



PYROCAST DENSE FUSED SILICA

PRECAST SHAPES

Pyrocast dense fused silica (DFS) is an economical product for shapes demanding thermal shock resistance at elevated temperatures. Pyrocast DFS stands up to repeated use in molten metal casting in aluminium, copper, zinc, brass, steel, glass and aerospace applications. It is durable and resists breakage during handling and cleaning. Components made from Pyrocast dense fused silica resist cracking due to the material's low thermal expansion.

COMPOSITION

Material	Approximate Weight
SiO ₂	99.60%
Al ₂ O ₃	0.30%
Fe ₂ O ₃	0.02%
CaO	0.02%
MgO	0.02%
TiO ₂	0.01%

BENEFITS

- Resistant to thermal shock
- Superior strength
- Low thermal expansion
- Economically priced
- Resistant to surface corrosion
- Able to rapidly cycle
- Computer controlled firing
- Superior material consistency

APPLICATIONS

- Spouts
- Control pins
- Mounting seats (inserts)
- Precast trough tiles
- Thimbles
- Wear plates
- TROUGH DAMS

AVAILABILITY

Pyrotek has been serving metal casters since 1956, helping them to enhance their production effectiveness. Our plants utilize the most modern equipment to produce precise castings to customer specifications.



PHYSICAL PROPERTIES

Bulk Density	1950–2000 kg/m ³ (121–125 lb/ft ³)
Peak Temperature	1650°C (3000°F)
Sustained Temperature	1090°C (2000°F)
Coefficient of Thermal Expansion	0.5–0.7 x 10 ⁻⁶ mm/mm/°C (0.3–0.4 x 10 ⁻⁶ in/in/°F)
Modulus of Rupture	17–25 x 10 ⁶ N/m ² (2470–3630 lb/in ²)
Cold Crushing Strength	48–51 x 10 ⁶ N/m ² (7000–7500 lb/in ²)
Thermal Conductivity	0.8 W/(m·K) at 13°C (5.8 BTU-in/hr/ft ² /°F at 55°F)
Apparent Porosity	9–11%

