



## CD STUD WELDING MATERIAL CAPABILITIES

BASE MATERIAL	STUD MATERIAL			
	MILD STEEL; 1010 - 1030	STAINLESS STEEL 302/304/305	ALUMINUM 1100/5086/6061	BRASS 70-30/65-35
MILD STEEL: 1006-1030	EXCELLENT	EXCELLENT	NA	EXCELLENT
MEDIUM CARBON STEEL: 1030-1050	GOOD	GOOD	NA	GOOD
GALVANIZED SHEET DUCT OR DECKING	EXCELLENT	EXCELLENT	NA	NA
STRUCTURAL STEEL	EXCELLENT	EXCELLENT	NA	EXCELLENT
STAINLESS STEEL: 405,410,430, AND 300 SERIES (EXCL. 303)	EXCELLENT	EXCELLENT	NA	EXCELLENT
LEAD-FREE BRASS, ELECTROLYTIC COPPER, LEAD-FREE ROLLED COPPER	EXCELLENT	EXCELLENT	NA	EXCELLENT
MOST ALUMINUM ALLOYS OF THE 1000,3000,5000, AND 6000 SERIES 1	NA	NA	EXCELLENT	NA
DIE-CAST ZINC ALLOYS	GOOD	GOOD	EXCELLENT	GOOD

1) OTHER MATERIALS, SUCH AS 7000 SERIES ALUMINUM, TITANIUM ALLOYS, INCONEL, ETC. CAN BE WELDED UNDER SPECIFIED CONDITIONS.  
2) GOOD – GENERALLY FULL STRENGTH RESULTS, DEPENDING ON THE COMBINATION OF STUD SIZE AND BASE METAL.

## STANDARD LOAD CAPACITIES

STUD MATERIAL	STUD SIZE	MAX. FASTENING TORQUE (INCH/LBS.)	ULTIMATE TENSILE LOAD (LBS.)	MAX. SHEAR LOAD (LBS.)
LOW-CARBON COPPER FLASHED STEEL	6-32	6.0	500	375
	8-32	12.0	765	575
	10-24	14.0	960	720
	1/4-20	43.0	1,750	1,300
	5/16-18	72.0	2,900	2,200
	3/8-16	106.0	4,300	3,250
STAINLES STEEL: 304	6-32	10.0	790	590
	8-32	20.0	1,260	940
	10-24	23.0	1,530	1,150
	1/4-20	75.0	2,880	2,160
	5/16-18	126.0	3,750	5,350
	3/8-16	186.0	4,850	7,150
ALUMINUM ALLOY: 1100	6-32	2.5	200	125
	8-32	5.0	295	185
	10-24	6.5	380	235
	1/4-20	21.5	670	415
	5/16-18	36.0	1,125	695
	3/8-16	53.0	1,660	1,000
ALUMINUM ALLOY: 5086	6-32	3.5	375	235
	8-32	7.5	585	365
	10-24	10.0	735	460
	1/4-20	32.5	1,360	850
	5/16-18	54.5	2,300	1,400
	3/8-16	81.0	3,400	2,100
BRASS: 70-30, 65-35	6-32	8.0	600	390
	8-32	16.0	860	560
	10-24	18.5	1,040	680
	1/4-20	61.0	1,950	1,275
	5/16-18	102.0	3,280	2,140
	3/8-16	150.0	4,800	3,160

\*MAXIMUM FASTENING TORQUE SHOULD DEVELOP FASTENER TENSION TO SLIGHTLY LESS THAN YIELD POINT.