AWS Classifications

HOBART®

Mild Steel Covered Electrodes, SMAW Process

E7018-1 H4R

- Electrode
- Tensile in ksi
- Position
- Type of coating and current
- Meets lower temperature impact requirements
- Hydrogen: H4 = Less than 4 ml/100 g. H8 = Less than 8 ml/100 g
- Meets requirements of absorbed moisture test

Position

1 Flat, Horizontal, Vertical, Overhead

2 Flat and Horizontal only

Types of Coating & Current

AWS	DIGIT	TYPE OF COATING	WELDING CURRENT
6010	**0**	cellulose sodium	DCEP
6011	**1**	cellulose potassium	AC or DCEP
6022	**2**	titania sodium	AC or DCEN
6013	**3**	titania potassium	AC or DCEP or DCEN
7014	**4**	iron powder titania	AC or DCEP or DCEN
7018	**8**	iron powder low hydrogen	AC or DCEP

DCEP-Direct Current Electrode Positive
DCEN-Direct Current Electrode Negative
AC-Alternating Current

Low Alloy Covered Electrodes

E8018-B2

- Electrode
- Tensile in ksi
- Position
- Type of coating and current
- Chemical composition of weld metal deposit

Chemical composition of weld metal deposit

AWS	Suffix	C	Mn	Si	Ni	Cr	Mo	V	P	S	Cr	Al	Nb	N	Cu
E7018	**A1**	0.12	0.90*	.80	—	—	.40-.65	—	.03	.03					
E8018	**B2L**	.05	.90	0.80	—	1.00-1.50	.40-.65	—	.03	.03					
E8018	**B2**	.05-.12	.90	0.80	—	1.00-1.50	.40-.65	—	.03	.03					
E9018	**B3L**	.05	.90	0.80*	—	2.00-2.50	.90-1.20	—	.03	.03					
E9018	**B3**	.05-.12	.90	0.80*	—	2.00-2.50	.90-1.20	—	.03	.03					
E8018	**B6**	.05-.10	1.0	.90	.40	4.0-6.0	.45-.65	—	.03	.03					
E8018	**B8**	.05-.10	1.0	.90	.40	8.0-10.5	.85-1.20	—	.03	.03					
E9015	**B9**	.08-.13	1.20	.30	8.0	8.0-10.5	.85-1.20	.15-.30	.01	.01	.25	.04	.02-.10	.02-.07	
E8018	**C1**	.12	1.25	0.80*	2.00-2.75	—	—	—	.03	.03					
E8018	**C2**	.12	1.25	0.80*	3.00-3.75	—	—	—	.03	.03					
E8018	**C3**	.12	.40-1.25	.80	.80-1.10	.15	.35	.05	.03	.03					
E10018	**D2**	.15	1.65-2.00	0.80*	.90	— .	25-.45	—	.03	.03					
EXXXX	**G****	—	1.00 Min	.80 Min	.50 Min	.20 Min	.20 Min	.10 Min	.03	.03	.2				
E9018	**M**	.10	.60-1.25	.80	1.40-1.80	.15	.35	.05	.030	.030					
E10018M	**M**	.10	.60-1.25	.80	1.40-1.80	.15	.35	.05	.030	.030					
E11018M	**M**	.10	1.30-1.80	.60	1.25-2.50	.40	.25-.50	.05	.030	.030					
E12018	**M**	.10	1.30-2.25	.60	1.75-2.50	.30-1.50	.30-.55	.05	.030	.030					
E7010	**P1**	.20	1.20	.60	1.00	.30	.50	.10	.030	.030					
E8010	**P1**	.20	1.20	.60	1.00	.30	.50	.10	.030	.030					

* Amount depends on electrode classification. Single values indicate maximum
** All G classifications have the same chemical minimum requirements

Mild Steel Solid Electrodes, GMAW, GTAW and PAW

ER70S-3

- Electrode or rod
- Tensile in ksi
- Solid
- Chemical composition & shielding gas

Low Alloy Solid Electrodes, GMAW, GTAW and PAW

ER80S-D2

- Electrode or rod
- Tensile in ksi
- Solid
- Chemical composition

Chemical Composition of Solid Wires Using CO_2 Shielding Gas

AWS classification	Shielding gas	Tensile Strength ksi (MPa)	Yield Strength ksi (MPa)	% Elongation min. in 2" (50 mm)	Impact strength Min. ft-lbs at °F (J at °C)	CHEMICAL COMPOSITION C	Mn	Si	P	S	Ni	Cr	Mo	Cu	Other
ER70S-2	CO_2	72 (500)	60 (420)	22	20 at -20 (27 at -29)	.07	.90-1.40	.40-.70	.025	.035	—	—	—	.50	Ti, Zr, Al
ER70S-3	CO_2	72 (500)	60 (420)	22	20 at 0 (27 at -18)	.06-.15	.90-1.40	.45-.70	.025	.035	—	—	—	.50	—
ER70S-4	CO_2	72 (500)	60 (420)	22	—	.07-.15	1.00-1.50	.65-.85	.025	.035	—	—	—	.50	—
ER70S-5	CO_2	72 (500)	60 (420)	22	—	.07-.19	.90-1.40	.30-.60	.025	.035	—	—	—	.50	Al
ER70S-6	CO_2	72 (500)	60 (420)	22	20 at -20 (27 at -29)	.07-.15	1.40-1.85	.80-1.15	.025	.035	—	—	—	.50	—
ER70S-7	CO_2	72 (500)	60 (420)	22	20 at -20 (27 at -29)	.07-.15	1.50-2.00	.50-.80	.025	.035	—	—	—	.50	—
ER80S-D2	CO_2	80 (550)	68 (470)	17	20 at -20 (27 at -29)	.07-.12	1.60-2.10	.50-.80	.025	.025	.15	—	.40-.60	.50	—