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PRODUCT
DATA SHEET

STAINLESS STEEL BARE WIRE DM420

Classification: **ER420** **AWS A5.9 / ASME SFA 5.9**

Description, Characteristics & Applications:

This alloy is often used for surfacing applications which call for superior resistance to abrasion. It requires preheat and inter-pass temperatures of not less than 400ºF, followed by slow cooling. Post weld heat treatment is used to temper the weld deposit.

Typical Chemical Composition (%)

C	Cr	Ni	Mo	Mn	Si	P	S	Cu
0.25 - 0.40	12.0 - 14.0	0.60 max	0.75 max	0.60 max	0.50 max	0.03 max	0.03 max	0.75 max

Deposited Chemical Composition (%) (Typical)

C	Cr	Ni	Mo	Mn	Si	P	S	Cu
0.29	13.5	25	0.10	0.45	0.48	0.014	0.008	---

Typical Mechanical Properties as Welded

Tensile Strength	Yield Strength	Elongation (%)
145,000psi	120,00psi	45%

Notes Data is typical for ER420 weld metal deposited by MIG using Argon + 2% oxygen and TIG using 100% Argon as the shielding gas. Submerged arc results depend on the type of flux used. Mechanical properties are greatly influenced by changes in welding parameters such as preheat and inter-pass temperatures.

Short Arc Welding / Spray Arc Welding

Process	Diameter	Wire Feed	Amps	Volts	Shielding Gas	CFH
SHORT ARC	.030	13-26	40-120	16-20	Argon + 2% O2	25
	.035	13-26	60-140	16-22	Argon + 2% O2	25
SPRAY ARC	.035	20-39	140-220	24-29	Argon + 2% O2	38
	.045	16-30	160-260	25-30	Argon + 2% O2	38
	1/16	10-16	230-350	27-31	Argon + 2% O2	38

TIG Welding Parameters

Diameter	Amps DCEN	Voltage	Gases
.035	60-90	12-15	Argon 100%
.045	80-110	13-16	Argon 100%
1/16	90-130	14-16	Argon 100%
3/32	120-175	15-20	Argon 100%

Note: Parameters for TIG welding are dependent upon plate thickness and welding position. Other shielding gases may be used for MIG and TIG welding; gases are selected by considering quality, cost, and operability.

Submerged Arc Welding Parameters

Wire Diameter	Amps	Voltage
3/32	250-450	28-32
1/8	300-500	29-34
5/32	400-600	30-35
3/16	500-700	30-35

Both agglomerated and fused fluxes can be used for submerged arc welding. The chemical composition of the flux affects the chemistry of the weld metal and, consequently, its corrosion resistance and mechanical properties.

The above information is to be used as a guideline and is based on the source Product Data Sheet. If additional information is needed please contact (800) 692-5930.

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