



technologia bez granic

SPECYFIKACJA MATERIAŁU: STAL NARZĘDZIOWA 1.2709 (MS1)

DMLS Materials - Technical Specification Maraging Steel 1.2709 (EOS MS1)

Technical Data		Physical & Chemical properties	
Minimum recommended layer thickness	40 µm	Relative density with standard parameters	approx. 100% (8 g/cm ³)
Minimum wall thickness	0.4 mm	Material composition: Fe 64.6-69.35 wt% Mo 4.5-5.2 wt% Cr max 0.5 wt% Ni 17-19 wt% Ti 0.6-0.8 wt% C max 0.03 wt% Co 8.5-9.5 wt% Al 0.05-0.15 wt% Mn, Si - each max 0.1 wt% P, S - each max 0.01 wt%	
Volume rate	between 2-4 mm ³ /s		
Age hardening shrinkage*	0.08%		
Mechanical properties at 20°C (vertical orientation)	As built	After age-hardening*	
Ultimate tensile strength (MPIF 10)	1100 MPa ± 100 MPa	1950 MPa ± 100 MPa	
Yield strength (Rp 0.2%)	1000 MPa ± 100 MPa	1900 MPa ± 100 MPa	
Elongation at break	8% ± 3%	2% ± 1%	
Young's Modulus	180 GPa ± 20 GPa		
Hardness	33-37 HRC	50-54 HRC	
Ductility (Notched Charpy Impact Test)	45 J ± 10 J	11 J ± 4 J	
Surface roughness - after shot-peening - after polishing	R _a 4-6.5 µm R _z up to < 0.5 µm		
Thermal properties			
Thermal conductivity (at 20°C)	15 ± 0.8 W/m°C	20 ± 1 W/m°C	
Specific heat capacity	450 ± 20 J/kgm°C	450 ± 20 J/kgm°C	
Maximum operating temperature	400°C		
Typical applications			
<ul style="list-style-type: none"> • Heavy duty injection moulds and inserts for moulding all standard thermoplastics using standard injection parameters, with achievable tool life of up to millions of parts. • Die casting moulds for small series in light alloys. • Parts requiring particularly high strength and hardness. 			

* Age hardening: 490 °C / 6h / air cooling

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

Centrum Szybkiego Prototypowania e-Prototypy®
 Wrocławski Park Technologiczny
 PL 54-413 Wrocław, ul. Klecińska 125
 tel. +48 71 351 80 56
 fax. +48 71 718 11 82
www.e-prototypy.pl
biuro@e-prototypy.pl



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