

FabCOR® 209

FLAT & HORIZONTAL

AWS E80C-Ni1 H4

Benefits:

- excellent gap bridging capability minimizes risk of burn-through, and part rejection
- higher deposition rates and travel speeds than solid wire increases productivity, more parts per hour
- high impact strengths at low temperatures help resist cracking in severe applications

Typical Applications:

- high-strength low-alloy steels
- structural applications
- single or multi-pass welding
- weathering steels

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂	95% Ar/5% O ₂
Carbon	0.05	0.04
Manganese	1.38	1.40
Silicon	0.65	0.80
Phosphorus	0.013	0.008
Sulphur	0.011	0.009
Nickel	1.00	0.95

Typical Diffusible Hydrogen:

1.2 ml/100g	3.0 ml/100g
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Typical Mechanical Properties (AW):

Tensile Strength (psi)	92,000	94,000
	(634 MPa)	(648 MPa)
Yield Strength (psi)	81,000	81,000
	(558 MPa)	(558 MPa)
Elongation % in 2" (50mm)	25%	26%

Typical Charpy V-notch Impact Values (AW):

Avg. at -50°F (-45°C)	44 ft.lb. (60J)	61 ft.lb. (83J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-350	25-29	5/8" (16 mm)
.052" (1.4 mm)	250-400	26-31	1" (25 mm)

Shielding Gas: 75-95% Ar/Balance CO₂, 95% Ar/5% O₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E80C-Ni1 H4
- AWS A5.28M, E55C-Ni1 H4
- ASME SFA 5.28, E80C-Ni1 H4
- CWB, 75-95% Ar/Balance CO₂, 95% Ar/5% O₂, E55C-Ni1-H4

FabCOR® 80N1

FLAT & HORIZONTAL

AWS E80C-Ni1

Benefits:

- high deposition rates provide faster travel speed, higher productivity
- no slag covering reduces inter-pass cleanup
- good low temperature impacts reduces potential of weld bead cracking
- better penetration profile than solid wire reduces possibility of cold-lap and lack of fusion

Typical Applications:

- high-strength low-alloy steels
- heavy equipment
- weathering steel
- all position welding with pulse or short circuit

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂	98% Ar/2% O ₂
Carbon	0.06	0.06
Manganese	0.80	1.05
Silicon	0.25	0.45
Phosphorus	0.006	0.006
Sulphur	0.011	0.012
Nickel	0.95	0.95
Copper	0.06	0.07
Molybdenum	0.14	0.14
Vanadium	< 0.01	< 0.01

Typical Mechanical Properties (AW):

Tensile Strength (psi)	82,000	86,000
	(565 MPa)	(593 MPa)
Yield Strength (psi)	74,000	77,000
	(510 MPa)	(531 MPa)
Elongation % in 2" (50mm)	24%	27%

Typical Charpy V-notch Impact Values (AW):

Avg. at -50°F (-45°C)	40 ft.lb. (54J)	30 ft.lb. (41J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-350	25-31	3/4" (19 mm)
.052" (1.4 mm)	250-400	26-32	3/4" (19 mm)

Shielding Gas: 75-95% Ar/Balance CO₂, 98% Ar/2% O₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E80C-Ni1
- AWS A5.28M, E55C-Ni1
- ASME SFA 5.28, E80C-Ni1
- ABS, 80% Ar/20% CO₂, 3YSA
- CWB, 75-90% Ar/Balance CO₂, 95% Ar/5% O₂, E55C-Ni1-H8

Metalloy® 80N2

FLAT & HORIZONTAL

AWS E80C-Ni2 H2

Benefits:

- high deposition rates allow faster travel speed and higher productivity
- high Charpy-impacts toughness at sub-zero temperatures reduces potential of weld bead cracking
- higher nickel alloying content results in superior mechanical properties

Typical Applications:

- sub-zero temperature environments
- offshore
- shipbuilding

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂	98% Ar/2% O ₂
Carbon	0.03	0.04
Manganese	0.77	1.09
Silicon	0.28	0.34
Nickel	2.23	2.26
Hydrogen	3.0 ml/100g	

Typical Mechanical Properties

(PWHT 1 Hr @ 1150°F/620°C):

Tensile Strength (psi)	78,200	90,000
	(539 MPa)	(621 MPa)
Yield Strength (psi)	65,800	77,000
	(454 MPa)	(531 MPa)
Elongation % in 2" (50mm)	30%	26%

Typical Charpy V-notch Impact Values

(PWHT 1 Hr @ 1150°F/620°C):

Avg. at -50°F (-45°C)	38 ft.lb. (52J)	—
Avg. at -80°F (-62°C)	—	48 ft.lb. (65J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-350	27-35	5/8" (16 mm)

Shielding Gas: 98% Ar/2% O₂, 75% Ar/25% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E80C-Ni2 H4
- AWS A5.28M, E55C-Ni2 H4
- ASME SFA 5.28, E80C-Ni2 H4

FabCOR® 90

FLAT & HORIZONTAL

AWS E90C-K3 H4

Benefits:

- excellent wetting characteristics assists in producing smooth weld beads with uniform fusion
- high tensile strength electrode suitable for quench and temper high-strength low-alloy steels
- high deposition rates possible at low heat inputs increasing productivity, minimizes Heat Affected Zone (HAZ)
- can be used with standard CV equipment promotes versatility, reduces equipment cost

Typical Applications:

- high-strength low-alloy steels
- quench and temper steels
- single or multi-pass welding
- heavy equipment

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂	90% Ar/10% CO ₂
Carbon	0.06	0.06
Manganese	1.19	1.41
Silicon	0.25	0.31
Phosphorus	0.009	0.006
Sulphur	0.012	0.012
Nickel	1.84	1.83
Chromium	0.08	0.08
Molybdenum	0.34	0.34
Vanadium	0.00	0.01
Copper	0.06	0.06

Typical Diffusible Hydrogen:

2.3 ml/100g 4.0 ml/100g

Typical Mechanical Properties (AW):

Tensile Strength (psi)	102,000	110,000
	(703 MPa)	(758 MPa)
Yield Strength (psi)	94,000	104,000
	(648 MPa)	(717 MPa)
Elongation % in 2" (50mm)	23%	22%

Typical Charpy V-notch Impact Values (AW):

Avg. at -60°F (-50°C) 71 ft.lb. (96J) 23 ft.lb. (31J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-350	27-30	5/8" (16 mm)
.052" (1.4 mm)	250-400	27-31	3/4" (19 mm)
1/16" (1.6 mm)	300-450	29-31	1" (25 mm)

Shielding Gas: 75-95% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E90C-K3 H4
- AWS A5.28M, E62C-K3 H4
- ASME SFA 5.28, E90C-K3 H4

* Formally known as Metalloy® 90

FabCOR® 100

FLAT & HORIZONTAL

AWS E100C-K3

Benefits:

- higher deposition rates and travel speeds than solid wire increases productivity, more parts per hour
- high tensile strength deposit suitable for high strength materials
- excellent toughness helps minimize risk of cracking in severe applications
- maintains acceptable properties over a wide heat input range

Typical Applications:

- high-strength low-alloy steels
- quench and temper steels
- single or multi-pass welding
- structural applications

Typical Weld Metal Chemistry:

Carbon	0.07
Manganese	1.50
Silicon	0.38
Nickel	1.58
Molybdenum	0.34

Typical Mechanical Properties (AW):

Tensile Strength (psi)	113,300 (781 MPa)
Yield Strength (psi)	103,300 (712 MPa)
Elongation % in 2" (50mm)	21%

Typical Charpy V-notch Impact Values (AW):

Avg. at -60°F (-51°C) 49 ft.lb. (66J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-350	27-35	1/2" (13 mm)
.052" (1.4 mm)	250-400	28-34	1" (25 mm)
1/16" (1.6 mm)	300-450	28-34	1" (25 mm)

Shielding Gas: 90-95% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E100C-K3
- AWS A5.28M, E69C-K3
- ASME SFA 5.28, E100C-K3

FabCOR® 1100

FLAT & HORIZONTAL

AWS E110C-K4

Benefits:

- excellent wetting characteristics assist in producing smooth weld beads with uniform fusion
- high tensile strength electrode suitable for quench and temper high-strength low-alloy steels
- high deposition rates possible at low heat inputs increase productivity, minimize Heat Affected Zone (HAZ)
- can be used with standard CV equipment promoting versatility, reducing equipment cost

Typical Applications:

- high-strength low-alloy steels
- quench and temper steels
- single or multi-pass welding
- heavy equipment

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂	90% Ar/10% CO ₂
Carbon	0.07	0.08
Manganese	1.52	1.50
Silicon	0.52	0.50
Phosphorus	0.004	0.003
Sulphur	0.007	0.005
Nickel	1.92	1.84
Chromium	0.18	0.24
Molybdenum	0.47	0.46

Typical Mechanical Properties (AW):

Tensile Strength (psi)	118,000	128,000
	(814 MPa)	(883 MPa)
Yield Strength (psi)	105,000	116,000
	(724 MPa)	(800 MPa)
Elongation % in 2" (50mm)	19%	17%

Typical Charpy V-notch Impact Values (AW):

Avg. at -60°F (-50°C) 43 ft.lb. (58J) 28 ft.lb. (38J)

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	150-280	24-30	1/2" (13 mm)
1/16" (1.6 mm)	170-350	25-34	1" (25 mm)

Shielding Gas: 75-95% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E110C-K4
- AWS A5.28M, E76C-K4
- ASME SFA 5.28, E110C-K4
- CWB, 75-95% Ar/Balance CO₂, E76C-K4-H4

* Formally known as Metalloy® 110

FabCOR® 80D2

FLAT & HORIZONTAL

AWS E90C-D2

Benefits:

- improved deposition rates compared to E80S-D2 solid wire increases productivity, produces more parts per hour
- good wetting characteristics assists in producing smooth weld beads with uniform fusion
- all-position capability with pulsed-spray transfer increases productivity, reduces cleanup time

Typical Applications:

- high-strength low-alloy steels
- single or multi-pass welding
- heavy equipment fabrication
- structural applications

Typical Weld Metal Chemistry:

	90% Ar/10% CO ₂	95% Ar/5% O ₂
Carbon	0.08	0.08
Manganese	1.80	1.34
Silicon	0.66	0.53
Phosphorus	0.005	0.003
Sulphur	0.008	0.006
Molybdenum	0.50	0.50
Copper	0.02	0.502

Typical Mechanical Properties (AW):

Tensile Strength (psi)	106,000	105,000
	(731 MPa)	(724 MPa)
Yield Strength (psi)	98,000	96,000
	(676 MPa)	(662 MPa)
Elongation % in 2" (50mm)	19%	17%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	42 ft.lb. (57J)	40 ft.lb. (54J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
.035" (0.9 mm)	150-250	26-28	5/8" (16 mm)
.045" (1.2 mm)	200-350	24-29	5/8" (16 mm)
.052" (1.4 mm)	250-400	25-30	3/4" (19 mm)
1/16" (1.6 mm)	250-450	24-29	1" (25 mm)

Shielding Gas: 75-95% Ar/Balance CO₂,
95-99% Ar/Balance O₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E90C-D2
- AWS A5.28M, E62C-D2
- ASME SFA 5.28, E90C-D2

FabCOR® Edge™ D2

FLAT & HORIZONTAL

AWS E90C-D2

Benefits:

- virtually no silicon deposits at weld bead toe lines reduce cleanup time, minimize risk of inclusions
- excellent gap bridging capabilities minimize burn-through, reduce part rejection
- higher deposition rates and travel speeds than solid wire increase productivity, more parts per hour

Typical Applications:

- high-strength low-alloy steels
- single or multi-pass welding
- heavy equipment fabrication

Typical Weld Metal Chemistry:

	98% Ar/2% CO ₂	90% Ar/10% CO ₂
Carbon	0.05	0.05
Manganese	1.50	1.45
Silicon	0.50	0.45
Phosphorus	0.009	0.009
Sulphur	0.012	0.012
Molybdenum	0.50	0.45
Copper	0.05	0.05

Typical Mechanical Properties (AW):

Tensile Strength (psi)	98,000	107,000
	(676 MPa)	(738 MPa)
Yield Strength (psi)	90,000	95,000
	(621 MPa)	(655 MPa)
Elongation % in 2" (50mm)	25%	22%

Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	55 ft.lb. (75J)	45 ft.lb. (61J)
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Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-350	25-28	5/8" (16 mm)
.052" (1.4 mm)	250-400	26-29	3/4" (19 mm)
1/16" (1.6 mm)	300-450	26-29	1" (25 mm)

Shielding Gas: 95-98% Ar/Bal O₂,
75-95% Ar/Bal CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E90C-D2
- AWS A5.28M, E62C-D2
- ASME SFA 5.28, E90C-D2

FabCOR® 80B2

FLAT & HORIZONTAL

AWS E80C-B2

Benefits:

- good wetting characteristics assists in producing smooth weld beads with uniform fusion
- excellent gap bridging capabilities helps minimize burn-through and part rejection rates
- suitable for welding 1/2 Cr-1/2 Mo, Cr-1/4 Mo and 1-1/4 Cr-1/2 Mo steels

Typical Applications:

- single or multi-pass welding of chrome-moly steels
- high temperature applications
- P11 pipe

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂	98% Ar/2% O ₂
Carbon	0.06	0.07
Manganese	0.82	0.78
Silicon	0.29	0.42
Chromium	1.36	1.25
Molybdenum	0.50	0.47

Typical Mechanical Properties (PWHT 1 hr @ 1150°F/620°C):

Tensile Strength (psi)	83,300	96,900
	(574 MPa)	(668 MPa)
Yield Strength (psi)	69,600	83,700
	(480 MPa)	(577 MPa)
Elongation % in 2" (50mm)	23%	23%

Typical Charpy V-notch Impact Values:

Not required

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-350	20-36	5/8" (16 mm)

Shielding Gas: 98% Ar/2% O₂,
75-90% Ar/Balance CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E80C-B2
- AWS A5.28M, E55C-B2
- ASME SFA 5.28, E55C-B2

FabCOR® 90B3

FLAT & HORIZONTAL

AWS E90C-B3

Benefits:

- excellent arc characteristics improve operator appeal
- minimal number of silicon islands reduce cleanup time, increase productivity
- higher deposition rates than B3 solid wire increase productivity
- maintains high tensile strength at high service temperature
- designed with 2-1/4% Cr, 1% Mo for welding base materials with similar composition

Typical Applications:

- single or multi-pass applications
- 2-1/4% Cr & 1% Mo steels
- P22 pipe
- high service temperatures

Typical Weld Metal Chemistry:

	75% Ar/25% CO ₂	98% Ar/2% O ₂
Carbon	0.07	0.09
Manganese	0.70	0.62
Silicon	0.35	0.39
Phosphorus	0.015	0.011
Sulphur	0.012	0.010
Chromium	2.30	2.07
Molybdenum.....	1.00	1.01

Typical Mechanical Properties (PWHT 1 hr @ 1275°F/690°C):

Tensile Strength (psi)	94,000	103,000
	(648 MPa)	(710 MPa)
Yield Strength (psi)	80,000	91,000
	(552 MPa)	(627 MPa)
Elongation % in 2" (50mm)	23%	20%

Typical Charpy V-notch Impact Values:

Not required

Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-350	27-29	3/4" (19 mm)

Shielding Gas: 98% Ar/2% O₂,
75% Ar/25% CO₂

Type of Current: DCEP

Approvals and Conformances:

- AWS A5.28, E90C-B3
- AWS A5.28M, E62C-B3
- ASME SFA 5.28, E90C-B3

