



**PRODUCT MANUAL FOR
ELECTRIC WELDING ACCESSORIES
ACCORDING TO IS 2641:1989**

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification licence /certificate.

1.	Product	:	IS 2641:1989
	Title	:	Electric Welding Accessories
	No. of Amendments	:	Nil
2.	Sampling Guidelines:		
a)	Raw material	:	NA
b)	Grouping guidelines	:	Please refer ANNEX –A
c)	Sample Size	:	4 Nos.
3.	List of Test Equipment	:	Please refer ANNEX –B
4.	Scheme of Inspection and Testing	:	Please refer ANNEX –C
5.	Possible tests in a day:		
	i. Design & Construction, Cl. 5.2 ii. Temperature Rise, Cl. 5.3.3 iii. Insulation Resistance Test, Cl. 5.3.4 iv. High Voltage Test, Cl. 5.3.5 v. Impact Strength, Cl. 5.3.6 vi. Flammability & Resistance to Heat, Cl. 5.3.7 vii. Voltage Drop, Cl. 6.2.2		
6.	Scope of the Licence:		
	“Licence is granted to use Standard Mark as per IS 2641:1989 with the following scope:		
	Name of the product	Electric Welding Accessories	
	Variety	<ul style="list-style-type: none"> • Electrode Holders - Type A/Type B, Rated Current A • Return Current Clamps - Rated current..... A, for manual arc welding, with covered electrodes of length not more than 450 mm. 	

ANNEX A

Grouping Guidelines

1. IS 2641:1989 specifies the requirements and tests for electric welding accessories, viz, electrode holders and return current clamps for manual arc welding.
2. Considering the accessibility of live parts, electrode holders are classified into Type A and Type B.
3. For considering GOL/CSoL, drawal of sample shall be as given below:
 - (a) **Electrode Holder:** Each Type with the highest current rating intended to be covered in the licence.
 - (b) **Return Current Clamp:** Highest rated current intended to be covered in the licence.
4. If electrode holders/return current clamp of any rated current is tested, electrode holders/return current clamp of other lower rated currents may also be covered.
5. The Firm shall declare the varieties of various electrode holders/ return current clamp they intend to cover in the Licence. The Scope of Licence may be restricted based on the Manufacturing capability and Testing facilities of the Manufacturer.
6. During the operation of the Licence, BO shall ensure that all the Varieties covered in the Licence are tested in rotation to the extent possible.

ANNEX B**List of Test Equipment***Major test equipment required to test as per the Indian Standard*

Sl. No.	Tests used in with Clause Reference		Test Equipment
	Test	Cl. No.	
1	General Requirements	5.2.2.1 to 5.2.2.13	Weighing Balance, Vernier Calliper, Micrometer, Scale, Measuring tape, Guard
2	Insulation Resistance	5.3.4.1 & 5.3.4.2	Insulation Resistance tester, Metal foil
3	High Voltage	5.3.5	HV Tester with Stopwatch, Metal foil
4	Temp. Rise	5.3.3.1 to 5.3.3.6	Voltage source, Ammeter, Voltmeter, Thermocouple / Thermometer, Timer (Stopwatch)
5	Impact Strength	5.3.6.1 & 5.3.6.2	Impact test apparatus
6	Flammability & Resistance to Heat	5.3.7.1 to 5.3.7.3	Flammability test apparatus with Ammeter, Stopwatch
7	Voltage Drop	6.2.2	Steel plate (300 mm x 75 mm x 12 mm), Ammeter, Voltmeter

The above list is indicative only and may not be treated as exhaustive.

ANNEX C

Scheme of Inspection And Testing

1. LABORATORY - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

1.1 The manufacturer shall prepare a calibration plan for the test equipments.

2. TEST RECORDS – The manufacturer shall maintain test records for the tests carried out to establish conformity.

3. LABELLING AND MARKING – As per the requirement of IS 2641:1989.

4. CONTROL UNIT – Electrode Holders / Return Current Clamps of the same type & rating manufactured in a day shall constitute a control unit.

5. LEVELS OF CONTROL - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

5.1 All the production which conforms to the Indian Standards and covered by the licence should be marked with Standard Mark.

6. REJECTIONS – Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016.

TABLE 1

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Method			No. of Sample	Frequency	Remarks
		Clause	Reference				
5	Electrode Holder						
5.2	Design & Construction	5.2.1	IS 2641:1989	R	Each piece	--	Please see Note 1
5.2.2	General Requirements	5.2.2.1 to 5.2.2.13	IS 2641:1989	R	Each piece	--	
5.3.4	Insulation Resistance	5.3.4.1, 5.3.4.2	IS 2641:1989	R	Each piece	--	
5.3.5	High Voltage	5.3.5	IS 2641:1989	R	Each piece	--	
5.3.3	Temperature Rise	5.3.3.1 to 5.3.3.6	IS 2641:1989	R	3 pieces	Every week for each type and rating	
5.3.6	Impact Strength	5.3.6.1, 5.3.6.2	IS 2641:1989	R	3 pieces		
5.3.7	Flammability & Resistance to Heat	5.3.7.1 to 5.3.7.3	IS 2641:1989	R	3 pieces		
6	Return Current Clamp						
6.1	Design & Construction	6.1.1 to 6.1.5	IS 2641:1989	R	Each piece	--	
6.2.2	Voltage Drop	6.2.2	IS 2641:1989	R	Each piece	--	

Note-1: In case of failure, twice the number of samples shall be tested. If further failure occurs, marking of that type & rating shall be stopped. A thorough investigation of the cause of failure shall be made and defect rectified. When 6 samples of that type and rating produced show conformity to these requirements, only then the marking shall be resumed. The original frequency may be restored only after 6 samples taken from 5 consecutive control units show conformity to these requirements.

Note-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification for approval by BO Head.