MW Components

Carbon Steel Grade 1035 Fact Sheet

AISI 1035 Carbon Steel, cold drawn, 19-32 mm (0.75-1.25 in) round

Subcategories: Carbon Steel; AISI 1000 Series Steel; Medium Carbon Steel

Close Analogs:

Key Words: UNS G10350, AMS 5080, AMS 5082, ASTM A29, ASTM A108, ASTM A510, ASTM A519, carbon steels

Component	Weight %					
C	Max 0.38					
Fe	98.63 - 99.09					
Mn	0.60-0.90					
P	Max 0.040					
S	Max 0.050					
Physical Properties	**Metric**	**English**	**Comments**	**Cold Head**	**Hot Forge**	**Wire Form**
Density	7.85 g/cc	0.284 lb/in³				
Mechanical Properties	**Metric**	**English**	**Comments**	**Cold Head**	**Hot Forge**	**Wire Form**
Hardness, Brinell	163	163				
Hardness, Knoop	184	184	Converted from Brinell hardness.			
Hardness, Rockwell B	84	84	Converted from Brinell hardness.			
Hardness, Vickers	170	170	Converted from Brinell hardness.			
Tensile Strength, Ultimate	550 MPa	79800 psi				
Tensile Strength, Yield	460 MPa	66700 psi				

Elongation at Break	12%	12%	In 50 mm			
Reduction of Area	35%	35%				
Modulus of Elasticity	196 GPa	28400 ksi				
Bulk Modulus	156 GPa	22600 ksi	Estimated from elastic modulus			
Poissons Ratio	0.29	0.29	Typical for steel			
Machinability	65.00%	65.00%	Based on AISI 1212 steel. as 100% machinability			
Shear Modulus	76.0 GPa	11000 ksi	Estimated from elastic modulus			
Electrical Properties	**Metric**	**English**	**Comments**	**Cold Head**	**Hot Forge**	**Wire Form**
Electrical Resistivity	0.0000163 ohm-cm	0.0000163 ohm-cm	annealed specimen			
	0.0000217 ohm-cm	0.0000217 ohm-cm	annealed specimen			
Thermal Properties	**Metric**	**English**	**Comments**	**Cold Head**	**Hot Forge**	**Wire Form**
CTE, linear	11.0 µm/m-°C	6.11 µin/in-°F				
	Temperature 20.0 - 100 °C	Temperature 68.0 - 212 °F				
	12.6 µm/m-°C	7.00 µin/in-°F				
	Temperature 0.000 - 300 °C	Temperature 32.0 - 572 °F				
	13.9 µm/m-°C	7.72 µin/in-°F				
	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-ft²-°F				