

## FabCOR® 86R

### AWS E70C-6M H4

#### Benefits:

- high deposition rates and efficiencies improving productivity
- virtually no slag coverage and low spatter levels reduce cleanup time
- smooth arc characteristics improve operator appeal
- low diffusible hydrogen weld deposit minimizes risk of cracking

#### Typical Applications:

- railcar
- storage vessels
- steel structures
- earthmoving equipment

#### Typical Weld Metal Chemistry:

	75% Ar/25% CO <sub>2</sub>	95% Ar/5% CO <sub>2</sub>
Carbon	0.03	0.03
Manganese	1.44	1.68
Silicon	0.67	0.78
Phosphorus	0.008	0.002
Sulphur	0.015	0.009
Hydrogen	2.0 ml/100g	2.7 ml

#### Typical Mechanical Properties (AW):

Tensile Strength (psi)	81,000	85,000
	(558 MPa)	(586 MPa)
Yield Strength (psi)	69,000	75,000
	(476 MPa)	(517 MPa)
Elongation % in 2" (50mm)	30%	27%

#### Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	74 ft.lb. (101J)	50 ft.lb. (68J)
Avg. at -40°F (-40°C)	40 ft.lb. (54J)	32 ft.lb. (43J)

#### Typical Operating Range:

Dia.	Amps	Volts	CTWD
.035" (0.9 mm)	200-300	25-36	1/2" (13 mm)
.045" (1.2 mm)	200-400	27-36	3/4" (19 mm)
.052" (1.4 mm)	200-400	25-36	1" (25 mm)
1/16" (1.6 mm)	250-500	29-36	1" (25 mm)
5/64" (2.0 mm)	300-500	29-34	1 1/4" (31 mm)
3/32" (2.4 mm)	350-550	29-34	1 1/4" (31 mm)

**Shielding Gas:** 75-95% Ar/Balance CO<sub>2</sub>, 95% Ar/5% O<sub>2</sub>

**Type of Current:** DCEP

#### Approvals and Conformances:

##### Hobart and Tri-Mark

- AWS A5.18, E70C-6M H4
- AWS A5.18M, E48C-6M H4
- ASME SFA 5.18, E70C-6M H4
- ABS, 80% Ar/20% CO<sub>2</sub>, 3YSA H5 (0.035" - 1/16" diameters)
- Bureau Veritas, 80% Ar/20% CO<sub>2</sub>, S3YMH5 (0.035" - 1/16" diameters)
- CWB, 75-95% Ar/Balance CO<sub>2</sub>, E491C-6MJ-H4 (0.9 mm - 1.6 mm diameters)
- CWB, 95% Ar/5% O<sub>2</sub>, E491C-6MJ-H4 (1.2 mm - 1.6 mm diameters)
- DNV, 80% Ar/20% CO<sub>2</sub>, III Y40MS(H5)
- Lloyd's Register, 80% Ar/20% CO<sub>2</sub>, 3Y40S H5
- AWS D1.8/D1.8M, 75% Ar/25% CO<sub>2</sub>, [0.045" (1.2 mm), 1/16" (1.6 mm) diameter]
- EN17632-A: T 46 2 M M 3 H5
- CE Marked per CPR 305/2011 (1.2 mm - 1.6 mm diameters)

\* Formally known as Metalloy® 76

## FabCOR® Edge™

### FLAT & HORIZONTAL

### AWS E70C-6M H4

#### Benefits:

- higher deposition rates help increase travel speed and productivity
- excellent wetting characteristics and gap bridging capabilities
- virtually no silicon deposits at weld bead toe lines reduces cleanup time and minimizes risk of inclusions

#### Typical Applications:

- heavy equipment
- agriculture
- robotic and mechanized welding
- non-alloyed and fine grain steels

#### Typical Weld Metal Chemistry:

	75% Ar/25% CO <sub>2</sub>	90% Ar/10% CO <sub>2</sub>
Carbon	0.05	0.03
Manganese	1.33	1.50
Silicon	0.63	0.72
Phosphorus	0.006	0.001
Sulphur	0.007	0.012
Nickel	0.42	0.42
Hydrogen	1.5 ml/100g	2.1 ml

#### Typical Mechanical Properties (AW):

Tensile Strength (psi)	91,000	97,000
	(630 MPa)	(669 MPa)
Yield Strength (psi)	81,000	87,000
	(561 MPa)	(600 MPa)
Elongation % in 2" (50mm)	25%	22%

#### Typical Charpy V-notch Impact Values (AW):

Avg. at -0°F (-20°C)	50 ft.lb. (68J)	56 ft.lb. (76J)
Avg. at -20°F (-30°C)	38 ft.lb. (52J)	47 ft.lb. (64J)

#### Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-375	25-30	3/4" (19 mm)
.052" (1.4 mm)	250-400	24-30	3/4" (19 mm)
1/16" (1.6 mm)	250-450	25-32	3/4" (19 mm)

**Shielding Gas:** 75-95% Ar/Balance CO<sub>2</sub>

**Type of Current:** DCEP

#### Approvals and Conformances:

##### Hobart & Tri-Mark

- AWS A5.18, E70C-6M H4
- AWS A5.18M, E48C-6M H4
- ASME SFA 5.18, E70C-6M H4
- ABS, 80% Ar/20% CO<sub>2</sub>, 3YSA H5 (0.045" - 1/16" diameters, flat position)
- ABS, 90% Ar/10% CO<sub>2</sub>, 3YSA H5 (0.035" - 0.045" diameters, all position)
- AWS D1.8/D1.8M, 75% Ar/25% CO<sub>2</sub> [0.052" (1.4 mm) diameter]
- CWB, 75-95% Ar/Balance CO<sub>2</sub>, E492C-6MJ-H4 (1.4 - 1.6 mm diameter)
- CWB, 75-95% Ar/Balance CO<sub>2</sub>, E491C-6MJ-H4 (1.2 mm diameter)
- EN17632-A: T 46 3 M M 3 H5
- CE Marked per CPR 305/2011 (0.9 - 1.6 mm diameter)

\* Formally known as Metalloy® Vantage™

## FabCOR® Edge™ MC

### FLAT & HORIZONTAL

### AWS E70C-6M H4

#### Benefits:

- higher deposition rate increases productivity compared to solid wire
- virtually no slag coverage helps reduce cleanup time
- smooth arc characteristics help to ensure consistent high-quality welds
- outstanding high-production performance for automation and mechanization

#### Typical Applications:

- robotic and mechanized welding
- general fabrication
- heavy equipment fabrication
- railcar

#### Typical Weld Metal Chemistry:

	75% Ar/25% CO <sub>2</sub>	95% Ar/5% CO <sub>2</sub>
Carbon	0.04	0.04
Manganese	1.43	1.62
Silicon	0.62	0.77
Phosphorus	0.006	0.008
Sulphur	0.009	0.011
Hydrogen	2.8 ml/100g	2.9 ml

#### Typical Mechanical Properties (AW):

Tensile Strength (psi)	85,000	90,000
	(586 MPa)	(621 MPa)
Yield Strength (psi)	73,000	81,000
	(503 MPa)	(558 MPa)
Elongation % in 2" (50mm)	28%	25%

#### Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	45 ft.lb. (61J)	30 ft.lb. (41J)
-----------------------	-----------------	-----------------

#### Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-400	25-36	3/4" (19 mm)
.052" (1.4 mm)	200-400	23-36	1" (25 mm)
1/16" (1.6 mm)	250-500	27-36	1" (25 mm)

**Shielding Gas:** 75-95% Ar/Balance CO<sub>2</sub>

**Type of Current:** DCEP

#### Approvals and Conformances:

- AWS A5.18, E70C-6M H4
- AWS A5.18M, E48C-6M H4
- ASME SFA 5.18, E70C-6M H4
- CWB, 75-95% Ar/Balance CO<sub>2</sub>, E492C-6M-H4
- CWB, 95% Ar/5% O<sub>2</sub>, E492C-6M-H4

## FabCOR® Matrix™

### FLAT & HORIZONTAL

#### AWS E70C-6M H4

##### Benefits:

- advanced feedability is suitable for high wire feed speeds, increases consumable life
- superior arc starting improves welding performance and consistency
- excellent wetting characteristics produces smooth weld beads with uniform fusion
- minimal silicon deposits reduces cleanup time, increases productivity
- superb manufacturing consistency provides repeatable welding performance and properties, suitable for automation

##### Typical Applications:

- heavy equipment
- high-production applications
- non-alloyed and fine grain steels
- robotic and mechanized welding

##### Typical Weld Metal Chemistry:

	75% Ar/25% CO <sub>2</sub>	90% Ar/10% CO <sub>2</sub>
Carbon	0.04	0.04
Manganese	1.30	1.38
Silicon	0.62	0.63
Phosphorus	0.008	0.010
Sulphur	0.022	0.023

##### Typical Diffusible Hydrogen:

2.2 ml/100g	1.4 ml/100g
-------------	-------------

##### Typical Mechanical Properties (AW):

Tensile Strength (psi)	71,000	85,000
	(490 MPa)	(586 MPa)
Yield Strength (psi)	67,000	73,000
	(462 MPa)	(503 MPa)
Elongation % in 2" (50mm)	24%	27%

##### Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	46 ft.lb. (62J)	40 ft.lb. (54J)
Avg. at -40°F (-40°C)	42 ft.lb. (57J)	38 ft.lb. (52J)

##### Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	200-350	25-30	5/8" (16 mm)
.052" (1.4 mm)	250-400	26-34	3/4" (19 mm)
1/16" (1.6 mm)	250-450	28-34	1" (25 mm)

**Shielding Gas:** 75-95% Ar/Balance CO<sub>2</sub>

**Type of Current:** DCEP

##### Approvals and Conformances:

- AWS A5.18, E70C-6M H4
- AWS A5.18M, E48C-6M H4
- ASME SFA 5.18, E70C-6M H4
- CWB, 75-95% Ar/Balance CO<sub>2</sub>, E492C-6M-H4
- EN 17632-A: T46 4 M 3 H5
- CE Marked per CPR 305/2011 (1.2 mm & 1.4 mm diameter electrodes)

## Eclipse® Ultimet 716

### FLAT & HORIZONTAL

#### AWS E70C-6M H4

##### Benefits:

- low fume generation rate increases welder appeal and improves the working environment
- excellent wetting characteristics assists in producing smooth weld beads with uniform fusion
- virtually no slag coverage reduces cleanup time and minimizes risk of inclusions
- low spatter reduces cleanup time, and increases productivity

##### Typical Applications:

- automotive
- railcars
- structural applications
- storage vessels

##### Typical Weld Metal Chemistry:

	75% Ar/25% CO <sub>2</sub>	90% Ar/10% CO <sub>2</sub>
Carbon	0.03	0.03
Manganese	1.48	1.67
Silicon	0.61	0.80
Phosphorus	0.013	0.013
Sulphur	0.009	0.012

##### Typical Diffusible Hydrogen:

2.5 ml/100g	3.0 ml/100g
-------------	-------------

##### Typical Mechanical Properties (AW):

Tensile Strength (psi)	81,000	89,000
	(558 MPa)	(614 MPa)
Yield Strength (psi)	70,000	70,000
	(483 MPa)	(483 MPa)
Elongation % in 2" (50mm)	27%	25%

##### Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C)	75 ft.lb. (102J)	70 ft.lb. (95J)
Avg. at -20°F (-30°C)	60 ft.lb. (81J)	56 ft.lb. (76J)

##### Typical Operating Range:

Dia.	Amps	Volts	CTWD
.035" (0.9 mm)	150-250	25-29	5/8" (16 mm)
.045" (1.2 mm)	200-350	25-28	5/8" (16 mm)
.052" (1.4 mm)	250-400	26-31	1" (25 mm)
1/16" (1.6 mm)	250-450	28-31	1" (25 mm)

**Shielding Gas:** 75-95% Ar/Balance CO<sub>2</sub>

**Type of Current:** DCEP

##### Approvals and Conformances:

- AWS A5.18, E70C-6M H4
- AWS A5.18M, E48C-6M H4
- ASME SFA 5.18, E70C-6M H4
- CWB, 75-95% Ar/Balance CO<sub>2</sub>, E491C-6M-H4 (1.2 - 1.6 mm diameter electrodes only)

\* Formally known as Metalloy® 70X

## FabCOR® X-Cel™

### FLAT & HORIZONTAL

#### AWS E70C-6M H4

##### Benefits:

- maximizes the benefits of using DCEN (straight) polarity
- provides a "soft arc" for reduced burn through and improved gap bridging capability
- deposition rates 30-40% higher than solid wire make the product ideally suited for semi-automatic, automatic and robotic welding on clean mild steel of thicknesses of 1/4" or less
- welds have exceptional bead appearance with minimal amounts of spatter

##### Typical Applications:

- non-alloyed and fine grain steels
- thin materials
- storage vessels
- automotive

##### Typical Weld Metal Chemistry:

	75% Ar/25% CO <sub>2</sub>	90% Ar/10% CO <sub>2</sub>
Carbon	0.06	0.06
Manganese	1.28	1.35
Silicon	0.65	0.70
Phosphorus	0.011	0.011
Sulphur	0.011	0.010

##### Typical Diffusible Hydrogen:

2.1 ml/100g	2.2 ml/100g
-------------	-------------

##### Typical Mechanical Properties (AW):

Tensile Strength (psi)	90,000	95,500
	(621 MPa)	(658 MPa)
Yield Strength (psi)	80,500	82,500
	(555 MPa)	(569 MPa)
Elongation % in 2" (50mm)	24%	22%

##### Typical Charpy V-notch Impact Values (AW):

Avg. at -20°F (-30°C)	45 ft.lb. (61J)	42 ft.lb. (57J)
-----------------------	-----------------	-----------------

##### Typical Operating Range:

Dia.	Amps	Volts	CTWD
.045" (1.2 mm)	150-300	21-27	5/8" (16 mm)
.052" (1.4 mm)	250-400	24-29	5/8" (16 mm)
1/16" (1.6 mm)	300-450	26-30	3/4" (19 mm)

**Shielding Gas:** 75-95% Ar/Balance CO<sub>2</sub>

**Type of Current:** DCEN

##### Approvals and Conformances:

- AWS A5.18, E70C-6M H4
- AWS A5.18M, E48C-6M H4
- ASME SFA 5.18, E70C-6M H4

## FabCOR® 702

### FLAT & HORIZONTAL

#### AWS E70C-3C

##### Benefits:

- metal-cored wire producing high deposition rates and high travel speeds Increased productivity over solid wire
- excellent side wall and root penetration provides better fusion patterns than solid wire
- slag free welds reduce cleanup time compared to flux-core wire
- low hydrogen weld deposit results in high crack resistant welds

##### Typical Applications:

- steel structures
- storage vessels
- earthmoving equipment
- railcar

##### Typical Weld Metal Chemistry:

Carbon	0.09
Manganese	1.30
Silicon	0.56
Phosphorus	0.011
Sulphur	0.018

##### Typical Mechanical Properties (AW):

Tensile Strength (psi)	85,500 (590 MPa)
Yield Strength (psi)	69,600 (480 MPa)
Elongation % in 2" (50mm)	24.2%

##### Typical Charpy V-notch Impact Values (AW):

Avg. at 0°F (-20°C)	57 ft.lbs. (77J)
---------------------	------------------

##### Typical Operating Range:

Dia.	Amps	Volts	CTWD
1/16" (1.6 mm)	300-450	30-37	3/4" (19 mm)
3/32" (2.4 mm)	450-600	29-36	1" (25 mm)
7/64" (2.8 mm)	450-650	29-38	1" (25 mm)

**Shielding Gas:** 100% CO<sub>2</sub>

**Type of Current:** DCEP

##### Approvals and Conformances:

- AWS A5.18, E70C-3C
- AWS A5.18M, E48C-3C
- ASME SFA 5.18, E70C-3C
- ABS, 100% CO<sub>2</sub>, 3YSA H10 (0.045" - 1/16" diameter electrodes, all positions)

## FabCOR® F6

### FLAT & HORIZONTAL

#### AWS E70C-GS

##### Benefits:

- intended for single-pass joining applications using a wide range of thin-gauge carbon and HSLA steels
- higher deposition rates than solid wire increases productivity
- excellent gap-bridging capabilities suitable for automated and mechanized application
- formulated and intended for use with DCEN polarity minimizes risk of burn-through, improves deposition rate

##### Typical Applications:

- galvanized and zinc coated steels
- aluminized coated steels
- HVAC fabrication
- automotive and transportation
- thin-gauge steels

##### Typical Weld Metal Chemistry:

	80% Ar/20% CO <sub>2</sub>	90% Ar/10% CO <sub>2</sub>
Carbon	0.13	0.13
Manganese	1.55	1.64
Silicon	0.84	0.89
Phosphorus	0.009	0.010
Sulphur	0.016	0.012

##### Typical Mechanical Properties:

Tensile Strength (psi)	76,000	76,500
	(524 MPa)	(527 MPa)

##### Typical Charpy V-notch Impact Values:

Not required

##### Typical Operating Range:

Dia.	Amps	Volts	CTWD
.035" (0.9 mm)	100-250	17-24	1/2" (13 mm)
.039" (1.0 mm)	150-300	18-24	5/8" (16 mm)
.045" (1.2 mm)	150-350	17-23	5/8" (16 mm)

**Shielding Gas:** 75-95% Ar/Balance CO<sub>2</sub>

**Type of Current:** DCEN & DCEP

##### Approvals and Conformances:

- AWS A5.18, E70C-GS
- AWS A5.18M, E48C-GS
- ASME SFA 5.18, E70C-GS
- EN 17632-A: T3T Z Z M M 3
- EN 17632-B: T43 Z TG 0 M A
- CE Marked per CPR 305/2011

## FabCOR® Edge™ Ni1

### FLAT & HORIZONTAL

#### AWS E80C-Ni1 H4

##### Benefits:

- virtually no silicon deposits at weld bead toe lines reduces cleanup time, minimizes risk of inclusions
- excellent gap bridging capabilities minimizes burn-through, reduces part rejection
- higher deposition rates and travel speeds than solid wire increases productivity, more parts per hour
- high impact strengths at low temperatures helps resist cracking in severe applications

##### Typical Applications:

- high-strength low-alloy steels
- structural applications
- nickel-molybdenum steels
- weathering steel

##### Typical Weld Metal Chemistry:

	75% Ar/25% CO <sub>2</sub>	95% Ar/5% O <sub>2</sub>
Carbon	0.05	0.04
Manganese	1.38	1.40
Silicon	0.65	0.57
Phosphorus	0.013	0.008
Sulphur	0.011	0.009
Nickel	1.00	1.01

##### Typical Diffusible Hydrogen:

2.1 ml/100g	3.4 ml/100g
-------------	-------------

##### Typical Mechanical Properties (AW):

Tensile Strength (psi)	92,000	85,000
	(634 MPa)	(586 MPa)
Yield Strength (psi)	81,000	73,000
	(558 MPa)	(503 MPa)
Elongation % in 2" (50mm)	25%	26%

##### Typical Charpy V-notch Impact Values (AW):

Avg. at -50°F (-45°C)	44 ft.lb. (60J)	41 ft.lb. (56J)
-----------------------	-----------------	-----------------

##### 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)
1/16" (1.6 mm)	250-450	25-30	1" (25 mm)

**Shielding Gas:** 75-95% Ar/Balance CO<sub>2</sub>, 95-99% Ar/Balance O<sub>2</sub>

**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 CO<sub>2</sub>, 95% Ar/5% O<sub>2</sub>, E55C-Ni1-H4