

High-Alloy Electrode for Welding Dissimilar, Unknown and Problem Steels

Xuper[®] 680 CGS



WELDING

- Repairs to most high alloy steel components
- Maximum repair reliability
- Extended part service life
- Reduced inventory carrying costs
- Improved silicon content for grain size control and weldability

**Castolin Eutectic[®]**
Eutectic Castolin

DESCRIPTION:

Many carbon steel, and most high alloy steels, are typically heat-treated to maximize their mechanical properties. With the number and compositional range of steels in use and on the rise in every industry, the need to use a “universal” repair alloy is often the only practical solution for critical, timely repairs. The answer: Xuper 680 CGS! A time tested universal electrode for ALL critical Maintenance & Repair applications.

Xuper 680 CGS has a unique formula that enhances all-position weldability while maintaining superior crack-resistance even when diluted. Its controlled grain size helps maximize in-service mechanical properties while smooth, even deposits reduce time spent cleaning and grinding.

TYPICAL APPLICATIONS:

The combined application range is broad: From jigs, molds, dies, leaf springs, high-strength repairs to earthmoving, mining, and constructional equipment...chassis, under-carriage repairs, composite die fabrications, manganese steel components.

TECHNICAL DATA:

Recommended Polarity: DCEP (+) or AC (~)
Typical Tensile Strength: 120,000 psi
Typical Yield Strength: 79,000 psi
Typical Elongation (1=5d) min.: 25%
Hardness as-deposited (Rb): 90
Maximum Temperature: 800°F steady-state

Recommended Amperages

Diameters:	3/32	1/8	5/32	3/16
Amperage:	55-70	75-95	90-115	135-190

Note: for optimum results use the lowest amperage practical

WELDING PROCEDURE:

Preparation: Clean weld area of scale and/or oxide. Angle prepping normally involves close-butts and infrequently bevel preparations. If needed, a 60° bevel is acceptable. Preheat and inter-pass temperatures will depend on the grade of steel, if known. Unknown grades should be nominally preheated within a 400-500°F range. For steels of known composition check the preheat/Inter-pass reference in the Reference Section.

Technique: A short, non-contact technique is recommended for both fillet and butt-welding. Use a slightly longer arc-length for bead-on-plate welding. Deposit stringer beads or 2x to 3x weave beads. Do not weave more than three times the electrode diameter otherwise slag interference will be encountered.

Post-welding: Parts which have been preheated should be wrapped or covered with heat-retardant material to slow cool parts...critical for Tools & Dies.



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