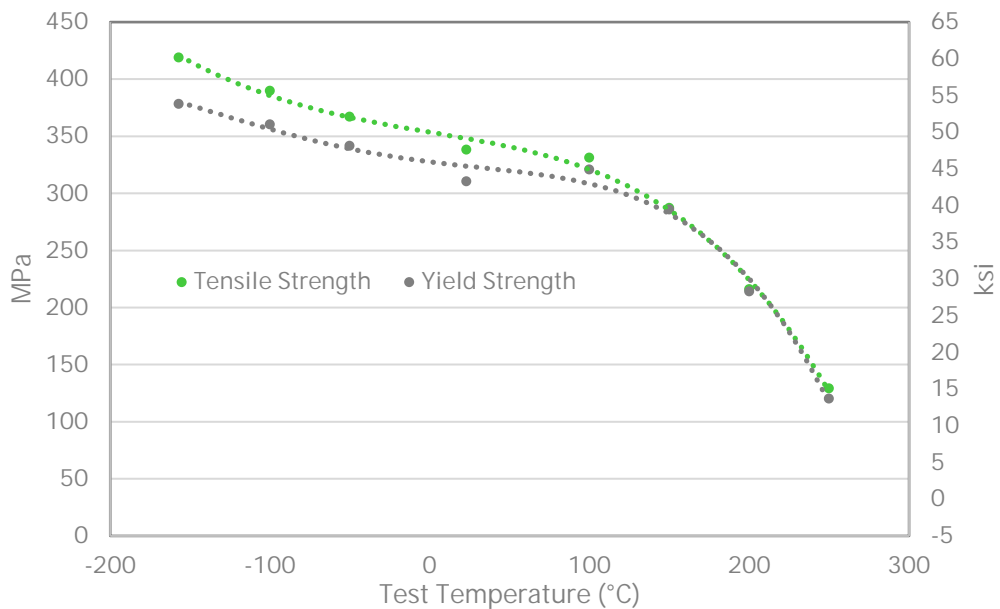


Surface roughness as built^[10]:

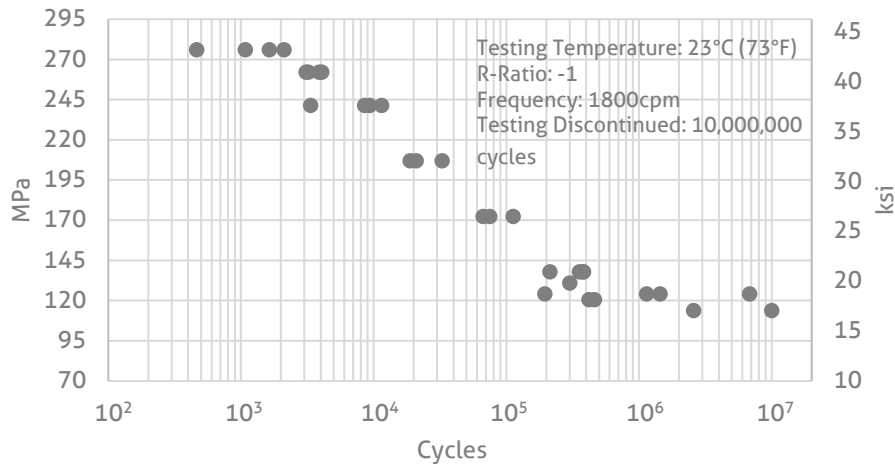
| Angle Deg. ° | Upskin | | Downskin | |
|-----------------|-----------|---------|------------|---------|
| | Ra μm | Ra μin | Ra μm | Ra μin |
| 0 (top) | 2.27±0.31 | 89.4±12 | | |
| 40 | 7.35±1.72 | 289±68 | 18.91±1.0 | 744±39 |
| 45 | 6.32±1.73 | 249±68 | 18.14±2.29 | 714±90 |
| 50 | 6.74±1.13 | 265±44 | 16.97±3.86 | 668±152 |
| 90 (vertical) | 7.28±0.31 | 287±12 | | |

Elevated temperature tensile^[11]:

| Test temperature | | Ultimate tensile strength | | Yield strength | | Elongation |
|------------------|-----------|---------------------------|---------------|----------------|---------------|---------------|
| °C | °F | MPa | ksi | MPa | ksi | % |
| -157 | -251 | 419±11 | 60.7±2 | 378±11 | 54.8±2 | 15.1±1 |
| -100 | -148 | 390±11 | 56.5±2 | 360±12 | 52.2±2 | 13.0±1 |
| -50 | -58 | 367±17 | 53.2±3 | 342±17 | 49.5±3 | 13.1±1 |
| 23 | 73 | 338±20 | 49.0±3 | 311±14 | 45.0±2 | 12.9±2 |
| 100 | 212 | 331±5 | 48.0±1 | 320±7 | 46.5±1 | 14.5±1 |
| 150 | 302 | 287±6 | 41.6±1 | 286±5 | 41.4±0.7 | 18.4±3 |
| 200 | 392 | 215±9 | 31.3±1 | 214±8 | 31.0±1 | 22.0±4 |
| 250 | 482 | 129±15 | 18.7±2 | 120±6 | 17.4±1 | 29.6±5 |



Fatigue^[12]:



All stated values are from heat treated samples.

^[1]ASTM E8, ^[2]ASTM E18, ^[3]ASTM E494-15, ^[4]Deposition rate calculation is for comparison purposes on an EOS M290 and does not include recoating time, laser migration time, contour exposures, etc., ^[5]ASTM G65, Procedure E, ^[6]Suthar et al. (2015). Comparative evaluation of abrasive wear resistance of various stainless steel grades. GE- International Journal of Engineering Research, 3(7), ^[7]Lall and Williamson. Wear Resistance and Mechanical Properties of Selected PM Aluminum Alloys and Composites, Metal Powder Products Company, ^[8]ISO/DIS 22007-2.2 (Transient Place Source, TPS), ^[9] ASTM E228, ^[10]Surface roughness determined by stylus profilometry, ^[11] ASTM E21, ^[12]ASTM E466.

All stated values are approximate values. All details given above are our current knowledge and experience, and are dependent on the equipment, parameters and operating conditions. The data provided in this document is subject to change and only intended as general information on a material set that is continually improving and developing. The data does not provide a sufficient basis for engineering parts. All samples were produced on an EOS M290. All tensile tests were performed at third party certified test labs such as Westmoreland Mechanical Testing & Research.