

Oxide/oxide ceramic matrix composite “Keramiklech”, standard materials for applications up to 1100°C

| “Keramiklech” Type | SvM1514N/SvM-Alu | MvM1415N | MvM1415N-2220 |
|---|--|--|--|
| Fibre (Fabric) | Silika | Nitivity-3025T | Nitivity-2220S |
| Matrix | 65% Al ₂ O ₃ 35% SiO ₂ | 70% Al ₂ O ₃ 30% SiO ₂ | 70% Al ₂ O ₃ 30% SiO ₂ |
| Bending strength [MPa] at room temperature (RT) | 20-30 | 60-70 | 60-70 |
| Tensile strength [MPa] at room temperature (RT) | – | – | – |
| Tensile strength [MPa] at 1000 °C | – | – | – |
| Thermal expansion coefficient [10 ⁻⁶ 1/K] | 2 | 6-8 | 6-8 |
| Thermal conductivity [W/mK] | < 1 | < 1,5 | < 1,5 |
| Recommended continuous service temperature [°C] | < 950 °C | < 1150 °C | < 1150 °C |
| Maximum continuous service temperature [°C] tested by clients | < 900 °C | < 1100 °C | < 1100 °C |

SvM1514N / SvM-Alu

For applications up to 950°C. This group of materials can be used as production components for aluminum casting and furnace doors casings. The production components for aluminum casting can be surface hardened with zirconia and can be coated with boron nitride to get a better protection against aluminum.

MvM1415N

For applications up to 1150°C. This material is good for tubes with small diameters, for structures with smooth surfaces and very thin wall thicknesses.

MvM1415N-2220

For applications up to 1150°C. This type is used for structures with large wall thickness and attractive component prices. Examples are butterfly valves, sliders and several furnace components.