



## MAC TRODE E631

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### ■ **Description & Applications:**

This electrode has a basic lime rutile flux coating and is alloyed to deposit a martensitic precipitation hardening Cr-Ni-Mo-Cu weld metal. Excellent weldability combined with good slag detachability. The smaller diameters, e.g. 2.50 & 3.25 can be used in all positions. Designed to weld Firth Vickers 520 an alloy 450 (USA). The corrosion resistance of the weld is similar to 304 stainless but its yield strength is 3 times greater. The weld is slightly under alloyed compared to FV 520 to compensate for the faster cooling rates of the weld metal to castings but responds in an identical manner to PWHT as FV 520.

### ■ **Related Specification:**

There is no BS, AWS or DIN specification to cover this electrode.

### ■ **Typical All Weld Metal Chemical Analysis %:**

C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Nb	Fe
0.04	0.60	0.40	0.020	0.020	13.90	5.00	1.50	1.50	0.30	BAL

### ■ **Typical All Weld Metal Mechanical Properties:**

<b>As Welded</b>	<b>Aged</b>	<b>Typical over-aged</b>
Ultimate Tensile Strength	1203N/mm <sup>2</sup>	1040 N/mm <sup>2</sup>
0.2% Proof Stress	1110N/mm <sup>2</sup>	960 N/mm <sup>2</sup>
Elongation On 4d	12%	16%
Reduction of Area	30%	40%
Hardness HV20	410	350
Aged PWHT	850°C – 2 hr. 450°C – 4 hr.	
Over aged	750°C – 2 hr. 550°C – 4 hr.	

### ■ **Additional Data :**

PWHT is austenite destabilisation anneal then air cool to allow full martensite transformation. Followed by ageing then air cool.

### ■ **Current:**

DC (±) AC (OCV 80 amps)

### ■ **Sizes Available and Recommended Amperages:**

2.50mm	3.25mm	4.00mm	5.00mm
70-100	100-130	150-190	200-240

### ■ **Storage:**

If allowed to become damp the electrodes should be re-dried for one hour at 250°C before use.