

Eureka Welding Alloys

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TECHNICAL DATA FOR EUREKA 31 FLUX CORED WIRE

Dated: March 31, 1995

Revised: July 8, 2013

INTRODUCTION

Eureka 31 Flux Cored Wire is an AISI type H-13 hot working tool steel alloy. The wire has a smooth spray transfer arc with a thin slag system that is easily removable. The wire is formulated to develop high quality weld deposits that are porous and crack free. The wire is designed for multi-pass welding which greatly increases productivity.

METALLURGICAL CHARACTERISTICS

Eureka 31 Flux Cored Wire is an AISI type H-13 hot working tool steel alloy that is extremely tough. This alloy displays excellent retention of hardness at elevated temperatures yielding excellent abrasion resistance. It also displays good impact resistance imparting good notch toughness and has moderate wear resistance. **Eureka 31** has an as welded hardness of 49 - 54 HRC.

RECOMMENDED APPLICATIONS

Eureka 31 is an excellent choice for press forging type dies where high heat and abrasion are encountered. It is highly resistant to heat checking when subjected to alternating heating and cooling cycles. Several high volume forgings that demand the ultimate in weld metal mechanical properties for the forging industry are, connecting rods, hand tools, sleeve yoke, and cam shafts. These applications are relatively shallow and for the most part small. Other forged products would include earth moving equipment and farm implements such as pipe wrenches, crankshafts, hooks, and cam rings.

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WELDING PARAMETERS

| TYPE | SIZE | AMPERAGE | VOLTS |
|------------------|--------------|-----------|---------|
| Metal Cored Wire | .045" 1.2 mm | 125 – 225 | 16 – 28 |
| Metal Cored Wire | 1/16" 1.6mm | 180 – 400 | 25 – 33 |
| Flux Cored Wire | 1/16" 1.6mm | 180 – 400 | 25 – 33 |
| Flux Cored Wire | 3/32" 2.4mm | 350 – 600 | 27 – 35 |
| Flux Cored Wire | 1/8" 3.2mm | 500 – 900 | 30 – 38 |

Use DC Current with a Stick Out of
1/4" - 1 1/4" (6mm-32mm)

RECOMMENDED SHIELDING GASES

75% Argon, 25% Co2

90% Argon, 10% Co2

92% Argon, 8% Co2

100% CO2 may produce lower quality arc conditions

GAS FLOW RATE

.045" 1.2 mm 20-50 CFH

1/16" 1.6mm 30-60 CFH

3/32" 2.4mm 80-120 CFH

1/8" 3.2mm 80-120 CFH

TYPICAL CHEMISTRY

| | | | | | |
|-----|-----|-----|-----|-----|-----|
| C | Mn | Si | Cr | Mo | V |
| .35 | .80 | .80 | 5.0 | 1.5 | 1.0 |

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PHYSICAL AND OR MECHANICAL PROPERTIES

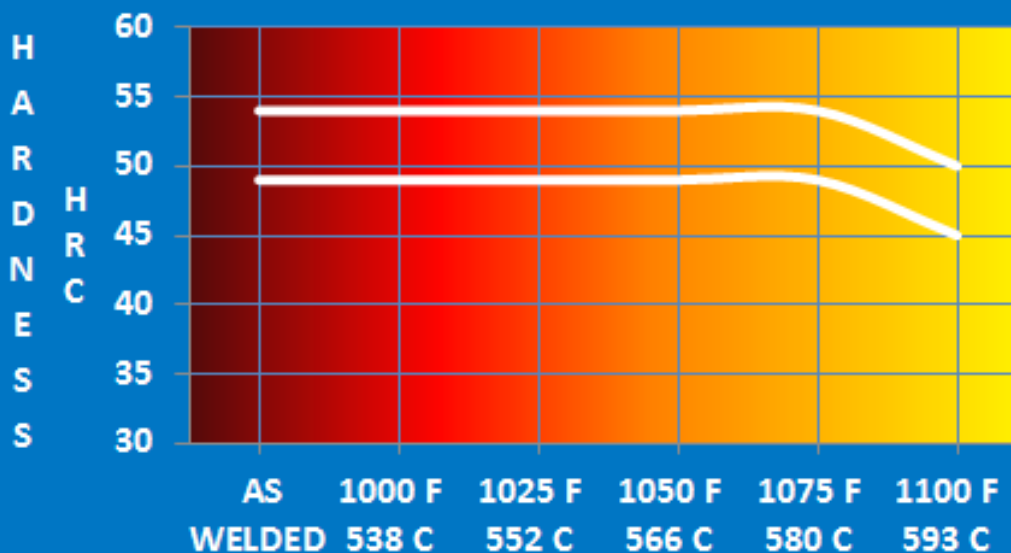
AS WELDED HARDNESS

49-54 HRC

TEMPERING DATA

The tempering data is to be used as a guide. Your results may differ due to the many variables in the utilization of this product.

SINGLE TEMPER CURVE EUREKA 31



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DOUBLE TEMPER CURVE EUREKA 31

