



Mechanical Property Requirement for Studs

(AWS D1.1/D1.1M:2004)

At the manufacturer's option, mechanical properties of studs shall be determined by testing either the steel after cold finishing or the full diameter finished studs. In either case, the studs shall conform to the standard properties shown in following table.

		Type A ¹	Type B ²	Type C ³
Tensile Strength	Psi min	61 000	65 000	80 000
	MPa min	420	450	552
Yield Strength (0.2% offset)	Psi min	49 000	51 000	---
	MPa min	340	350	---
(0.5% offset)	Psi min	---	---	70 000
	MPa min	---	---	485
Elongation	% in 2 in. min	17%	20%	---
	% in 5x dia min	14%	15%	---
Reduction of area	% min	50%	50%	---

Notes:

1.Type A studs shall be general purpose of any type and size used for purpose other than shear transfer in composite beam design and construction.

2.Type B studs shall be studs that are headed, bent, or of other configuration in 1/2 in. [12mm], 5/8 in. [16mm], 3/4 in. [20mm], 7/8 in. [22mm], and in. [25mm] diameter that are used as an essential component in composite beam design and construction.

3.Type C studs shall be cold-worked deformed steel bars manufactured in conformance with specification ASTM A 496 having a nominal diameter equivalent to the diameter of a plain wire having the same weight per foot as the deformed wire. ASTM A 496 specifies a maximum diameter of 0.628 in. [16mm] maximum. Any bar supplied above that diameter shall have the same physical characteristics regarding deformations as required by ASTM A 496.