

# Excalibur® 7018 MR®

Mild Steel, Low Hydrogen • AWS E7018 H4R

## Key Features

- ▶ Improved coating integrity
- ▶ Extreme bendability
- ▶ 60% less moisture pickup vs. competition
- ▶ Reduction of arc starting porosity
- ▶ Clear puddle and a smooth arc

## Typical Applications

- ▶ Power generation
- ▶ Pressure piping
- ▶ Petrochemical
- ▶ Mild steel
- ▶ Pressure vessels

## Conformances

AWS A5.1/A5.1M: 2004	E7018 H4R
ASME SFA-A5.1:	E7018 H4R
ABS:	3Y H5
Lloyd's Register:	3YM H5
DNV Grade:	3 YH5
GL:	3YH5
BV Grade:	3YHHH
CWB/CSA W48-06:	E4918

## Welding Positions

All, except vertical down

## DIAMETERS / PACKAGING

Diameter in (mm)	Length in (mm)	1 lb (0.5 kg) Plastic Tube 6 lb (2.7 kg) Master Carton	10 lb (4.5 kg) Easy Open Can 30 lb (13.6 kg) Master Carton	50 lb (22.7kg) Easy Open Can
3/32 (2.4)	14 (350)	ED032086	ED032588	ED028280
1/8 (3.2)	14 (350)	ED031468	ED032589	ED028281
5/32 (4.0)	14 (350)		ED032590	ED028282
3/16 (4.8)	14 (350)			ED028283
7/32 (5.6)	18 (450)			ED028917
1/4 (6.4)	18 (450)			ED028918

## MECHANICAL PROPERTIES<sup>(1)</sup>

	Yield Strength <sup>(2)</sup> MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lbf) @ -29°C (-20°F)
Requirements - AWS E7018 H4R	400 (58) min.	490 (70) min.	22 min.	27 (20) min.
Typical Results <sup>(3)</sup> - As-Welded	430-510 (62-74)	510-605 (74-88)	25-37	121-332 (89-246)

## DEPOSIT COMPOSITION<sup>(1)</sup>

	%C	%Mn	%Si	%P	%S	%Ni
Requirements - AWS E7018 H4R	0.15 max.	1.60 max.	0.75 max.	0.035 max.	0.035 max.	0.30 max.
Typical Results <sup>(3)</sup>	0.03-0.08	1.01-1.55	0.34-0.68	0.01-0.02	≤ 0.01	0.01-0.06
	%Cr	%Mo	%V	%Mn + Ni + Cr + Mo + V	Diffusible Hydrogen (mL/100g weld metal)	
Requirements - AWS E7018 H4R	0.20 max.	0.30 max.	0.08 max.	1.75 max.	4.0 max.	
Typical Results <sup>(3)</sup>	0.02-0.07	≤ 0.05	≤ 0.02	1.04-1.75	2-3	

## TYPICAL OPERATING PROCEDURES

Polarity <sup>(4)</sup>	Current (Amps)					
	3/32 in (2.4 mm)	1/8 in (3.2 mm)	5/32 in (4.0 mm)	3/16 in (4.8 mm)	7/32 in (5.6 mm)	1/4 in (6.4 mm)
DC+	70-110	90-160	130-210	180-300	250-330	300-400
AC	80-120	100-160	140-210	200-300	270-370	325-420

<sup>(1)</sup>Typical all weld metal. <sup>(2)</sup>Measured with 0.2% offset. <sup>(3)</sup>See test results disclaimer on pg. 18. <sup>(4)</sup>Preferred polarity is listed first.

\* Extreme bendability apply to 3/32, 1/8 and 5/32 in. diameters.

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**TEST RESULTS**

Test results for mechanical properties, deposit or electrode composition and diffusible hydrogen levels were obtained from a weld produced and tested according to prescribed standards, and should not be assumed to be the expected results in a particular application or weldment. Actual results will vary depending on many factors, including, but not limited to, weld procedure, plate chemistry and temperature, weldment design and fabrication methods. Users are cautioned to confirm by qualification testing, or other appropriate means, the suitability of any welding consumable and procedure before use in the intended application.

**CUSTOMER ASSISTANCE POLICY**

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