



Unibraze 9018-M (E9018-M)

DESCRIPTION:

UNIBRAZE 9018M is an outstanding welding electrode for welding higher strength steels with tensile strength in excess of 90,000 psi. The coating is specially formulated to resist moisture pick-up under conditions of high heat and humidity. The electrode offers resistance to moisture reabsorption which helps prevent hydrogen cracking and aids in elimination of starting porosity. Definitely a preferred electrode with high operator appeal.

APPLICATIONS:

UNIBRAZE 9018M is used for joining HY-90, HY-80, T-1 and other high tensile steels.

FEATURES:

- Excellent arc characteristics
- Low spatter level
- Quick and easy slag removal
- Low moisture reabsorption
- Low smoke level
- Low hydrogen, less than 4 ml/100 g

BENEFITS:

- Stable, easy to control arc
- Improves weld bead appearance, higher deposition
- Reduces clean-up time
- Prevents starting porosity
- Welder safety and comfort
- Resistant to hydrogen-induced cracking

TYPICAL WELD METAL PROPERTIES (Chem Pad):

Weld Metal Analysis		AWS Spec
Carbon (C)	0.054	0.10 max
Manganese (Mn)	1.10	0.60-1.25
Phosphorus (P)	0.012	0.03 max
Sulphur (S)	0.009	0.03 max
Silicon (Si)	0.27	0.80 max
Chromium (Cr)	0.07	0.15 max
Vanadium (V)	0.012	0.05 max
Nickel (Ni)	1.64	1.40-1.80
Molybdenum (Mo)	0.35	0.35 max

TYPICAL MECHANICAL PROPERTIES (AW):

AWS Spec		
Tensile Strength	100,000 psi (687 MPa)	90,000 psi min
Yield Strength	89,000 psi (616 MPa)	78,000-90,000 psi min
Elongation % in 2"	24% 2	4%

TYPICAL CHARPY V-NOTCH IMPACT VALUES*(AW):

AWS Spec
Avg. at -60°F 56 ft•lbs 20 ft•lbs min

DIFFUSIBLE HYDROGEN: 2.7 ml/100 gr

CONFORMANCES AND APPROVALS:

- AWS A5.5, E9018-M H4R, ASME SFA 5.5, E9018-M H4R
- ABS

Notice: The results reported are based upon testing of the product under controlled laboratory conditions in accordance with American Welding Society Standards. Actual use of the product may produce different results due to varying conditions. An example of such conditions would be electrode size, plate chemistry, environment, weldment design, fabrication methods, welding procedure and service requirements. Thus the results are not guarantees for use in the field. The manufacturer disclaims any warranty of merchantability or fitness for any particular purpose with respect to its product.



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RECOMMENDED WELDING PROCEDURES:

- GENERAL:** Electrode positive, work negative (DCEP) or AC
ARC LENGTH: Very short arc
FLAT: Angle electrode 10-15° from 90°
VERTICAL-UP: Use weaving techniques
VERTICAL-DOWN: Not recommended
OVERHEAD: Use slight weaving motion within the puddle
STORAGE: After opening, store in holding oven (250°F to 400°F) until used.
RECONDITIONING: If exposed to atmosphere for extended periods, reconditioned for one (1) hour at 600°F.

RECOMMENDED OPERATING PARAMETERS:

Diameter		Type of Power	Minimum Amps	Optimum* Amps	Maximum Amps
Inches	mm				
3/32	2.4	DCEP or AC	70	100	110
1/8	3.2	DCEP or AC	90	135	160
5/32	4.0	DCEP or AC	130	170	220
3/16	4.8	DCEP or AC	200	250	300

*For out of position welding, reduce amperages shown by 15%.

TYPICAL DEPOSITION RATES (at Optimum):

Diameter		Type of Power	Amperage	Deposition Rate Lbs/Hr.
Inches	mm			
3/32	2.4	DCEP	100	2.62
1/8	3.2	DCEP	135	3.49
5/32	4.0	DCEP	170	4.06
3/16	4.8	DCEP	250	5.86

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