CD Stud/Base Metal Combination Welding Capabilities

Base Weld Surface Material	Stud Material			
	Mild Steel 1008, 1010	Stainless 304, 305	Aluminum 1100, 6061	Brass 70-30, 65-35
Mild Steel 1006 through 1030	Excellent	Excellent	—	Excellent
Medium Carbon Steel 1030 through 1050	Good*	Good*	—	Good*
Galvanized Sheet Duct Or Decking	Excellent	Excellent	—	—
Structural Steel	Excellent	Excellent	—	Excellent
Stainless Steel 405, 410, 430, and 330 Series, except 303	Excellent	Excellent	—	Excellent
Lead Free Brass, Electrolytic Copper, Lead-Free Rolled Copper	Excellent	Excellent	—	Excellent
Most Aluminum Alloys Of The 1100, 3000, 5000, and 6000 Series**	—	—	Excellent	—
Die-Cast Zinc Alloys	Good*	Good*	Excellent	Good*

*Good: Generally full strength results, depending upon the combination of stud sized and base metal.

**Other materials, such as 7000 Series aluminum, titanium alloys, Inconel, etc. can be welded under specified conditions.

CD Stud Reverse-Side Marking limitations

The charts on the following page will be of help in determining the best combination of stud weld base size and base metal thickness. The terms on the chart are defined as follows:

EXCELLENT— No marking, excellent weld.

ACCEPTABLE— Visible markings, excellent weld.

UNACCEPTABLE— Unacceptable marking, base metal failure.

It should be noted that these charts are based on optimum laboratory conditions. Even under optimum conditions, it is difficult to determine the precise point at which reverse-side marking will appear. Therefore, these charts should be used only as a guide.

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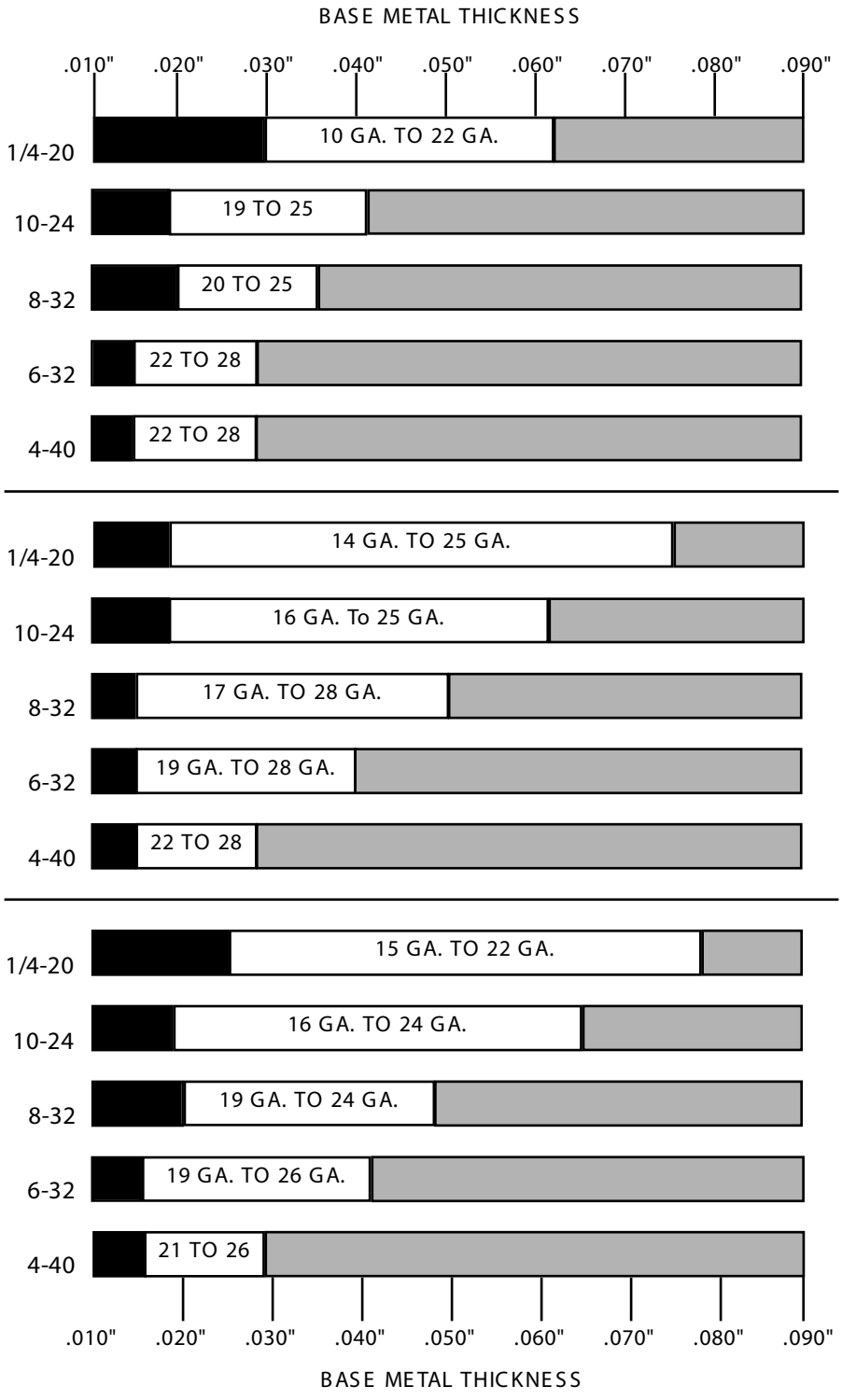
How To Find The Optimum Combination Of Stud Sized And Base Metal Thickness In Order To Prevent Reverse-Side Marking.



Unacceptable

Acceptable

Excellent

Mild Steel

Base Metal: Mild Steel

Stud: Mild Steel, Flanged or Small Flanged

Stainless Steel

Base Metal: Stainless Steel

Stud: Stainless Steel, Flanged or Small Flanged

Aluminum

Base Metal: Aluminum

Stud: Aluminum, Flanged or Small Flanged

Note: Stud tip size can influence the degree of reverse-side marking.

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CD Studs Weight Charts

ESTIMA						
LENGTH	4-40	6-32	8-32	10-24	1/4-20	5/16-18
1/4	.69	1.00	1.39	1.79	3.08	4.90
3/8	.94	1.38	1.93	2.50	4.37	6.98
1/2	1.18	1.76	2.49	3.21	5.66	9.06
5/8	1.43	2.13	3.04	3.93	6.95	11.13
3/4	1.67	2.51	3.60	4.64	8.24	13.21
7/8	1.92	2.89	4.15	5.35	9.52	15.29
1	2.16	3.26	4.71	6.07	10.81	17.36
1-1/4	2.65	4.02	5.82	7.50	13.39	21.52
1-1/2	3.15	4.77	6.93	8.92	15.96	25.67
1-3/4	3.64	5.52	8.04	10.35	18.54	29.83
2	4.13	6.27	9.15	11.78	21.12	33.98
2-1/4	4.62	7.03	10.26	13.21	23.69	38.14
2-1/2	5.11	7.78	11.37	14.63	27.27	42.29
EACH ADD'L INCH	1.96	3.01	4.44	5.71	10.31	16.62

ESTIMATED WEIGHTS OF NON-THREADED STUDS IN POUNDS PER 1000 PIECES						
LENGTH	3/32	1/8	5-32	3/16	1/4	5/16
1/4	.68	1.06	1.59	2.24	3.87	5.97
3/8	.92	1.50	2.27	3.21	5.61	8.68
1/2	1.16	1.93	2.94	4.19	7.35	11.39
5/8	1.40	2.37	3.62	5.16	9.09	14.11
3/4	1.64	2.80	4.30	6.14	10.84	16.82
7/8	1.88	3.24	4.98	7.12	12.56	19.53
1	2.12	3.67	5.65	8.09	14.32	22.25
1-1/4	2.60	4.54	7.01	10.04	17.81	27.67
1-1/2	3.08	5.41	8.36	11.99	21.69	33.10
1-3/4	3.56	6.28	9.72	13.95	24.78	38.52
2	4.04	7.15	11.07	15.90	28.25	43.95
2-1/4	4.52	8.02	12.43	17.85	31.75	49.37
2-1/2	5.00	8.89	13.78	19.80	35.23	54.80
EACH ADD'L INCH	1.96	3.48	5.42	7.81	13.94	21.70

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