

AFM E71T-1

AWS/SFA A5.20

AFM E71T-1 is an all position, flux cored mild steel wire designed to produce superior mechanical properties while using 100% CO₂ shielding gas. It produces Xray quality weld deposits that are flat to slightly convex and have a bright lustre. A soft stable arc, low spatter, and fast-freeze weld puddle make out-of-position welding possible.

Applications:

AFM E71T-1 is commonly used for single and multiple pass welding on mild and low alloy steels. Used in welding storage vessels, piping, earth moving equipment, shipbuilding, and railroad cars.

Typical Chemical Analysis (as welded):

C	0.05	P	0.015
Si	0.40	S	0.009
Mn	1.35		

Typical Mechanical Properties (as welded):

Tensile Strength, psi	86,000
Yield Strength, psi	78,000
Elongation in 2", (%)	29
Reduction of Area, (%)	74
Charpy V-notch (@ -20°F)	55 ft. lbs.

Standard Packaging:

.045 (1.2), .052 (1.4), & 1/16 (1.6)
25# & 44# spools; 60# coils

AFM E81T1-B2

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AFM E81T1-B2 is an all-position flux cored wire that contains 1-1/4% Cr-1/2% Mo. The weld metal analysis is very similar to **AFM E8018-B2** low hydrogen electrode. It is used for welding 1/2% Cr-1/2% Mo, 1% Cr-1/2% Mo, and 1-1/4% Cr-1/2% Mo steels, such as ASTM A335-P11 pipe and ASTM A387 Gr.11 plate. The wire can be used in either single or multiple pass welding. **AFM E81T1-B2** can be used with 100% CO₂ or Argon mixtures up to 75% Argon.

Chemical Composition Requirements for Undiluted Weld Metal:

C	0.05-0.12	Si	0.80
Mn	1.25	Cr	1.00-1.50
P	0.03	Mo	0.40-0.65
S	0.03		

All values are considered maximum, unless otherwise noted.

Tension Test Requirements:

Tensile Strength, psi	80-100,000
MPa	550-690
Yield Strength @ 0.2% Offset, Min	
Psi	68,000
MPa	470
Elongation in 2 in., (%)	19 min.

Standard Sizes and Packaging:

.045 (1.2) x 33# spool
1/16 (1.6) x 33# spool

AFM E91T1-B3

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AFM E91T1-B3 is an all-position flux cored wire that contains 2-1/4% Cr-1% Mo. The weld metal analysis is similar to **AFM E9018-B3** low hydrogen electrode. It is recommended for welding 2-1/4% Cr-1% Mo steels, such as ASTM A335-P22 pipe and ASTM A387 Gr.22 plate, and can be used for single or multiple pass welding. **AFM E91T1-B3** can be used with 100% CO₂ or Argon mixtures up to 75% Argon.

Chemical Composition Requirements for Undiluted Weld Metal:

C	0.05-0.12	Si	0.80
Mn	1.25	Cr	2.00-2.50
P	0.03	Mo	0.90-1.20
S	0.03		

All values are considered maximum, unless otherwise noted.

Tension Test Requirements:

Tensile Strength, psi	90-110,000
MPa	620-760
Yield Strength @ 0.2% Offset, Min.	
Psi	78,000
MPa	540
Elongation in 2 in., (%)	17 min.

Standard Sizes and Packaging:

- .045 (1.2) x 33# spool
- 1/16 (1.6) x 33# spool

AFM E81T1-Ni1

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AFM E81T1-Ni1 is an all-position wire which has a smooth, easily controlled arc that produces a spray-like transfer. The easily removable slag firmly holds the molten puddle for out-of-position work. It exhibits excellent low temperature impact toughness as welded and stress relieved. **AFM E81T1-Ni1** is commonly used on petrochemical equipment, offshore oil construction, ship fabrication, and heavy machinery. The weld metal analysis is similar to **AFM E8018-C3** low hydrogen electrode and is used with a 75% Ar/25% CO₂ shielding gas.

Chemical Composition Requirements for Undiluted Weld Metal:

C	0.12	Ni	0.80-1.10
Mn	1.50	Cr	0.15
P	0.03	Mo	0.35
S	0.03	V	0.05
Si	0.80		

All values are considered maximum, unless otherwise noted.

Tension Test Requirements:

Tensile Strength, psi	80-100,000
MPa	550-690
Yield Strength @ 0.2% Offset, Min	
Psi	68,000
MPa	470
Elongation in 2 in., (%)	19 min.

Standard Sizes and Packaging:

- .045 (1.2) x 33# spool
- 1/16 (1.6) x 33# spool

AFM E81T1-Ni2

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AFM E81T1-Ni2 is an all-position flux cored wire that deposits 2-1/2% Ni deposit with an 80 ksi tensile strength. It may be used with CO₂ or Argon mixtures, which reduce spatter and further improve weldability. It is used commonly used on shipbuilding and heavy machinery construction. The weld metal analysis is similar to **AFM E8018-C1** low hydrogen electrode.

Chemical Composition Requirements for Undiluted Weld Metal:

C	0.12	S	0.03
Mn	1.50	Si	0.80
P	0.03	Ni	1.75-2.75

All values are considered maximum, unless otherwise noted.

Tension Test Requirements:

Tensile Strength, psi	90-110,000
MPa	620-760
Yield Strength @ 0.2% Offset, Min.	
Psi	78,000
MPa	540
Elongation in 2 in., (%)	17 min.

Standard Sizes and Packaging:

- .045 (1.2) x 33# spool
- 1/16 (1.6) x 33# spool

AFM E71TGS

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AFM E71TGS is a self-shielded flux-cored wire for general purpose use and welding in all positions. It is especially suited for single-pass fillet and lap welds on thin-gauge mild or galvanized steel.

Mechanical Property Requirements (as welded):

Tensile Strength, ksi	70,000
MPa	480

Standard sizes:

- .030 (0.8) x 2-lb & 10-lb spools
- .035 (0.9) x 2-lb & 10-lb spools