

Aluminum 6005-T5

| Physical Properties | Metric | English | Comments |
|------------------------------|--|--|--|
| Density | 2.70 g/cc | 0.0975 lb/in ³ | AA; Typical |
| Mechanical Properties | Metric | English | Comments |
| Hardness, Brinell | 95 | 95 | 500 kg load with 10 mm ball |
| Hardness, Knoop | 120 | 120 | Converted from Brinell Hardness Value |
| Hardness, Rockwell A | 39.8 | 39.8 | Converted from Brinell Hardness Value |
| Hardness, Rockwell B | 60 | 60 | Converted from Brinell Hardness Value |
| Hardness, Vickers | 107 | 107 | Converted from Brinell Hardness Value |
| Tensile Strength, Ultimate | 260 MPa | 37700 psi | |
| Tensile Strength, Yield | 240 MPa | 34800 psi | |
| Elongation at Break | 8.00 % @Thickness 1.60 mm | 8.00 % @Thickness 0.0630 in | In 5 cm |
| Modulus of Elasticity | 69.0 GPa | 10000 ksi | Average of Tension and Compression. In Aluminum alloys, the compressive modulus is typically 2% greater than the tensile modulus |
| Poissons Ratio | 0.330 | 0.330 | Estimated from trends in similar Al alloys. |
| Fatigue Strength | 100 MPa @# of Cycles 5.00e+8 | 14500 psi @# of Cycles 5.00e+8 | |
| Shear Modulus | 26.0 GPa | 3770 ksi | Estimated from similar Al alloys. |
| Shear Strength | 205 MPa | 29700 psi | |

Aluminum 6061-T6; 6061-T651

| Physical Properties | Metric | English | Comments |
|---------------------------|---|--|--|
| Density | 2.70 g/cc | 0.0975 lb/in ³ | AA; Typical |
| Mechanical Properties | Metric | English | Comments |
| Hardness, Brinell | 95 | 95 | AA; Typical; 500 g load; 10 mm ball |
| Hardness, Knoop | 120 | 120 | Converted from Brinell Hardness Value |
| Hardness, Rockwell A | 40 | 40 | Converted from Brinell Hardness Value |
| Hardness, Rockwell B | 60 | 60 | Converted from Brinell Hardness Value |
| Hardness, Vickers | 107 | 107 | Converted from Brinell Hardness Value |
| Ultimate Tensile Strength | 310 MPa | 45.0 ksi | AA; Typical |
| Tensile Yield Strength | 276 MPa | 40.0 ksi | AA; Typical |
| Elongation at Break | 12.0 % @Thickness 1.59 mm | 12.0 % @Thickness 0.0625 in | AA; Typical |
| | 17.0 % @Diameter 12.7 mm | 17.0 % @Diameter 0.500 in | AA; Typical |
| Modulus of Elasticity | 68.9 GPa | 10000 ksi | AA; Typical; Average of tension and compression. Compression modulus is about 2% greater than tensile modulus. |
| Notched Tensile Strength | 324 MPa | 47000 psi | 2.5 cm width x 0.16 cm thick side-notched specimen, K _t = 17. |
| Ultimate Bearing Strength | 607 MPa | 88000 psi | Edge distance/pin diameter = 2.0 |
| Bearing Yield Strength | 386 MPa | 56000 psi | Edge distance/pin diameter = 2.0 |
| Poissons Ratio | 0.330 | 0.330 | Estimated from trends in similar Al alloys. |
| Fatigue Strength | 96.5 MPa @# of Cycles 5.00e+8 | 14000 psi @# of Cycles 5.00e+8 | completely reversed stress; RR Moore machine/specimen |
| Fracture Toughness | 29.0 MPa-m ^{1/2} | 26.4 ksi-in ^{1/2} | K _{IC} ; TL orientation. |
| Machinability | 50 % | 50 % | 0-100 Scale of Aluminum Alloys |
| Shear Modulus | 26.0 GPa | 3770 ksi | Estimated from similar Al alloys. |
| Shear Strength | 207 MPa | 30000 psi | AA; Typical |