IS 291 GR I

NAVAL BRASS

DESCRIPTION

IS 291 Gr I is commonly referred to as a naval brass and issued typically in a wide range of marine and subsea applications. This brass alloy offers superior strength and corrosion resistance and offers good property retention at cryogenic temperatures. With excellent hot formability and very good corrosion resistance.

CHEMICAL COMPOSITION

Elements	Min (%)	Max (%)
Cu	61.00	64.00
Pb	-	0.20
Sn	1.00	1.50
Fe	-	0.10
Total Others	-	0.20
Zn	Remainder	

MECHANICAL PROPERTIES (AS PER TEMPER HB)

Range (Inch)	From	To	UTS Min (MPa)	PS Min	Elongation Min (%)	Hardness Min (HRB)	Hardness Max (HRB)
Round (Dia)	1.5	12.5	390.00	-	18.00	-	-
	12.5	50.00	380.00	-	18.00	-	-
	50.00	75.00	345.00	-	18.00	-	-
Hex (A/F)	3.00	12.5	390.00	-	18.00	-	-
	12.5	50.00	380.00	-	18.00	-	-
	50.00	65.00	345.00	-	18.00	-	-
Square (A/F)	3.00	12.5	390.00	-	18.00	-	-
	12.5	50.00	380.00	-	18.00	-	-
	50.00	60.00	345.00	-	18.00	-	-
Rectangle (Thickness)	3.00	12.5	390.00	-	18.00	-	-
	12.5	50.00	380.00	-	18.00	-	-

RAJHANS METALS PRIVATE LIMITED

3985, GIDC, Phase-III, Dared, Jamnagar - 361 004. (Gujarat) INDIA. +91 2882573820 www.rajhans.com

IS 291 GR I

NAVAL BRASS

PHYSICAL PROPERTIES

Melting Point - Liquidus°F	1650
Melting Point - Solidus°F	1630
Densitylb/cu in. at 68°F	0.304
Specific Gravity	8.41
Electrical Conductivity% IACS at 68°F	26
Thermal ConductivityBtu/ sq ft/ ft hr/ °F at 68°F	67
Coefficient of Thermal Expansion 68-57210-^{6} per °F (68 – 572°F)	11.8
Specific Heat CapacityBtu/ lb /°F at 68°F	0.09
Modulus of Elasticity in Tensionksi	15000
Modulus of Rigidityksi	5600

FABRICATION PROPERTIES

Technique	Suitability
Capacity for being Cold Worked	Fair
Hot Worked	Excellent
Machinability Rating	30%
Forgeability Rating	90%
Silver Alloy Brazing	Excellent
Soft Soldering	Excellent
Oxyacetylene Welding	Good

TYPICAL USES

- Fasteners
- Industrial
- Marine

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