



technologia bez granic

SPECYFIKACJA MATERIAŁU: STAL NIERDZEWNA 1.4542 (PH1)

DMLS Materials - Technical Specification Stainless Steel 15-5 PH (EOS PH1)

Technical Data		Physical & Chemical properties	
Minimum recommended layer thickness	20 µm	Relative density with standard parameters	approx. 100% (7.8 g/cm ³)
Minimum wall thickness	0.4 mm	Material composition:	
Volume rate	between 1.8-3.2 mm ³ /s	Fe 71.5-80 wt%	Cu 2.5-4.5 wt%
		Cr 14-15.5 wt%	Mn max 1 wt%
		Ni 3.5-5.5 wt%	Si max 1 wt%
			Mo max 0.5 wt%
			Nb 0.15-0.45 wt%
			C max 0.07 wt%
Mechanical properties at 20°C		As built	After age-hardening*
Ultimate tensile strength (MPIF 10) - horizontal direction (XY) - vertical direction (Z)		1150 MPa ± 50 MPa 1050 MPa ± 50 MPa	1450 MPa ± 100 MPa 1450 MPa ± 100 MPa
Yield strength (Rp 0.2%) - horizontal direction (XY) - vertical direction (Z)		1050 MPa ± 50 MPa 1050 MPa ± 50 MPa	1300 MPa ± 100 MPa 1300 MPa ± 100 MPa
Elongation at break - horizontal direction (XY) - vertical direction (Z)		16% ± 4% 17% ± 2%	12% ± 2% 12% ± 2%
Hardness		30-35 HRC	Min 40 HRC
Surface roughness - after shot-peening - after polishing		R _a 4.5 µm R _z up to < 0.5 µm	
Thermal properties			
Coefficient of thermal expansion (20-500°C)		12.5µm/m°C	
Thermal conductivity (at 20°C) - horizontal direction (XY) - vertical direction (Z)		13.8 ± 0.8 W/m°C 13.7 ± 0.8 W/m°C	15.7 ± 0.8 W/m°C 15.8 ± 0.8 W/m°C
Specific heat capacity - as laser sintered		460 ± 20 J/kg°C	470 ± 20 J/kg°C
Maximum operating temperature		550°C	550°C
Typical applications			
<ul style="list-style-type: none"> • Engineering applications including functional prototypes, small series products, individualised products or spare parts. • Parts requiring high corrosion resistance, sterilisability, etc. • Parts requiring particularly high hardness and strength. 			

więcej informacji związanych z materiałami/usługami e-Prototypy® uzyskasz kontaktując się z naszym biurem: +48 71 351 80 56 lub odwiedzając stronę www.e-prototypy.pl

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