



Specially Formulated Electrode for
Molybdenum-Bearing Tool & Die Steels

ToolTectic®

6NHSS



- For the repair welding of M-class Tool Steels
- Good for surface enhancement of low-alloy steels
- Exceptional property retention at high temperatures

ToolTectic® 6NHSS

ToolTectic 6NHSS is a coated electrode modified to weld M-series tool steels such as M1, M2, & M10 and to surface enhance lower alloy tool & die steels during fabrication. Weld deposits are tolerant of high heat and maintain excellent hot hardness properties.

Weld deposits resist softening at elevated temperatures, have excellent resistance to tool contact wear, and have superior application toughness.

TECHNICAL DATA

Typical Values

Hardness:	62 - 64 HRC as-deposited
Hot Hardness:	45 - 50 HRC up to 1200°F
Annealing Temperature:	1650°F (899°C)
Hardening Temperature:	2225 - 2250°F (1218 - 1232°C) 1000 - 1050°F (537 - 565°C)
Preheat Temperature:	950 - 1000°F (510 - 537°C) when welding M1, M2 & M10 grades. For general applications a preheat of 400°F (204°C) is suitable
Inter-pass Temperature:	950 - 1100°F (510 - 593°C) when welding M-grade steels. For general applications use a ± 25°F interpass range.
Current & Polarity:	DCEP (+) and AC

SUGGESTED WELDING PARAMETERS:

Diameter	Amperage
3/32" (2.4mm)	55 - 70
1/8" (3.2mm)	85 - 125
5/32" (4.0mm)	115 - 155

PROCEDURE FOR USE

PREPARATION: Clean weld area of scale and/or oxide and degrease using VOC-free cleaners. Dye penetrant test to locate cracks. Prepare cracks by grinding so as to generate a "U" profile. For enclosed cracks without an end point continue the preparation some 1" (25mm) ahead of the crack. Preheat slowly according to the grade and heat treated condition of the tool or die.

TECHNIQUE: Maintain a short arc length and do not use a contact technique. Use stringer beads and back whip craters to reduce crater-cracking tendencies. Check the inter-pass temperature frequently.

POST-WELDING: Parts should be covered with a heat-retardant blanket or placed in a pre-heated furnace for controlled cool-down.

TYPICAL APPLICATIONS

For M-series tool steels, particularly grade M2. This grade, and the other grades, are noted for use in blanking, piercing, forming, and deep cutting operations. Weld deposits resist softening at elevated temperatures, have excellent resistance to tool contact wear, and have superior application toughness.

Observe normal welding practices, respiratory protection and proper air flow pattern advised. For general welding practices, see AWS publications Z49.1 "Safety in Welding and Cutting and Allied Process". Welding is a completely safe process when performed in accordance with proper safety measures. Become familiar with local safety regulations before beginning welding operations. DO NOT operate welding equipment or use welding materials before you have thoroughly read the proper instruction manual(s). Please refer to the Eutectic internet site for Material Safety Data Sheet (MSDS) information. DISREGARDING THESE INSTRUCTIONS, AND/OR THE INSTRUCTIONS OF WELDING EQUIPMENT OR MATERIAL MANUALS, MAY BE HAZARDOUS TO YOUR HEALTH.



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