

# Royal 13-25 FC

Flux Cored Arc Welding  
(FCAW)

Hard-Facing, Build-Up and Joining Alloy

DCEP  
All Position



"The Royal Line"

**CROWN** ALLOYS COMPANY

30105 Stephenson Hwy, Madison Heights, MI 48071  
(248) 588-3790 (800) 521-7878 [www.crownalloys.com](http://www.crownalloys.com)

## Premium Nickel Manganese Flux-Cored Wire

### Typical Applications

**Royal 13-25 FC** is a premium quality, flux-cored tubular wire with excellent operating characteristics. It is a versatile joining, surfacing and unlimited build-up material which deposits "Hadfield" type manganese steel. Weld deposits work harden readily, retain good hardness at elevated temperatures, have moderate corrosion resistance and may be flame cut.

**Royal 13-25 FC** is a nickel-manganese-chrome build-up type alloy. It is also used to join manganese, carbon and stainless steels together as well as serving as a "cushion" for harder surfacing alloys such as the **Royal 13-29 FC**. Typically used on manganese casting repair, hammer mill hammers, breaker bars, shot blast cabinets, impact hammers, crusher jaws and rolls, shovel teeth and buckets, railroad frogs, switches and crossovers.

### Specifications

- Hardness as welded 16-22 (Rockwell C)
- Work Hardened 45-50 (Rockwell C)
- Tensile Strength 125,000 psi
- Yield Strength 80,000 psi
- Elongation 32%
- Number of passes Unlimited
- Machinability Poor – Can be flame cut
- Nonmagnetic

### Procedure

Clean weld area. Use DC reverse polarity (DCEP). An external shielding gas is not necessary, but a better weld appearance and greater weld coverage can be achieved by using 75% Argon – 25% CO<sub>2</sub>. Before repairing any manganese steel, be sure to remove the work-hardened surface of the part first especially when repairing rail components. To prevent embrittlement of manganese steels, the interpass temperatures should NOT exceed 500°F at any point that is one inch from the area being welded and avoid lingering in any one spot. Peening while still hot helps to shape the part, reduce stresses and increase surface hardness. Can be used with variable speed wire feeders and any conventional power source.

Diameter	Shielding Gas	Welding Current (amps)	Arc Voltage (volts)	Stickout (inches)
.045	Not necessary, however best bead appearance and greater weld coverage is achieved using 75%Ar - 25%CO <sub>2</sub> .	120 - 230	21 - 26	1" to 1½"
1/16		180 - 310	23 - 29	1" to 1½"

### Sizes and Part Numbers

Diameter	Part Numbers		
	2 lb (4") Spools	8" Spools	25 lb Spools
.045	RS1325/1G	RS1325/2G	RS1325/3G
1/16	RS1325/1L	RS1325/2L	RS1325/3L



**!!!! 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.**

