

Calcium Silicate Board

-- FCS Grades

INTRODUCTION

Firebird asbestos-free Calcium Silicate Board include 4 kinds, which are:

- a. 1000°C Calcium Silicate Board;
- b. 1100°C Calcium Silicate Board;
- c. High Density High Strength Calcium Silicate Board;
- d. Water-resistance 1000°C Calcium Silicate Board;

Product forms include straight & arch, pipe cover and special shapes.

Firebird Calcium Silicate Board enjoy the characters of:

- 1) High strength & Low Density;
- 2) Heat-resistance at high temperature;
- 3) Low thermal conductivity;
- 4) Asbestos-free;
- 5) Easy-to-cut and easy-to-install;

TYPICAL APPLICATION

1000°C Calcium Silicate Board & 1100°C Calcium Silicate Board are widely used as thermal insulation in cement industry, aluminum smelter, power station, steel mill, glass industry, petrochemical industry, fireproof door core, fireplace, etc.

High Density High Strength Calcium Silicate board can be machined into precision component & widely used in the steel ladle, aluminum canal, spout, car rear view mirror mold, dip tube, pouring spouts, rings, floats, launders, etc.

Water-resistance 1000°C Calcium Silicate Board can be used in application where water proof is requested.

PRODUCTION



TYPICAL INDEXES

1000°C Calcium Silicate Board					
Items	Unit	FCS-17	FCS-22	FCS-25	FCS-27
Bulk Density	Kg/m ³	≤ 170	220 ±10%	250 ±10%	270 ±10%
Compressive Strength At 5% Deformation	MPa	≥ 0.4	≥ 0.65	≥ 1.0	≥ 1.0
Flexural Strength	MPa	≥ 0.2	≥ 0.4	≥ 0.55	≥ 0.55
Service Temp. Limit	°C	≤ 1000	1000	1000	1000
Linear Shrinkage	%	≤ 2	≤ 2	≤ 2	≤ 2
		1000°Cx3h	1000°Cx16h	1000°Cx16h	1000°Cx16h
Thermal Conductivity W/m.K	200°C	≤ 0.060	≤ 0.075	≤ 0.080	0.098
	400°C	≤ 0.086	≤ 0.098	≤ 0.105	0.110
	600°C	≤ 0.121	≤ 0.128	≤ 0.132	0.158
	800°C	--	≤ 0.160	≤ 0.165	0.218
Chemical Analysis %	SiO ₂	47	≥ 55	≥ 55	46-48
	CaO	49	≥ 36	≥ 36	39-41
	Al ₂ O ₃	1	≤ 0.5	≤ 0.5	0.39-0.42
	Fe ₂ O ₃	--	≤ 1	≤ 1	0.3-0.4
Surface Condition	Standard A: Original dimple pattern, Non-four side cutting (Default delivery standard) Standard B: Double sanded, four side cutting (Extra Charge)				

1100°C Calcium Silicate Board				
Items	Unit	FCS-25H	FCS-27H	FCS-30H
Bulk Density	Kg/m ³	250 ±10%	270 ±10%	300 ±10%
Cold Crushing Strength At 5% Deformation	MPa	≥ 0.9	≥ 1.0	≥ 1.1
Modulus of Rupture	MPa	≥ 0.5	≥ 0.55	≥ 0.60
Service Temp. Limit	°C	≤ 1100	≤ 1100	1000
Linear Shrinkage	%	≤ 2	≤ 2	≤ 2
		1050°Cx3h	1050°Cx3h	1050°Cx3h
Thermal Conductivity W/m.K	200°C	0.085	0.098	0.102
	400°C	0.100	0.110	0.116
	600°C	0.152	0.158	0.164
	800°C	0.214	0.218	0.226
Chemical Analysis %	SiO ₂	47-48	47-48	47-48
	CaO	44-45	44-45	44-45
	Al ₂ O ₃	0.3-0.4	0.3-0.4	0.3-0.4
	Fe ₂ O ₃	0.3-0.4	0.3-0.4	0.3-0.4
Surface Condition	Standard A: Original dimple pattern, Non-four side cutting (Default delivery standard) Standard B: Double sanded, four side cutting (Extra Charge)			
NOTE: China does not have standard for 1100°C Calcium Silicate Board at present, so we use Europe standard EN1094-6-1998 for linear shrinkage test, 3h at 50°C below max. service temp.				

High Density Calcium Silicate Board				
Items	Unit	FCS-50	FCS-80C Carbon Fiber Reinforced	FCS-85G Glass Fiber Reinforced
Bulk Density	Kg/m ³	500±10%	850 ±10%	850 ±10%
Bending Strength	MPa	≥ 4.0	6	5
Compression Strength At 5% Deformation At Break	MPa	≥ 5.0	11	10
		--	15	12
Continuous Service Temp.	°C	1000	850	850
Linear Shrinkage 650°Cx24h, %	Linear	--	0.10	0.15
	Thickness	--	0.60	0.86
Linear Shrinkage 700°Cx24h, %	Linear	--	0.18	0.25
	Thickness	--	0.80	1.00
Linear Shrinkage 750°Cx24h, %	Linear	--	0.20	0.28
	Thickness	--	0.90	1.10
Linear Shrinkage 850°Cx24h, %	Linear	--	0.21	0.35
	Thickness	--	1.10	1.30
Linear Shrinkage 1000°Cx24h, %	Linear	≤1.5	0.36	0.49
	Thickness	1000°Cx3h	2.40	3.50
Thermal Conductivity W/m.K	100°C	--	0.103	0.113
	200°C	--	0.114	0.120
	300°C	≤0.110	0.124	0.121
	400°C	--	0.133	0.125
Chemical Analysis %	SiO ₂	≥ 48	49-52	49-52
	CaO	≥ 38	39-42	39-42
	Al ₂ O ₃	≤ 1	0.4-0.5	0.4-0.5
	Fe ₂ O ₃	≤ 0.5	0.3-0.4	0.3-0.4
Surface Condition	Double sanded; four side can be cut upon request. (FCS-50 need collect Extra Charge)			

DIMENSIONS & TOLERANCE

◆ Dimension

Grade FCS-17	Grade: FCS-22 / FCS-25 / FCS-27 Grade: FCS-25H /FCS-27H / FCS30H		
Length:600 Width: 300 Thickness: 25-120	Length	Width	Thickness
	400	250	25-120
	500	500	25-120
	600	300	25-120
	1000	500	25-120
	1220	900	25-120
	1220	1220	25-120
Customized special shapes are available			

◆ Tolerance

Items	Firebird Standard	GB/T10699-2015 TYPE-II	ASTM C533-2007 TYPE II	JIS A9510-2001 NO.1-22
Length	±3	±4	±3	+5/10mm -2/0mm
Width	±2	±4	±3	±3
Thickness	±2	+3mm -1.5mm	±3	+3mm -1mm
Warpage of Curve	≤ 0.5% x Length/Width	≤ 0.5% x Length/Width	≤ 6mm	No obvious warpage
Cracking	No cracks completely through the insulation thickness	No cracks completely through the insulation thickness	No cracks completely through the insulation thickness	No obvious warpage

PACKING

Cartons on pallets or as per customer's request.