

MIDALLOY ER307Si Bare Wire

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

Midalloy ER307Si is an austenitic stainless wire with very little or no ferrite. The high silicon content in Midalloy ER307Si provides for a smooth spatter free weld deposit.

APPLICATIONS

- Base material plates such as armor plate, manganese steel and wear plates are welded to themselves and to other carbon and alloy steels.
- ER307Si 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, Midalloy ER307Si is not subject to 885F embitterment like ER309 or ER312.
- Midalloy ER307Si may be a better choice as a buffer layer or “buttering alloy” under hard facing alloys.

TYPICAL CHEMISTRY

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

TYPICAL MECHANICAL PROPERTIES

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

RECOMMENDED WELDING PARAMETERS (DCRP)

PROCESS	DIAMETER	VOLTAGE	AMPERAGE	GAS/FLUX*
TIG (GTAW)	1/16”	14-18	90-130	100% Ar
	3/32”	15-20	120-175	100% Ar
	1/8”	15-20	150-220	100% Ar
MIG (GMAW)	.035” SHORT ARC	16-26	70-160	69%Ar-30%He-1%O ₂
	.035” SPRAY ARC	26-31	150-230	92%Ar-2%CO ₂ or
	.045” SPRAY ARC	28-32	180-280	98%Ar-2%O ₂
SUB ARC (SAW)	3/32”	28-30	275-350	Record IN or
	1/8”	29-32	350-450	Record IND 24

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.

PACKAGING

- TIG 10 lb. Tube / 60 lb. carton
- MIG 30 lb. spool
- SUB-ARC 60 lb. coil

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