

# NELSON STUD WELDING

## SPECIFICATION: High Strength Stud Weld Studs



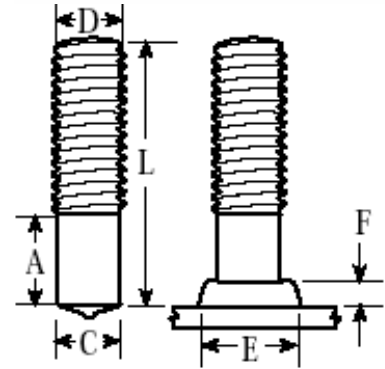
Nelson makes weldable, high strength studs that have approximately the same physical strength as Grade 5 fasteners. Consult chart, below, for the physical properties of Nelson High Strength studs to SAE Grade 5 and comparison of ISO Class 8.8 bolts. These studs are not heat treated, and have a carbon content of 0.20 % to ensure proper weldability.

Nelson High Strength studs are available in 5/16-18, 3/8-16 and 1/2-13 thread sizes in the CPL weld base style, and M8, M10, and M12 metric MP weld base style.

The base material to which Nelson High Strength studs are welded must be at least 70,000 psi yield strength in order to develop the full strength of these studs.

*Caution:* If the High Strength studs are welded to A36 (36,000 psi) structural steel, failure may occur in the base plate at less than full stud strength.

### CPL – High Strength



When ordering, specify **Type, Diameter, Before Weld Length, Material, Quantity, and Part Number**

*Example 1:* CPL 1/2-13 x 1-3/4"; High Strength Steel; 1,000 pieces; #101021688

*Example 2:* MP M10 x 48mm; High Strength Steel; 1,000 pieces; #101021692

Thread Size	Minimum Stud Length	Burn Off	Weld Base Length A	Weld Base Diameter C	Weld Fillet Diameter E	Weld Fillet Height F	Clearance	Ferrule	Required Standard Accessories		
									Chuck	Ferrule Grip	Foot Assembly
5/16-18	0.593	0.125	0.375	0.275	0.406	0.109	0.469	100101035	500001009	501001006	502001137
3/8-16	0.625	0.125	0.385	0.330	0.468	0.109	0.531	100101036	500001011	501001007	502001137
1/2-13	0.843	0.125	0.500	0.448	0.593	0.156	0.656	100101038	500001014	501001009	502001137
M8	16	3	7.10	11.00	9.00	3.50	11.00	100101035	500001009	501001006	502001137
M10	16	3	11.50	8.95	12.50	3.40	14.00	100101156	500001269	501001008	502001137
M12	24	3.5	14.00	10.70	14.50	4.50	16.50	100101032	500001206	501001009	502001137

**MATERIALS:** The physical properties of Nelson High Strength studs are shown below. For specific grade information and physical and chemical properties of other studs, as well as plating options available on these studs, please see [General Stud Specifications](#).

### Comparison of Physical Properties

Minimum Values	Nelson High Strength (HS)	SAE Grade 5 (Gr5)	ISO Property Class 8.8
Ultimate Tensile (psi)	115,000	120,000	113,000
Yield (psi)	105,000	92,000	91,000
% Elongation	6.5	14	14
% Area Reduction	42	35	35
Hardness (HRC)	22-34	25-34	18-31

**THREADS:** Standard threads are available with up to 3" of thread length in UNC-2A coarse thread pitch and ISO R261 6g. Thread lengths greater than 3", are available as special order.

**FLUX:** All Nelson high strength CPL imperial threaded and metric threaded studs have a solid flux load.

Visit our website [www.NelsonStudWelding.com](http://www.NelsonStudWelding.com) for a list of our standard stock products.