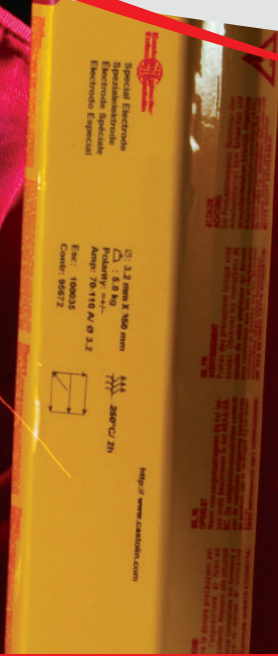




Electrode for Repair and Joining
of Air-Hardening Tools & Dies

ToolTectic®

6SH



- For welding Air-Hardening A-Series Tool Steels
- Maintains properties in-service
- Heat-Treatable
- Formulated for surface enhancement of low alloys

ToolTectic® 6SH

ToolTectic 6SH is a coated electrode formulated to weld A-series tool steels and particularly Grade A-2. This grade of electrodes is an air-hardening steel with superior nondeforming and abrasion resistant properties.

Weld deposits show minimum heat crazing and are tolerant of high and in-service quenching operations. Deposits maintain shape and tolerance dimensions during service.

TECHNICAL DATA

Typical Values	
Hardness:	50 - 55 HRC as-deposited
Annealing Temperature:	1550 - 1600°F (843 - 871°C)
Hardening Temperature:	Heat slowly to 1300 - 1400°F (704 - 760°C)
Tempering Temperature:	500 - 1000°F (260 - 538°C) depending on the hardness required.
Preheat Temperature:	300 - 400°F (149 - 204°C)
Inter-pass Temperature:	±50°F of Preheat range for general applications.
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 & 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

ToolTectic 6SH is similar to a Grade A-2, is also known as a cold work tool steel, that is most frequently used to repair worn drawing dies, coining dies, blanking and shaping dies, including many cold forming dies. It is also used in the fabrication of composite air hardening steel dies, gripper dies and hobbing dies.

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 begin-ning 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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