



# Unibraze 347Si

**CLASSIFICATIONS:** AWS A5.9/ASME SFA 5.9 Class ER347Si    UNS S34788

**DESCRIPTION:** Unibraze 347Si is a Nb stabilized austenitic stainless steel used to weld 347 and 321. The Nb improves the resistance to chromium carbide precipitation and intergranular corrosion and the increased silicon improves the usability at temperatures greater than 750°F. If the dilution by the base metal produces a low ferrite or fully austenitic weld, the crack sensitivity of the weld is somewhat higher than that of the lower silicon weld metal (ER347).

## CHEMICAL COMPOSITION OF WELD METAL (%)

|                 | C          | Cr             | Ni            | Mo         | Mn           | Si           | P          | S          | Cu         | Nb            |
|-----------------|------------|----------------|---------------|------------|--------------|--------------|------------|------------|------------|---------------|
| <b>AWS/ASME</b> | .08<br>max | 19.0 –<br>21.5 | 9.0 –<br>11.0 | .75<br>max | 1.0 –<br>2.5 | .65 –<br>1.0 | .03<br>max | .03<br>max | .75<br>max | 10xC –<br>1.0 |
| <b>TYPICAL</b>  | .03        | 19.24          | 9.65          | .15        | 1.33         | .89          | .021       | .013       | .181       | .489          |

## TYPICAL MECHANICAL PROPERTIES:

|                         |                     |
|-------------------------|---------------------|
| <b>Tensile Strength</b> | 89,900 psi (620MPa) |
| <b>Yield Strength</b>   | 61,000 psi (420MPa) |
| <b>Elongation</b>       | 39%                 |

## TYPICAL WELDING PARAMETERS:

|            | Shielding Gas  | Gas Flow     | Diameter       | Voltage | Amperage |
|------------|--|--------------|----------------|---------|----------|
| <b>MIG</b> | 98/99% Ar +2/1% O <sub>2</sub><br>97%Ar + 3% CO <sub>2</sub> | 30 to 50 CFH | .035" (.9mm)   | 26-29   | 160 /210 |
|            |  |              | .045" (1.14mm) | 28-32   | 180/250  |
|            |  |              | .062" (1.6mm)  | 29-33   | 200/280  |
| <b>TIG</b> | 100% Ar  |              | 1/16" (1.6mm)  | 14-18   | 90/130   |
|            |  |              | 3/32" (2.4mm)  | 15-20   | 120/175  |
|            |  |              | 1/8" (3.2mm)   | 15-20   | 150/220  |

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 products.