

Crown ER 80S-D2

Gas Metal Arc Welding
(GMAW) MIG Wire

High Strength Steel



"The Royal Line"

CROWN ALLOYS COMPANY

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Superior High Strength Low-Alloy MIG Wire

Typical Applications

Crown ER80S-D2 is a premium low-alloy steel solid wire that contains ½ percent molybdenum (for increased strength) and high levels of manganese and silicon to provide good wetting and good rust and scale tolerance. The higher level of deoxidizers (Mn and Si) help to control porosity when welding with CO₂.

Crown ER80S-D2 will yield radiographic quality welds with excellent bead appearance in both ordinary and difficult-to-weld carbon and low alloy steels. This alloy also exhibits excellent out-of-position welding characteristics with the short circuiting and pulsed arc MIG processes.

The combination of weld soundness and strength makes the **Crown ER80S-D2** suitable for single and multiple-pass welding of a variety of carbon and low-alloy, higher strength steels in both the as welded and postweld heat-treated conditions. Maximum mechanical properties are achieved when using a preheat and interpass temperature of 275°F minimum.

Specifications

AWS A5.28/A5.28M
ER 80S-D2

Crown ER 80S-D2	AWS Specification Minimum (100% CO ₂)	Mechanical Properties (100% CO ₂)	Mechanical Properties (75%Ar / 25%CO ₂)	Mechanical Properties (90%Ar / 10%CO ₂)
Tensile Strength	80,000 psi (min)	93,300 psi (typical)	103,000 psi (typical)	106,000 psi (typical)
Yield Strength	68,000 psi (min)	81,900 psi (typical)	88,900 psi (typical)	90,200 psi (typical)
Elongation % in 2"	17.0% (min)	19.8% (typical)	22.5% (typical)	22.5% (typical)
Charpy V-Notch @ -20°F	20 ft.lbs. (min)	27 ft.lbs. (typical)	30 ft.lbs. (typical)	36 ft.lbs. (typical)

Procedure

Short Circuit Transfer Welding - Use Direct Current Electrode Positive (DCEP)

Diameter	Shielding Gas	Welding Current (amps)	Arc Voltage (volts)	Wire Feed Speed (ipm)	Gas Flow (cfh)
.035	100% CO ₂	75 - 105	18 - 24	125 - 250	25 - 45
	75%Ar / 25%CO ₂	70 - 150	18 - 23	130 - 350	25 - 45
.045	100% CO ₂	140 - 290	18 - 29	150 - 450	25 - 45
	75%Ar / 25%CO ₂	160 - 270	20 - 27	180 - 400	25 - 45

Above parameters are for flat and horizontal fillet positions. Reduce current 10% to 15% for vertical and overhead welding.

Spray Transfer Welding - Use Direct Current Electrode Positive (DCEP)

Diameter	Shielding Gas	Welding Current (amps)	Arc Voltage (volts)	Wire Feed Speed (ipm)	Gas Flow (cfh)
.035	80% to 95% Argon / balance CO ₂	160 - 275	25 - 31	380 - 750	25 - 45
.045	80% to 95% Argon / balance CO ₂	245 - 360	26 - 33	300 - 500	25 - 45

Sizes and Part Numbers

Diameter	Part Numbers		
	2 lb (4") Spools	8" Spools	33 lb Spools
.035	MS80SD2/1F	MS80SD2/2F	MS80SD2/3F
.045	MS80SD2/1G	MS80SD2/2G	MS80SD2/3G

DISCLAIMER: The above "typical" results are based upon testing of the product under controlled laboratory conditions in accordance with AWS specifications. Actual use of the product may produce different results due to varying conditions. Conditions that could affect results would be wire diameter, plate chemistry, environment, weldment design, fabrication methods, welding procedure and service requirements. Therefore, the "typical" results are presented for informational purposes only, and while every effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, expressed or implied, regarding the products described herein or their use or applicability.



!!!! WARNING !!!!



WELDING FUMES AND GASES CAN BE DANGEROUS TO YOUR HEALTH.

BEFORE USING THIS PRODUCT THE WELDER (END-USER) MUST READ AND UNDERSTAND THE COMPLETE PRODUCT WARNING LABEL AND THE NEW 16 SECTION SAFETY DATA SHEET (SDS).

THE SAFETY DATA SHEET (SDS) WHICH OUTLINES THE POTENTIAL HEALTH HAZARDS AND SAFETY INFORMATION RELATED TO THIS PRODUCT CAN BE DOWNLOADED FROM THE SDS PORTION OF THIS WEBSITE. IT IS ALSO AVAILABLE FROM YOUR EMPLOYER AND WELDING SUPPLY DISTRIBUTOR.

DO NOT PROCEED WITH USE OF THIS PRODUCT UNTIL YOU READ AND UNDERSTAND THE SAFETY DATA SHEET (SDS) AND PRODUCT WARNING STATEMENT.

BE SURE TO CONSULT THE LATEST VERSION OF THE SDS.

SEE THE PRODUCT WARNING LABEL AND SDS FOR COMPLETE WARNING INFORMATION.

