

## Material: ASTM A356 9

### Standard Specification for Steel Castings, Carbon, Low Alloy, and Stainless Steel, Heavy-Walled for Steam Turbines

**Group:** Ferrous Mild Steel Alloys

**Sub Group:** ASTM A356 / A356M Carbon, Low Alloy, and Stainless Steel, Heavy-Walled for Steam Turbines

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

**Grade Belongs to the Industry:** Casting

Chemical Composition			Heat Treatment	
Carbon	C %	0.200 max.	Normalising or Annealing or Hardening + Tempering	
Silicon	Si %	0.200 - 0.600		
Manganese	Mn %	0.500 - 0.900		
Phosphorus	P %	0.035 max.		
Sulphur	S %	0.030 max.		
Chromium	Cr %	1.000 - 1.500		
Molybdenum	Mo %	0.900 - 1.200		
Vanadium	V %	0.200 - 0.350		
Iron	Fe %	Balance	Mechanical Properties	
-	-	-	Tensile Strength in Mpa	585 min.
-	-	-	Yield Strength in Mpa	415 min.
-	-	-	Elongation in %	15 min.
-	-	-	Reduction of Area in %	45 min.
-	-	-	Hardness in BHN	-
-	-	-	Impact in Joule	-

Cross Reference Table			
Material	Standard	Country	Grade Belong to the Industry
J21610	UNS	USA	Casting
422744	CSN	Czech Republic	Casting
1.7706	EN	European Union	Casting
1.7706	DIN	Germany	Casting
G17 CrMoV 5-10	AFNOR NF	France	Casting
G17 CrMoV 5-10	UNI	Italy	Casting
L17HMF	PN	Poland	Casting

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