

PRODUCT SALES BULLETIN

SUBJECT: SPECIFICATION FOR WELDING CARBON AND ALLOY STEEL

1. SCOPE

This specification establishes the requirements for welding carbon and alloy steel.

2. REQUIREMENTS

There are 5 types of welding processes/material types covered by this specification:

2.1 Carbon Steel to Carbon Steel

Process: Gas metal arc welding (GMAW)
 Electrode Type: ER70S-6
 Approved Brand Names: Lincoln L-56
 Any wire meeting ER70S-6 requirements

2.2 Carbon Steel or Alloy to Alloy

Process: Gas shielded flux core arc welding
 Electrode Type: E71T-1
 Min. Charpy Impact: 70 ft./lb. @ 0°F.
 Approved Brand Names: Lincoln 71M
 Hobart Formula XL550
 Alloy Rods Dual Shield II 71 Ultra

2.3 Tack Welding / Out of Position Welding / Field Welding of Alloy Steel

Process: Shielded metal arc welding (SMAW)
 Electrode Type: E7018
 Min. Charpy Impact: 70 ft./lb. @ 0°F.
 Approved Brand Names: Lincoln Jetweld LH-70
 Any stick electrode meeting E7018 low hydrogen requirements.

2.4 Tool & Die Maintenance / High Tensile Strength Applications

Process: Shielded metal arc welding (SMAW)
 Electrode Type: Specialty
 Approved Brand Names: Weld Mold Polytensile 8800
 Eutectic 680 CGS
 Certanium 707

2.5 Tool & Die Maintenance / High Tensile Strength Applications Requiring Heat Treat

Process: Shielded metal arc welding (SMAW)
 Electrode Type: Specialty
 Approved Brand Names: Weld Mold Polytensile 888
 Eureka 350

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3. ADDITIONAL REQUIREMENTS PERTAINING TO ALLOY AND/OR LOW HYDROGEN ELECTRODES

- 3.1 Clean the base metal of all slag, paint, grease, oil, moisture or other foreign materials.
- 3.2 All electrodes having low hydrogen coverings shall be purchased, stored and used per the manufacturer's specifications.
- 3.3 After the opening of hermetically sealed containers or removal from drying or storage ovens, electrode exposure to the atmosphere shall not exceed four hours.
- 3.4 Welding parameters are to be set as high as practical to maximize heat input and penetration in the weld area.
- 3.5 Alloy steel must be at 60° F. or higher prior to welding. Room temperature must be no lower than 60° F.
- 3.6 When using flux core wire, a double pass must be deposited. On end yokes the initial pass is not to deposit more than 1/2 of the final fillet size specified.
- 3.7 On initial pass welds, de-slag the weld immediately and continue with second pass as soon as possible. Leave weld slag on final welds as long as practical or until the weld has cooled (to slow the cooling rate of the weld area).
- 3.8 Butt welding of alloy steel is not acceptable. Splice plates or full penetration welds must be used. Full penetration welds require a double pass.

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