

Oxide/oxide ceramic matrix composite “Keramiklech”, AvM/610-1500 standard material for applications up to 1300°C

Keramiklech Type, old name	AvM1415N	
Keramiklech Type, new name	AvM/610-1500	test standard
Fibre (Fabric)	Nextel 610/ 1500 denier (DF11-1500)	–
Matrix	70% Al ₂ O ₃ 30% SiO ₂	–
Thickness per layer [mm]	0,3	–
Density [g/cm ³]	2,3	–
Bending strength [MPa] anisotrop 0/90° at RT*	160-170 ⁽²⁾	DIN 658-3, 3 point bending
Young's modulus (bending) [GPa] at RT*	78 ⁽²⁾	–
Tensile strength [MPa] anisotrop 0/90° at RT*	60-65 ^{(2), (3)}	DIN 658-1
Young's modulus (tension) [GPa] at RT*	78 ⁽²⁾	DIN 658-1
Tensile strength [MPa] at 1000 °C	35 ⁽³⁾	DIN 658-1
Tensile strength [MPa] at 1200 °C	35 ⁽³⁾	DIN 658-1
Compression strength [MPa] at RT*	62 ⁽²⁾	DIN 658-2
Young's modulus (compression) [GPa] at RT*	93 ⁽²⁾	DIN 658-2
Shear strength (ILSS) [MPa] at RT*	10,5 ⁽²⁾	DIN 658-4
Thermal expansion coefficient [10 ⁻⁶ 1/K]	6-8	DIN 1159-1
Thermal conductivity [W/mK]		DIN 1159-2
300 °C	2,44 ⁽⁴⁾	–
600 °C	1,89	–
900 °C	1,63	–
1100 °C	1,52	–
Recommended continuous service temperature [°C]	< 1300 °C	–
Recommended continuous service temperature [°C] with mechanical load	< 1200 °C	–
Maximum continuous service temperature [°C] with high mechanical load	< 1000 °C	–

Standard material AvM/610-1500/as of 2021, (*at room temperature)

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