

## AISI 1018 Steel, cold drawn, high temperature, stress relieved, 16-22 mm (0.625-0.875 in) round


**Categories:** [Metal](#); [Ferrous Metal](#); [Carbon Steel](#); [AISI 1000 Series Steel](#); [Low Carbon Steel](#)

**Material Notes:** Supplied as killed, semikilled, rimmed, and capped steel. Good weldability, relatively soft and strengthen with cold work during forming or drawing. Widely used in cold forming operations such as heading, upsetting, and extrusion. Used in the as-rolled condition as bar, shapes, sheet, and strip.

**Key Words:** UNS G10180, AMS 5069, ASTM A29, ASTM A108, ASTM A510, ASTM A513, ASTM A519, ASTM A544, ASTM A545, ASTM A548, ASTM A549, ASTM A576, ASTM A659, 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, MIL SPEC MIL-S-11310 (CS1018), SAE J403, SAE J412, SAE J414, 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/in <sup>3</sup>	Typical for steel
Mechanical Properties	Metric	English	Comments
Hardness, Brinell	131	131	
Hardness, Knoop	150	150	Converted from Brinell hardness.
Hardness, Rockwell B	73	73	Converted from Brinell hardness.
Hardness, Vickers	136	136	Converted from Brinell hardness.
Tensile Strength, Ultimate	450 MPa	65300 psi	
Tensile Strength, Yield	310 MPa	45000 psi	
Elongation at Break	20 %	20 %	in 50 mm
Reduction of Area	45 %	45 %	
Modulus of Elasticity	200 GPa	29000 ksi	
Bulk Modulus	159 GPa	23100 ksi	Estimated from elastic modulus
Poissons Ratio	0.29	0.29	Typical for steel
Shear Modulus	78.0 GPa	11300 ksi	Estimated from elastic modulus
Electrical Properties	Metric	English	Comments
Electrical Resistivity 	0.0000159 ohm-cm @Temperature 0.000 °C	0.0000159 ohm-cm @Temperature 32.0 °F	annealed condition
	0.0000219 ohm-cm	0.0000219 ohm-cm	annealed condition

@Temperature 100 °C	@Temperature 212 °F
0.0000293 ohm-cm	0.0000293 ohm-cm
@Temperature 200 °C	@Temperature 392 °F

annealed condition

Thermal Properties	Metric	English	Comments
CTE, linear 	11.5 µm/m-°C	6.39 µin/in-°F	Typical steel
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	12.2 µm/m-°C	6.78 µin/in-°F	Typical for steel
	@Temperature 0.000 - 300 °C	@Temperature 32.0 - 572 °F	
	13.9 µm/m-°C	7.72 µin/in-°F	Typical for steel
	@Temperature 0.000 - 500 °C	@Temperature 32.0 - 932 °F	
Specific Heat Capacity	0.486 J/g-°C	0.116 BTU/lb-°F	annealed
	@Temperature >=100 °C	@Temperature >=212 °F	
Thermal Conductivity	51.9 W/m-K	360 BTU-in/hr-ft <sup>2</sup> -°F	Typical steel

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.

Some of the values displayed above may have been converted from their original units and/or rounded in order to display the information in a consistent format. Users requiring more precise data for scientific or engineering calculations can click on the property value to see the original value as well as raw conversions to equivalent units. We advise that you only use the original value or one of its raw conversions in your calculations to minimize rounding error. We also ask that you refer to MatWeb's [terms of use](#) regarding this information. [Click here](#) to view all the property values for this datasheet as they were originally entered into MatWeb.