

# Material: IS 4522 Grade 1

## Standard Specification for Heat Resistant Alloy Steel and Nickel Base Castings

**Group:** Ferrous Stainless Steel Alloys

**Sub Group:** IS 4522 Grade 1 Heat Resistant Alloy Steel and Nickel Base Castings

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

**Grade Belongs to the Industry:** Casting

Chemical Composition		
Carbon	C %	0.400 max.
Silicon	Si %	2.000 max.
Manganese	Mn %	1.000 max.
Phosphorus	P %	0.050 max.
Sulphur	S %	0.050 max.
Chromium	Cr %	12.000 - 14.000
Nickel	Ni %	1.000 max.
Molybdenum	Mo %	0.500 max.
Iron	Fe %	Balance
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

Heat Treatment
As - Cast or Annealing

Mechanical Properties	
Tensile Strength in Mpa	590 min.
Yield Strength in Mpa	-
Elongation in %	8 min.
Reduction of Area in %	-
Hardness in BHN	-
Impact in Joule	-

Cross Reference Table			
Material	Standard	Country	Grade Belong to the Industry
420.0000	AISI	USA	Bar, Wire, Shapes and Forging
1.4028	EN	European Union	Forging
SUS 420J2	JIS	Japan	Forging
30CH13	GOST	Russia	Bar, Wire, Shapes and Forging
2304	SS	Sweden	Bar, Wire, Shapes and Forging
X 30 Cr 13	UNI	Italy	Bar, Wire, Shapes and Forging
420 S 45	BS	British	Bar, Wire, Shapes and Forging

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