

NITRONIC® 60W

ER218 Bare Wire

SPECIFICATION: AWS 5.9 Class ER218 / ASME SFA 5.9 Class ER218

CLASSIFICATION: ER218 / UNS S21880

DESCRIPTION / APPLICATION:

- ER218 is most often used to weld Nitronic® 60 base metal. REF ASTM A276, ASTM A240, AMS 5848, ASTM 479, and ASTM 193/194.
- 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.
- ER218 is a nitrogen strengthened, high manganese-silicon 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 provide one of the best combinations of strength and ductility when subjected to carbide precipitation.
- Applications include fasteners, engine valves, shear pins, bushings, shafts and other areas where galling resistance is required.

TYPICAL CHEMISTRY:

C	Cr	Ni	Mo	Mn	Si	P	S	N	Fe	Cu
0.07	17.2	8.6	0.75 max	8.2	3.9	0.03	0.02	0.12	BAL	0.75 max

TYPICAL MECHANICAL PROPERTIES:

TENSILE STRENGTH	123,000 PSI
YIELD STRENGTH	85,000 PSI
ELONGATION MIN.	15%
IMPACT STRENGTH	50 FT-LBS 73°F, 10 FT-LBS @-320°F
AS DEPOSITED HARDNESS	25 RC

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 ER218 (NITRONIC® 60W) 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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