AISI 1018 Steel, cold drawn

Categories: Metal; Ferrous Metal; Carbon Steel; AISI 1000 Series Steel; Low Carbon Steel

Material Notes: Medium low-carbon steel, has good weldability and slightly better machinability than the lower carbon steels.

Key Words: carbon steels, AMS 5069, ASTM A108, UNS G10180, AS 1442 K1018 (Australia), AS 1443 K1018, CSN 12020 (Czech), CSN 12022, AFNOR NF A33-101 AF42C20, DIN 1.0453, DIN C16.8, DGN B-301 1018 (Mexico), COPANT 331 1018 (Pan America), COPANT 333 1018, MST.T (Russia), ST.20A, ST.3, ST.3T, GOST M18S, GOST 23570 18ps, GOST 23570 18sp, GOST 5520 18K, GOST 5521 S, NBN 629 D37-2 (Belgium), NBN 630 E37-1, NBN 630 E37-2, NBN A21-221 C17KD, BDS 9801 S (Bulgaria), GB 715 ML3 (China), TS 302 Fe35.2 (Turkey), TS 346 Fe35, BS 970 080A17, DEF STAN95-1-1 C1018

Vendors: **Click here to view all available suppliers for this material.**

Please click here if you are a supplier and would like information on how to add your listing to this material.

Physical Properties	Metric	English	Comments
Density	7.87 g/cc	0.284 lb/in³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	126	126	
Hardness, Knoop	145	145	Converted from Brinell hardness.
Hardness, Rockwell B	71	71	Converted from Brinell hardness.
Hardness, Vickers	131	131	Converted from Brinell hardness.
Tensile Strength, Ultimate	440 MPa	63800 psi	
Tensile Strength, Yield	370 MPa	53700 psi	
Elongation at Break	15.0 %	15.0 %	In 50 mm
Reduction of Area	40.0 %	40.0 %	
Modulus of Elasticity	205 GPa	29700 ksi	Typical for steel
Bulk Modulus	140 GPa	20300 ksi	Typical for steel
Poissons Ratio	0.290	0.290	Typical For Steel
Machinability	70 %	70 %	Based on AISI 1212 steel. as 100% machinability
Shear Modulus	80.0 GPa	11600 ksi	Typical for steel

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000159 ohm-cm	0.0000159 ohm-cm	annealed condition; 0°C (32°F)
	0.0000219 ohm-cm @Temperature 100 °C	0.0000219 ohm-cm @Temperature 212 °F	annealed condition
	0.0000293 ohm-cm @Temperature 200 °C	0.0000293 ohm-cm @Temperature 392 °F	annealed condition

Thermal Properties	Metric	English	Comments
Specific Heat Capacity	0.486 J/g-°C	0.116 BTU/lb-°F	annealed; 50-100°C (122-212°F)
Thermal Conductivity	51.9 W/m-K	360 BTU-in/hr-ft²-°F	estimated based on similar materials

Component Elements Properties	Metric	English	Comments
Carbon, C	0.14 - 0.20 %	0.14 - 0.20 %	
Iron, Fe	98.81 - 99.26 %	98.81 - 99.26 %	As remainder
Manganese, Mn	0.60 - 0.90 %	0.60 - 0.90 %	
Phosphorous, P	<= 0.040 %	<= 0.040 %	
Sulfur, S	<= 0.050 %	<= 0.050 %	

References for this datasheet.