

20 Standard gray iron test bars, as cast

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

Material Notes: 839 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	156	156	
Hardness, Knoop	173	173	Converted from Brinell hardness.
Hardness, Vickers	161	161	Approximated. Converted from Brinell hardness.
Tensile Strength, Ultimate	152 MPa	22000 psi	
Modulus of Elasticity	66.0 - 97.0 GPa	9570 - 14100 ksi	
Ultimate Compressive Strength	572 MPa	83000 psi	
Poissons Ratio	0.290	0.290	Calculated
Fatigue Strength	69.0 MPa	10000 psi	Reversed bending fatigue limit
Shear Modulus	27.0 - 39.0 GPa	3920 - 5660 ksi	
Shear Strength	179 MPa	26000 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.