Cast items for non-ferrous metal melts

SILCAFUSE

110-168

SILCAFUSE are cast ceramic components based on fused silica for direct contact with non-ferrous metal melts. They are not wetted by liquid non-ferrous metal melts and are suitable for applications up to 1100 °C. **SILCAFUSE** is ceramic bonded, thermally pre-fired and anhydrous.

SILCAFUSE has a low coefficient of thermal expansion and accordingly possesses very high resistance to temperature changes and temperature shocks.

In particular for launders the low thermal expansion is of advantage as the butt joints can be cast so that there are effectively no joints. In combination with our micro-porous back-up insulation **SILCAPOR** the energy losses of the launders are minimized and the temperature homogeneity of the melt is significantly improved.

SILCAFUSE 110-168 is used for launders, ladles, thimbles, baffle plates, bushings and a variety of casting nozzles. The materials differ in respect of bulk density and therefore also in respect of thermal conductivity.

There is great flexibility in respect of shape and design because the parts are manufactured by casting. The moulds are produced using up to date 3D printing techniques.

SPECIAL FEATURES

- good mechanical strength
- not wetted by non-ferrous metals
- minimal thermal expansion
- good resistance to abrasion
- high resistance to temperature changes
- variable designs

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SILCAFUSE		Unit	110-168
Upper application limit temperature		°C	1,100
Bulk density (± 10 %)		kg/m³	1,680
Open porosity		Vol.-%	-
Cold compression strength		MPa	29
Flexural strength		MPa	18
Shrinkage	12 h at 750 °C	%	0
Thermal conductivity λ at t_m	400 °C	W/(m K)	0.47
	500 °C		-
	600 °C		0.49
	700 °C		-
Thermal expansion	50 °C	$K^{-1} \times 10^{-6}$	-
	200 °C		-
	400 °C		-
	600 °C		-
	800 °C		-
	1,000 °C		0.71
Chemical reference analysis	SiO_2	%	98.5
	Al_2O_3		<0.1
	TiO_2		-
	Fe_2O_3		-
	CaO		1.4
	MgO		-
	Na_2O_3		-
	K_2O		-
	ZrO_2		-
Cristobalite content		%	<0.6

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.

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refractory solutions

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