Density calcium silicate boards (annealed)

CALCAST® CC 100, CC 150, CC 350

CALCAST® is a high-temperature insulating ceramic based on calcium silicate. It has bulk densities of 860 to 1,040 kg/m³. The temperature limit is 1,000 °C. The material is not wetted by liquid NF-metals and is therefore an ideal material in casting applications with direct contact to liquid metal. **CALCAST®** insulates and is used to control the distribution of the metal.

Typical applications of **CALCAST®** are components for the production of billets and ingots in horizontal and vertical casting units, e.g. nozzles, spouts, floats, stoppers and hot top rings.

Furthermore, our **CALCAST®** grades are standard materials used in foundry casting processes such as LPDC, HPDC, CPC and gravity casting. They are used e.g. as bushings, nozzles, connecting launders and casting boxes.

Different **CALCAST®** materials are available for various processes and applications. The properties of the different grades are customized to particular applications.

Machining
CALCAST® can be precisely machined to close tolerances. With our 5-axis processing machines we can produce the most complicated geometries.

SPECIAL FEATURES

- good insulation
- low thermal capacity
- dimensionally stable
- excellent edge stability
- no wetting with liquid non-ferrous metals
- precise machinable in close tolerances

CALCAST® CC 100, CC 150, CC 350

CALCAST®		Method	Unit	CC 100	CC 150	CC 350
Upper application limit temperature		EN 1094-6	°C	1,000	1,000	1,000
Bulk density (± 10 %)		EN 1602	kg/m³	860	1,040	1,050
Open porosity (in acc. with standard)		EN 993-1	%	68	60	58
Compression strength		EN 826	MPa	19	28	28
Flexural strength		EN 12089	MPa	7	10	13
Shrinkage after 12 h		EN 1094-6				
Length and width	750 °C		%	0.20	0.05	0.25
Thickness	750 °C			0.60	0.20	0.80
Length and width	1,000 °C			0.30	0.12	0.30
Thickness	1,000 °C			1.10	0.70	1.50
Thermal conductivity λ at t_m	200 °C	EN 12667	W/(m K)	0.24	0.27	0.27
	400 °C			0.26	0.29	0.29
	600 °C			0.27	0.30	0.30
	800 °C			0.32	0.35	0.35
Specific thermal capacity			kJ/(kg K)	0.8 - 1.2	0.8 - 1.2	0.8 - 1.2
Thermal expansion coefficient	20 °C - 750 °C	DIN 51045-5		⊥ //	⊥ //	⊥ //
⊥ perpendicular to board plane						
// parallel to board plane			$K^{-1} \times 10^{-6}$	7.2 6.0	5.1 6.0	4.7 6.3
Chemical composition						
Calcium silicate hydrate			%	-	-	95 - 97
(CaO-; MgO-; Al_2O_3-) silicate hydrate				97.5 - 98	97.5 - 98	-
R_xO_x (R=Fe, Ti, K, Na)				1	1	1
Annealing loss			%	2.0 - 2.5	1.0 - 1.5	3.0 - 3.5
Dimensions						
Standard sizes		Tolerances				
	Length	± 3	mm	1,250		
	Width	± 3	mm	1,000		
	Thickness	0/+0.8	mm	12.7/19.1/25.4/31.8/38.1/50.8/76.2/101.6		
	Surfaces machined.					
Other dimensions are available on request.						

The properties mentioned are typical values obtained according to the listed methods. Product variations have to be taken into account. The data do not represent guaranteed properties and cannot be used for any warranty claim. Data are subject to technical modifications.

silca
refractory solutions

SILCA Service- und Vertriebsgesellschaft für Dämmstoffe mbH
Elberfelder Str. 200a, 40822 Mettmann
Telefon: +49 2104 9727-0 | Fax: +49 2104 76902 | info@silca-online.de | www.silca-online.de