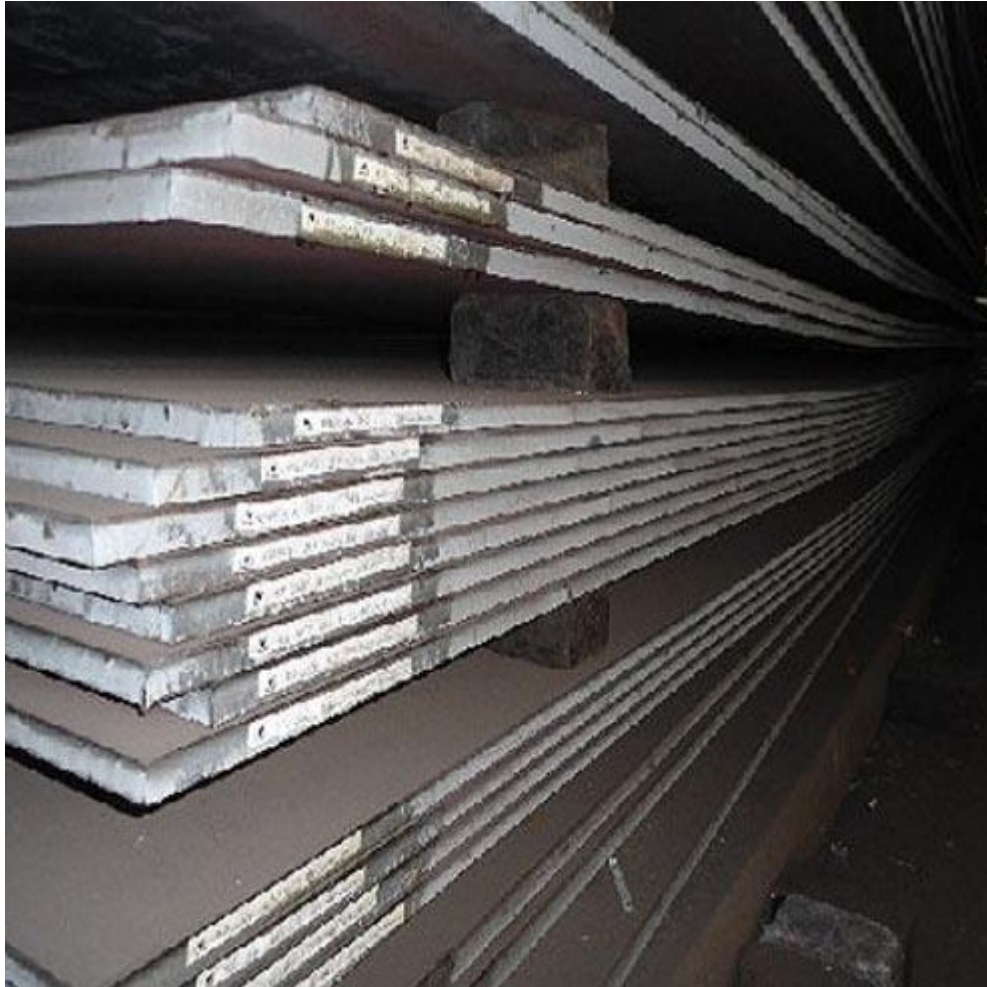


ASTMA517/A517M

ASTM A517/A517M Standard Specification for Pressure Vessel Plates, Alloy Steel, High-Strength, Quenched and Tempered



ASTM A517/A517M specification covers standard requirements for high-strength quenched and tempered alloy steel plates intended for use in fusion welded boilers and other pressure vessels. The steel shall be killed and shall conform to the fine austenitic grain size requirement. Heat and product analyses shall be conducted wherein the material shall conform to the required chemical composition for carbon, manganese, phosphorus, sulfur, silicon, nickel, chromium, molybdenum, boron, vanadium, titanium, zirconium, copper, and columbium. Tensile properties of the steel plate shall meet the specified values for tensile strength, yield strength, and elongation. The material shall undergo mechanical tests such as tension test and transverse Charpy V-notch impact test. ASTM A517/A517M standard main steel grade: ASTM A517 Grade A, B, E, F, P, H, Q

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Standard:ASTMA517/A517M
Grade : ASTMA517 GR A,B,E,F,P,H,Q
Thickness : 8mm -260mm
Width : 1000mm-4000mm
Length : 1000mm-20000mm
MOQ: 1 PC
Product type : Steel plate
Delivery time : Promptly (Stock) or 10-40 days (Production)
Stock : Available
MTC: Available
Delivery condition: Quenched and Tempered

TABLE 1 Chemical Requirements

Elements	Composition, %							
	Grade A	Grade B	Grade E	Grade F	Grade H	Grade P	Grade Q	Grade S
Carbon:								
Heat analysis	0.15	0.15	0.12	0.10	0.12	0.12	0.14	0.10
Product analysis	-0.21	-0.21	-0.20	-0.20	-0.21	-0.21	-0.21	-0.20
	0.13	0.13	0.10	0.08	0.10	0.10	0.12	0.10
	-0.23	-0.23	-0.22	-0.22	-0.23	-0.23	-0.23	-0.22
Manganese:								
Heat analysis	0.80	0.70	0.40	0.60	0.95	0.45	0.95	1.10
Product analysis	-1.10	-1.00	-0.70	-1.00	-1.30	-0.70	-1.30	-1.50
	0.74	0.64	0.35	0.55	0.87	0.40	0.87	1.02
	-1.20	-1.10	-0.78	-1.10	-1.41	-0.78	-1.41	-1.62
Phosphorus, max ^A	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035
Sulfur, max ^A	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035
Silicon:								
Heat analysis	0.40	0.15	0.10	0.15	0.15	0.20	0.15	0.15
Product analysis	-0.80	-0.35	-0.40	-0.35	-0.35	-0.35	-0.35	-0.40
	0.34	0.13	0.08	0.13	0.13	0.18	0.13	0.13
	-0.86	-0.37	-0.45	-0.37	-0.37	-0.37	-0.37	-0.45
Nickel:								
Heat analysis	...	...	...	0.70	0.30	1.20	1.20	...
Product analysis	...	...	...	-1.00	-0.70	-1.50	-1.50	...
	...	...	...	0.67	0.27	1.15	1.15	...
	...	...	...	-1.03	-0.73	-1.55	-1.55	...
Chromium:								
Heat analysis	0.50	0.40	1.40	0.40	0.40	0.85	1.00	...
Product analysis	-0.80	-0.65	-2.00	-0.65	-0.65	-1.20	-1.50	...
	0.46	0.36	1.34	0.36	0.36	0.79	0.94	...
	-0.84	-0.69	-2.06	-0.69	-0.69	-1.26	-1.56	...
Molybdenum:								
Heat analysis	0.18	0.15	0.40	0.40	0.20	0.45	0.40	0.10
Product analysis	-0.28	-0.25	-0.60	-0.60	-0.30	-0.60	-0.60	-0.35
	0.15	0.12	0.36	0.36	0.17	0.41	0.36	0.10
	-0.31	-0.28	-0.64	-0.64	-0.33	-0.64	-0.64	-0.38
Boron	0.0025	0.0005	0.001	0.0005	0.0005	0.001	...	...
	max	-0.005	-0.005	-0.006	min	-0.005	...	...
Vanadium:								
Heat analysis	...	0.03	^B	0.03	0.03	...	0.03	...
Product analysis	...	-0.08	...	-0.08	-0.08	...	-0.08	...
	...	0.02	...	0.02	0.02	...	0.02	...
	...	-0.09	...	-0.09	-0.09	...	-0.09	...
Titanium:								
Heat analysis	...	0.01	0.01	...	...	...	...	0.06
Product analysis	...	-0.04	-0.10	...	...	...	...	0.07
	...	0.01	0.005	...	...	...	...	0.07
	...	-0.05	-0.11	...	...	...	...	0.07
Zirconium:								
Heat analysis	0.05 ^C	...	...	...	...	...	...	...
Product analysis	-0.15	...	...	...	...	...	...	...
	0.04	...	...	...	...	...	...	...
	-0.16	...	...	...	...	...	...	...
Copper:								
Heat analysis	...	...	...	0.15	...	...	...	...
Product analysis	...	...	...	-0.50	...	...	...	...
	...	...	...	0.12	...	...	...	...
	...	...	...	-0.53	...	...	...	...
Columbium, max								
Heat analysis	...	...	...	...	...	...	...	0.06
Product analysis	...	...	...	...	...	...	...	0.07

^A Applied to both heat and product analyses.

^B May be substituted for part or all of titanium content on a one for one basis.

^C Zirconium may be replaced by cerium. When cerium is added, the cerium/sulfur ratio should be approximately 1.5 to 1, based on heat analysis.

TABLE 2 Tensile Requirements

	2.50 in. [65 mm] and Under	Over 2.50 to 6 in. [65 to 150 mm]
Tensile strength, ksi [MPa]	115-135 [795-930]	105-135 [725 to 930]
Yield strength, min, ksi [MPa]	100 [690]	90 [620]
Elongation in 2 in. [50 mm], min, % ^A	16	14
Reduction of area, min, %:		
Rectangular specimens	35	...
Round specimens	45	45

^A See Specification A 20/A 20M for elongation adjustment.

We are a professional ASME SA517 and ASTM A517 steel stockist and supplier. We can supply different product type and grades of ASME SA517 . If you have any need of ASME SA517 steel please do not hesitate to contact us .

ASME SA517

ASTM A517

ASME SA517 Grade B

ASME SA517 Grade F

ASME SA517 Grade Q

ASME SA517 Grade H

ASTM A517 Grade B

ASTM A517 Grade F

ASTM A517 Grade Q

ASTM A517 Grade H