

SSAB ASTM A633 Grade E Normalized High Strength Low-Alloy Steel Plates

The ASTM A633 specification covers normalized high-strength low-alloy structural steel plates for welded, riveted or bolted construction requiring superior notch toughness performance at low ambient temperatures. SSAB presently offers A633 Grade E, which has a minimum yield strength of 60 ksi, with longitudinal Charpy impact values of 25 ft-lbs minimum at -40°F.

Typical Applications

Utility pole base plates, jack up rig legs for offshore platforms, booms, car bodies, crawler frames, electric shovel dipper handles, and suspension components

Available Sizes

Thickness range: 0.375 to 2.000" (9.5 to 51 mm)

Width range: 72" to 121" (1.83 to 3.07 m)

Length range: 240 to 600" (6.1 to 15.2 m)

Inquire lengths less than 240" (6.1 m).

Flatness

Guaranteed to meet ½ ASTM A6 flatness tolerances.

Composition (maximum wt. %) for A633 Grade E Plate

C	Mn	P	S	Si	V	Cb	N
0.22	1.50	0.020*	0.010*	0.50	0.11	0.05	0.03

The minimum total Al content must be 0.018% or the minimum V:N ratio must be 4:1.

*Note that SSAB's P and S levels are more restrictive than A633 Grade E.

Even lower limits for P and S are available on an inquiry basis.

Weldability

A633 Grade E plate is weldable with appropriate shop or field practices using most typical processes, including SMAW, FCAW, GMAW and SAW. Because of the relatively high carbon equivalent value (CEV typically about 0.55*) and the heat treat cycle to which this product has been exposed, care must be taken to insure that appropriate welding procedures and consumables are chosen such that the properties adhere to the appropriate AWS standard. Low hydrogen practices are strongly recommended, including the removal of surface moisture.

* CEV = C + Mn/6 + (Cr + Mo + V)/5 + (Ni + Cu)/15

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Formability

Because the normalizing process results in a fine-grained structure that is homogeneous, A633 Grade E plates produced by this process exhibit excellent formability. In most circumstances, material may be formed with a minimum inside bend radius of 1.5t (for bends perpendicular to the rolling direction). A larger minimum inside bend radius (2.25t) is required when bending parallel to the rolling direction. Please inquire for applications requiring tighter inside bend radii. Shear burrs or irregularities resulting from thermal cutting on the material edges in the vicinity of the bend axis should be removed by grinding prior to forming.

Mechanical Properties (per ASTM A633 Grade E)

Transverse Tensile Properties

Yield Strength (ksi)	Ultimate Tensile Strength (ksi)	Elongation (% in 8")	Elongation (% in 2")
60 min.	80 to 100	16 min.	21 min.

Sales Contacts

For sales information, please call 877-722-2589 (Southern USA & Mexico), 800-340-5566 (Western and Central USA), 800-383-9031 (North Central USA), and 888-576-8530 (Northeast USA & Canada) or consult www.ssab.com.