



**!!!! 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 MATERIAL SAFETY DATA SHEET (MSDS).**

**THE MATERIAL SAFETY DATA SHEET (MSDS) WHICH OUTLINES THE POTENTIAL HEALTH HAZARDS AND SAFETY INFORMATION RELATED TO THIS PRODUCT CAN BE DOWNLOADED FROM THE MSDS 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 MATERIAL SAFETY DATA SHEET (MSDS) AND PRODUCT WARNING STATEMENT.**

**BE SURE TO CONSULT THE LATEST VERSION OF THE MSDS.**

**SEE THE PRODUCT WARNING LABEL AND MSDS FOR COMPLETE WARNING INFORMATION.**



# **CROWN ALLOYS**

## **COMPANY**

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### **Crown ER 100S-1**

**Copper Coated Low-Alloy High Strength Steel for MIG and TIG**

**Typical Applications:**

**Crown ER 100S-1** will deposit high-strength, very tough weld metal for critical applications. Originally developed for MIG (GMAW) and TIG (GTAW) welding HY-80 steel for military applications (ships, tanks and submarines), **Crown ER 100S-1** is also used for a variety of structural applications where tensile strength requirements exceed 100,000 psi (690 Mpa), and excellent toughness is required to temperatures as low as -60°F (-50°C). **Crown ER 100S-1** is also excellent for welding on ASTM A514, A543, A724 and A782 quenched and tempered plate.

**Specifications:**

AWS A 5.28  
ER 100S-1

**Mechanical Properties**

- Tensile Strength(minimum) 100,000 psi (690 MPa)
- Tensile Strength(typical) 105,000 psi (725 MPa)
- Yield Strength(minimum) 88,000 psi (610 MPa)
- Yield Strength(typical) 95,000 psi (655 MPa)
- Elongation in 2" 16%(minimum) 20%(typical)
- Charpy V-Notch(minimum) 50 ft.lbs. @ -60°F
- Charpy V-Notch(typical) 65 ft.lbs. @ -60°F

### **MIG (GMAW) Parameters**

**Short Circuit Transfer Welding. Use DC reverse polarity (DCEP)**

Diameter	Shielding Gas	Welding Current (amps)	Arc Voltage (volts)	Travel Speed (ipm)	Wire Feed Speed (ipm)	Gas Flow (cfh)
<b>.035</b>	100% CO <sub>2</sub>	100 - 140	22 - 25	10 - 22	320 - 510	35 - 50
<b>.045</b>	75%Ar / 25%CO <sub>2</sub>	120 - 150	23 - 28	11 - 21	170 - 550	35 - 50

**Spray Transfer Welding. Use DC reverse polarity (DCEP)**

<b>.035</b>	98%Ar / 2%O <sub>2</sub>	160 - 250	28 - 32	10 - 22	320 - 510	35 - 50
<b>.045</b>	75%Ar / 25%CO <sub>2</sub>	170 - 250	29 - 34	11 - 21	170 - 550	35 - 50

### **TIG (GTAW) Parameters**

**Use DC straight polarity (DCEN)**

Diameter	Shielding Gas	Welding Current (amps)	Arc Voltage (volts)	Gas Flow (cfh)
<b>3/32 x 36"</b>	100% Argon	120 - 200	10 - 18	30 - 40
<b>1/8 x 36"</b>	100% Argon	150 - 230	12 - 20	30 - 40