



## Material - ASME SA 213 Alloy 20

**Standard Specification for Seamless Ferritic and Austenitic Alloy-Steel Boiler, Superheater and Heat-Exchanger Tubes**

**Group - Non-Ferrous Nickel Alloys**

**Sub Group - ASME SA 213 Alloy 20 Seamless Ferritic and Austenitic Alloy-Steel Boiler, Superheater and Heat-Exchanger Tubes**

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

**Grade Belongs to the Industry - Tube**

Chemical Composition			Heat Treatment	
Carbon	C %	0.070 max.	As-Cast or Annealing or Age Hardning	
Silicon	Si %	1.000 max.		
Manganese	Mn %	2.000 max.		
Chromium	Cr %	19.000 - 21.000		
Sulphur	S %	0.035 max.		
Molybdenum	Mo %	2.000 - 3.000		
Copper	Cu %	3.000 - 4.000		
Nb + Ta	Nb% + Ta%	1.000 max.		
Phosphorus	P %	0.045 max.		
Nickel	Ni %	32.000 - 38.000		
Iron	Fe %	Balance		
-	-	-	<b>Mechanical Properties</b> Tensile Strength in Mpa      550 min. Yield Strength in Mpa      240 min. Elongation in %      30 min. Reduction of Area in %      - Hardness in BHN      217 max. Impact in Joule      -	
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Cross Reference Table			
Material	Standard	Country	Grade Belong to the Industry
Incoloy Alloy 020	Gravity	India	Pipe, Tube, Sheet, Strip, Plate, Hexagon and Wire
A 312 Alloy 20	ASTM	USA	Pipe
A 312 N08020	ASTM	USA	Pipe
A213 Alloy 20	ASTM	USA	Tube
AS-312 Alloy 20	ASME	USA	Pipe
SA-312 Alloy 20	ASME	USA	Pipe
NCF020	JIS	Japan	Plate, Sheet and Strip

**Further any inquiry to discuss with Gravity Cast Pvt. Ltd. – Gravity Group of Companies team member Call on +918469160029, or email [marketing@gravitycastindia.com](mailto:marketing@gravitycastindia.com)**

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