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Lincoln Electric ED010153

Lincoln Electric 6013 Stick Electrode User Manual

Model: ED010153

1. INTRODUCTION

This manual provides essential information for the safe and effective use of Lincoln Electric 6013 Stick Electrodes. The E6013 electrode is a general-purpose, all-position electrode designed for welding mild steel. It offers a smooth, stable arc, low spatter, and easy slag removal, making it suitable for a wide range of applications, including light fabrication, repair work, and sheet metal welding.

Please read this manual thoroughly before using the product to ensure proper operation and safety.

2. SAFETY INFORMATION

Welding operations involve inherent risks. Adherence to safety precautions is paramount to prevent injury or property damage. Always consult and follow all applicable national and local safety standards, including those from OSHA, ANSI, and AWS.

- **Electric Shock Can Kill:** Ensure proper grounding of welding equipment. Do not touch live electrical parts. Wear dry welding gloves and protective clothing.
- **Fumes and Gases Can Be Dangerous:** Keep your head out of the fumes. Use adequate ventilation or exhaust at the arc to keep fumes and gases away from your breathing zone.
- **Arc Rays Can Burn Eyes and Skin:** Wear a welding helmet with a proper shade filter. Protect other personnel in the area with welding screens or curtains. Wear appropriate protective clothing.
- **Fire and Explosion Hazard:** Remove all flammable materials from the welding area. Have a fire extinguisher readily available. Do not weld on containers that have held combustibles.
- **Hot Parts Can Cause Severe Burns:** Allow welded materials to cool before handling. Use insulated gloves and tongs.
- **Noise Can Damage Hearing:** Wear ear protection if noise levels are high.
- **Read and Understand:** Always read and understand the safety data sheets (SDS) for electrodes and any materials being welded.

For detailed safety information, refer to AWS Z49.1, "Safety in Welding, Cutting, and Allied Processes."

3. PRODUCT SPECIFICATIONS

Electrode Details

AWS Classification: E6013

Material: Mild Steel

Diameter: 1/8 inch (3.2 mm)

Length: 14 inches (356 mm)

Tensile Strength: 60,000 psi (minimum)

Container Size: 50 lb. (22.7 kg)

Model Number: ED010153

Typical Operating Parameters

Parameter	Value
Current Type	AC or DCEN (DC- Straight Polarity)
Amperage Range (1/8")	80 - 130 Amps
Welding Positions	All Positions



Figure 1: Lincoln Electric 6013 Stick Electrodes in their original 50 lb. metal container. The container provides protection and storage for the electrodes.

4. SETUP

Proper setup is crucial for safe and effective welding.

- 1. Work Area Preparation:** Clear the welding area of all flammable materials. Ensure adequate ventilation.
- 2. Personal Protective Equipment (PPE):** Don appropriate PPE, including a welding helmet, flame-resistant clothing, welding gloves, safety glasses, and ear protection.
- 3. Welding Machine Setup:**
 - Connect the work clamp (ground) securely to the workpiece or welding table, ensuring good electrical contact.
 - Insert the 6013 electrode into the electrode holder.
 - Set the welding machine to the appropriate current type (AC or DCEN) and amperage range (refer to Section 3 for typical values).
- 4. Workpiece Preparation:** Clean the workpiece thoroughly to remove rust, paint, oil, or other contaminants that can affect weld quality.



Figure 2: A stack of Lincoln Electric 6013 Stick Electrodes, showing their uniform coating and length. These electrodes are ready for insertion into an electrode holder.

5. OPERATING INSTRUCTIONS

Follow these steps for effective welding with Lincoln Electric 6013 electrodes:

1. Striking the Arc:

- Lower your welding helmet.
- Gently scratch or tap the electrode tip against the workpiece to initiate the arc.
- Once the arc is established, quickly lift the electrode slightly to maintain a short arc length (approximately the diameter of the electrode).

2. Maintaining the Arc:

- Maintain a consistent arc length. Too long an arc can lead to porosity and instability; too short can cause the electrode to stick.
- Keep a consistent travel speed. Too fast a speed results in a narrow, ropey bead; too slow can cause excessive buildup and overheating.
- Maintain a consistent electrode angle, typically 10-20 degrees from vertical in the direction of

travel.

3. Welding Technique:

- E6013 electrodes are known for their smooth arc and easy slag removal. A slight weaving motion can be used to control bead width and penetration.
- For thin materials, a "whipping" technique (moving the arc forward and then back into the puddle) can help control heat input.

4. Finishing the Weld:

- When reaching the end of a weld, slowly withdraw the electrode to fill the crater and prevent crater cracking.
- Allow the weld and slag to cool before chipping off the slag.



Figure 3: A close-up of the electrode tips, showing the flux coating and core wire. The flux coating plays a critical role in arc stability and weld quality.

6. MAINTENANCE AND STORAGE

Proper handling and storage of electrodes ensure optimal performance and longevity.

- **Storage:** Store electrodes in a dry, cool environment. High humidity can cause moisture absorption in the flux coating, leading to welding defects like porosity.
- **Original Container:** Keep electrodes in their original sealed container until ready for use to protect them from moisture and physical damage.
- **Re-drying:** While E6013 electrodes are less sensitive to moisture than low-hydrogen electrodes, if they become damp, consult Lincoln Electric's recommendations for re-drying procedures, if any, to restore performance.
- **Handling:** Handle electrodes carefully to avoid chipping or damaging the flux coating.

7. TROUBLESHOOTING

Common issues encountered during stick welding with E6013 electrodes and their potential solutions:

Problem	Possible Cause	Solution
Porosity (holes in weld)	Excessive arc length, contaminated base metal, damp electrodes, insufficient shielding gas (if applicable, though less common for stick).	Shorten arc length, clean base metal, ensure electrodes are dry, check for drafts.
Excessive Spatter	Amperage too high, arc length too long, incorrect polarity.	Reduce amperage, shorten arc length, verify DCEN polarity for E6013.
Poor Penetration	Amperage too low, travel speed too fast, arc length too long.	Increase amperage, decrease travel speed, shorten arc length.
Arc Instability / Sticking	Amperage too low, damp electrodes, poor ground connection.	Increase amperage, ensure electrodes are dry, check and clean ground connection.
Difficult Slag Removal	Amperage too low, incorrect travel speed.	Adjust amperage and travel speed for a proper bead profile. Allow weld to cool sufficiently.

8. SUPPORT AND CONTACT INFORMATION

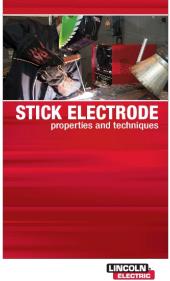
For further assistance, technical support, or inquiries regarding Lincoln Electric products, please contact the manufacturer directly.

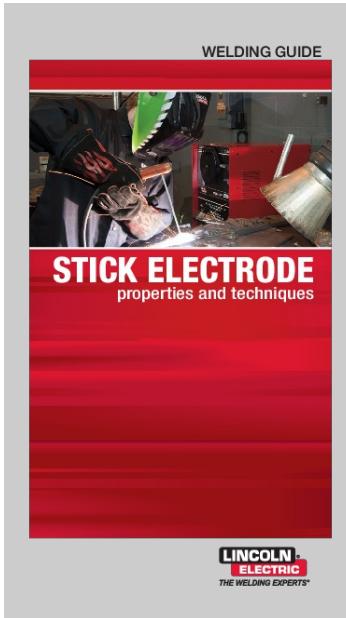
Manufacturer: Lincoln Electric

Website: www.lincolnelectric.com

Customer Service: Refer to the official Lincoln Electric website for current contact details, including phone numbers and support forms.

Lincoln Electric is committed to providing high-quality welding solutions and support to its customers.

	<p>Lincoln Electric Stick Electrode Welding Guide: Properties and Techniques</p> <p>Comprehensive guide to Lincoln Electric stick electrodes, covering properties, techniques, and safety for various welding applications. Learn about out-of-position welding, high deposition welding, and electrode selection.</p>
	<p>Lincoln Electric Ranger 260MPX & 330MPX Operator's Manual</p> <p>This operator's manual provides comprehensive instructions for the Lincoln Electric Ranger 260MPX and 330MPX welding machines. It covers installation, operation, safety precautions, technical specifications, and maintenance. Learn about welding processes, auxiliary power, engine details, and troubleshooting for these industrial and professional-grade arc welding equipment.</p>
	<p>Lincoln Electric Welding Consumables Catalog Comprehensive Product Guide</p> <p>Comprehensive catalog of Lincoln Electric welding consumables, including electrodes, MIG/TIG wire, flux-cored, and submerged arc products. Find detailed listings for industrial and professional welding applications.</p>
	<p>Lincoln Electric TIG 200 SQUARE WAVE Quick Reference Guide</p> <p>A quick reference guide for the Lincoln Electric TIG 200 SQUARE WAVE welding machine, detailing digital display menus, amperage settings for TIG and Stick welding, tungsten recommendations, and welding techniques. Includes material compatibility and setup information.</p>
	<p>Lincoln Electric REDI-MIG 455 Remote Semi Automatic Arc Welding Machine Operating Manual</p> <p>Comprehensive operating manual for the Lincoln Electric REDI-MIG 455 Remote Semi Automatic Arc Welding Machine. Covers installation, operation, maintenance, safety precautions, troubleshooting, and parts lists. Features include digital meters, spot timer, and remote wire feeding capabilities.</p>
	<p>Lincoln Electric HyperFill™ Process Guide: Higher Deposition Welding</p> <p>A comprehensive process guide for Lincoln Electric's HyperFill™ twin-wire GMAW-P welding technology, detailing setup, applications, optimization, and troubleshooting for increased deposition rates and improved arc stability.</p>

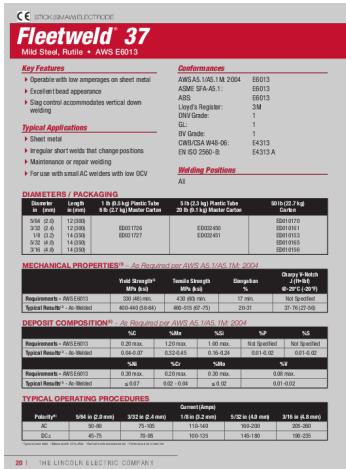


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Lincoln Electric Automotive Tools Welding Guide automotive tools brakes suspension engine transmission jacks auto body charging tires pullers The Company ed010153 welding guide images card lincoln electric items |||

WELDING GUIDE STICK ELECTRODE properties and techniques Customer Assistance Policy The business of The Lincoln Electric Company is manufacturing and selling high quality welding equipment, consumables, and cutting equipment. Our challenge is to meet the needs of our customers and to exceed their e...

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Fleetweld 37 c21019 smaw stick electrode mild steel rutile The Lincoln Electric Company

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STICK SMAW ELECTRODE Fleetweld 37 Mild Steel, Rutile AWS E6013 Key

Features Operable with low a ... astic Tube 20 lb 9.1 kg Master Carton ED032450 ED032451 50 lb 22.7 kg Carton ED010170 ED010161 **ED010153** ED010165 ED010156 MECHANICAL PROPERTIES 1 As Required per AWS A5.1/A5.1M: 2004 Requirements - AWS E6013 0.29 min. 1.20 max. 1.97 min. 0.10 min. Not Specified Not Specified Typical Result* - As Required 0.29 min. 1.20 max. 1.96 min. 0.10 min. Not Specified Not Specified Requirements - AWS E6013 0.30 min. 0.25 max. 0.30 max. 0.09 max. Not Specified Not Specified

TYPICAL OPERATING PROCEDURES

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DC 40-75 70-90 100-125

AC 100-125 100-125 100-125

Current (amps)

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3/12 in (2.4 mm)

5/32 in (4.0 mm)

3/16 in (4.8 mm)

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[\[pdf\]](#) Documentation Accessories

Education Resource Purchasing Portal mc1448 mc14 48 education resource purchasing portal welding program supplies educational resources skilled trades personnel training curriculum safety materials videos documentation participate The Lincoln Electric Company lincolnelectric assets US EN literature Lincoln Electric Supports Education Education Resource Purchasing Portal The Lincoln Electric Ed ... P ED028152 Fleetweld 35 ED028153 Fleetweld 35 ED028154 Fleetweld 35 ED010161 Fleetweld 37 **ED010153** Fleetweld 37 ED010165 Fleetweld 37 ED028280 Excalibur 7018 MR ED028281 Excalibur 701...
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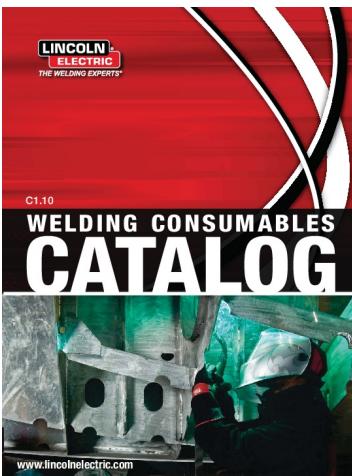
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Premium Alloy Welding Solutions Lincoln Electric is your single source for alloy welding consumables ... products, RSP products have no other agencies approvals.

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2011 Consumables Product Catalog Lincoln Electric consumables product catalog c110 c1 10 The Company C110 lincolnelectric 80 assets en US Products literature

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May 22, 2013

To: Lincoln Electric Distributors, OEMs and End User Customers

Subject: Conflict Minerals Disclosure

On August 22, 2011 the U.S. Securities and Exchange Commission ("SEC") adopted final rules which implement Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act. These rules impose certain reporting and disclosure requirements on publicly-held companies in the U.S. In general, these requirements require companies to disclose the source of certain minerals used in their products.

1. Determine whether certain minerals, including tin, tungsten, tantalum and gold ("Conflict Minerals") are contained in and present directly or indirectly to the products. The Conflict Minerals come from the Democratic Republic of the Congo or one of the surrounding countries: Rwanda, Burundi, Uganda, and the Central African Republic, or are derived from conflict minerals from an adjacent country: Congo (Brazzaville), Angola, or Zambia ("DRC Countries") or from recycled or scrap sources; and 2. Report the source of the Conflict Minerals used in the products. The information must be disclosed in the SEC's Form 10-K and Form 10-Q reports and in the company's annual reports.

Lincoln Electric is aware that many of its customers will need information regarding the Conflict Mineral status of Lincoln products which become a part of the Customer's product. The purpose of this letter is to explain the steps Lincoln Electric is taking to determine the Conflict Mineral status of its products.

Conflict Minerals Disclosure: Lincoln has preliminarily determined the Conflict Mineral status of its Arc welding consumable products ("Consumables") by reviewing the specifications and NDEs for each product. Lincoln has determined that the Consumables do not contain Conflict Minerals.

Conflict Minerals: There are a very few consumables which contain Conflict Minerals, for which a country of origin is not available. This information is provided in the attached Consumable Conflict Mineral Status Chart. Updates to the chart will be available on the Lincoln Electric website.

Conflict Minerals Reporting: For customers that do not incorporate the Lincoln Electric Consumable Products into their product, it is not necessary to obtain the Conflict Minerals status of the Consumable Products. Most customers fall into this category. To clarify this point, please refer to the SEC's final rules published in the final rule of Page 6051 which states:

"... we continue to believe that a conflict mineral is a physical tool or machine used to produce a product does not fall under the "necessary to the product" language in the conflict minerals disclosure rules. A conflict mineral that is used as a tool or machine is captured by the Conflict Minerals Statutory Provision because

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Conflict Minerals Disclosure The Lincoln Electric Company conflict minerals disclosure leco us lincolnelectric en company Documents

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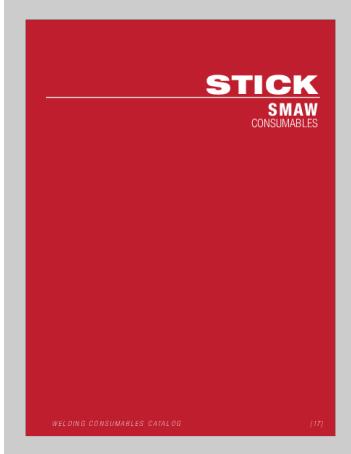
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