

# ULTRACORE® XP70

Mild Steel, Flat & Horizontal ▪ AWS E70T-9C-H8, E70T1-C1A2-CS1-H8

## KEY FEATURES

- High deposition in the flat and horizontal positions
- Low spatter generation
- Good weld bead wetting
- Excellent slag detachability, even in deep or narrow grooves
- Wide operating range for great operator appeal across all skill levels

## WELDING POSITIONS

Flat & Horizontal

## CONFORMANCES

**AWS A5.20/A5.20M:** E70T-1C-H8, E70T-9C-H8  
**ASME SFA-A5.20:** E70T-1C-H8, E70T-9C-H8  
**AWS A5.36/A5.36M** E70T1-C1A2-CS1-H8  
**AWS D1.8**

## TYPICAL APPLICATIONS

- Structural fabrication
- Heavy equipment

## SHIELDING GAS

100% CO<sub>2</sub>  
 Flow Rate: 40-55 CFH

## DIAMETERS / PACKAGING

| Diameter in (mm) | 50 lb (22.7 kg) Coil | 500 lb (227 kg) Accu-Trak® Drum | 500 lb (227 kg) Speed-Feed® Drum |
|------------------|----------------------|---------------------------------|----------------------------------|
| 1/16 (1.6)       | ED036431             | ED036547                        | ED036642<br>ED036515             |
| 5/64 (2.0)       | ED036430             |                                 |                                  |
| 3/32 (2.4)       | ED036427             |                                 |                                  |

## MECHANICAL PROPERTIES<sup>(1)</sup>

|   | Yield Strength <sup>(2)</sup><br>MPa (ksi) | Tensile Strength<br>MPa (ksi) | Elongation<br>% | Charpy V-Notch<br>J (ft·lbf) |                 |
|---|--|-------------------------------|-----------------|------------------------------|-----------------|
|   |  |                               |                 | @ -18°C (0°F)                | @ -29°C (-20°F) |
| <b>Requirements<sup>(4)</sup></b><br>AWS A5.20: E70T-1C-H8, E70T-9C-H8<br>AWS A5.36: E70T-1-C1A2-CS1-H8 | 400 (58) min                               | 480-655 (70-95)               | 22 min          | 27 (20) min                  | 27 (20) min     |
| <b>Typical Results<sup>(3)</sup></b><br>As-Welded with 100% CO <sub>2</sub>                             | 495-555 (72-81)                            | 570-625 (82-91)               | 25-29           | 35-59 (26-44)                | 27-59 (20-44)   |

## DEPOSIT COMPOSITION<sup>(1)</sup>

|   | %C          | %Mn         | %Si         | %S        | %P        | %B            | Diffusible Hydrogen<br>(mL/100g weld deposit) |
|---|-------------|-------------|-------------|-----------|-----------|---------------|---|
| <b>Requirements<sup>(4)</sup></b><br>AWS A5.20 E70T-1C-H8, E70T-9C-H8       | 0.12 max    | 1.75 max    | 0.90 max    | 0.03 max  | 0.03 max  | Not Specified | 8.0 max                                       |
| AWS A5.36 E70T-1-C1A2-CS1-H8  |             |             |             | 0.030 max | 0.030 max |               | 8 max   |
| <b>Typical Results<sup>(3)</sup></b><br>As-Welded with 100% CO <sub>2</sub> | 0.03 - 0.06 | 1.44 - 1.64 | 0.49 - 0.56 | ≤ 0.008   | <0.016    | <0.0042       | 2-4   |

<sup>(1)</sup> Typical all weld metal. <sup>(2)</sup> Measured with 0.2% offset. <sup>(3)</sup> See test results disclaimer. <sup>(4)</sup> As-Welded with 100% CO<sub>2</sub>. <sup>(5)</sup> To estimate ESO, subtract 1/4 in (6.0 mm) from CTWD.

**TYPICAL OPERATING PROCEDURES – Flat & Horizontal**

| Diameter, Polarity<br>Shielding Gas           | CTWD <sup>(1)</sup><br>mm (in) | Wire Feed Speed<br>m/min (in/min) | Voltage<br>(volts) | Approx. Current<br>(amps) | Melt-Off Rate<br>kg/hr (lb/hr) | Deposition Rate<br>kg/hr (lb/hr) | Efficiency<br>(%) |
|---|--------------------------------|-----------------------------------|--------------------|---------------------------|--------------------------------|----------------------------------|-------------------|
| 1/16 in (1.6 mm), DC+<br>100% CO <sub>2</sub> | 19 (3/4)                       | 3.2 (125)                         | 26-30              | 165                       | 2.4 (5.2)                      | 2.1 (4.6)                        | 87 - 90           |
|   |                                | 5.1 (200)                         | 27-31              | 255                       | 3.8 (8.3)                      | 3.4 (7.4)                        |                   |
|   |                                | 6.4 (250)                         | 27-31              | 300                       | 4.8 (10.4)                     | 4.2 (9.3)                        |                   |
|   | 25 (1)                         | 7.6 (300)                         | 28-32              | 300                       | 5.7 (12.5)                     | 5.1 (11.2)                       |                   |
| 9.5 (375)                                     |                                | 28-32                             | 315                | 7.1 (15.6)                | 6.4 (14.1)                     |                                  |                   |
| 5/64 in (2.0 mm), DC+<br>100% CO <sub>2</sub> | 25 (1)                         | 3.2 (125)                         | 27-31              | 260                       | 3.8 (8.3)                      | 3.3 (7.2)                        | 89 - 92           |
|   |                                | 4.4 (175)                         | 27-31              | 330                       | 5.3 (11.7)                     | 4.7 (10.4)                       |                   |
|   |                                | 5.7 (225)                         | 27-31              | 390                       | 6.8 (15.0)                     | 6.1 (13.5)                       |                   |
|   |                                | 6.4 (250)                         | 28-32              | 420                       | 7.6 (16.7)                     | 6.8 (15.1)                       |                   |
|   |                                | 7.0 (275)                         | 28-32              | 450                       | 8.3 (18.4)                     | 7.6 (16.7)                       |                   |
|   |                                | 8.3 (325)                         | 28-32              | 475                       | 9.1 (20.0)                     | 8.3 (18.2)                       |                   |
| 3/32 in (2.4 mm), DC+<br>100% CO <sub>2</sub> | 25 (1)                         | 3.2 (125)                         | 28-32              | 360                       | 5.4 (12.0)                     | 4.9 (10.9)                       | 88 - 91           |
|   |                                | 5.1 (200)                         | 28-32              | 490                       | 8.7 (19.2)                     | 7.8 (17.1)                       |                   |
|   |                                | 6.4 (250)                         | 29-33              | 575                       | 10.9 (24.0)                    | 9.7 (21.3)                       |                   |
|   | 32 (1 1/4)                     | 7.0 (275)                         | 29-33              | 450                       | 12.0 (26.5)                    | 10.6 (23.4)                      |                   |
|   |                                | 7.6 (300)                         | 30-34              | 575                       | 13.1 (28.9)                    | 11.5 (25.4)                      |                   |
|   |                                | 8.3 (325)                         | 31-35              | 615                       | 14.2 (31.3)                    | 12.5 (27.5)                      |                   |

<sup>(1)</sup> Typical all weld metal. <sup>(2)</sup> Measured with 0.2% offset. <sup>(3)</sup> See test results disclaimer. <sup>(4)</sup> As-Welded with 100% CO<sub>2</sub>. <sup>(5)</sup> To estimate ESO, subtract 1/4 in (6.0 mm) from CTWD.

Material Safety Data Sheets (MSDS) and Certificates of Conformance are available on our website at [www.lincolnelectric.com](http://www.lincolnelectric.com)

**TEST RESULTS**

Test results for mechanical properties, deposit or electrode composition and diffusible hydrogen levels were obtained from a weld produced and tested according to prescribed standards, and should not be assumed to be the expected results in a particular application or weldment. Actual results will vary depending on many factors, including, but not limited to, weld procedure, plate chemistry and temperature, weldment design and fabrication methods. Users are cautioned to confirm by qualification testing, or other appropriate means, the suitability of any welding consumable and procedure before use in the intended application.

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