

Material: BS A 3

Standard Specification for Carbon Steel; Railway Rolling Stock Materials

Group: Ferrous Mild Steel Alloys

Sub Group: BS A 3 Carbon Steel; Railway Rolling Stock Materials

Application: Intended for Valve, Pump, General Engineering, Automotive and Other Industries

Grade Belongs to the Industry: Casting

Chemical Composition		
Carbon	C %	0.450 max.
Silicon	Si %	0.500 max.
Manganese	Mn %	1.000 max.
Phosphorus	P %	0.040 max.
Sulphur	S %	0.040 max.
Chromium	Cr %	0.500 max.
Nickel	Ni %	0.300 max.
Molybdenum	Mo %	0.400 max.
Vanadium	V %	0.100 max.
Copper	Cu %	0.300 max.
Iron	Fe %	Balance
-	-	-
-	-	-
-	-	-
-	-	-

Heat Treatment
Annealing or Normalizing or Hardening + Tempering

Mechanical Properties	
Tensile Strength in Mpa	650 - 800
Yield Strength in Mpa	420 min.
Elongation in %	19 min.
Reduction of Area in %	-
Hardness in BHN	-
Impact in Joule	-

Cross Reference Table			
Material	Standard	Country	Grade Belong to the Industry
J04002	UNS	USA	Casting
DIN 1.1190	DIN	Germany	Steel
1040	AISI	USA	Forging, Bar, Wire, and Shape
42CD4M	AFNOR NF	France	Casting
A732 3Q	ASTM	USA	Casting
A732 1Q	ASTM	USA	Casting
A732 3A	ASTM	USA	Casting

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