

# Crown ER 410

Gas Metal Arc Welding  
(GMAW) MIG Wire

Gas Tungsten Arc Welding  
(GTAW) TIG Wire

Stainless Steel Alloy



## Martensitic Stainless Steel Welding Wire

### Typical Applications

**Crown ER 410** is a martensitic stainless steel welding wire. It is often used for welding or repairing 12% chromium, air-hardenable stainless steels like types 410, 416, 420, 431 and cast C-15. **Crown ER 410** is also used for overlays on carbon steels and low-alloy steels to resist corrosion and erosion. **Crown ER 410** has a higher hardness than “300 series” stainless steels and is therefore used where resistance to high abrasion is needed. It is often used in valve seats for better galling resistance. To obtain adequate ductility, preheat and post-weld heat-treatment are required.

### Specifications

AWS A5.9/A5.9M

- Tensile Strength up to 89,500 psi
- Yield Strength up to 65,500 psi
- Elongation in 2" up to 24%
- Hardness as Welded 38 to 45 Rc
- Hardness after PWHT\* 34 Rc

\*Post Weld Heat Treatment: Hold at 1,375°F for 1 hour. Cool at a maximum rate of 200°F/hr to 600°F. Air cool to room temperature.

### Procedure

#### GMAW (MIG) Welding Parameters

##### Short Circuit Transfer Welding

Use DC reverse polarity (DCEP). Settings based on [90% Helium - 7½% Argon - 2½% CO<sub>2</sub>] shielding gas.

Wire Diameter (inches)	Welding Current (amperage)	Arc Voltage (volts)	Wire Feed Speed (ipm)	Gas Flow (cfh)
.035	75 – 160	17 – 22	120 – 250	20-25
.045	95 – 180	18 – 22	135 – 240	20-25

##### Spray Transfer Welding

Use DC reverse polarity (DCEP). Settings based on Argon and 1 to 5 percent Oxygen shielding gas.

.035	150 - 240	24 - 29	300 - 500	30
.045	200 - 300	24 - 31	250 - 400	30-35

#### GTAW (TIG) Welding Parameters

Manual Welding – DC straight polarity (DCEN) – Use a 2% thoriated tungsten (Th-2) Red Band – Use Argon Shielding Gas

Metal Thickness	Joint Type	Tungsten Diameter	Filler Rod Diameter	Arc Voltage (volts)	Welding Current (amperage)	Gas Flow (cfh)
.045"	All	.040	.045	5 – 10	30 - 50	10-15
1/16"	Butt/Corner	1/16	1/16	9 – 16	50 - 70	15
1/16"	Lap/Fillet	1/16	1/16	10 – 16	60 - 80	15
1/8"	Butt/Corner	1/16 to 3/32	3/32	12 – 18	70 - 90	15
1/8"	Lap/Fillet	1/16 to 3/32	3/32	12 – 18	90 - 115	15
3/16" & up	Butt/Corner	3/32	1/8	14 – 20	105 - 200	20
3/16" & up	Lap/Fillet	3/32	1/8	14 – 20	130 - 210	20

All suggested settings are approximate. Inverter-based welders generally require less heat input (lower amps). Welds should be tested to comply to your specifications.

### Sizes and Part Numbers

TIG Diameter	Part Numbers	
	1# Package	10# Package
.045 x 36"	ST410/TG-BP	ST410/TG
1/16 x 36"	ST410/TL-BP	ST410/TL
3/32 x 36"	ST410/TN-BP	ST410/TN
1/8 x 36"	ST410/TO-BP	ST410/TO

MIG Diameter	Part Numbers		
	2 lb (4") Spools	8" Spools	30lb Spools
.035	SS410/1F	SS410/2F	SS410/3F
.045	SS410/1G	SS410/2G	SS410/3G



**!!!! 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.**

