

## Spot welding galvanized low-carbon steel

| Material Thickness | Electrode Diameter And Shape |     |      | Net Electrode Force | Welding Current (Approx.) | Weld Time | Weld Nugget Size | Minimum Tension-Shear Strength | Minimum Weld Spacing | Minimum Contacting Overlap |        |
|--------------------|------------------------------|-----|------|---------------------|---------------------------|-----------|------------------|--------------------------------|----------------------|----------------------------|--------|
|                    | Inches                       | In. | Deg. |                     |                           |           |                  |                                |                      |                            | Lb.    |
| notes 1, 2, & 3    | note 4                       |     |      |                     |                           |           |                  |                                |                      |                            |        |
|                    |                              | D   | d    | Oc                  |                           |           |                  |                                |                      |                            |        |
|                    |                              | In. | In.  | Deg.                | Lb.                       | Amps.     | Cycles           | In.                            | Lb.                  | Inches                     | Inches |
|                    | 0.022                        | 5/8 | 3/16 | 120                 | 300                       | 13000     | 8                | 0.15                           | 550                  | 5/8                        | 5/8    |
|                    | 0.030                        | 5/8 | 3/16 | 120                 | 400                       | 13000     | 10               | 0.16                           | 1000                 | 5/8                        | 5/8    |
|                    | 0.036                        | 5/8 | 1/4  | 120                 | 500                       | 13500     | 12               | 0.19                           | 1180                 | 3/4                        | 5/8    |
|                    | 0.039                        | 5/8 | 1/4  | 120                 | 650                       | 14000     | 13               | 0.21                           | 1400                 | 3/4                        | 5/8    |
|                    | 0.052                        | 5/8 | 1/4  | 120                 | 725                       | 14500     | 18               | 0.22                           | 1700                 | 7/8                        | 11/16  |
|                    | 0.063                        | 3/4 | 1/4  | 120                 | 850                       | 15500     | 22               | 0.24                           | 2500                 | 1-1/8                      | 3/4    |
|                    | 0.078                        | 3/4 | 5/16 | 120                 | 1200                      | 19000     | 24               | 0.28                           | 3200                 | 1-1/4                      | 7/8    |
|                    | 0.093                        | 3/4 | 3/8  | 120                 | 1400                      | 21000     | 30               | 0.34                           | 4200                 | 1-1/2                      | 1      |
| 0.108              | 7/8                          | 3/8 | 120  | 1750                | 20000                     | 37        | 0.40             | 5900                           | 1-3/4                | 1-1/8                      |        |
| 0.123              | 7/8                          | 3/8 | 120  | 2000                | 20000                     | 42        | 0.48             | 7200                           | 2                    | 1-1/8                      |        |

### NOTES:

1. Material must be free from dirt, grease, paint etc. prior to welding, but may have light oil.
2. Two equal metal thicknesses of each gage.
3. Commercial coating weight is 1.25 oz. per square foot.
4. Electrode Material-RWMA Group A, Class 2.
5. Water Cooling: 2 gallons per minute.

Projections should be larger in diameter for galvanized than for uncoated material.

## Projection welding galvanized low-carbon steel

| Material Thickness | Electrode Diameter And Shape |     |      | Net Electrode Force | Welding Current (Approx.) | Weld Time | Weld Nugget Size | Minimum Tension-Shear Strength | Projection Size |                |
|--------------------|------------------------------|-----|------|---------------------|---------------------------|-----------|------------------|--------------------------------|-----------------|----------------|
|                    | Inches                       | In. | In.  |                     |                           |           |                  |                                | Diameter In.    | Height In.     |
| notes 1, 2, & 3    | note 4                       |     |      |                     |                           |           |                  | (For Single Projections Only)  |                 |                |
|                    |                              | D   | d    |                     |                           |           |                  |                                | L               | H <sub>p</sub> |
|                    |                              | In. | In.  | Lb.                 | Amps.                     | Cycles    | In.              | Lb.                            | Diameter In.    | Height In.     |
|                    | 0.039                        | 5/8 | 3/8  | 250                 | 10000                     | 15        | 0.15             | 925                            | 0.187           | 0.041          |
|                    | 0.063                        | 5/8 | 7/16 | 400                 | 11500                     | 20        | 0.25             | 2050                           | 0.218           | 0.048          |
|                    | 0.078                        | 3/4 | 1/2  | 550                 | 16000                     | 25        | 0.25             | 2700                           | 0.250           | 0.054          |
|                    | 0.093                        | 3/4 | 1/2  | 750                 | 16000                     | 30        | 0.30             | 4300                           | 0.250           | 0.054          |
|                    | 0.108                        | 7/8 | 1/2  | 950                 | 22000                     | 33        | 0.31             | 4900                           | 0.250           | 0.054          |

### NOTES:

1. Material must be free from dirt, grease, paint etc. prior to welding, but may have light oil.
2. Two equal metal thicknesses of each gage.
3. Commercial coating weight is 1.25 oz. per square foot.
4. Electrode Material-RWMA Group A, Class 2.
5. Pressure-tight joints require stripping the zinc coating prior to welding.
6. Nominal electrode diameter ranges between 8 to 10 inches.

From American Welding Society "Recommended Practices for Resistance Welding."

## Seam welding galvanized low-carbon steel

| Material Thickness | Electrode Width And Shape |      | Net Electrode Force | Welding Current (Approx.) | Weld Time |           | Welding Speed | Welds Per Inch | Minimum Contacting Overlap |        |
|--------------------|---------------------------|------|---------------------|---------------------------|-----------|-----------|---------------|----------------|----------------------------|--------|
|                    | In.                       | In.  |                     |                           | Heat Time | Cool Time |               |                |                            |        |
| notes 1, 2, & 3    | note 4                    |      |                     |                           |           |           |               |                |                            |        |
|                    |                           | W    | E                   |                           |           |           |               |                |                            |        |
|                    |                           | In.  | In.                 | Lb.                       | Amps.     | Cycles    | Cycles        | In./Min.       | W/in.                      | Inches |
|                    | 0.015                     | 3/8  | 1/4                 | 900                       | 15000     | 2         | 2             | 120            | 7.5                        | 3/8    |
|                    | 0.036                     | 1/2  | 1/4                 | 1100                      | 18000     | 4         | 2             | 60             | 10.0                       | 1/2    |
|                    | 0.039                     | 1/2  | 1/4                 | 1200                      | 19000     | 4         | 3             | 60             | 9.0                        | 1/2    |
|                    | 0.052                     | 1/2  | 1/4                 | 1350                      | 20000     | 5         | 1             | 90             | 7.0                        | 9/16   |
| 0.063              | 1/2                       | 5/16 | 1500                | 19800                     | 8         | 2         | 54            | 7.0            | 5/8                        |        |
| 0.078              | 5/8                       | 5/16 | 1850                | 23000                     | 10        | 7         | 30            | 7.0            | 11/16                      |        |

