

Material Specification

15-5PH Stainless Steel

Building Success
Layer by Layer™

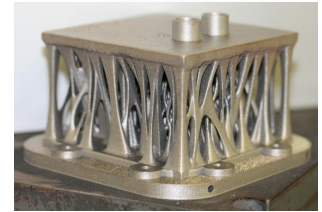


Application: 15-5PH Stainless Steel is a pre-alloyed stainless steel. Its composition corresponds to US classification 15-5PH and European 1.4540 and fulfils the requirements of AMS 5659 for Mn, Mo, Ni, Si, C, Cr and Cu.

This kind of steel is characterized by having very good corrosion resistance and mechanical properties, especially in the precipitation hardened state. It is widely used in a variety of medical, aerospace and other engineering applications requiring high hardness, strength and corrosion resistance.

This material is ideal for many part-building applications such as functional metal prototypes, small series products, individualised products or spare parts. Parts can be machined, spark-eroded, welded, micro shot-peened, polished and coated if required.

- Typical applications:**
- 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.



Physical and Chemical Properties:				
Relative Density with Standard Parameters			approx. 100% (7.8 g/cm ³)	
Material composition	Fe	balance	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:				
			After standard heat treatment cycle SS_15_5_C	
Ultimate Tensile Strength	- horizontal direction (XY)		typ. 1450 ± 100 MPa	
	- vertical direction (Z)		typ. 1450 ± 100 MPa	
Yield strength (Rp 0.2%)	- horizontal direction (XY)		typ. 1300 ± 100 MPa	
	- vertical direction (Z)		typ. 1300 ± 100 MPa	
Elongation at break	- horizontal direction (XY)		typ. 12 ± 2%	
	- vertical direction (Z)		typ. 12 ± 2%	
Hardness			typ. min 40 HRC	
Thermal Properties:				
Thermal conductivity	- horizontal direction (XY)		typ. 15.7 ± 0.8 W/m°C	
	- vertical direction (Z)		typ. 15.8 ± 0.8 W/m°C	
Specific heat capacity			typ. 470 ± 20 J/kg°C	

For further technical information or to obtain a quotation for your parts, please contact us on +44 (0)1635 580284 or email your 3D CAD data to enquiries@3trpd.co.uk

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