

# Material: ASTM A 959 Type 660

## Standard Specification for Seamless Nickel and Nickel Alloy Pipe, Tube, Sheet, Strip, Plate, Round Bar, Flat Bar, Forging Stock, Hexagon and Wire

**Group:** Non-Ferrous Nickel Alloys

**Sub Group:** ASTM A 959 Type 660 Seamless Nickel and Nickel Alloy Pipe, Tube, Sheet, Strip, Plate, Round Bar, Flat Bar, Forging Stock, Hexagon and Wire

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

**Grade Belongs to the Industry:** Pipe, Tube, Sheet, Strip, Plate, Hexagon and Wire

Chemical Composition		
Carbon	C %	0.080 max.
Silicon	Si %	1.000 max.
Manganese	Mn %	2.000 max.
Chromium	Cr %	13.500 - 16.000
Sulphur	S %	0.030 max.
Molybdenum	Mo %	1.000 - 1.500
Aluminium	Al %	0.350 max.
Boron	B %	0.003 - 0.010
Titanium	Ti %	1.900 - 2.300
Vanadium	V %	0.100 - 0.500
Nickel	Ni %	24.000 - 27.000
Iron	Fe %	Balance
-	-	-
-	-	-
-	-	-

Heat Treatment	
	As-Cast or Annealing or Age Hardning

Mechanical Properties	
Tensile Strength in Mpa	600 - 1500
Yield Strength in Mpa	737.4 min.
Elongation in %	29.300 min.
Reduction of Area in %	-
Hardness in HRC	31 max.
Impact in Joule	-

Cross Reference Table			
Material	Standard	Country	Grade Belong to the Industry
Incoloy A-286	Gravity	India	Pipe, Tube, Sheet, Strip, Plate, Hexagon and Wire
F 2281 660	ASTM	USA	Pipe, Tube, Sheet, Strip, Plate, Hexagon and Wire
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
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Customer Care: +91-99090 45075 Email: [info@icastllp.com](mailto:info@icastllp.com)



+91-99090 45075



[info@icastllp.com](mailto:info@icastllp.com)



ICAST ALLOYS LLP, Plot 2527, Road H1, Kranti Gate, GIDC Metoda, Lodhika, Rajkot-360021, Gujarat, India