

## Properties of Stocked Materials.

MATERIAL AS BUILT CONDITION	TITANIUM 64 ALLOY	STAINLESS STEEL 15-5PH	STAINLESS STEEL 316L	INCONEL 718	INCONEL 625	ALUMINIUM ALSi10Mg
Composition	Ti balance Al (5.5-6.5%) V (3.5-4.5%) O (<2000ppm) N (<500ppm) C (<800ppm) H (<120ppm) Fe (<2500ppm)	Fe balance Cr (14-15.5%) Ni (3.5-5.5%) Cu (2.5-4.5%) Mn (1% max) Si (1% max) Mo (0.5% max) Nb (0.15-0.45%) C (0.07%)	Fe balance Cr (17.49%) Ni (12.84%) Cu (0.08%) Mn (0.47%) Si (0.41%) Mo (2.36%) N (0.09) C (0.01%) P (<0.013%) S (<0.010%) O (0.04%)	Fe balance Ni (50-55%) Cr (17-21%) Nb (5.5%) Mo (3.3% max) Ti (1.15% max) Si (0.35% max) Mn (0.35% max) Al (0.3% max) Cu (0.3% max) C (0.08% max) P (0.015% max) S (0.015% max)	Ni balance Cr (20-23%) Mo (8-10%) Nb (3.15-3.9%) Mn (0.5% max) Si (0.5% max) P (0.015% max) Co (1% max) Ti (0.4% max) Al (0.4% max) Fe (5% max) Ta (0.05 max) C (0.1% max) S (0.015% max) O (0.02% max)	Al balance Si (9-11%) Fe (<0.55%) Cu (<0.05%) Mn (<0.45%) Mg (0.2-0.45%) Ni (<0.05%) Zn (<0.1%) Pb (<0.05%) Sn (<0.05%) Ti (<0.15%)
Density	4.43g/cm3	7.8g/cm3	7.9g/cm3	8.19g/ cm3	8.44g/cm3	2.67g/cm3
Layer Thickness	50µm (standard)	50µm (standard)	50µm (standard)	50µm (standard)	50µm (standard)	50µm (standard)
Minimal Wall Thickness*	0.3mm	0.3mm	0.3mm	0.3mm	0.3mm	0.3mm
Surface Roughness**	Ra=9-12µm as built Ra=4-10µm standard finish  Stress Relieved	Ra=9-12µm as built Ra=4-10µm standard finish  As built	Ra=9-12µm as built Ra=4-10µm standard finish  As built	Ra=9-12µm as built Ra=4-10µm standard finish  As built	Ra=9-12µm as built Ra=4-10µm standard finish  As built	Ra=9-12µm as built Ra=4-10µm standard finish  As built
Ultimate tensile strength	1100 +/- 60 MPa	1050 +/- 50 MPa	540 +/- 40 MPa	900 +/- 50 MPa	900 +/- 50 MPa	460 +/- 20 MPa
Yield Strength (Rp 0.2%)	1000 +/- 70 MPa	950 +/- 50 MPa	460 +/- 30 MPa	650 +/- 50 MPa	620 +/- 50 MPa	240 +/- 10 MPa
Elongation at break***	7% +/- 2%	12% +/- 4%	50% +/- 15%	28% +/- 5%	50% +/-6%	6% +/- 2%
Hardness	35-40 HRC	35-40 HRC	89 HRB	25-30 HRC	87 HRB	
Max long term operating temp	350°C	300°C	300°C	700°C	760-850°C	

\* Dependent on geometry  
 \*\* Dependent on surface orientation  
 \*\*\* As printed test bars

All values approximate and dependent on standard parameters  
 Values subject to change without notice  
 Other materials can be arranged for volume orders, please call to discuss +64 7 557 0344