



Unibraze 55 Electrode

SPECIFICATION: AWS A5.15/ASME SFA 5.15 ENiFe-CI

UNS W82002

DESCRIPTION: Unibraze 55 (55% Ni/45%Fe core wire) welding electrodes are designed for general cast iron welding, for joining, gray, ductile, malleable, and alloy cast irons to themselves, to each other, and joining cast iron to mild steel, stainless steel, and nickel based alloys. Unibraze 55 electrodes provides carbon to promote graphite precipitation and reduce weld shrinkage stresses, which reduces cracking in the weld or heat affected zone. It is well suited for thick cast iron sections and has a high tolerance for phosphorus and other contaminants in the base metal, so welds with high strength and good ductility can be made in low grade cast irons. Unibraze 55 weld deposits are machinable.

Chemical Analysis % (all weld metal)

	C	Mn	Si	S	Fe	Ni	Cu	Al	Others
AWS/ASME	2.0 max	2.5 max	4.0 max	.03 max	Bal.	45.0- 60.0	2.5 max	1.0 max	1.0 max

Mechanical Properties (all weld metal)

Tensile Strength	58,000-84,000 psi
Yield Strength	43,000-63,000 psi
Elongation	6-18%
Hardness	165-218

Welding Instructions: Unibraze 55 electrodes can be used in flat, vertical and overhead positions. AC or DC current can be used, although DC is preferred. Preheat and post heat treatment is not required when welding ductile or gray iron, but preheat may be advantageous in pressure boundary welds, or where there are different thicknesses in the same area.

Welding Parameters (flat or downhand*)

Diameter	Amps (AC)	Amps (DC)
3/32"	50-65	40-65
1/8"	80-95	70-95
5/32"	110-135	100-135
3/16"	130-155	120-155

**for overhead welding reduce downhand current 5-15 amps; for vertical reduce downhand 10-20 amps*

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 specific purpose with respect to its products.