



CNBM



okorder.com

CNBM International Corporation

Refractories for Cement Industry



CNBM CNBM International Corporation



Company Profile



CNBM (China National Building Material) Group is the largest comprehensive building materials group in China that integrates scientific research, manufacturing and logistics into one entity. CNBM is also the largest building materials and equipment specialists in China. Upon the State Council's approval, CNBM owns more than 300 subordinate manufacturing factories and servicing companies till now. There are 6 fully owned public listed companies and 11 partially owned with substantial shares public listed companies. In many such of these fields, CNBM is playing a leading role in the building industry in the country.



CNBM International Corporation is the most important import and export platform of CNBM group. With its advantages, CNBM International mainly concentrates on cement, glass, iron and steel, ceramics industries and devotes herself for supplying high quality series of refractories as well as technical consultancies and logistics solution.

CNBM International Corporation is highly recognized by its business partners and clients all over the world and has obtained rapid development under the spirit of win-win. Depending on the support of production divisions and its active staff, CNBM international reached a turnover of USD one billion in 2010. We will carry on the mutual beneficial, create value for our employees, share holders and clients and benefit the whole society in our future development.



EMMA Score: 1
D&B Rating: 4A1

Our customers in the world

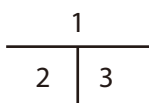
Project Name	Location (Abroad)	Production Capacity
Malaysia Kuching C.P.	Kuching Sarawak	2000TPD
Pakistan Wah Cement Plant	Pakistan	3000TPD
Iran Grinding Plant	Iran Qeshm	3000tpd
Iran Larestan Cement Co.	Iran Larestan	700TPD
Pahang Cement Plant	Malaysia	3200TPD
Pakistan Nizampur C.P.	Pakistan Nizampur	2000TPD
Vietnam Cement Power Grinding Station	Vietnam	500,000t/a
Colombia Favidrio Cement Co. Ltd.	Colombia	1000t/d
Iran Cement Co. Ltd.	Iran	3300t/d
Myanmar Cement Co. Ltd.	Myanmar	1300t/d
Pakistan Lucky Co. Ltd	Pakistan Lucky Co. Ltd	2500t/d
Pakistan Attock Co. Ltd	Pakistan Attock Co. Ltd	3000t/d
Pakistan Lucky Co. Ltd	Pakistan Lucky Co. Ltd	3,000t/d
Pakistan Yunus Brother Corporation	Pakistan Yunus Brother Corporation	3,000t/d
Pakistan Attock Co. Ltd	Pakistan Attock Co. Ltd	3,000t/d
Vietnam Chinfon Cement Corporation	Vietnam Chinfon Cement Corporation	500,000t
Vietnam Yembmh Cement Corporation	Vietnam Yembmh Cement Corporation	2,500t/d
Najran Cement Company (Phase I)	Najran, Kingdom of Saudi Arabia	6000t/d
Najran Cement Company (Phase II)	Najran, Kingdom of Saudi Arabia	3000t/d
North Region Cement Company	North region of Saudi Arabia	6000t/d
Berber Cement Project	Sudan	4800t/d
Atbara Cement Project	Sudan	5300t/d
Absheron Cement Plant	Azerbaijan	1500t/d
Al Mafrag (Line 1&Line 2)	Jordan	6000t/d
Hissia	Syria	6000t/d
Derba Midroc Cement Project	Ethiopia	5000t/d
Ali Abdullah Alesayi	Yemen	3000t/d
China United Cement Beichuan Co.,Ltd	China	4200t/d
JILIN YATAI (GROUP) CO.,LTD	China	2500t/d
Jiangxi Wannianqing Cement Co., Ltd.	China	2500t/d
East Hope	China	3×5000t/d
Sichuan Xingchuancheng Cement Co., Ltd.	China	2500t/d
Beijing Triumph building materials engineering Co., Ltd.	China	5000t/d
Jiangxi Province Shengta Industry (Group)	China	2500t/d 1800t/d
Jiaozuo Zhongjing Cement Co., Ltd.	China	2500t/d
Guangdong Qingyuan Guangying Cement Co., Ltd	China	2500t/d
China Resources Cement Holdings (Yufeng) Limited	China	3×3200t/d
China Resources Cement Holdings (Hongshuihe) Limited	China	2500t/d 5000t/d
South Cement (Shaofeng)Co., Ltd	China	5000t/d
Henan Dadi Cement Co.,Ltd.	China	5000t/d
Fujian Meiling Cement Co.,Ltd.	China	2500t/d
Hebei Jihong Cement Co.,Ltd.	China	5000t/d

Production Facilities



Batching System:
Computer-aid batching and weighing as per the recipes

Shaping System:
Computer-program LAEIS
2500t press with automatic quality inspection system.



1. 1,000 tons of press
2. 2500 tons fully automatic presses
3. Automatic batching system



Environmental protection and Energy saving ultra-high temperature tunnel kiln

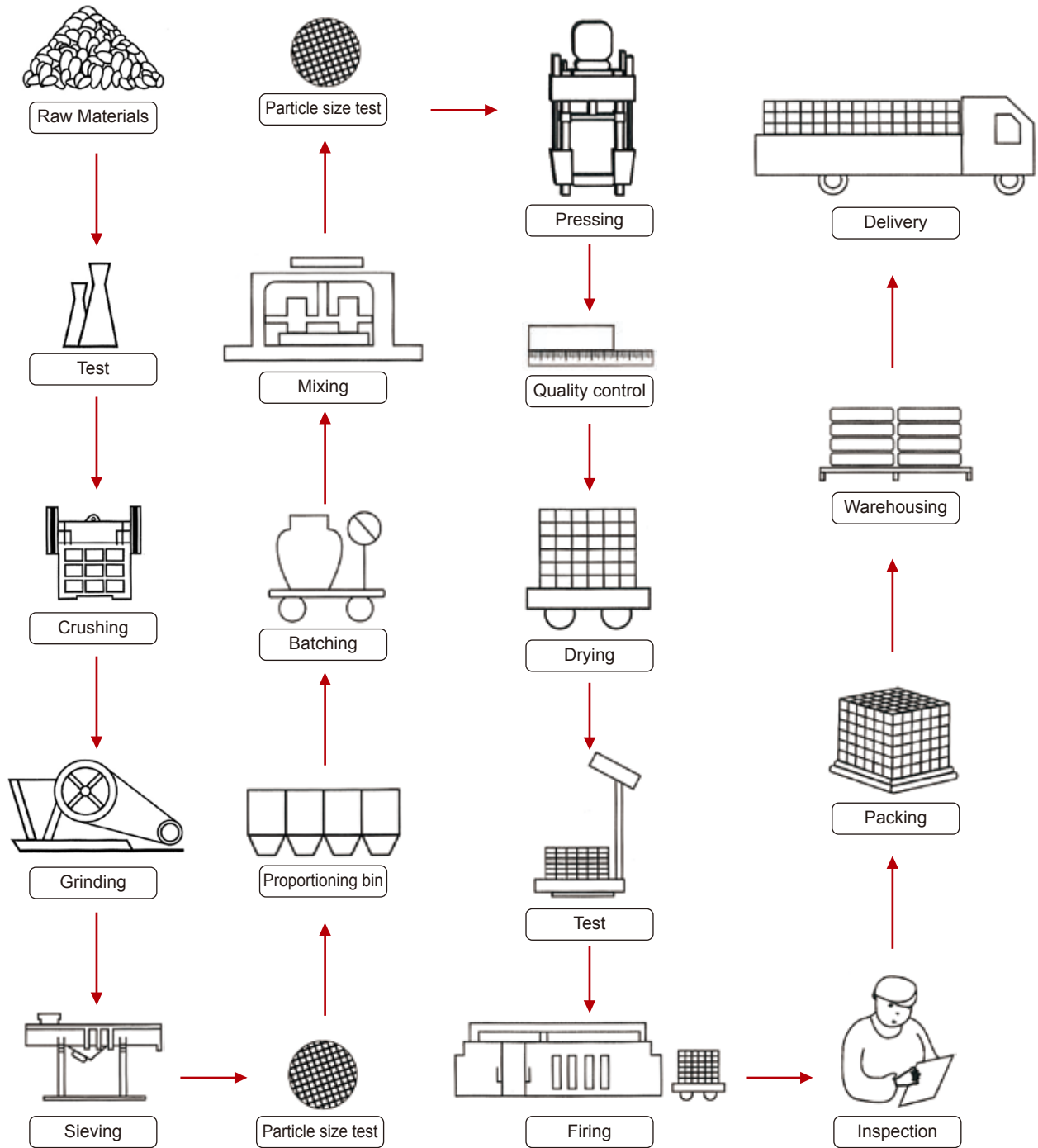
Drying System: Utilization of surplus heat of high temperature tunnel kiln together with microwave boosting drying;



Firing System: Firing in computer-program and automatically controlled tunnel kiln with natural gas from the West-East natural gas transmission project as the fuel, firing temperatures up to 1800°C.



Process Flow



Typical Applications

KILN RECOMMENDATION

Refractories for Rotary Kiln

I Outlet

- High Strength Abrasion Resistant Corundum-Mullite Castable
- High Strength Corundum Based Castable
- Steel Fiber Reinforced Castable

II Burning Zone

- Magnesia-Hercynite Spinel Bricks
- Directly bonded Magnesia-Chrome Bricks
- Semi-Directly Bonded Magnesia-Chrome Bricks

III Transition Zone

- Silica-Mullite Bricks
- Anti-Spalling High Alumina Bricks
- Magnesia-Spinel Bricks
- Phosphate Bonded High Alumina Bricks

IV Calcining Zone

- Anti-Spalling High Alumina Bricks
- Phosphate Bonded High Alumina Bricks

V Inlet

- Steel Fiber Reinforced Castable
- High Alumina Low Cement Castable

Refractories for Preheater

- Alkali Resistant Castable
- Alkali Resistant Bricks
- Anti-Crust Castable

Refractories for Kiln Hood

- High Strength Corundum-Mullite Castable
- High Alumina Low Cement Castable
- Steel Fiber Reinforced High Alumina Castable

Refractories for Calciner

- Spalling Resistant High Alumina Bricks
- High Alumina Low Cement Castable

Refractories for Tertiary Air Duct

- Alkali Resistant Castable
- Silica-Mullite Bricks
- High Strength Abrasion Resistant Castable

Refractories for Cooler

- Alkali Resistant Castable
- High Strength Abrasion Resistant Castable
- High Alumina Low Cement Castable



Semi-direct-bonded magnesia-chrome bricks

Common magnesia-chrome bricks

With sintered magnesia and chrome clinker as raw material, the semi-direct bonded magnesia-chrome bricks and common magnesia-chrome bricks are burned at high temperature over 1600°C, the principal crystal phase of which are periclase and magnesia-chrome spinel.

ITEM	SMC-8	SMC-12	MC-8	MC-12	COMC-8	COMC-12	MC-12A	MC-12B
	Semi-direct bonded		Magnesia-chrome brick		Pre-reaction high-quality		Unfired	
MgO (%)	70	60	65	55	75	65	60	55
Cr ₂ O ₃ (%)	8	12	8	12	8	12	12	12
SiO ₂ (%)	3.5	3.5	-	-	2.0	2.5	-	-
Apparent Porosity (%)	20	20	21	21	18	18	16	16
Bulk Density	2.95	3.0	2.9	2.95	3.0	3.05	3.05	3.0
C.C.S, Mpa	45	40	35	30	40	40	60	55
Refractories Under Load (0.2Mpa), °C	1600	1650	1550	1580	1650	1650	1550	1600
Thermal Shock Resistance(1100 °C,water quenching cycle)	5	5	4	-	-	-	-	-
Thermal Conductivity	2.7	-	2.7	-	-	-	-	-
Thermal Expansion Rate	-	1.5	-	-	-	-	-	-

Application

Commonly applied in the burning zone of cement rotary kiln.

Features

- ◆ High corrosion resistance spalling resistance

Co-sintered magnesia-chrome bricks, Unburned magnesia-chrome bricks

By co-frinding light burned magnesia powder, chrome concentrate and additives to form green body or shape in to ball beforeco-sintering, the material is pre-synthesized at ultra high temperature, which are then mixed with chrome concentrate to constitute magnesia-chrome bricks Due to periclase crystal grains enwrapped by secondary magnesia-chromite spinel,

Application

Commonly applied in the burning zone of dry-process cement rotary kiln.

Features

- ◆ High corrosion resistance, good toughness

Magnesia-spinel bricks, Magnesia-spinel composite bricks

Periclase-spinel bricks as chrome free products In order to solve the problem of over hot in the kiln barrel caused by high thermal conductivity, we successfully developed periclase-spinel bricks composite bricks and insulating periclase-spinel bricks.

The working side of periclase-spinel composite bricks is the same as periclase-spinel bricks LMA-85A, LMA-85B and LMA-85C.

Application

Specially developed for the transition zone of large scale dry-method cement kiln.

Features

- ◆ high strength ◆ high resistance to thermal shock
- ◆ Excellent corrosion resistance

ITEM	LMA-85A	LMA-85B	LMA-85C	LMA-93A	LMA-93B	Insulating side of Periclase-spinel composite bricks
MgO (%)	83	82	80	93	90	55
Al ₂ O ₃ (%)	9	9	9	5	5	
SiO ₂ (%)	1.0	2.0	3.0	1.0	2.0	30
Apparent Porosity (%)	18	18	19	18	18	24
Bulk Density	2.9	2.85	2.85	2.9	2.85	2.6
C.C.S, Mpa	45	40	40	45	40	30
Refractories Under Load (0.2Mpa), °C	1700	1700	1650	1700	1700	1600
Thermal Shock Resistance(1100°C, water quenching cycle)	10	8	8	8	6	-
(1000°C)W/mk Thermal Conductivity	3.0	-	2.9	3.8	-	2.0
(1400°C)% Thermal Expansion Rate	1.2	-	-	1.5	-	-

Special magnesia-chrome bricks

CMAX Modified magnesia-chrome brick are composed of high purity compound spinel. The bricks are shaped under high pressure and sintered at high temperature, and they are environment-protecting product with low chrome content.

Application

Using in the sintering zone of large scale dry-process cement rotary kiln over 4000t/d.

Features

- ◆ high strength ◆ Excellent toughness under high temperature
- ◆ high resistances to thermal shock, spalling and corrosion ◆ excellent toasting of kiln peel
- ◆ low Cr₂O₃ consistent

Magnesia-hercynite bricks

On the basis of researching the same kind of products in the world, the MgO-Fe₂O₃ spinel bricks were developed to be chrome free environment protective products. They overcome the shortage of producing low melting point calcium aluminate resulting in poor flexibility to the products.

Application

Using in burning zone of large and medium dry-method cement rotary kiln.

Features

- ◆ high resistances to infiltration and corrosion ◆ high resistances to thermal shock
- ◆ excellent good stress intensity

ITEM	MHC-80A	MHC-80B	MHC-80C	MFe-80A	MFe-80B	MFe-90A	MFe-90B
MgO (%)	81	80	75	85	80	92	90
Cr ₂ O ₃ (%)	3-6	3-6	3-6	Al ₂ O ₃ (%) 3.0	Al ₂ O ₃ (%) 3.0	Al ₂ O ₃ (%) 3.5	Al ₂ O ₃ (%) 4.0
SiO ₂ (%)	1.0	1.5	2.0	1.0	2.0	1.0	1.5
Fe ₂ O ₃ (%)	5-8	6-9	6-9	7.5	7.5	4.0	4.5
Apparent Porosity (%)	17	18	19	17	17	16	16
Bulk Density	3.05	3.0	2.9	3.0	2.9	2.95	2.85
C.C.S, Mpa	55	45	40	50	45	55	50
Refractories Under Load (0.2Mpa), °C	1700	1650	1600	1650	1600	1700	1650
Thermal Shock Resistance(950°C, water quenching cycle)	100	80	80	100	80	100	80
Thermal Conductivity	2.8			2.6	2.6	2.8	2.8
Thermal Expansion Rate	1.5			1.6			

Direct-bonded magnesia-chrome bricks

Direct-bonded magnesia-chrome bricks and Semi direct bonded Magnesia-Chrome bricks are composed of high-purity or secondary high-purity or fused magnesia and chrome concentrate..

Application

Commonly applied in Glass phase concentrates in the triangle zone of the crystalline phases, which are directly bonded to each other, etc.

Features

- ◆ low porosity ◆ high cold crushing strength
- ◆ Excellent resistance to abrasion, corrosion, thermal shock and spalling

ITEM	DMC-4	DMC-6	DMC-8A	DMC-8B	DMC-8C	DMC-9A	DMC-9B	DMC-12
MgO (%)	80	75	80	75	70	70	70	60
Cr ₂ O ₃ (%)	4	6	8	8	8	9	9	12
SiO ₂ (%)	2.5	2.8	1.5	2	3	2.8	3.0	1.8
Apparent Porosity (%)	18	18	17	18	19	19	19	18
C.C.S, Mpa	40	40	40	45	45	40	40	40
Refractories Under Load (0.2Mpa), °C	1600	1600	1700	1650	1600	1600	1580	1650
Thermal Shock Resistance (1100°C, water quenching cycle)	5	5	5	5	5	5	5	5
(1000°C)W/mk Thermal Conductivity	-	2.9	2.8	-	-	2.8	-	2.8
(1400°C)% Thermal Expansion Rate	1.5	1.4	1.5	-	-	1.6		1.5

Magnesia-alumina-zirconia bricks

Magnesia-alumina-zirconia bricks are produced on the basis of low thermal magnesia-alumina bricks by adding ZrO_2 . Meanwhile, Zirconia easily reacted with CaO forming calcium zirconate with high melting point in application.

Application

Mainly used in the the burning zone of large scale dry-method cement kiln.

Features

- ◆ the micro-porestructure inside the products improves theirs thermal shock resistance
- ◆ improves the corrosion resistance of the products and adhesion of kiln material.

Modified magnesia-alumina-chrome bricks

Modified magnesia-alumina-chrome bricks are manufactured on the basis of low thermal magnesia-alumina bricks by adding Cr_2O_3 .

Application

Mainly used in the calcining zone of large scale dry process cement rotary kiln.

Features

- ◆ the resistance to thermal shock, corrosion and spalling, and good coating of the kiln materials on the lining surface.

ITEM	MAZ-90A	MAZ-90B	MAGeS-A	MAGeS-B
	Magnesia-alumina-zirconia bricks		Modified magnesia-alumina-chrome bricks	
MgO (%)	90	85	80	75
Al_2O_3 (%)	5	5	9	8
SiO_2 (%)	1.0	2.0	1.5	2.5
ZrO_2 (%)	1-3	1-3	Cr_2O_3 3-5	Cr_2O_3 3-5
Apparent Porosity (%)	18	18	17	18
Bulk Density	2.95	2.9	3.0	2.9
C.C.S, Mpa	50	50	50	50
Refractories Under Load (0.2Mpa), °C	1700	1700	1700	1650
Thermal Shock Resistance(1100°C, water quenching cycle)	9	8	9	8
(1000°C)W/mkThermal Conductivity	3.4	-	2.9	2.9
(1400°C)% Thermal Expansion Rate	-	-	-	-

Silica-mullite bricks

By adopting high grade bauxite and SiC as raw material and special sintering process, silica-mullite bricks are characterized by high strength, good performance of abrasion resistance and thermal shock resistance, constant forming protective layer of reducing accretion formation, long application cycle etc.

Application

Mainly used in the transition zone, calcining zone of medium and small cement kiln.

Special silica-mullite bricks

the strength higher and refractoriness under load higher than silica mullite brick, thermal coefficient lower than silica-mullite brick.

Application

The silica-mullite-andalusite brick is used for the transition zone of large scale cement rotary kiln

ITEM	AZM-1650	AZM-1680	GMT-1	GMT-2
	Silica-mullite bricks		Special silicon-mullite bricks	
Al ₂ O ₃ (%)	63	65	68	70
SiO ₂ (%)	35	30	28	25
Apparent Porosity (%)	22	20	19	19
Bulk Density	2.5	2.6	2.68	2.7
C.C.S, Mpa	85	90	110	110
Refractories Under Load (0.2Mpa), °C	1600	1630	1660	1680
Thermal Shock Resistance(1100°C, water quenching cycle)	10	12	15	20
(1000°C)W/mkThermal Conductivity	2.5	2.3	2.1	2.0
Refractoriness(°C)≥	1790	1790	1790	1790
Wearing strength	8.2	7.8	8.0	9.0

Chemical-bonded special high alumina bricks,

Anti-spalling high alumina bricks are manufactured by adding materials with expansion different from that of bauxite to the high alumina bricks. Based on the principle of multiphase increasing toughness, tiny cracks are generated in their constitutional structure, which improve the thermal shock resistance of the products. The bricks are characterized by high resistance to spalling and good refractoriness under load

Application

Mainly used in the transition zone, calcining zone of medium and small cement kiln.

Anti-spalling high alumina bricks, New type anti-spalling high alumina bricks

Special anti-spalling high alumina bricks are new type of refractory products, which are developed according to the application situation of the normal anti-spalling high alumina bricks in the transition zone. With features of high strength, good resistance to abrasion, thermal shock and spalling etc.,

Application

Mainly used in the transition zone, calcining zone of medium and small cement kiln.

ITEM	Chemical-bonded special high alumina bricks	Anti-spalling high alumina bricks	New type anti-spalling high alumina bricks
	TLZ-75	YRS-70	YRS-76
Al ₂ O ₃ (%)	75	70	76
Apparent Porosity (%)	23	25	25
Bulk Density	2.6	2.55	2.5
C.C.S, Mpa	60	45	55
Refractories Under Load (0.2Mpa), °C	1450	1470	1500
Thermal Shock Resistance(1100°C, water quenching cycle)	10	20	25
(1000°C)W/mkThermal Conductivity	1.4	1.4	1.4
Refractoriness(°C)≥	1790	1790	1790
Thermal expansion rate(1000°C) %		0.4-0.6	0.4-0.6

High Strength Alkali Resistant Brick

ITEM	RK-O	RK-H	RK-A	CB-20	CB-30
	Common type alkali-resistant bricks	High-strength type alkali-resistant bricks	Arch type alkali-resistant bricks	Insulation type alkali-resistant bricks	
Al ₂ O ₃ (%)	25-35	25-35	25-35	20-30	20-30
SiO ₂ (%)	60-70	60-70	60-65	60-67	60-67
Apparent Porosity (%)	25	20	25	30	30
C.C.S, Mpa	25	60	30	15	20
Refractories Under Load (0.2Mpa), °C	1350	1300	1400	1200	1200
Thermal Shock Resistance(1100°C, water quenching cycle)	10	5	10	5	-
350°C)W/mkThermal Conductivity	1.3	1.4	1.3	0.75	0.75
(900°C)% Thermal Expansion Rate	0.7	-	-	0.6	-

Phosphate bonded high alumina bricks

With high quality bauxite as raw material, phosphate as bonder, phosphate bonded high alumina bricks are light burned bricks which are used for small cement rotary kiln.

With features of high R U L, high strength, high resistance to erosion, corrosion and thermal shock, High R U L bricks , kyanite bricks and high temperature strength abrasive bricks have been applied as substitute for phosphate bonded products to solve the problem of insufficient refractoriness under load, and used for the burning zone, transition zone of medium and small cement kiln.

Due to the addition of steel fiber, the structure strength, performance of spalling resistance and wear resistance of the steel fiber reinforced anti-spalling bricks are improved effectively. The products are mainly used in the outlet of small cement kiln and cooling machine.

ITEM	P	PA	SLI-80	SLI-75	GH-80	shell	HAS	KF
	Phosphate bonded high alumina bricks	Phosphate bonded kyanite bricks	High R U L bricks and composite bricks		Phosphate bonded high alumina brick with high strength and wear-resistance	Steel fiber reinforced anti-spalling bricks		
Al ₂ O ₃ (%)	75	77	80	75	80	40	80	80
Fe ₂ O ₃ (%)	8	12	8	12	8	12	12	12
CaO (%)	0.6	0.6	-	-	-	-	-	-
Bulk Density	2.65	2.7	2.9	2.85	2.9	1.9	2.95	2.85
C.C.S, Mpa	60	65	65	60	60	20	80	70
Refractories Under Load (0.2Mpa), °C	1300	1250	1450	1430	1460	1200	1550	1450
Thermal Conductivity	1.5	1.6	1.6	-	1.6	0.75	1.6	-
Refractoriness °C	1780	1780	1790	1790	1790	1650	1790	1790

Monolithic Refractories for Cement Industry

Item		Corundum/Mullite based abrasion resistant castable			Low cement high alumina castable			
		C18S	C80MC	C70MC	C16T	C16	C160	C15B
Al ₂ O ₃ +SiC (%)	≥	90	80	70	-	-	-	-
Al ₂ O ₃ (%)	≥	-	-	-	75	70	75	70
Bulk density (kg/m ³) ≥	110°C×24h	3000	2900	2750	2650	2600	2700	2600
C.C.S. (MPa) ≥	110°C×24h	150	100	100	100	100	100	80
	1100°C×3h	160	120	110	110	100	110	100
	1500°C×3h	160	120	110	110		150	
M.O.R. (MPa) ≥	110°C×24h	15	12	10	10	8	14	10
	1100°C×3h	20	14	12	12	10	15	12
	1500°C×3h	20	14	12	12	-	15	-
Permanent linear change (%)	1100°C×3h	±0.3	±0.3	±0.3	±0.3	±0.4	±0.4	±0.4
	1300°C×3h	-	-	-	-	±0.5	-	±0.5
	1500°C×3h	±0.5	±0.5	±0.5	±0.5	-	±0.5	-
Max. service temperature (°C)		1750	1600	1600	1600	1600	1600	1500
Water addition (%)		4.5~5.0	4.5~5.5	5.5~6.5	5.5~6.5	6.0~7.5	5.5~6.0	5.5~6.5
Alkali resistance		-	-	-	-	Grade II	-	Grade II
Application		Outlet, burner			Kiln hood, cooler, etc.	Outlet, burner, kiln hood, cooler, etc.		Kiln hood, cooler, etc.

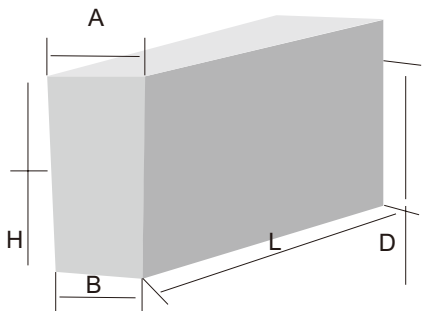
Item		Andalusite containing abrasion and thermal shock resistant castable	High alumina self-flowing castable	Gunning castable	Alkali resistant castable	
		C70HC	CZL70	CPB70	C13NL	C14NL
Al ₂ O ₃ (%)	≥	65	-	-	48	48
SiC (%)	≥	8	-	-	50	50
Al ₂ O ₃ +SiC (%)	≥	-	70	70	-	-
Bulk density (kg/m ³) ≥	110°C×24h	2900	2600	2500	2100	2200
C.C.S. (MPa) ≥	110°C×24h	130	60	60	70	70
	1100°C×3h	120	80	80	70	70
	1500°C×3h	120	-	-	-	-
M.O.R. (MPa) ≥	110°C×24h	15	6	8	7	7
	1100°C×3h	12	8	10	7	7
	1500°C×3h	12	-	-	-	-
Permanent linear change (%)	1100°C×3h	±0.3	±0.4	±0.5	±0.4	±0.4
	1500°C×3h	0~0.3	-	-	-	-
Abrasion resistance (cm ³) ≤	110°C×24h	Grade I	-	-	-	-
Installation method		vibration	-	-	-	-
Max. service temperature (°C)		-	1600	1600	1300	1400
Water addition (%)		-	6~7	6.5~7.5	6.5~7.5	6~7
Alkali resistance		-	-	-	Grade I	Grade I
Application		Outlet, burner	Kilns hood, cooler, calciner, etc.		Preheater system, calciner, side wall and orrf of cold end in cooler, etc.	

Item		Abrasion resistant ramming mixes for power generation by using remnant heat		Abrasion resistant plastics for application at medium and low temperature	
		C80GD	C80TM	C200	C500
Al ₂ O ₃ +SiC (%)	≥	80	80	70	80
Bulk density (kg/m ³) ≥	110°C×24h	2800	2800	2800	2900
C.C.S. (MPa) ≥	110°C×24h	60	40	130	150
	550°C×3h	80	60	-	-
M.O.R. (MPa) ≥	110°C×24h	8	6	20	25
	550°C×3h	12	8	-	-
Permanent linear change (%)	550°C×3h	±0.4	±0.4	-	-
Abrasion resistance (cm ³) ≤	550°C×3h	8	8	-	-
	110°C×24h	-	-	4.5	4.5
Installation method		Ramming	Goating	Smearing	
Thickness of abrasion resistant layer		20~30	20~30	20~25	
Application		The power generation system by using remnant heat		Abrasion resisting layer working at medium and low temperature	

Note: Technical Data are typical results from test pieces. This information, subject to change, is offered solely for your consideration. Users of our products should make their own tests to determine the suitability of each product for their particular purposes.

Designing of dimension and brand of bricks for rotary kiln

Brick Type	Kiln Diameter (mm)	Dimension (mm)				Brick Type	Dimension (mm)					Capacity dm ³
		L	H	A	B		A	B	H	L	D	
International Phosphate Series						VDZ series (According to International series, except bricks with ※, the constant middle width of bricks is 71.5mm.)						
P ₁₁	1.1-1.5	198	100	71	60	B218	78.0	65.0	180	198	2,160	2.55
P ₁₆	1.6-1.9	198	120	80	69	B318	76.5	66.5	180	198	2,754	2.55
P ₂₀	2.0-2.4	198	150	81	70	B418	75.0	68.0	180	198	3,857	2.55
P ₂₅	2.5-2.9	198	150	90	80	B618	74.0	69.0	180	198	5,328	2.55
P ₃₀	3.0-3.2	198	180	92	81	B718※	78.0	74.0	180	198	7,020	2.71
P ₃₃	3.3-3.5	198	180	83	74	B220	78.0	65.0	200	198	2,400	2.83
P ₃₆	3.6-3.9	198	180	100	90	B320	76.5	66.5	200	198	3,060	2.83
P ₄₀	4.0-4.2	198	200	90	81	B420	75.0	68.0	200	198	4,286	2.83
P ₄₃	4.3-4.5	198	200	97	88	B620	74.0	69.0	200	198	5,920	2.83
P ₄₆	4.6-4.9	198	200	92	84	B820※	78.0	74.0	200	198	7,800	3.01
P _{C1-1}	1.1-1.5	198	100	90	79	B222	78.0	65.0	220	198	2,640	3.11
PC1-2	1.1-1.5	198	100	60	49	B322	76.5	66.5	220	198	3,366	3.11
PC1-3	1.1-1.5	198	100	50	39	B422	75.0	68.0	220	198	4,714	3.11
P _{C1-4}	1.6-1.9	198	120	90	79	B622	74.0	69.0	220	198	6,512	3.11
P _{C1-5}	1.6-1.9	198	120	60	49	B822※	78.0	74.0	220	198	8,580	3.31
P _{C1-6}	1.6-1.9	198	120	50	39	ISO series (According to International series the constant larger head width of bricks is 130mm)						
P _{C2-1}	2.0-2.9	198	150	100	90	216	103.0	86.0	160	198	1,939	2.99
P _{C2-2}	2.0-2.9	198	150	70	60	316	103.0	92.0	160	198	2,996	3.09
P _{C2-3}	2.0-2.9	198	150	60	50	218	103.0	84.0	180	198	1,952	3.33
P _{C3-1}	3.0-3.9	198	180	110	101	318	103.0	90.5	180	198	2,966	3.45
P _{C3-2}	3.0-3.9	198	180	70	61	418	103.0	93.5	180	198	3,903	3.50
PC ₃₋₃	3.0-3.9	198	180	60	51	618	103.0	97.0	180	198	6,180	3.56
PC ₄₋₁	4.0-4.9	198	200	100	91	220	103.0	82.0	200	198	1,962	3.66
PC ₄₋₂	4.0-4.9	198	200	70	61	320	103.0	89.0	200	198	2,943	3.80
PC ₄₋₃	4.0-4.9	198	200	60	51	420	103.0	92.5	200	198	3,924	3.87
						520	103.0	94.7	200	198	4,964	3.91
						620	103.0	96.2	200	198	6,059	3.94
						820	103.0	97.8	200	198	7,923	3.98
						222	103.0	80.3	220	198	1,996	3.99
						322	103.0	88.0	220	198	3,021	4.16
						422	103.0	91.5	220	198	3,941	4.24
						622	103.0	95.5	220	198	6,043	4.32
						822	103.0	97.3	220	198	7,951	4.36
						425	103.0	90.0	250	198	3,962	4.78
						625	103.0	94.5	250	198	6,059	4.89



Guide Line for Installation of Refractory Materials in Rotary Kiln

1) Preparation

- Check the conjunct joint and weldable joint.
- Keep the inside surface of rotary kiln neat and dry, exclude the sand blast.
- Keep the stop brick ring in the vertical position with the kiln axe.

2) Lining installation

- Whether close any installation measure, make sure the bricks cling to the shell surface tightly. Now, it is universal of ring-installation that is intersecting at the kiln center by radial installation.
- Draw the basic line matching the axes line of brick on the steel plate, then install the bricks strictly.
- The mortar should be coated equably on the bricks, control the joint between bricks within 1-1.5mm.

3) Locking-brick

- Locking-brick must be installed in distance. The steel plates can be used to fulfill the joint, which are distributed averagely in locking-bricks ring.

4) The transition of the new and old refractory bricks

- Combine the surface of the new and old bricks tightly. The machining bricks (length no less than 80mm) may be used fir transition steadily in the installation.



CNBM



okorder.com

CNBM International Corporation

Address: Floor 17th, No.4 Building, Zhuyu Business Center,
No.9, Shouti South Road, Haidian District, Beijing 100048, China
Tel: (0086-21) 57512507

Fax: (0086-21) 57512572

Cell Phone: 13811089603

E-mail: celinezhang@okorder.com

Website: www.okorder.com, www.icnbn.com; www.thermalcmax.com