

# Royal 220-M

Shielded Metal Arc Welding  
(SMAW) Stick Electrode

AC/DC  
All Position

Alloy for MOST Steels



"The Royal Line"

**CROWN** ALLOYS COMPANY

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## Premium High Strength Electrode for a Wide Variety of Steels

### Typical Applications

**Royal 220-M** will produce the highest tensile and yield strength on over 50 different steels. These include dies, cast steels, tool steels, stainless steels, spring steels (including vanadium-moly spring steels), nickel clad steels, pressure vessels, dissimilar steels and many other difficult-to-weld steels. Weld deposits have superior crack-resistance even when welding jigs, molds, dies, leaf springs, earthmoving, mining, and construction equipment. **Royal 220-M** forms an extremely strong underlayment or pad prior to applying hard facing alloys. It is also used for broken stud or bolt removal (see Tech Sheet "**Royal 220-M as stud-pull**"). **Royal 220-M** weld deposits are machinable as welded and work harden during use.

### Specifications

- Tensile Strength                      Up to 120,000 PSI  
(as welded)  
Up to 180,000 PSI  
(after work hardening)
- Yield Strength                        Up to 90,000 PSI
- Elongation in 2"                      25-32%
- Hardness                                200 - 300 Brinell  
(will not respond to heat treating)

### Procedure

Use AC or DC reverse polarity. Clean weld area. Bevel heavy sections. Preheat and interpass temperatures will depend on the grade of steel, if known. Unknown grades of steel should be nominally preheated within the 300°F to 500°F range as it will help eliminate cracking on high alloy steels and tool steels. Hold a short, non-contact arc. Stringer beads are preferred to prevent overheating. Slag will be easier to remove if the part is allowed to cool first. Parts which have been preheated should be wrapped or covered to allow parts to cool as slowly as possible.

### Sizes, Amps and Part Numbers

Size	Amps	Part Numbers	
		1# Package	5# Package
1/16	25-35	RE220M/EL-BP	RE220M/EL
5/64	35-40	RE220M/EM-BP	RE220M/EM
3/32	40-80	RE220M/EN-BP	RE220M/EN
1/8	70-125	RE220M/EO-BP	RE220M/EO
5/32	100-150	RE220M/EP-BP	RE220M/EP
3/16	140-220	RE220M/EQ-BP	RE220M/EQ



**!!!! 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.**

