



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

Xuper®

680 CGS



- 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

Xuper® 680 CGS

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.

TECHNICAL DATA

Typical Values

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

DIAMETER	1/16" (1.6mm)	5/64" (2.0mm)	3/32" (2.4mm)
AMPERAGE	25-40	35-50	55-70

DIAMETER	1/8" (3.2mm)	5/32" (4.0mm)	3/16" (4.8mm)
AMPERAGE	75-95	90-115	135-190

PROCEDURE FOR USE

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.

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.

TYPICAL APPLICATIONS

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



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