

# SCIENTIFIC INFORMATION

## X-tra Fil – Technical Profile

Filler content	w/w % (v/v %)	86.0 (70.1)	DIN 51081
3-Point flexural strength (24 h, 37 °C water storage)		145 MPa	University of Regensburg
3-Point flexural strength (0-2 / 2-4 mm)		156 / 159 MPa	School of Dentistry, Birmingham
Fracture toughness $K_{1c}$		2.9 MPa • m <sup>1/2</sup>	University of Regensburg
Modulus of elasticity		15100 MPa	ISO 4049
Depth of curing (800 mW/cm <sup>2</sup> )		4.3 mm / 10 s	ISO 4049
Depth of curing (400 mW/cm <sup>2</sup> )		4.2 mm / 20 s	ISO 4049
Surface hardness (Vickers)		81.4 HV	University of Regensburg
Surface hardness (Micro-Vickers Hardness)		142 MHV	University of Rostock
Polymerization shrinkage		1.7 %	University of Manchester
Stress from polymerization shrinkage		3.5 MPa	University of Manchester
Adhesion to dentine with Futurabond NR		29.3 MPa	University of Münster
Adhesion to enamel with Futurabond NR		24.5 MPa	MH Hannover
...dto. with additional etching		36.1 MPa	MH Hannover
Radiopacity		330 %AI	ISO 4049
Water solubility		< 0.3 µg / mm <sup>3</sup>	ISO 4049
Water absorption		10 µg / mm <sup>3</sup>	ISO 4049
Abrasion (200.000 cycles)		43 µm	ACTA 3-media

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