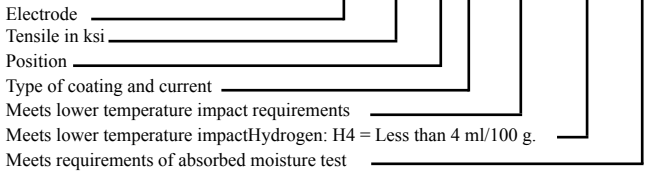


# AWS Classification



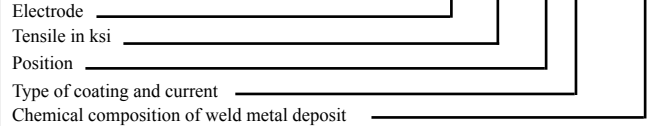
## Mild Steel Covered Electrodes, SMAW Process

### E7018-1 H4R



## Low Allow Covered Electrodes

### E8018-B2



### Position

- 1) Flat, Horizontal, Vertical, Overhead
- 2) Flat and Horizontal only

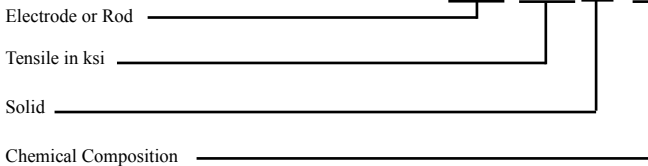
### Types of Coating & Current

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 DCEP
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

## Mild Steel Solid Electrodes, GMAW and GTAW

### ER70S-6



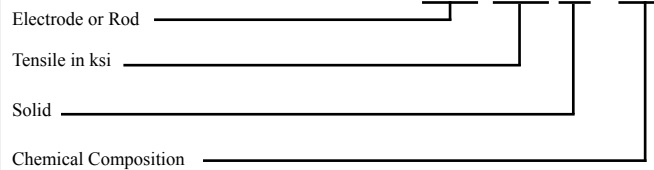
### Chemical Composition of Weld Metal Deposit

AWS	Suffix	C	Mn	Si	Ni	Cr	Mo	V	P	S	Cr	Al	Nb	N
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				
EXXX	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 electric classification. Single values indicate maximum.  
\*\* All G Classifications have the same chemical minimum requirements.

## Low Alloy Solid Electrodes, GMAW and GTAW

### ER90S-D2



### Chemical Composition of Solid Wires Using CO<sub>2</sub> 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 <sub>2</sub>	70 (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 <sub>2</sub>	70 (500)	60 (420)	22	20 at 0 (27 at -18)	.06-.15	.90-1.40	.45-.70	.025	.035	—	—	—	.50	—
ER70S-4	CO <sub>2</sub>	70 (500)	60 (420)	22	—	.07-.15	1.00-1.50	.65-.85	.025	.035	—	—	—	.50	—
ER70S-5	CO <sub>2</sub>	70 (500)	60 (420)	22	—	.07-.19	.90-1.40	.30-.60	.025	.035	—	—	—	.50	Al
ER70S-6	CO <sub>2</sub>	70 (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 <sub>2</sub>	70 (500)	60 (420)	22	20 at -20 (27 at -29)	.07-.15	1.50-2.00	.50-.80	.025	.035	—	—	—	.50	—
ER80S-D2	CO <sub>2</sub>	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	—

