

**NICKEL BEARING
All Position, Flux Cored,
Self-Shielded**

Select 78-Ni1

CLASSIFICATION: E71T8-Ni1J-H16 per AWS A5.29, ASME SFA 5.29

APPROVALS: ABS 3YSA, Lloyd's 3YS H10, DNV III YMS H10, CWB E491T8-Ni1J-H16

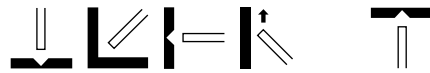
Select 78-Ni1 is a low alloy steel, flux cored, self-shielded electrode manufactured for the all position welding of carbon and certain low alloy steels where exceptional low temperature toughness is needed.

APPLICATIONS: Select 78-Ni1 is designed for critical structural applications such as offshore platforms, shipbuilding, heavy wall tubular construction, general structural fabrication and weathering steel uses.

DIAMETERS: 1/16", .072", 5/64"

SHIELDING GAS: Self-shielded

WELDING POSITIONS: All positions



CHARACTERISTICS:

- Operates on straight polarity (DCEN).
- Outstanding bead shape.
- Fast freezing slag facilitates all position welding.
- Smooth globular transfer.
- Easy to remove slag.

TYPICAL MECHANICAL PROPERTIES:

Ultimate Tensile Strength (psi)	84,700
Yield Strength (psi)	67,700
Percent Elongation	25
CVN (ft•lb f) @ -20°F	59
@ -40°F	50

TYPICAL DEPOSIT COMPOSITION:

Wt%	C	Mn	P	S	Si	Ni	Al
	.05	1.35	.010	.005	.25	1.01	.70

**NICKEL BEARING
Metal Cored**

Select 80C-Ni1

CLASSIFICATION: E80C-Ni1-H4 per AWS A5.28, ASME SFA 5.28

APPROVALS: DNV 4YMS H5 (75% Ar/25%CO₂-Flat), CWB E55C-Ni1-H4 (15-25CO₂/Balance Ar), AWS D1.8 (seismic), 1/16", 90%Ar/10%CO₂

Select 80C-Ni1 is a composite metal cored electrode for gas-shielded arc welding of certain low temperature or low alloy steels. This electrode is intended for single or multiple pass welding in horizontal fillets and the flat position.

APPLICATIONS: Select 80C-Ni1 is well suited for fine grained or low alloy steels requiring moderate tensile strength and good subzero CVN toughness such as ASTM A203, GrE, A302, A575 and A633. These steels are typically used in the fabrication of earthmoving machinery and buckets, offshore equipment and mining machinery.

DIAMETERS: .035", .045", .052", 1/16",

SHIELDING GASES: 75-95% Ar/balance CO₂, 95-98% Ar/balance O₂, 40-55 cfh

WELDING POSITIONS:

Flat and Horizontal



CHARACTERISTICS:

- Excellent CVN toughness at subzero temperatures.
- Outstanding welder appeal.
- Virtually no spatter.
- Low in fume generation.
- Superb bead profile.

TYPICAL MECHANICAL PROPERTIES:

	98%Ar/ 2%O ₂	90%Ar/ 10%CO ₂
Ultimate Tensile Strength (psi)	92,500	87,700
Yield Strength (psi)	79,800	76,500
Percent Elongation	26	26
CVN (ft•lb f) @ -50°F	28	26

TYPICAL DEPOSIT COMPOSITION:

Wt%	C	Mn	P	S	Si	Ni
98Ar/2O ₂	.03	1.45	.009	.010	.50	.95
90Ar/ 10CO ₂	.04	1.38	.007	.009	.55	.94

Select 80C-Ni1LS

CLASSIFICATION: E80C-Ni1-H4 per AWS A5.28, ASME SFA 5.28

APPROVAL: CWB E55C-Ni1-H4 (100%CO₂, 85%Ar/15%CO₂)

This low alloy steel, gas-shielded, composite metal cored electrode produces substantially fewer slag islands than typical metal cored wires. Select 80C-Ni1LS is intended for single and multiple pass welding in horizontal fillets and the flat position.

APPLICATIONS: In applications where better bead appearance and less postweld cleanup are desired, Select 80C-Ni1LS is the choice. The absence of slag and spatter, which facilitates painting after welding, makes this premium electrode ideal for fine grained or low alloy steels requiring moderate tensile strength and good subzero CVN toughness. These include ASTM A203, Gr E, A302, A575 and A633 – steels which are typically used in the fabrication of earthmoving machinery and buckets, offshore equipment and mining machinery.

DIAMETERS: .035", .045", .052", 1/16"

SHIELDING GAS: 75-95% Ar/balance CO₂, 95-98% Ar/balance O₂, 40-55 cfh

WELDING POSITIONS:

Flat and Horizontal



CHARACTERISTICS:

- Features a true spray transfer.
- Produces virtually no spatter and fewer slag islands as well as low fume generation.
- Superb bead profile with superior tie-in.
- Low in fume generation.
- Far fewer problems with lack of fusion, subsurface porosity and alloy segregation than with solid wires.

TYPICAL MECHANICAL PROPERTIES:

	98%Ar/ 2%O ₂	90%Ar/ 10%CO ₂
Ultimate Tensile Strength (psi)	92,500	88,700
Yield Strength (psi)	79,800	76,500
Percent Elongation	26	26
CVN (ft•lb f) @ -50°F	28	26

TYPICAL DEPOSIT COMPOSITION:

Wt%	C	Mn	P	S	Si	Ni
98Ar/2O ₂	.03	1.45	.009	.010	.50	.95
90Ar/ 10CO ₂	.04	1.38	.007	.009	.55	.94

Flux Cored, Low Alloy Properties Summary Table (continued)

Product	AWS Class	Shielding Gas	As Welded/Stress Relieved	Tensile Strength (ksi)	Yield Strength (ksi)
100 ksi Tensile Strength (Flat/Horizontal)					
Select 100-K3	E100T1-K3	CO ₂	As Welded	105.7	94.0
Select 105-D2	E100T5-D2CM	75% Ar/2% CO ₂	SR 1 Hr @ 1150°F	102.6	90.7
Select 4130LN	None	75% Ar/25% CO ₂	QT 1 Hr @ 1100°F SR 2 Hr @ 1200°F	115.8 78.6	124.7 106.9
100 ksi Tensile Strength (All Position)					
Select 101-K3C	E101T1-K3C	CO ₂	As Welded	106.5	92.3
Select 101-K3M	E101T1-K3M	75% Ar/25% CO ₂	As Welded	113.7	95.1
Select 101 SR	E101T1-GM	75% Ar/25% CO ₂	As Welded	111.1	98.7
110 ksi Tensile Strength (Flat/Horizontal)					
Select 110-K3	E110T1-K3	CO ₂	As Welded	116.0	105.0
Select 115-K3	E110T5-K3	CO ₂	As Welded	116.0	104.0
Select 115-K4	E110T5-K4	CO ₂	As Welded	119.0	107.2
110 ksi Tensile Strength (All Position)					
Select 111-K3C	E111T1-K3C	CO ₂	As Welded	125.2	118.1
Select 111-K3M	E111T1-K3M	75% Ar/25% CO ₂	As Welded	126.9	107.8
120 ksi Tensile Strength (All Position)					
Select 125-K4	E120T5-K4	CO ₂	As Welded	132.1	116.0

Metal Cored, Low Alloy Properties Summary Table

Product	AWS Class	Shielding Gas	As Welded/Stress Relieved	Tensile Strength (ksi)	Yield Strength (ksi)
80 ksi Tensile Strength (Metal Core)					
Select 80C-B2	E80C-B2	98% Ar/2% O ₂	SR 1 Hr @ 1150°F	87.0	70.3
Select 80C-Ni1	E80C-Ni1	90% Ar/10% CO ₂ 98% Ar/2% O ₂	As Welded	87.7 92.5	76.5 79.8
Select 80C-Ni1 LS	E80C-Ni1	90% Ar/10% CO ₂ 98% Ar/2% O ₂	As Welded	88.7 92.5	76.5 79.8
Select 80C-Ni2	E80C-Ni2	98% Ar/2% O ₂	SR 1 Hr @ 1150°F	91.0	72.0
Select 80C-W	E80C-W2	75% Ar/25% CO ₂	As Welded	92.0	78.1
90 ksi Tensile Strength (Metal Core)					
Select 90C-B3	E90C-B3	75% Ar/25% CO ₂	SR 1 Hr @ 1275°F	93.0	78.5
Select 90C-B9	E90C-B9	95% Ar/5% CO ₂	SR 1 Hr @ 1375°F SR 3 Hr @ 1375°F	105.4 103.2	88.4 84.1
Select 80C-D2	E90C-D2	75% Ar/25% CO ₂	As Welded	93.0	81.0
Select 90C-M2	E90C-K3	90% Ar/10% O ₂	As Welded	92.1	78.9
100 ksi Tensile Strength (Metal Core)					
Select 100C	E100C-G	98% Ar/2% O ₂	As Welded	106.0	95.0
Select 100C-K3	E100C-K3	75% Ar/25% CO ₂	As Welded	104.0	89.0
110 ksi Tensile Strength (Metal Core)					
Select 110C-M2	E110C-G	98% Ar/2% O ₂	As Welded	115.6	106.4
Select 110C-K4	E110C-K4	75% Ar/25% CO ₂	As Welded	117.0	103.0
Select 4130C	–	98% Ar/2% O ₂	QT 2 Hr @ 1100°F SR 2 Hr @ 1200°F	132.0 108.0	118.0 89.0
120 ksi Tensile Strength (Metal Core)					
Select 120C	E120C-G	98% Ar/2% O ₂	As Welded	120.6	108.4

Current Approvals for Select-Arc Products

Product	ABS		Position(s)
	Gas	Grade	
70C-6	Ar-25CO ₂	3YSA	F, V-down
70C-6LS	Ar-25CO ₂	3YSA	F
70C-T	Ar-25CO ₂	3YSA	F
70TR	CO ₂	E70T-1	F
78-Ni1	–	3YSA	All
70CRP	CO ₂	2YSA	F, H-Fillet
70NSP	CO ₂	2YSA	F, H-Fillet
71	CO ₂	E70T-1	F, H
97	CO ₂	E70T-1	F, H
720	CO ₂ /Ar-25CO ₂	3YSA	All, V-down
720	CO ₂ /Ar-25CO ₂	3YSA	All, V-down
720HP	CO ₂ /Ar-25CO ₂	3YSA	All, V-down
720HP	CO ₂ /Ar-25CO ₂	3YSA	All, V-down
721	Ar-25CO ₂	3YSA	All, V-down
727	CO ₂ /Ar-25CO ₂	3YSA	All
727	CO ₂ /Ar-25CO ₂	3YSA	All
EM12KS	Various fluxes	F7A2-EC1	F
812-K2	Ar-25CO ₂	4YSA	All
820-Ni1	CO ₂ /Ar-25CO ₂	4YSA	All
820-Ni1	CO ₂ /Ar-25CO ₂	4YSA	All
810-Ni2	CO ₂ /Ar-25CO ₂	3YSA	All
810-Ni2	CO ₂ /Ar-25CO ₂	3YSA	All
920-K2	CO ₂	E91T1-GC	All
101 SR	Ar-25CO ₂	E101T1-GM	All
111K3-C	CO ₂	E111T1-K3C	All
111K3-M	Ar-25CO ₂	E111T1-K3MJ	All
308L	CO ₂	E308LT0-1	F, H
308L	Ar-25CO ₂	E308LT0-4	F, H
308L-AP	CO ₂	E308LT1-1	All
308L-AP	Ar-25CO ₂	E308LT1-4	All
309L	CO ₂	E309LT0-1	F, H
309L	Ar-25CO ₂	E309LT0-4	F, H
309L-AP	CO ₂	E309LT1-1	All
309L-AP	Ar-25CO ₂	E309LT1-4	All
316L	CO ₂	E316LT0-1	F, H
316L	Ar-25CO ₂	E316LT0-4	F, H
316L-AP	CO ₂	E316LT1-1	All
316L-AP	Ar-25CO ₂	E316LT1-4	All

Product	DNV		Position(s)
	Gas	Grade	
70C-6	Ar-25CO ₂	III YMS	F, V-down
70C-T	Ar-25CO ₂	III YMS	F
78	–	III YMS H10	All
80C-Ni1	Ar-25CO ₂	IV YMS	F
720	CO ₂ /Ar-25CO ₂	III YMS	All
720HP	CO ₂ /Ar-25CO ₂	III YMS	All
727	CO ₂ /Ar-25CO ₂	III YMS	All
812-K2	Ar-25CO ₂	IV YMS	All
820Ni1	CO ₂ /Ar-25CO ₂	IV YMS	All
308L-AP	CO ₂	NV 308L	All
309L-AP	CO ₂	NV 309L	All
316L-AP	CO ₂	NV 316L	All
316L-AP CRYO	Ar-25CO ₂	VL 316L	All

