

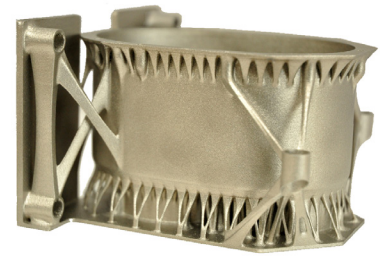
# Material Specification

## 316L Stainless Steel

**Application:** 3T 316L Stainless Steel is a pre-alloyed austenitic stainless steel. This powder meets the chemical requirements of AISI 316L, DIN 17006 X2CrNiMo17-12-2, W.Nr1.4404.

This kind of steel is characterised by having higher corrosion resistance and mechanical properties than the more common 304 alloy, and can be used over a wide temperature range down to cryogenic temperatures.

This type of steel is widely used in a variety of food processing, medical, aerospace, oil and gas, and other engineering applications requiring high strength and corrosion resistance.



- Typical applications:**
- Engineering applications including functional prototypes, small series products, individualised products or spare parts
  - Parts requiring high corrosion resistance, sterilisability, etc.
  - Parts requiring high strength and weldability

Physical and Chemical Properties:				
Relative Density with Standard Parameters			approx. 100% (7.9 g/cm <sup>3</sup> )	
Material composition	Fe balance	Mo 2.25-3 wt%	Cu max 0.50 wt%	Si max 0.75 wt%
	Cr 17-19 wt%	C max 0.03 wt%	P max 0.025 wt%	N max 0.10 wt%
	Ni 13-15 wt%	Mn max 2 wt%	S max 0.01 wt%	
Mechanical Properties:				
			<b>As built</b>	
Ultimate Tensile Strength	- horizontal direction (XY) - vertical direction (Z)	typ. 640 MPa ± 50 MPa typ. 540 MPa ± 55 MPa		
Yield strength (Rp 0.2%)	- horizontal direction (XY) - vertical direction (Z)	typ. 530 MPa ± 60 MPa typ. 470 MPa ± 90 MPa		
Young's Modulus	- horizontal direction (XY) - vertical direction (Z)	typ. 185 GPa typ. 180 GPa		
Elongation at break	- horizontal direction (XY) - vertical direction (Z)	typ. 40 ± 15% typ. 50 ± 20%		
Hardness		typ. 85 HRB		

**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](mailto:enquiries@3trpd.co.uk)**

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