MW Components

Alloy Steel Grade 8740 Fact Sheet

AISI 8740 Steel, normalized 870°C (1600°F)

Subcategories: Alloy Steel; AISI 8000 Series Steel; Low Alloy Steel; Carbon Steel; Medium Carbon Steel

Close Analogs:

Key Words: DIN 1.6546, UNI 40 NiCrMo 2 KB, B.S. Type 7, ASTM A331, ASTM A505, ASTM A519, MIL-SPEC MIL-S-6049, SAE J404, SAE J412, SAE J770, UNS G87400, AMS 6322, AMS 6323, AMS 6325, AMS 6327, AMS 6358, ASTM A322

Component	Weight %					
C	Max 0.43					
Cr	0.40-0.60					
Fe	96.645-97.72					
Mn	0.75-1.0					
Mo	0.20-0.30					
Ni	0.40-0.70					
P	Max 0.035					
Si	0.15-0.30					
S	Max 0.040					
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	269	269				
Hardness, Knoop	294	294	Converted from Brinell hardness.			
Hardness, Rockwell B	99	99	Converted from Brinell hardness.			
Hardness, Rockwell C	27	27	Converted from Brinell hardness.			

Hardness, Vickers	284	284	Converted from Brinell hardness.			
Tensile Strength, Ultimate	930 MPa	135000 psi				
Tensile Strength, Yield	550 MPa	79800 psi				
Elongation at Break	16%	16%	in 50 mm			
Modulus of Elasticity	205 GPa	29700 ksi	Typical for steel			
Bulk Modulus	160 GPa	23200 ksi	Typical for steel.			
Poissons Ratio	0.29	0.29	Calculated			
Machinability	65.00%	65.00%	annealed and cold drawn. Based on 100% machinability for AISI 1212 steel.			
Shear Modulus	80.0 GPa	11600 ksi	Typical for steel			
Izod Impact	18.0 J	13.3 ft-lb				
Electrical Properties	**Metric**	**English**	**Comments**	**Cold Head**	**Hot Forge**	**Wire Form**
Electrical Resistivity	0.0000234 ohm-cm	0.0000234 ohm-cm				
Thermal Properties	**Metric**	**English**	**Comments**	**Cold Head**	**Hot Forge**	**Wire Form**
Specific Heat Capacity	0.475 J/g-°C	0.114 BTU/lb-°F	Typical steel			
Thermal Conductivity	46.6 /m-K	323 BTU-in/hr-ft²-°F	Typical steel			