

## 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

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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
<b>Porosity (holes in weld)</b>	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.
<b>Excessive Spatter</b>	Amperage too high, arc length too long, incorrect polarity.	Reduce amperage, shorten arc length, verify DCEN polarity for E6013.
<b>Poor Penetration</b>	Amperage too low, travel speed too fast, arc length too long.	Increase amperage, decrease travel speed, shorten arc length.
<b>Arc Instability / Sticking</b>	Amperage too low, damp electrodes, poor ground connection.	Increase amperage, ensure electrodes are dry, check and clean ground connection.
<b>Difficult Slag Removal</b>	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

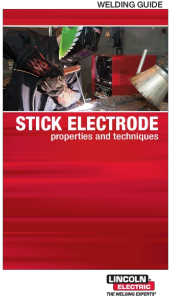





For further assistance, technical support, or inquiries regarding Lincoln Electric products, please contact the manufacturer directly.

**Manufacturer:** Lincoln Electric

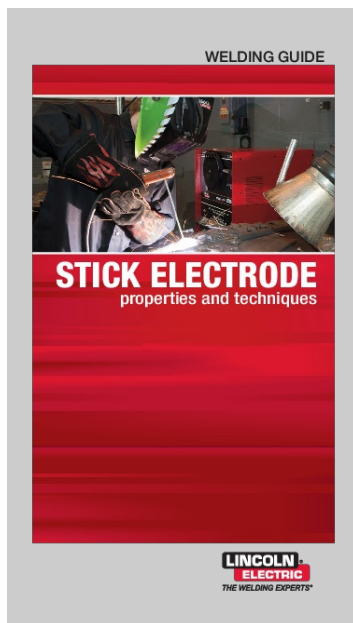
**Website:** [www.lincolnelectric.com](http://www.lincolnelectric.com)

**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><a href="#">Lincoln Electric Stick Electrode Welding Guide: Properties and Techniques</a></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><a href="#">Lincoln Electric Ranger 260MPX &amp; 330MPX Operator's Manual</a></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><a href="#">Lincoln Electric Welding Consumables Catalog   Comprehensive Product Guide</a></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><a href="#">Lincoln Electric TIG 200 SQUARE WAVE Quick Reference Guide</a></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><a href="#">Lincoln Electric REDI-MIG 455 Remote Semi Automatic Arc Welding Machine Operating Manual</a></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><a href="#">Lincoln Electric HyperFill™ Process Guide: Higher Deposition Welding</a></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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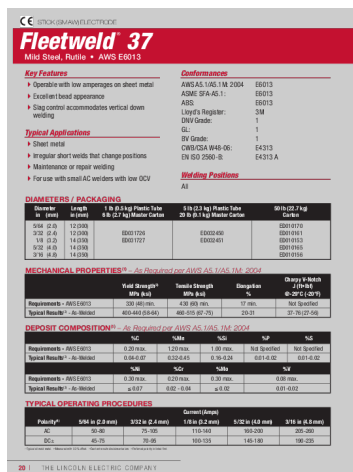
WELDING GUIDE STICK ELECTRODE properties and techniques Customer

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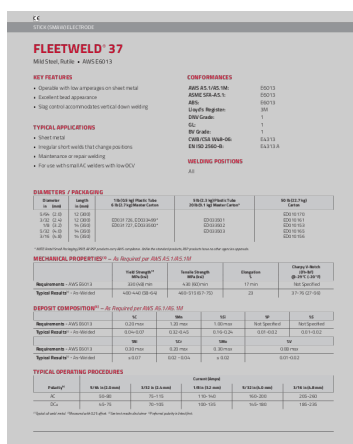
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c21019 smaw stick electrode mild steel rutile Fleetweld 37 The Lincoln Electric Company FLEETWELD®

CUSTOMER ASSISTANCE POLICY is manufacturing and selling high quality welding equipment

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Products Consumable Stick Electrodes Mild and Low Alloy Steels Fleetweld 37

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## Lincoln Electric Supports Education

### Education Resource & Purchasing Portal

The Lincoln Electric Education Resource & Purchasing Portal allows qualified schools to obtain welding program supplies and educational resources necessary to instruct future skilled trades personnel in the craft and science of welding.

The web-based 24/7 access portal allows the instructor to download resources for basic consumables and safety materials, videos and training documentation. Schools can also obtain educational pricing on premium welding electrodes and wire, welding gear, guns and expendable parts, flame correction filters and more.

**HOW TO USE THE PROGRAM WORKS:**

Qualified Schools can register to participate in the Lincoln Electric Education Resource & Purchasing Portal. For example, organizations will be required to submit a completed registration form and a letter of authorization from the school principal at the time of registration.

Log on to the portal to place online orders for welding consumables, personal protection gear, expendable parts and documents. Special pricing applies to schools only. During the checkout process, select your preferred partner from our list of participating distributors. (One distributor per school location).

Lincoln Electric will ship the order directly to your school. Lincoln Electric Shipping of Orders greater than \$500 for the contiguous United States.

**ORDERING IS EASY!**  
Visit [lincolnelectric.com/education](http://lincolnelectric.com/education) to start the registration process.

**Benefits:**

- Access a variety of classroom training and safety materials.
- Download educational videos from a secure and approved portal.
- Exclusive educational pricing on premium electrodes and wire as low as 8.10¢.
- Special pricing on personal protection gear, expendable parts and MagneRay accessories.
- 24/7 online order process and access to order history and tracking information.
- Efficient online purchases with a participating distributor.
- Instant credit limit applied to your account for immediate purchasing.
- Free Shipping on Online Orders greater than \$500 for the contiguous United States (Standard Shipping Only).

For questions or inquiries about the program, call 800.610.1005.

Lincoln Electric Education Resource & Purchasing Portal

Lincoln Electric

## [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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## Fleetweld® 37

AWS E6013 - Acero dulce, rutílico

**Características principales**

- Compatible con todos los tipos de hornos de arco.
- Excelente apariencia del cordón de soldadura.
- El control de la acción facilita la soldadura vertical descendente.
- Haga soldadura.
- Soldadura de mantenimiento o reparación.
- Para uso en soldadura por arco de CA con tipo de onda de pulso de onda.

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## [pdf] Catalog Label

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## Stick Electrode Product Catalog

For Mild and Low Alloy Steels

www.lincolnelectric.com

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## [pdf] Catalog

C2 10 Stick Electrode Product Catalog Fleetweld Jetweld Jet LH Pipeliner Shield Arc Excalibur mild steel low alloy stick electrodes welding Lincoln Electric Company c210 lincolnelectric assets US EN literature Electrodes Compare Air Compressor Generator Welder Combos For Work Trucks 2023 Source ||| Stick Electrode Product Catalog For Mild and Low Alloy Steels www.lincolnelectric.com About The Li ... 350 14 350 14 350 ED031726 ED031727 ED032450 ED032451 ED032573 ED032574 ED010170 ED010161 **ED010153** ED010165 ED010156 MECHANICAL PROPERTIES 1 - As Required per AWS A5.1/5.1M: 2004 Requirem...

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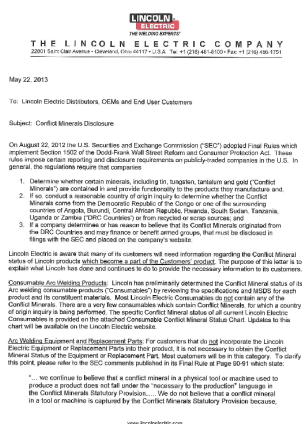
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Conflict Minerals Disclosure The Lincoln Electric Company conflict minerals disclosure leco us lincolnelectric en company Documents

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The image shows a Conflict Minerals Reporting Template (CMRT) form. It is a structured document with various sections for reporting conflict minerals. The form includes a header with the EICC logo and the title 'Conflict Minerals Reporting Template (CMRT)'. Below the header, there are several sections for providing company information, including name, address, and contact details. The main body of the form consists of multiple tables for reporting conflict minerals, with columns for mineral type, source, and other relevant information. The form is designed to be filled out by companies to report on their conflict minerals sourcing.

[\[pdf\]](#) Instructions Declaration of Conformity

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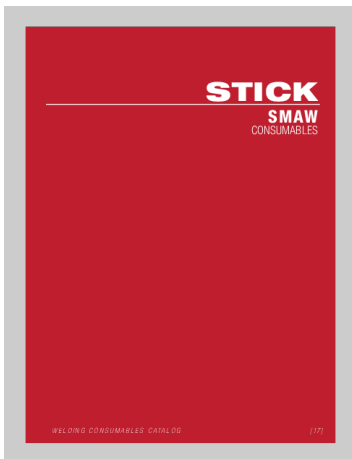
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