



# Unibrazed 10018-D2

(E10018-D2)

## Conformances And Approvals:

AWS Spec A5.5, Class E10018-D2 H4R • ASME SFA5.5, F-4, A-11, E10018-D2 H4R

## Description:

Featuring good arc characteristics, crack resistance and ductility, **Unibrazed 10018-D2** is outstanding for welding low alloy, high-strength steels and manganese-molybdenum steels requiring tensile strengths of at least 100,000 psi. Its specially formulated coating, designed to reduce moisture pick-up and minimize hydrogen cracking and starting porosity, makes it great for conditions of high heat and humidity. **Unibrazed 10018-D2** is preferred by foundries where normalizing treatments are involved.

## Applications:

Excellent for manganese-molybdenum castings, alloy forgings, structural, and for pressure vessels in either as welded or stress relieved conditions.

## Features: Benefits:

Low hydrogen, less than 4 ml/100g	Resistant to hydrogen-induced cracking
Low moisture re-absorption	Prevents starting porosity
Good arc characteristics	Stable, easy to control arc
Good ductility	High impact resistance
Low spatter level	Improves weld bead appearance, higher deposition
Quick and easy slag removal	Reduces clean-up time
Low smoke level	Welder safety and comfort

## Typical Weld Metal Properties\* (Chem Pad):

Weld Metal Analysis		AWS Specification:
Carbon (C)	0.05	0.15 max
Manganese (Mn)	1.85	1.65 to 2.00
Phosphorus (P)	0.025	0.03 max
Nickel (Ni)	.082	0.90 max
Sulphur (S)	0.012	0.03 max
Silicon (Si)	0.45	0.80 max
Molybdenum (Mo)	0.35	0.25 to 0.45

## Typical Mechanical Properties\*:

Stressed Relieved -1 Hour at 1150°F		AWS Spec
Tensile Strength	112,000 psi	100,000 psi, min
Yield Strength	97,000 psi	87,000 psi, min
Elongation % in 2"	25%	16% min
Reduction of Area	69%	Not required

## Typical Charpy V-Notch Impact Values\* (As Welded):

Stressed Relieved -1 Hour at 1150°F		AWS Spec
Avg. at -60°F	24 ft•lbf	20 ft•lbf

\*The information contained or otherwise referenced herein is presented only as "typical" without guarantee or warranty, and Unibrazed expressly disclaims any liability incurred from any reliance thereon.

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.



**RECOMMENDED WELDING PROCEDURES:**

- GENERAL:** DCEP (electrode positive, work negative) or AC  
**ARC LENGTH:** Very short (less than half the diameter of the electrode)  
**FLAT:** Angle electrode 10-15° from 90°  
**VERTICAL-UP:** Use weaving technique  
**VERTICAL DOWN:** Not recommended  
**OVERHEAD:** Use slight whipping motion within the puddle  
**STORAGE:** After opening, store in holding oven (250°F to 300°F) until used to ensure low hydrogen weld deposit  
**RECONDITIONING:** If electrode has been exposed to the atmosphere for an extended period of time, place in 250°F oven and slowly increase temperature to 600°F; bake at 600°F for one (1) hour.

**RECOMMENDED OPERATING PARAMETERS:**

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

<b>Dia.</b>	<b>Type of Power</b>	<b>MinimumAmps</b>	<b>Optimum*Amps</b>	<b>Maximum Amps</b>
3/32	DCEP or AC	70	100	110
1/8"	DCEP or AC	90	135	160
5/32"	DCEP or AC	130	170	220
3/16"	DCEP or AC	200	250	300
1/4"	DCEP or AC	300	350	400

**TYPICAL DEPOSITION DATA (AT OPTIMUM):**

\*Allowance made for 2" stub loss included.

<b>Dia.</b>	<b>Type of Power</b>	<b>Amps</b>	<b>Deposition Rate (Lbs/hr)</b>
3/32"	DCEP	100	2.47
1/8"	DCEP	135	2.80
5/32"	DCEP	170	4.00
3/16"	DCEP	250	5.55
1/4"	DCEP	350	8.20

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