ASTM A514 Grade E

General Product Description

ASTM A514 Grade E is a quenched and tempered alloy steel plate used in structural applications that require high yield strength combined with good formability and toughness. A514 Grade E has a minimum yield strength of 100 ksi up to 2.5 inches in thickness and 90 ksi for plates greater than 2.5 inches to 6 inches in thickness. Grade E may be ordered with supplemental Charpy V-notch toughness test requirements.

Applications

Typical applications for A514 Grade E include transport trailers, construction equipment, crane booms, mobile aerial work platforms, agriculture equipment, and heavy vehicle frames and chassis.

Dimensions

Grade	Product Type	Thickness (Inches)	Width (Inches)	Length (Inches)
Grade E	Plate	0.185-6.00	60-131.9	73-590

Mechanical Properties

Tensile Properties: Tensile testing is performed in the transverse direction according to ASTM A6 requirements. The tensile property and hardness requirements are tabulated below:

Grade	Product Type	Thickness (Inches)	Yield strength (ksi)	Tensile strength (ksi)	Elongation in 2″ (min %)	Area ¹⁾ (min %)	Area ²⁾ (min %)	Brinell hard- ness ³⁾ (HBW)
Grade E	Plate	0.185-0.750	100	110-130	16	35		235-293
Grade E	Plate	0.751-2.50	100	110-130	16	35	45	
Grade E	Plate	2.51-6.00	90	100-130	14		45	

Reduction in area for 1.5 in. wide rectangular tension specimen.
Reduction in area for 0.5 in. round tension specimen.

³⁾ For plates up to 0.375 in., a Brinell hardness test may be used instead of a tensile test for those plates not tensile tested in a 15 ton lot.

Contact Information

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