ASTM A106 GR. B Datasheet

ASTM A106

ASTM A106/ASME SA106 is the standard specification for seamless carbon steel pipe used for high-temperature services. It includes three grades: A, B, and C, with Grade B being commonly used. This type of pipe finds applications in various industries, including pipeline systems for oil and gas, water, and mineral slurry transmission. It is also used in boiler systems and for construction and structural purposes.

ASTM A106 Grade B

ASTM A106 Grade B pipe is considered equivalent to ASTM A53 Grade B and API 5L Grade B in terms of chemical composition and mechanical properties. It is a type of carbon steel that has a minimum yield strength of 240 MPa and a minimum tensile strength of 415 MPa. **ASTM A106 GR. B Carbon Steel Seamless Pipe** is the usual specification for seamless carbon steel pipe for high-temperature service. ASTM A106 Grade B is a mild steel pipe material usually used in industrial plants, power plants, power plants, refineries, and chemical plants. ASTM A106 GR. B Carbon Steel Seamless pipes must be solution annealed according to the heat treatment part to restore the ferrite. ASTM A106 GR. B Carbon Steel Round Pipes are very important as getting the weld area too warm or using too much weld energy, leads to cooling rates creature too slow.

Chemical Composition

Element	ASTM A106 Carbon Steel Gr. B
C	0.30
Mn	0.29-1.06
P	0.04
S	0.04
Cu	0.40
Ni	0.40
Cr	0.4
Mo	0.15
V	0.08

Please note:
For every reduction of 0.01% in the maximum carbon element, an increase of 0.06% in manganese above the specified value is allowed, up to a maximum of 1.35%.

Elements Cr, Cu, Mo, Ni, V combined shall not exceed 1%.

Mechanical Properties & Physical Properties

Element	ASTM A106 Carbon Steel Gr. B
Tensile Strength	60,000 (415) MPa
Yield Strength (0.2%Offset)	35,000 (240) MPa

Tensile Strength,
min, psi [MPa] Grade A 48,000 [330], Grade B 60,000 [415], Grade C 70,000 [485]
Yield Strength
minimum at psi [MPa] Grade A 30,000 [205], B 35,000 [240], C 40,000 [275]

Dimensions Schedule

The standard covers pipe sizes in NPS (National Standard Straight) from 1/8 inch to 48 inches (10.3mm DN6 – 1219mm DN1200). It also complies with the nominal wall thickness specified in ASME B 36.10M. For sizes that are not covered by ASME B 36.10M, this standard specification can still be used.

Raw materials
The materials used for the ASTM A106 standard specification should be suitable for bending, flanging, or similar forming processes. If the steel material is to be welded, the welding process should be appropriate for this grade of ASTM A106 and suitable for high-temperature working environments.

In cases where a superior or higher grade of ASTM A106 steel pipe is required, the standard provides an optional specification for supplementary requirements. Additionally, these supplementary specifications require additional testing to be conducted when placing an order for pipes that adhere to this standard.

Application

- Food Processing Industry
- Fabrication Industry
- Oil and Gas Industry
- Chemical Industry
- Plumbing
- General Purpose Applications
- Heating
- Water Supply Systems
- Power Plant
- Paper & Pulp Industry

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