

Eureka Welding Alloys

2000 E. Avis Drive

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TECHNICAL DATA FOR EUREKA ROBOWELD 450 METAL CORED WIRE

Dated: January 27, 2015

INTRODUCTION

Eureka RoboWeld 450 Metal Cored Wire was specifically developed for robotic welding of forging dies of most any designs. The RoboWeld wires when used with the **NEWELD** robotic process do not require peening of weld metal due to lower welding stresses. This is accomplished through a combination of five factors;

- 1) High quality wires utilizing the very best raw materials available.
- 2) The programed pulse arc welding energy has lower penetration, dilution, and heat input.
- 3) The programed robot maintains precise torch angles, stick out length and travel speeds.
- 4) Programed arc start up and arc ending amperages and voltages are ramped up and down.
- 5) Only a few layers of weld metal are required to achieve nearly pure weld metal.

Eureka RoboWeld 450 Metal Cored Wire is a martensitic stainless steel alloy. The wire has a smooth spray transfer arc with nearly no slag to contend with. The wire is formulated to develop high quality weld deposits that are defect free. The wire is designed for multi-pass welding which greatly increases productivity.

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METALLURGICAL CHARACTERISTICS

Eureka RoboWeld 450 Metal Cored Wire is a martensitic stainless steel Chromium, Molybdenum and Nickel hot working alloy. It has excellent crack resistance, moderate wear resistance and displays reasonable impact resistance. The as welded hardness is 44-48 HRC.

RECOMMENDED APPLICATIONS

Eureka RoboWeld 450 Metal Cored Wire is used for the welding of forging die impressions in both hammer and press forging dies requiring strength and toughness. In many cases it is used in the lower half of impressions which are then overlaid with a higher wear resistant alloy. Typical applications are crankshaft dies, connecting rods and yokes.

WELDING PARAMETERS

TYPE	SIZE	AMPERAGE	VOLTS
Metal Cored Wire	1/16" 1.6mm	180 – 350	24 – 31

**Use DC Current with a Stick Out of
1/2"-3/4" (12mm-19mm)**

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RECOMMENDED SHIELDING GASES

90% Argon, 10% Co2

92% Argon, 8% Co2

GAS FLOW RATE

1/16" 1.6mm 40-80 CFH

TYPICAL CHEMISTRY

C	Mn	Si	Cr	Mo	Ni
.15	.60	.80	10.5	2.0	1.8

PHYSICAL AND OR MECHANICAL PROPERTIES

TENSILE STRENGTH 165,500 psi

YIELD STRENGTH 129,500 psi

ELONGATION 9.6%

REDUCTION IN AREA 30.5%

CHARPY "V" NOTCH 20.7 Ft/lbs.

AS WELDED HARDNESS

44-49 HRC

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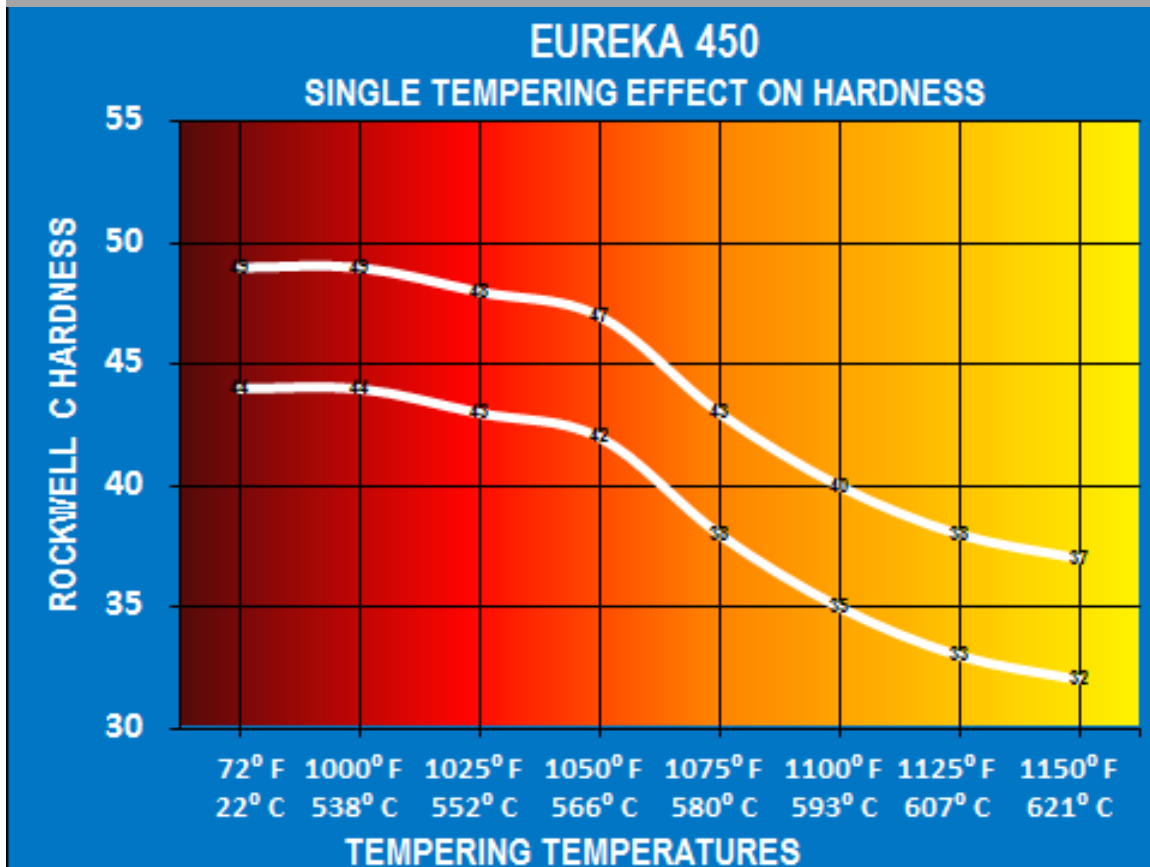
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TEMPERING DATA

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.



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