**Tubular Wires**

**Fabshield® 71T8**

**ALL POSITION**

AWS E71T8-Ni1J H8

**Benefits:**

- self-shielded; can be used outdoors without sheltering
- 1/16" (1.6 mm) diameter electrode provides an additional option in procedure development
- excellent impact toughness minimizes risk of cracking in severe applications
- optimized performance for welding in the vertical-down position on pipe

**Approvals and Conformances:**

- API 5L Grade X70 and below (with proper procedures)
- oil & gas transmission pipelines
- oil & gas distribution pipelines

**Typical Weld Metal Chemistry:**

- Carbon: 0.02%
- Manganese: 1.44%
- Silicon: 0.06%
- Phosphorus: 0.01%
- Sulphur: 0.004%
- Nickel: 0.95%
- Aluminum: 1.00%

**Typical Diffusible Hydrogen:** 3.4 ml/100g

**Typical Mechanical Properties (AW):**

- Tensile Strength (psi): 80,000 (552 MPa)
- Yield Strength (psi): 71,000 (490 MPa)
- Elongation % in 2" (50mm): 25%

**Typical Charpy V-notch Impact Values (AW):**

- Avg. at -20°F (-30°C): 255 ft.lbs. (346J)
- Avg. at -40°F (-40°C): 135 ft.lbs. (183J)

**Typical Operating Range:**

- Dia.: 1/16" (1.6 mm) 150-225A 17-21V 3/4" (19 mm) 175-250A 17-20V
- 5/64" (2.0 mm) 175-250A 17-20 1" (25 mm) 18-19V

**Shielding Gas:** None required

**Type of Current:** DCEN

**Approvals and Conformances:**

- AWS A5.29, E71T8-Ni1J H8
- AWS A5.29M, E491T8-Ni1J H8
- ASME SFA 5.29, E71T8-Ni1J H8

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**Fabshield® 81N1**

**ALL POSITION**

AWS E71T8-Ni1J H8

**Benefits:**

- self-shielded; can be used outdoors without sheltering
- fast-freezing slag is suitable for welding in all positions, and optimized for vertical-down
- excellent impact toughness minimizes risk of cracking in severe applications
- low-hydrogen electrode helps minimize the risk of hydrogen-induced cracking

**Approvals and Conformances:**

- API 5L X65 and below steels (with proper procedures)
- shipbuilding & offshore

**Typical Weld Metal Chemistry:**

- Carbon: 0.03%
- Manganese: 0.87%
- Silicon: 0.05%
- Phosphorus: 0.01%
- Sulphur: 0.004%
- Nickel: 0.95%
- Aluminum: 0.67%

**Typical Diffusible Hydrogen:** 6.4 ml/100g

**Typical Mechanical Properties (AW):**

- Tensile Strength (psi): 71,000 (490 MPa)
- Yield Strength (psi): 60,000 (414 MPa)
- Elongation % in 2" (50mm): 29%

**Typical Charpy V-notch Impact Values (AW):**

- Avg. at -40°F (-40°C): 205 ft.lbs. (278J)

**Typical Operating Range:**

- Dia.: 5/64" (2.0 mm) 175-250A 17-20 1" (25 mm) 18-19V

**Shielding Gas:** None required

**Type of Current:** DCEN

**Approvals and Conformances:**

- AWS A5.29, E71T8-Ni1J H8
- AWS A5.29M, E491T8-Ni1J H8
- ASME SFA 5.29, E71T8-Ni1J H8

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**Fabshield® X80**

**ALL POSITION**

AWS E81T8-Ni2J H8

**Benefits:**

- high strength deposit suitable for welding a wide range of materials
- low-hydrogen electrode minimizes the risk of hydrogen-induced cracking
- formulated for optimal performance in pipe-welding applications
- good impact toughness to minimize risk of cracking in critical applications

**Approvals and Conformances:**

- API 5L transmission pipeline
- oil & gas transmission pipeline
- oil & gas storage tanks
- certain structural applications

**Typical Weld Metal Chemistry:**

- Carbon: 0.04%
- Manganese: 1.37%
- Silicon: 0.06%
- Phosphorus: 0.011%
- Sulphur: 0.002%
- Nickel: 2.38%
- Aluminum: 0.93%

**Typical Diffusible Hydrogen:** 7.3 ml/100g

**Typical Mechanical Properties (AW):**

- Tensile Strength (psi): 94,000 (648 MPa)
- Yield Strength (psi): 84,000 (579 MPa)
- Elongation % in 2" (50mm): 25%

**Typical Charpy V-notch Impact Values (AW):**

- Avg. at -20°F (-30°C): 105 ft.lbs. (142J)
- Avg. at -40°F (-40°C): 95 ft.lbs. (129J)

**Typical Operating Range:**

- Dia.: 5/64" (2.0 mm) 175-225A 17-20V 1" (25 mm) 18-19V

**Shielding Gas:** None required

**Type of Current:** DCEN

**Approvals and Conformances:**

- AWS A5.29, E81T8-Ni2J H8
- AWS A5.29M, E551T8-Ni2J H8
- ASME SFA 5.29, E81T8-Ni2J H8
## Fabshield® 71K6

**ALL POSITION**
AWS E71T8-K6J H8

**Benefits:**
- self-shielded; can be used outdoors without sheltering
- easy slag removal reduces cleanup time and minimizes risk of inclusion
- excellent impact toughness minimizes risk of cracking in severe applications
- excellent welding characteristics improve operator appeal and promote consistent high-quality welds

**Typical Applications:**
- offshore drilling rigs
- shipbuilding
- piping
- structural fabrication

**Typical Weld Metal Chemistry:**
- Carbon ............... 0.035
- Manganese .......... 0.82
- Silicon ............... 0.07
- Phosphorus .......... 0.011
- Sulphur .............. 0.004
- Nickel .............. 0.89
- Chromium .......... 0.06
- Molybdenum ....... 0.03
- Aluminum ........... 0.95

**Typical Diffusible Hydrogen:** 5.5 ml/100g

**Typical Mechanical Properties (AW):**
- Tensile Strength (psi) 76,000 (524 MPa)
- Yield Strength (psi) 62,000 (427 MPa)
- Elongation % in 2" (50mm) 28%

**Typical Charpy V-notch Impact Values (AW):**
- Avg. at -40°F (-40°C) 295 ft.lbs. (400J)

**Typical Operating Range:**
- Dia. 
  - DCEN: 5/64" (2.0 mm) 175-275 
- Amps: 18-20 
- Volts: 1" (25 mm)

**Shielding Gas:** None required

**Type of Current:** DCEN

**Approvals and Conformances:**
- AWS A5.29, E71T8-K6J H8
- AWS A5.29M, E491T8-K6J H8
- ASME SFA 5.29, E71T8-K6J H8
- ABS, E71T8-K6J (5/64" diameter, all position)
- EN17632-A T 38 4 1Ni Y 1 H10
- DNV, IV YMS (H10)
- Lloyd’s Register, 4YS (H10)

## Fabshield® Offshore 71Ni

**ALL POSITION**
AWS E71T8-K6J H8

**Benefits:**
- self-shielded; can be used outdoors without sheltering
- fast-freezing slag allows for welding in all positions
- good impact toughness minimizes risk of cracking in critical applications
- easy slag removal reduces cleanup time and minimizes risk of inclusion

**Typical Applications:**
- certain structural applications
- shipbuilding
- offshore drilling rigs
- construction

**Typical Weld Metal Chemistry:**
- Carbon ............... 0.85
- Manganese .......... 1.21
- Silicon ............... 0.07
- Phosphorus .......... 0.011
- Sulphur .............. 0.004
- Nickel .............. 0.85
- Aluminium .......... 0.90

**Typical Diffusible Hydrogen:** 5.6 ml/100g

**Typical Mechanical Properties (AW):**
- Tensile Strength (psi) 75,000 (517 MPa)
- Yield Strength (psi) 61,000 (421 MPa)
- Elongation % in 2" (50mm) 29%

**Typical Charpy V-notch Impact Values (AW):**
- Avg. at -20°F (-30°C) 240 ft.lbs. (325J)
- Avg. at -40°F (-40°C) 115 ft.lbs. (156J)

**Typical Operating Range:**
- Dia. 
  - DCEN: 5/64" (2.0 mm) 175-225 
- Amps: 18-20 
- Volts: 1" (25 mm)

**Shielding Gas:** None required

**Type of Current:** DCEN

**Approvals and Conformances:**
- ASME SFA 5.29, E621T8-G H8
- AWS A5.29M, E491T8-G H8
- MWI 4YS (H10)
- Lloyd’s Register, 4YS (H10)
- DNV, IV YMS (H10)

## Fabshield® X90

**ALL POSITION**
AWS E91T8-G H8

**Benefits:**
- high strength deposit suitable for welding a wide range of materials
- self-shielded; can be used outdoors without sheltering
- optimized performance for pipe welding applications
- excellent impact toughness minimizes risk of cracking in severe applications

**Typical Applications:**
- oil & gas transmission pipelines
- oil & gas distribution pipelines

**Typical Weld Metal Chemistry:**
- Carbon ............... 0.04
- Manganese .......... 1.56
- Silicon ............... 0.09
- Phosphorus .......... 0.008
- Sulphur .............. 0.004
- Nickel .................. 2.92
- Aluminium .......... 1.05

**Typical Diffusible Hydrogen:** 6.2 ml/100g

**Typical Mechanical Properties (AW):**
- Tensile Strength (psi) 101,000 (696 MPa)
- Yield Strength (psi) 90,000 (621 MPa)
- Elongation % in 2" (50mm) 24%

**Typical Charpy V-notch Impact Values (AW):**
- Avg. at 0°F (-20°C) 120 ft.lbs. (163J)
- Avg. at -20°F (-30°C) 105 ft.lbs. (142J)
- Avg. at -40°F (-40°C) 85 ft.lbs. (115J)

**Typical Operating Range:**
- Dia. 
  - DCEN: 5/64" (2.0 mm) 175-250 
- Amps: 18-20 
- Volts: 1" (25 mm)

**Shielding Gas:** None required

**Type of Current:** DCEN

**Approvals and Conformances:**
- AWS A5.29, E91T8-G H8
- AWS A5.29M, E921T8-G H8
- ASME SFA 5.29, E91T8-G H8
- ABS, E91T8-K6J (5/64" diameter, all position)
- EN17632-A T 38 4 1Ni Y 1 H10
- DNV, IV YMS (H10)
- Lloyd’s Register, 4YS (H10)