

Atmospheric corrosion resistant steel ASTM A 242

ASTM A242 is a high strength low-alloy structural steel specification with improved atmospheric corrosion resistance. The specification of A242 steel is normally applicable to steel plates through one-half inch in thickness. The atmospheric corrosion resistance of A242 is substantially better than that of carbon steels such as A36 and A572-50 with or without copper addition. When properly exposed to the atmosphere, A242 is suitable for many applications in the unpainted condition.

The A242 steel has a [yield strength](#) of 50,000 [pounds per square inch](#) (340,000 [kPa](#)) and [ultimate tensile strength](#) of 70,000 psi (480,000 kPa) for light-medium rolled shapes and plates up to 0.75 inches (19 mm) thick. A242 steel has yield strength of 46,000 psi (320,000 kPa) and ultimate strength of 67,000 psi (460,000 kPa) for medium weight rolled shapes and plates from 0.75–1 inch (19–25 mm) thick. The thickest rolled sections and plates – from 1.5–4 in (38–102 mm) thick have yield strength of 42,000 psi (290,000 kPa) and ultimate strength of 63,000 psi (430,000 kPa).

A242 steel Chemical composition in Product analysis

Bebon steel — The most professional exporter on weathering resistant steel

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Grade	Chemical Composition %					Tensile Test				
	C	Mn	P	S	Cu	Thickness (t)mm	Yield point ksi(N/mm ²)	Tensile strength ksi (N/mm ²)	Elongation	
									Test piece in(mm)	% min
Type1	0.15 max	1.00 max	0.15 max	0.05 max	0.20 min	$t \leq 19.05$	50(345) min	70(480) min	GL=8(200) GL=2(50)	18 21
						$19.05 < t \leq 38.10$	46(315) min	67(460) min		
						$38.10 < t \leq 101.6$	42(290) min	63(435) min		

Remarks: 1.For plates wider than 24 in.(600mm), the elongation requirement is reduced two percentage points.

2.For nominal thickness under 5/16 in.(8mm), the deduction from the specified percentage of elongation in 8 in.(200mm) shall be made for decreases of the nominal thickness below 5/16 in.(8mm). See elongation requirement adjustments under the Tension Tests section of Specification A6 for deduction values.

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