



## Unibraze 307Si

### CLASSIFICATION

- No AWS Classification Ref AWS 5.9 Class ER307 / ASME SFA 5.9 Class ER307
- ISO 14343
- W. No 1.4370
- EN12072 Grade 18.8 MN

### DESCRIPTION

Unibraze 307Si is an austenitic stainless wire with very little or no ferrite. The high silicon content provides for a smooth spatter free weld deposit. Applications include; base material plates such as armor plate, manganese steel and wear plates are welded to themselves and to other carbon and alloy steels. Unibraze 307Si is an excellent choice to weld dissimilar metals like carbon steel to stainless that requires a PWHT. The resultant weld deposit has corrosion resistance up to 1560°F. Welding high temperature furnace components, Unibraze 307Si is not subject to 885F embrittlement like ER309 or ER312. Unibraze 307Si may be a better choice as a buffer layer or “buttering alloy” under hard facing alloys.

### TYPICAL CHEMISTRY

C	Si	Cr	Ni	Mn	P	Cu	S	Mo
.10	.80	19.2	7.82	6.8	.015	.05	.010	.5 max

### TYPICAL MECHANICAL PROPERTIES

<b>TENSILE STRENGTH</b>	86,500 PSI
<b>YIELD STRENGTH</b>	51,500 PSI
<b>ELONGATION IN 2”</b>	40%
<b>IMPACTS @20C</b>	85 ft-lbs

### RECOMMENDED WELDING PARAMETERS (DCRP)

PROCESS	DIAMETER	VOLTAGE	AMPERAGE	GAS/FLUX*
<b>TIG (GTAW)</b>	1/16”	14-18	90-130	100% Ar
	3/32”	15-20	120-175	100% Ar
	1/8”	15-20	150-220	100% Ar
<b>MIG (GMAW)</b>	.035” SHORT ARC	16-26	70-160	69%Ar-30%He-1%O <sub>2</sub>
	.035” SPRAY ARC	26-31	150-230	92%Ar-2%CO <sub>2</sub> or
	.045” SPRAY ARC	28-32	180-280	98%Ar-2%O <sub>2</sub>

Note: The weld deposit has little or no ferrite. Care must be taken to avoid hot cracks. This is accomplished by low heat input and making “convex” bead profiles.