

Atom Arc T



Atom Arc T was developed for welding T-1 steel in all applications. Mechanical properties of the welded joints equal or exceed the properties of the base steel in either the as welded or stress relieved condition, thus giving 100% design joint efficiency. In addition, Atom Arc T electrodes are suitable for many other applications, particularly where high-strength welds with excellent low temperature impact properties are required.

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|------------------------|--|
| Classifications | AWS A5.5 : E11018M H4R ASME SFA 5.5 |
| Approvals | ABS AWS A5.5: E11018-M CWB CSA W48 E7618-M-H4 QPL-22200/1 MIL-11018-M |
| Industry | Bridge Construction Civil Construction Industrial and General Fabrication Mobile Equipment Railcars Ship/Barge Building |

Approvals are based on factory location. Please contact ESAB for more information.

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|------------------------|--------------------------|
| Welding Current | AC or DC+ |
| Coating Type | Low-hydrogen iron powder |

Typical Tensile Properties

| Condition | Yield Strength | Tensile Strength | Reduction in Area | Elongation |
|--|-------------------|-------------------|-------------------|------------|
| Stress Relieved 1hr 552°C (1025°F) (Flat Position) | 705 MPa (102 ksi) | 770 MPa (112 ksi) | 63 % | 23 % |
| As Welded | 725 MPa (105 ksi) | 795 MPa (115 ksi) | 62 % | 23 % |

Typical Charpy V-Notch Properties

| Condition | Testing Temperature | Impact Value |
|------------------------------------|---------------------|-----------------|
| As Welded | -18 °C (0 °F) | 75 J (55 ft-lb) |
| As Welded | -40 °C (-40 °F) | 65 J (48 ft-lb) |
| As Welded | -51 °C (-60 °F) | 60 J (44 ft-lb) |
| Stress Relieved 1hr 552°C (1025°F) | -18 °C (0 °F) | 68 J (50 ft-lb) |
| Stress Relieved 1hr 552°C (1025°F) | -40 °C (-40 °F) | 57 J (42 ft-lb) |
| Stress Relieved 1hr 552°C (1025°F) | -51 °C (-60 °F) | 34 J (25 ft-lb) |

Typical Weld Metal Analysis %

| C | Mn | Si | S | P | Ni | Cr | Mo | V | Cu |
|-------|------|------|------|------|------|------|------|-------|-------|
| 0.048 | 1.46 | 0.28 | 0.01 | 0.01 | 1.83 | 0.23 | 0.35 | 0.010 | 0.072 |

Typical Weld Metal Analysis %

| Nb |
|-------|
| 0.004 |

Deposition Data

| Diameter | Optimal Amps | Current | Deposition Rate | Deposition Efficiency % |
|-------------------|--------------|-----------|---------------------|-------------------------|
| 3.2 mm (1/8 in.) | 120 A | 90-160 A | 1.2 kg/h (2.6 lb/h) | 71.6 % |
| 3.2 mm (1/8 in.) | 140 A | 90-160 A | 1.2 kg/h (2.7 lb/h) | 70.9 % |
| 4.8 mm (3/16 in.) | 200 A | 200-300 A | 2.2 kg/h (4.9 lb/h) | 76.4 % |
| 4.8 mm (3/16 in.) | 250 A | 200-300 A | 2.4 kg/h (5.4 lb/h) | 74.6 % |
| 2.4 mm (3/32 in.) | 90 A | 70-100 A | 0.8 kg/h (1.7 lb/h) | 66.3 % |



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| Deposition Data | | | | |
|----------------------|--------------|-----------|------------------------|-------------------------|
| Diameter | Optimal Amps | Current | Deposition Rate | Deposition Efficiency % |
| 4.0 mm (5/32 in.) | 140 A | 130-220 A | 1.1 kg/h (3.1 lb/h) | 75 % |
| 4.0 mm (5/32 in.) | 170 A | 130-220 A | 1.7 kg/h (3.8 lb/h) | 73.5 % |
| 5.6 mm (7/32 in.) | 250 A | 250-350 A | 2.9 kg/h (6.5 lb/h) | 75 % |
| 5.6 mm (7/32 in.) | 300 A | 250-350 A | 3.3 kg/h (7.2 lb/h) | 74 % |