

ASTM A633 Grade C is a normalized high-strength low-alloy structural steel plate for welded, riveted or bolted construction requiring superior notch toughness performance at low ambient temperatures. A633 Grade C has a minimum yield strength of 50 ksi [345 MPa] and may be ordered with supplemental Charpy V-notch impact test requirements.

Applications

Typical applications for A633 Grade C include utility pole base plates, offshore oil and gas platforms, construction equipment frames, electric shovel dipper handles and suspension components.

Available Dimensions

The following A633 Grade C plate sizes are available:

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Thickness (in)	Width (in)	Length (in)
0.375 - 2.00	72 - 123	240 - 600
2.001 - 3.00	72 - 98	240 - 600

Thickness: Inquire thicknesses <0.375" down to 0.250" and >3" up to 4".

Width: Inquire widths <72" down to 60" and >123" up to 131.9".

Length: Inquire lengths <240" down to 73" and slightly >600".

Mechanical Properties

Tensile Testing is performed in the transverse direction according to ASTM A6 requirements. The specified mechanical properties are tabulated below:

Thickness (in)	Yield strength (min ksi)	Tensile strength (ksi)	Elongation in 2" (min %)	Elongation in 8" (min %)
0.375 - 2.50	50	70 - 90	21	16
2.501 - 3.00	46	65 - 85	21	16

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Charpy V-Notch Impact Toughness:

May be ordered as a supplementary requirement. A minimum Charpy V-notch impact energy value of 25 ft-lbs. [34 J] at -40°F [-40°C] in longitudinal specimens is a typical supplemental impact toughness requirement. Please inquire for applications requiring a specified minimum impact toughness.

Chemical Composition

Meets chemical requirements of ASTM A633 Grade C, as shown below (ladle analysis, wt% maximums unless noted):

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C (max %)	Mn 1) (%)	P 2) (max %)	S 2) (max %)	Si (%)	Cb (%)
0.20	1.15 - 1.50	0.020	0.010	0.15 - 0.50	0.01 - 0.05

- 1) Manganese content may be increased to 1.60% maximum provided the carbon content does not exceed 0.18%.
- 2) P and S more restrictive than A633 Grade C requirements.