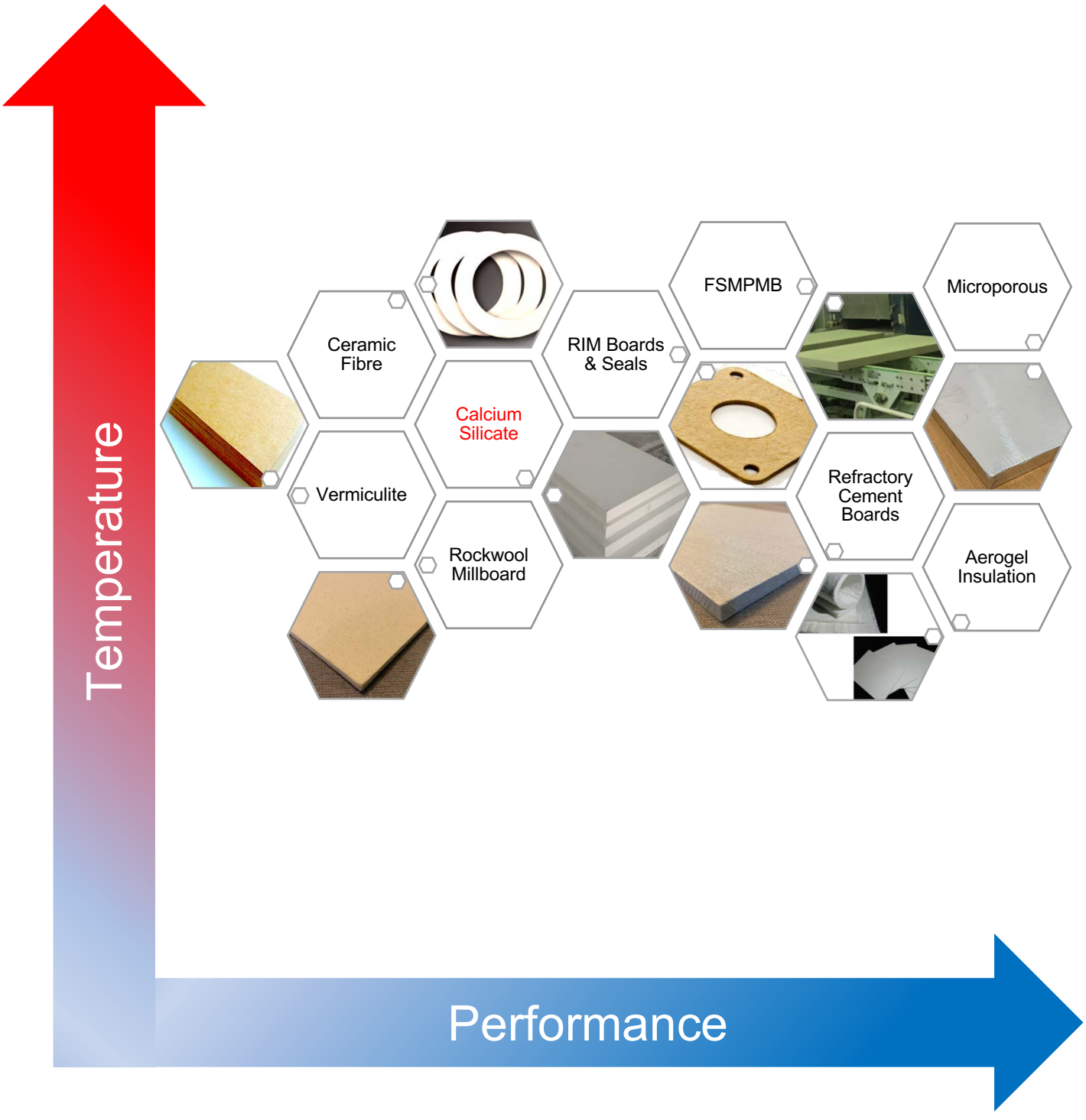
Wedge

High Density Calcium Silicate Boards

Low Cost | High Insulation | High Strength



High Density Calcium Silicate Boards & Designs

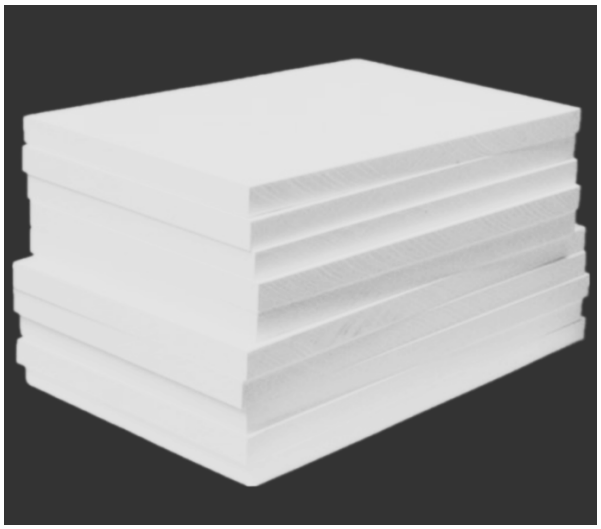
Wedge high density Calcium Silicate Boards are manufactured with Filter Press Technology to achieve very high strength, high temperature insulation, high machinability, and non-wettability to molten metals. These boards and machined ready to use designs are most suitable as thermal insulation for processes in direct contact with molten aluminium such as transfer ladle, casting, holding, metal bath furnace in launders, spouts, floats, hot top ring headers, and holding furnaces for die-casting.

Advantages

- Low thermal conductivity, Low heat capacity Molten aluminium can be transferred with minimal reduction in temperature.
- Used for the lining of the holding furnace, energy savings can be achieved by raising temperature in a shorter time than conventional castable.
- Excellent machinability for variety of shapes such as floats, spouts, hot top ring headers, etc.
- It is non-wettable with molten aluminium, so it is easy to remove solidified metal.

Applications

- Molten aluminium launders.
- Molten aluminium baths for holding furnaces
- Floats, spouts, stopper pins.
- Hot top ring headers, Floats, Spouts, etc.
- Distribution boxes, dams, baffles, filter boxes,
- Troughs, head boxes,
- Working lining in low energy aluminium die cast holding



Quality		W-HD900	W-HD1000	NLM-Z140	NLM-1000	W-HDC45
Colour		White	White	White	White	White
Classification temperature	ºC	1000	1000	1000	1000	1000
Bulk density	kg/m3	860	1000	840	800	1000
Cold compressive strength	MPa	19	28	1% @2.3	1% @2.7	> 30
Bending strength	MPa	7	12	8.8	9.3	> 8
Hardness	Shore D	55	68	64	64	
Shrinkage						
at 750 ºC after 12h Linear	%	0.2	0.1	@ 24hr 0.4	@ 24hr 0.4	0.1
at 750 ºC after 12h Thickness	%	0.6	0.6	@ 24hr 1.1	@ 24hr 1.1	
at 1000 ºC after 12h Linear	%	0.3	0.15	@ 24hr 0.9	@ 24hr 0.6	
at 1000 ºC after 12h Thickness	%	1.1	1.8	@ 24hr 4.6	@ 24hr 2.0	
Thermal conductivity						
200 ºC	W/(m K)	0.24	0.25	0.2	0.19	0.25
400 ºC	W/(m K)	0.25	0.26	0.2	0.2	0.26
600 ºC	W/(m K)	0.25	0.28	0.2	0.2	0.27
800 ºC	W/(m K)	0.27	0.29	0.2	0.2	0.27
Specific heat capacity	kJ/kg K	0.96	0.97			0.97
Reversible thermal expansion						
(20–750 °C)	K-1 x 10-6	7	4.5			6-7x10-6
Chemical analysis						
CaO	%	38–52	38–52			38–52
SiO2	%	45–55	45–55			45–55
Al2O3	%	1.4	1.4			1.4
Fe2O3	%	< 1.1	< 1			< 1
LOI	%	< 5	< 5			< 5
Standard Sizes						
Length	mm	100 - 3000				
Width	mm	100 - 1500				
Thickness	mm	12.7 - 101.6				

Graphite Reinforced Calcium Silicate Boards

Wedge graphite reinforced boards and designs combines the mechanical and physical properties of graphite and calcium silicate that provides very high load carrying capacity. With these boards and designs you can achieve very low shrinkage, less oil absorption, less out gassing when in metal contact, high non-wetting with molten metal, excellent machinability due to improved toughness and strength. After contact with the aluminium metal almost zero sticking of metal to the surface of boards and design parts. This can also also reduce the transport of oxides into the casted part as well as the overall consumption of metal alloy.

Advantages

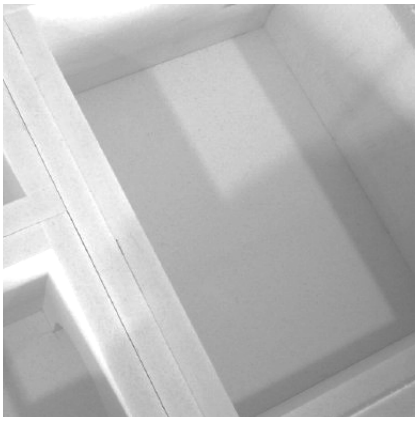
- Very low shrinkage
- Less oil absorption
- Less out gassing when in metal contact
- High non-wetting with molten metal
- Excellent machinability

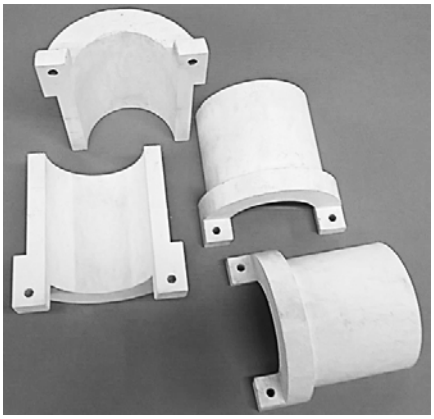
Applications

- Transfer & transport launders, ladles
- Bushings, hot top rings
- transition plates, tips, snouts, filter boxes
- head boxes, headers, floats and spouts

Quality		W-CMA	W-C18	W-CCG4	WL-101
Classification temperature	ºC	1000	850	1000	1000
Bulk density	kg/m3	1040	816 - 818	1100 - 1150	800
Cold compressive strength	MPa	17	16	22 - 24	1% @2.7
Bending strength	MPa	9.5	8	10 - 11	9.3
Hardness	Shore D	60		65 - 70	64
Shrinkage					
at 750 ºC after 12h Linear	%	0.1	0.1	0.25 - 0.3	@ 24hr 0.4
at 750 ºC after 12h Thickness	%	0.8	0.6	0.8	@ 24hr 1.1
Thermal conductivity					
200 ºC	W/(m K)	0.2	0.2		0.19
400 ºC	W/(m K)	0.2	0.2	0.64 - 1.2	0.2
600 ºC	W/(m K)	0.21	0.21	0.52 - 0.92	0.2
800 ºC	W/(m K)	0.22	0.22	0.37 - 0.62	0.2
(20–750 °C)	K-1 x 10-6		7	6.2 - 6.7	
Chemical analysis					
Calcium Silicate	%	82-85		90 - 95	
Graphite	%			4 - 8	
Standard Sizes					
Length	mm	100 - 3000			
Width	mm	100 - 1500			
Thickness	mm	12.7 - 101.6			

Wedge





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