

SCIENTIFIC INFORMATION

Grandio – Technical Profile

Filler content (w/w % (Vol.%))	87.0 (71.4)	DIN 51081
Polymerization shrinkage	1.57%	University of Manchester
3-Point flexural strength	161 MPa	ISO 4049
Fracture toughness K_{1C}	2.4 MN/m ^{3/2}	University of Manchester
Modulus of elasticity (1 m water storage, 37 °C)	19100 MPa	University of Athen
Compressive strength	475 MPa	Dental College Bangalore
Depth of curing (500 mW/cm ²)	3 mm / 20 s	ISO 4049
Surface hardness (Vickers)	84 HV	University of Regensburg
Surface hardness (Micro-Vickers Hardness)	285 MHV	University of Rostock
Thermal expansion coefficient	19.2 [10 ⁻⁶ /K]	Fraunhofer Institute Würzburg
Shear bond strength on dentine (Futurabond NR)	39.3 MPa	University of Tanta
Radiopacity	250 %Al	ISO 4049
Colour stability	no discolouration	ISO 4049
Stability under daylight	meets standard	ISO 4049
Water solubility	0.3 µg/mm ³	ISO 4049
ACTA three body Abrasion (200.000 cycles)	18 µm	University of Regensburg
Water absorption	10 µg / mm ³	ISO 4049

The stated measurement values do not represent a specified value within the scope of the VOCO GmbH quality assurance system.