

SA-387 Steel Plate, Grades 5, 9, 11, 12, 22 and 91 Class 1 and 2
 Chromium - Molybdenum Alloy Steel Plates for elevated temp + corrosion.
 For Use in Boilers and pressure vessels

Chemical Properties:

<u>SA387</u>	<u>Grade 5</u>	<u>Grade 9</u>	<u>Grade 11</u>	<u>Grade 12</u>	<u>Grade 22</u>
<u>Carbon</u>	0.15 max	0.15 max	0.04 - 0.17	0.04 - 0.17	0.04 - 0.15
<u>Manganese</u>	0.25 - 0.66	0.25 - 0.66	0.35 - 0.73	0.35 - 0.73	0.25 - 0.66
<u>Phosphorous</u>	0.035	0.030	0.035	0.035	0.035
<u>Sulfur</u>	0.030	0.030	0.035	0.035	0.035
<u>Silicon</u>	0.55 max	1.05 max	0.44 - 0.86	0.13 - 0.45	0.5 max
<u>Chromium</u>	3.9 - 6.1	7.9 - 10.1	0.94 - 1.56	0.74 - 1.21	1.88 - 2.62
<u>Molybdenum</u>	0.40 - 0.7	0.85 - 1.15	0.40 - 0.7	0.4 - 0.65	0.85 - 1.15

SA387 GR 5 CLASS 2

A high quality chrome molybdenum alloy steel plate intended specifically for use in weldable carbon steel pressure vessels at elevated temperatures. Added molybdenum gives the material greater temperature tensile strength and the chromium provides improved corrosion resistance.

SA387 GR 9 CLASS 2

Weldable carbon steel plates for pressure vessels and boilers used in elevated temperatures. The material benefits from added chromium and molybdenum which gives the steel greater corrosion resistance and resistance to heat. SA387 Grade 9 is used by fabricators who serve the oil, gas and petrochemical industry.

SA387 GR 11 CLASS 2

A pressure vessel grade steel for use in elevated temperature service, ASME SA387 Grade 11 Class 2 is used in a variety of industries and is highly effective, particularly in the oil, gas and petrochemical industry, where liquids and gases are often stored at higher temperatures.

The higher levels of chromium also provide excellent corrosion and oxidation resistance, which is a must in sour gas applications.

SA387 GR 12 CLASS 2

Engineered for use in elevated temperature service, ASME SA387 Grade 12 is a chrome molybdenum carbon alloy steel for use in weldable pressure vessels and industrial boilers.

The material benefits from added chromium which provides excellent corrosion and oxidation resistance making it ideal for sour service applications in the oil and gas industry.

SA387 GR 22 CLASS 2

We supply ASME SA387 Grade 22 Class 2 plates to fabricators serving the oil, gas and petrochemical industry. These industries require a pressure vessel grade steel which works well in elevated temperatures and our material serves this purpose well. And with good corrosion and oxidation resistance, SA387 Grade 22 Class 2 plates are a good option.

SA387 GR 91 CLASS 2

Where resistance to high temperature and good anti-corrosion characteristics are required, ASME SA387 Grade 91 Class 2 carbon alloy steel plate is a material to consider. It is a pressure vessel grade steel which is used commonly by fabricators who supply the oil and gas industry.

Due to the materials excellent corrosion resistant properties, SA387 Grade 91 is also an option for use in sour service environments. The material has good weldability and with its heat resistant qualities, the material is a highly versatile steel which can be used in numerous applications.

ASTM A387/ SA387

Pressure Vessel Plates, Alloy Steel, Chromium-Molybdenum

IN STOCK FOR IMMEDIATE SHIPMENT

Mechanical Properties:

A 387 Grade 5		A 387 Grade 9		A 387 Grade 11		A 387 Grade 12		A 387 Grade 22		
	Class 1	Class 2	Class 1	Class 2	Class 1	Class 2	Class 1	Class 2	Class 1	Class 2
Tensile Strength (ksi)	60-85	75-100	60-85	75-100	60-85	70-90	50-80	65-85	60-85	75-100
Tensile Strength (MPa)	415-585	515-690	415-585	515-690	415-585	485-620	380-550	450-585	415-585	515-690
Yield Strength (ksi)	30	45	30	45	35	45	33	40	30	45
Yield Strength (MPa)	205	310	205	310	240	310	230	275	205	310
Elongation in 200mm (%)					19	18	18	19		
Elongation in 50mm (%)	18	18	18	18	22	22	22	22	18	18
Reduction of area in %	45	45	45	45					45	45

Chemical Properties:

Grade 5	Grade 9	Grade 11	Grade 12	Grade 22	
Carbon					
Heat Analysis	0.15 max	0.15 max	0.05 - 0.17	0.05 - 0.17	0.05 - 0.15
Product Analysis	0.15 max	0.15 max	0.04 - 0.17	0.04 - 0.17	0.04 - 0.15
Manganese					
Heat Analysis	0.3 - 0.6	0.30 - 0.6	0.4 - 0.65	0.4 - 0.65	0.3 - 0.6
Product Analysis	0.25 - 0.66	0.25 - 0.66	0.35 - 0.73	0.35 - 0.73	0.25 - 0.66
Phosphorous					
Heat Analysis	0.035	0.03	0.035	0.035	0.035
Product Analysis	0.035	0.03	0.035	0.035	0.035
Sulphur					
Heat Analysis	0.03	0.03	0.035	0.035	0.035
Product Analysis	0.03	0.03	0.035	0.035	0.035
Silicon					
Heat Analysis	0.5 max	1.0 max	0.5 - 0.80	0.15 - 0.4	0.5 max
Product Analysis	0.55 max	1.05 max	0.44 - 0.86	0.13 - 0.45	0.5 max
Chromium					
Heat Analysis	4.00 - 6.00	8.0 - 10.0	1.0 - 1.5	0.8 - 1.15	2.0 - 2.5
Product Analysis	3.9 - 6.1	7.9 - 10.1	0.94 - 1.56	0.74 - 1.21	1.88 - 2.62
Molybdenum					
Heat Analysis	0.45 - 0.65	0.9 - 1.1	0.45 - 0.65	0.45 - 0.6	0.9 - 1.1
Product Analysis	0.40 - 0.7	0.85 - 1.15	0.40 - 0.7	0.4 - 0.65	0.85 - 1.15

- ASTM A182 Grades F5, F11, F22, F91 Round Bar
- P11, P22