

Technical Data Sheet

Calcium Silicate Insulation

General Description:

Light weight calcium silicate insulations can be widely used as thermal insulation layer in various high temperature industrial units, which improves energy saving and thermal efficiency. Dirgodaz Amol Industries Co, provides different type of light weight calcium silicate boards (SD-CS series) for maximum service temperature up to 1100 °c.

Manufacturing process and features :

These products are manufacture with formulation components such as silica and calcia based materials, additives and reinforcement fibers, which are processed with hydrothermal autoclave synthesis techniques. This manufacturing process enables to the production of high quality product with stable structural and phase characteristics and homogenous porous microstructure which provides reliable thermal insulation performance and long term service life.

These product are characterized by following properties:

high thermal stability, low bulk density, low thermal conductivity, high compression and flexural strength, low thermal shrinkage and high dimensional stability, good resistance to chemical corrosion in reducing atmospheres (CO, CH<sub>4</sub>, NH<sub>3</sub>, and H<sub>2</sub>) and easy to machine and cut.

Technical specification:

The following data represents typical average values of each physical and mechanical quality properties for different calcium silicate boards, which also are subject to normal tolerances. These parameters are characterized according to standard procedures. Also new products can be developed to achieve the specific customer technical specification and design requirements for some types of industrial applications.

Physical and mechanical properties:

Physical and mechanical properties data of various available products are listed in the below table.

Property	unit	SD-CS 850	SD-CS 1000	SD-CS 1100
Classification temperature	°c	850	1000	1100
Bulk density	g/cm <sup>3</sup>	0.30	0.28	0.27
Cold Crushing Strength	kg/cm <sup>2</sup>	15	15	15
Linear shrinkage	%	1.6	1.3	1.5
	condition	800 °c -12h	950 °c -12h	1050 °c -12h
Thermal Conductivity (w/m.k)	400 °c	0.12	0.10	0.10
	600 °c	0.14	0.12	0.12
	800 °c	0.16	0.15	0.14



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#### Typical Applications:

Calcium silicate boards mostly can be used as back-up thermal insulation layer in combination with other refractory linings such as brick or monolithic. Although in some high temperature working conditions, which are subjected to severe thermal stress and thermal shock impacts, these products should not be used as the hot face front layer.

These products can be used in various heat processing units of following industrial applications:

- Ferrous & non-Ferrous(melting, forging, rolling, heat-treatment furnaces)
- Aluminum (anode baking furnace, electrolysis cell)
- Chemical & Petrochemical (thermal cracking units)
- Ceramics (firing and sintering furnaces)
- Glass (melting, purification, annealing and heat treatment thermal units)
- Cement

#### Geometrical Dimensions:

These products are available with the following dimensions.

Dimensions	width - length	thickness
values (mm)	300-1000 500-1000 600-1000	25 to 100
tolerances (mm)	±2.5	± 1.5

