NITRONIC® 50W

ER209 Bare Wire

SPECIFICATION: AWS 5.9 Class ER209 / ASME SFA 5.9 Class ER209

CLASSIFICATION: ER209 / UNS S20980

DESCRIPTION / APPLICATION:

• ER209 is most often used to weld Nitronic® 30, and Nitronic® 50 base metals.

• This filler metal can also be used in welding dissimilar alloys like mild steel and the stainless steels, and also for direct overlay on mild steel for corrosion applications when used with the gas metal arc welding process.

• ER209 is a nitrogen strengthened, austenitic stainless steel exhibiting high strength and good toughness over a wide range of temperatures.

• Weldments in the as-welded condition made by using this filler metal are not subject to carbide precipitation.

• Nitrogen alloying reduces the tendency for carbon diffusion and thereby increases resistance to intergranular corrosion.

TYPICAL CHEMISTRY:

C	Cr	Ni	Mo	Mn	Si	P	S	N	Cu	V
0.05	20.5-24.0	9.5-12.0	1.5-3.0	4.0-7.0	0.90	0.03	0.03	0.10-0.30	0.75	0.10-0.30

TYPICAL MECHANICAL PROPERTIES:

TENSILE STRENGTH	101,500 PSI
YIELD STRENGTH	62,900 PSI
ELONGATION MIN.	36%
IMPACT STRENGTH	54.2 FT-LBS -4ºF

AVAILABLE PACKAGING:

MIG 25 lbs. spool 0.030" Dia, 0.035" Dia, 0.045" Dia, 0.062" Dia

TIG 36" 10lbs. tubes 0.062" Dia, 0.078" Dia, 0.093" Dia, 0.125" Dia, 0.187" Dia

TYPICAL WELDING PARAMETERS FOR ER209 (NITRONIC® 50W) WIRE:

GMAW (SHORT CIRCUITING MODE):

WIRE DIA.	AMPERAGE	VOLTAGE	WIRE SPEED IN./MIN.	JOINT THICKNESS INCH	SHIELDING GAS
0.030" 0.035"	70 - 90	18 - 24 17 - 20	150 - 200	0.050 - 0.187	90He/7.5Ar/2.5Co2 69Ar/30He/1Co2
0.045"	75-160	19-22 18-22	175-225	0.125 - 0.750	75Ar/25He 90He/7.5Ar/2.5Co2 69Ar/30He/1Co2

ALL PARAMETERS DIRECT CURRENT REVERSED POLARITY

GTAW Parameters same as 300 series stainless steels.

The gas tungsten arc, plasma arc, and electron beam processes are not suggested for direct application of this filler metal on mild steel.

NOTES:

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. Excessive weaving may also cause surface (hot short) cracks.

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