

40 Standard gray iron test bars, as cast

Categories: [Metal](#); [Ferrous Metal](#); [Cast Iron](#); [Gray Cast Iron](#)

Material Notes: 1440 kg transverse load on test bar.

Vendors: No vendors are listed 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	7.15 g/cc	0.258 lb/in ³	Typical for Gray Cast Iron
Mechanical Properties	Metric	English	Comments
Hardness, Brinell	235	235	
Hardness, Knoop	262	262	Converted from Brinell hardness.
Hardness, Rockwell C	17.9	17.9	Approximated. Converted from Brinell hardness. Value below normal HRC range, for comparison purposes only.
Hardness, Vickers	248	248	Approximated. Converted from Brinell hardness.
Tensile Strength, Ultimate	293 MPa	42500 psi	
Modulus of Elasticity	110 - 138 GPa	16000 - 20000 ksi	
Ultimate Compressive Strength	965 MPa	140000 psi	
Poissons Ratio	0.290	0.290	Calculated
Fatigue Strength	128 MPa	18600 psi	Reversed bending fatigue limit
Shear Modulus	44.0 - 54.0 GPa	6380 - 7830 ksi	
Shear Strength	393 MPa	57000 psi	Torsional shear strength.
Material Components Properties	Metric	English	Comments
Carbon, C	3.25 - 3.50 %	3.25 - 3.50 %	
Chromium, Cr	0.050 - 0.45 %	0.050 - 0.45 %	
Copper, Cu	0.15 - 0.40 %	0.15 - 0.40 %	
Manganese, Mn	0.50 - 0.90 %	0.50 - 0.90 %	
Molybdenum, Mo	0.050 - 0.10 %	0.050 - 0.10 %	
Nickel, Ni	0.050 - 0.20 %	0.050 - 0.20 %	
Phosphorous, P	<= 0.12 %	<= 0.12 %	
Silicon, Si	1.80 - 2.30 %	1.80 - 2.30 %	
Sulfur, S	<= 0.15 %	<= 0.15 %	

[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 disclaimer and terms of use regarding this information. [Click here](#) to view all the property values for this datasheet as they were originally entered into MatWeb.