay, and other chemical binder, and they can be easily formed and installed to suit any specific shape.

It is mainly used for a variety of heating furnaces, soaking pit, annealing furnace, carburizing furnace, hot blast stove, sintering furnace, etc., and also applied at the top of small-scale electric arc furnace, the burner of high temperature furnace, and other similar parts

Specifications \ Grade		PA–180	PA–170	PA–165	PA–160	PA–155	PA–150	PA–145
Chemical Composition (%)	Al_2O_3 %	85	73	60	46	40	39	37
	SiO2 %	85	73	60	46	40	39	37
Maximum Operating Temperature℃		1,800	1,700	1,650	1,600	1,550	1,500	1,450
Bulk Density (g/cm3)		2.9	2.75	2.5	2.3	2.25	2.2	2.15
Cold Crushing Strength/ Hot Modulus of Rupture (MPa)	110℃ x 24hr	30 / 6	20 / 5	12 / 3	12 / 3.5	8 / 2	8 / 2	6 / 2
	1000℃ x 3hr	50 / 8	25 / 5	25 / 3.5	25 / 3	25 / 3	25 / 3	25 / 3
	1400℃ x 3hr	60 / 10	40 / 7	70 / 4	60 / 9	60 / 9	55 / 8	
Reheating Linear Change (%)	110℃ x 24hr	–0.7	–0.8	–0.9	–0.9	–1.0	–1.0	–1.0
	1000℃ x 3hr	–0.6	–0.7	–0.5	–0.5	–0.3	–0.3	–0.25
	1400℃ x 3hr	0.15	0	0.15	0.15	0.2	0.2	
Thermal conductivity (W/m.k)	500℃	1.2	1.05	0.81	0.81	0.78	0.75	0.73
	1,000℃	1.37	1.2	1.03	0.9	0.87	0.84	0.82

Refractory Precast Block

Precast Refractories are precasted by high strength castables with a super high purity cement. They provides high density, strength and excellent abrasion resistance, which are produced for extreme applications such as roof, spout and taphole block for EAF (Electric Arc Furnace), bubbling sleeve and well block for ladle and dam block for tundish.