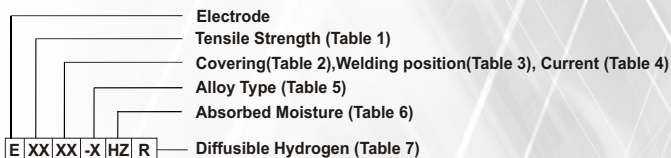


LOW ALLOY STEEL ELECTRODES CLASSIFICATION FOR SMAW (AWS A/SFA 5.5)



E XX XX M
E XX XX M1
E XX XX M HZ
E XX XX M1 HZ

Intended to meet most requirements
Military specification (Table 8)

Table 1: Tensile Strength of undiluted weld metal

Code Digit	Tensile Strength min, psi (MPa)
70	70,000 (490)
80	80,000 (550)
90	90,000 (620)
100	100,000 (690)
110	110,000 (760)
120	120,000 (830)
The 'L' versions will have lower minimum UTS values than their corresponding normal versions	

Table 3: Welding Position

Code Digit	Welding Position
10 to 18	F, V, OH, H
20, 27	F, H-fillet
45	F, OH, H, V-down

Table 5: Alloy Type (Weld metal)

Code Digit	Alloy Type
A1	C-Mo Steel
B1,B2,B2L,B3,B3L,B4L,B5,B6, B6L,B7,B7L,B8,B8L,B9	C-Cr-Mo Steel
C1,C1L,C2,C2L,C3,C3L,C4,C5L	C-Ni Steel
D1,D2,D3	C-Mn-Mo Steel
NM1	C-Ni-Mo Steel
P1,P2	Pipeline Electrodes
W1,W2	Weathering Steel
M,M1	Military Specification
'L' indicates Low Carbon Versions	

Table 7: Diffusible Hydrogen

Code Digit	Diffusible Hydrogen Content, average (ml/100g Deposited Metal) max
H4	4
H8	8
H16	16

Table 2: Type of Covering

Code Digit	Covering Type
10	High cellulose sodium
11	High cellulose potassium
13	High titania potassium
15, 45	Low-hydrogen sodium
16	Low-hydrogen potassium
18	Low-H ₂ potassium, Iron powder
18M,M1	Low-hydrogen Iron powder
20	High iron oxide
27	High iron oxide, iron powder

Table 4: Type of Current

Code Digit	Current
10,15,45,18M,18M1	DCEP
11, 18, 16	AC / DCEP
12, 20 (H-Fill), 27 (H-Fill)	AC / DCEN
13, 14, 19, 20(F), 27(F)	AC/ DCEP / DCEN

Table 6: Absorbed Moisture in electrode coating

Code Digit	Limit of Moisture Content, % by W _t , max	
	As-Received or Re Conditioned	As-Exposed
70 -- R	0.3	0.4
80 -- R	0.2	0.4
90 to 120- R	0.15	0.4
120--M1 -- R	0.1	0.4

Table 8: Military Specification

Code Digit	Tensile Strength min, psi (MPa)	Yield strength psi (MPa)	Elongation min (%)
90 -- M	90,000 (620)	78,000-90,000 (540-620)	24
100 -- M	100,000 (690)	88,000-100,000 (610-690)	20
110 -- M	110,000 (760)	98,000-110,000 (680-760)	20
120 -- M,M1	120,000 (830)	108,000-120,000 (745-830)	18



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