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BUREAU OF INDIAN STANDARDS

Minutes

Committee Name	Meeting No	Date & Time	Mode
Electric Welding Equipment Sectional Committee, ETD 21	16	13 Oct 2023 (Friday), 1500 h	Online

Chairman : Shri S. Prabakaran **Member Secretary :** Shri Suresh Kumar Gopalan

Members Present :

Sno	Name	Organization	Email
1	Shri S. Prabakaran	BHEL, Tiruchirappalli	sethupraba@gmail.com
2	Smt A Santhakumari	BHEL, Tiruchirappalli	santha@bhel.in
3	Dr Kevin Ark Kumar	BHEL, Tiruchirappalli	kevin@bhel.in
4	Shri Prasenjit Mahanty	ESAB India Limited, Chennai	prasenjit.mahanty@esab.co.in
5	Dr.K.Panneerselvam	NIT, Tiruchirapalli	kps@nitt.edu
6	Shri Atul Dharmadhikari	Mogora Cosmic Pvt. Ltd.	atul@mogora.com
7	Shri Nimesh Chinoy	AWPM	nchinoy@edmail.in
8	Shri Vilas Tamboli	AWPM	awpm12@yahoo.com
9	Shri sachin dobhada	Ador Welding Ltd, Pune	sachindobhada@adorians.com
10	Shri Suresh Kumar Gopalan	BIS	eetd@bis.gov.in

ITEM 0 GENERAL

0.1 WELCOME & OPENING REMARKS

Shri S. Prabakaran, Chairman of ETD 21, extended a hearty welcome to the members present.

ITEM 1 CONFIRMATION OF THE LAST MEETING MINUTES

1.1 In view of no comments received, the committee confirmed the minutes of the last meeting of Electric Welding Equipment Sectional Committee, ETD 21, held on 02 Feb 2023 via online.

ITEM 2 COMPOSITION OF SECTIONAL COMMITTEE

2.1 The committee reviewed the composition of the sectional committee, ETD 21, as given at Annex 1 of the agenda. The committee decided to co-opt, a) Association of Welding Products Manufacturers, Mumbai, b) Mogora Cosmic Pvt. ltd, c) Ador Welding Ltd, Pune.

Contact details of Larsen and Toubro Limited, Mumbai and Mazagon Dock Limited, Mumbai, will be provided by Shri Nimesh Chinoy, SigmaWeld Welding Inverters.

Contact details of Heavy Vehicles Factory, Chennai, will be provided by Shri S. Prabakaran.

New nominations may be sought from non-participating organization.

ITEM 3 ACTION ARISING OUT OF THE PREVIOUS MEETING

SlNo	Item no of last minutes	Subject	Decision of last meeting	Action/ Remark	Decision
1	3(1)	2.1 (1) Composition of Electric Welding Equipment Sectional Committee, ETD 21	Smt. A. Santhakumari shared following the contact details qr@beml.co.in, qrl@beml.co.in, hariganesh@adorians.com, CS.Manjunath@tvsmotor.com, Mohamed_Hussain@lincolnelectric.in , Parthasarathy.Sasianand@fronius.com The committee decided to seek the nomination from these organisation for co-option.	Nomination sought from these organization and reply is awaited	Reminders to be send
2	3(2)	**Panel 1 - for revision of IS 9604** **WRI, BHEL** – Dr. Kevin **IIT Madras** – Dr. Murugaiyan **Mogora Cosmic**, Pune **SISCO**, Kolkata **ESAB** **Sudheer Bishnoi, BIS**	The committee noted that reference of HF filter, Gas regulator, Gas console & flow meter is given in IEC 60974-12, IEC 60974-6, IEC 60974-8 & IEC 60974-7 respectively. The committee decided as follows, a) To co-opt M/s Lincoln Electric in the panel 1. b) Panel 1 to consider review of following standards for withdrawl, as the IEC 60974 series is already adopted as IS 16593 series, IS 1851 : 1997, IS 2635 : 1997, IS 2641 : 1989, IS 4559 : 1993, IS 6008 : 1989, IS 7931 : Part 1 : 1975, IS 7931 : Part 2 : 1975, IS 7931 : Part 3 : 1975, IS 8804 : 1993, IS 9604 : 1994, IS 13339 : 1992 Panel 1 will submit the report within a month	Report may be presented	Dr Kevin, presented draft report during the meeting is given at **Annex 1**. During discussion, members suggested to include some modification to the standard, standard mark, testing facility etc. It is pointed out that the scope of the panel is to review for withdrawl of old Indian Standards as the latest IEC 60974 series is already adopted as IS 16593 series. The committee decided to circulate the above report, among newly co-opted members also for a period of two weeks, in case of no comments, old Indian Standards may be withdrawn through email approval from the Chairman.
3	3(3)	**Panel 2 – for revision of IS 4804 (Part 1 to Part 4) – Resistance Welding Equipment** **WRI, BHEL** - Dr. P.R.	It was informed that Dr. P.R. Venkateswaran via email (dated: 10th August 2021) had submitted that he shall provide draft by Feb 2022. Smt. A. Santhakumari, WRI, BHEL	Panel may provide the updates	Smt. A. Santhakumari, WRI, BHEL, informed that the old standard may be withdrawn as it is based on

		Venkateswaran (Convenor) Expert from **M/s Mechelonic Welders, Alstom, Fronius, ERTL, IIT-Roorkee, IIT-Madras**	informed the committee that they would review and provide inputs in the same. She also stated that she will provide contact details of M/s Mechelonic Welders, Fronius and IIT Madras. It was decided to co-opt General Electric and Siemens in Panel 1 and Panel 2 . Contact details would be provided Shri Deepak Kr. Sahoo from PGCIL. ---------- The committee decided that the panel 2 will submit the report by 15 February 2023, considering latest IS 17816 (Part 1 & 2) published in 2022		earlier version of IEC. The committee decided that Smt A Santhakumari, WRI, BHEL, to provide the above recommendation in letter format to BIS & subsequently, old Indian Standards may be withdrawn through the email approval from the Chairman.

ITEM 5 PROGRAM OF WORK

5.1 The committee noted the information given in the agenda.

5.2 The committee finalized the documents for printing namely, ETD/21/22536, ETD/21/22537, ETD/21/22538, ETD/21/22539, ETD/21/22540. The committee decided to drop the document number ETD/21/22541 and circulate the latest version the standards, IEC 62822-3:2023, into wide circulation for a period of one month. In case of no comments received, document may be finalized for printing with the approval of the chairman through email.

ITEM 6 INTERNATIONAL ACTIVITIES

The committee noted the information given in the agenda.

ITEM 7 STANDARDS NATIONAL ACTION PLAN (SNAP)

The committee noted the information given in agenda.

ITEM 8 INITIATIVES TAKEN BY BIS IN STANDARDS DEVELOPMENT ACTIVITY

The committee noted the information given in agenda.

ITEM 9 DATES AND PLACE FOR THE NEXT MEETING

Date and place for the next meeting will be decided in consultation with the Chairperson.

ITEM 10 ANY OTHER BUSINESS

The committee members suggested that NITS should conduct online training program instead of offline, so that more members can participate and benefit. The meeting ended with a vote of thanks to the Chair.

Electric Welding Equipment

ETD 21
Panel -1

Review Report

IS 1851 : 1997, IS 2635 : 1997,
IS 2641 : 1989, IS 4559 : 1993,
IS 6008 : 1989, IS 7931 : Part 1 : 1975,
IS 7931 : Part 2 : 1975,
IS 7931 : Part 3 : 1975,
IS 8804 : 1993, IS 9604 : 1994,
IS 13339 : 1992

Executive Summary:

The current scenario surrounding standards for welding equipment presents several challenges and shortcomings. This report outlines the existing issues, identifies the requirements for improvement, and proposes a framework to address these challenges. The key issues include the presence of multiple, outdated standards, misperception within the industry, neglect of emerging technologies and limited accessibility to standards. To rectify these issues, the following requirements are outlined: the need for a single standard for Electric Welding Equipment, consideration of emerging technologies and easy online accessibility.

1. Introduction:

The industries rely heavily on standards to ensure safety, quality and efficiency in the operation of equipment. However, the current scenario reveals significant deficiencies that hinder progress. These deficiencies include multiple, outdated standards, widespread confusion, a lack of adaptation to emerging technologies and limited accessibility to these standards. This report seeks to address these issues and recommend a path forward.

2. Current Scenario:

1) Multiple Standards: One of the foremost problems is the existence of multiple standards for different types of welding process-related equipment. These standards are often conflicting, leading to misperception within the industry and making it difficult for organizations to choose the appropriate standard to follow.

2) Outdated Standards: Many of the existing standards are outdated, failing to keep up with technological advancements. This creates a significant gap between industry practices and the standards, resulting in potential inefficiencies, safety hazards and difficulties in compliance.

3) Misperception: The presence of numerous, often contradictory standards contribute to widespread misunderstanding among the seller and buyers of welding equipment. This confusion can lead to misinterpretation and misapplication of standards, jeopardizing safety and reliability.

4) Neglect of Emerging Technology: The existing standards do not adequately address emerging technologies such as Industry 4.0, Internet of Things (IoT) and artificial intelligence. This lack of consideration hampers the industry's ability to harness the benefits of these innovations while ensuring their safe implementation.

5) Limited Accessibility: Access to all the welding equipment technologies related standards is often challenging and this limits their accessibility to industry professionals, particularly in resource-constrained regions.

3. Requirements for Improvement:

To address the issues outlined above, the following requirements must be met:

1) Single Comprehensive Standard: There is a need for a single, comprehensive standard that covers all aspects of process-related equipment. This standard should aim to unify existing standards and eliminate conflicts.

2) International Alignment: The new standard should align with international best practices to ensure consistency in safety, quality, and efficiency across borders.

3) Consideration of Emerging Technologies: The updated standard should proactively address emerging technologies and provide guidelines for their safe and effective integration into existing processes.

4) Online Accessibility: To improve accessibility, the standard should be made readily available online, ensuring that industry professionals worldwide can access and reference it easily.

4. Proposed Framework:

To achieve these requirements, ETD 21 has engaged industry stakeholders, including manufacturers, operators and regulatory authorities, in the development and review of the standard to ensure it addresses their needs and concerns.

1. The panel suggest to have a single standard for welding equipment and the IS 16593 shall be standard for all welding equipment with part numbers for different accessories used for the process.
2. There are mainly two characteristics of the power source - i.e. constant current & constant voltage. Only output electrical parameters changes as per process requirement. There are common tests for the power sources and are included in the standard. The IS 16593 is applicable for A) MMAW B) GTAW C) MIG /MAG D) SAW E) Plasma cutting & welding .
3. The power source for stud welding is also similar to MMAW power source so it should also be included in same standard.
4. The magnetic impulse welding process is having same power source like SAW it should also be included in same standard.
5. As the IS 16593 is on par with the international standard, the equipment manufactured according to the standard should have a **mark** on the equipment like CE / UL etc.
6. In the GEM (Govt E marketplace) there are many confusions in the specification, Govt./PSU companies shall refer to this standard while placing the enquiry.
7. The technical experts of ETD 21 shall guide and aid to the manufacturers for implementing this standard including tests on the equipment.
8. The panel recommend to withdraw the following Indian Standards as these are already adopted as IS 16593 series
    - IS 1851 : 1997,
    - IS 2635 : 1997,
    - IS 2641 : 1989,
    - IS 4559 : 1993,
    - IS 6008 : 1989,
    - IS 7931 : Part 1 : 1975,
    - IS 7931 : Part 2 : 1975,
    - IS 7931 : Part 3 : 1975,
    - IS 8804 : 1993,
    - IS 9604 : 1994,
    - IS 13339 : 1992

5. Conclusion:

The current scenario surrounding standards for process-related equipment presents significant challenges. However, by establishing a single, internationally aligned standard that considers emerging technologies and ensures online accessibility, the industry can overcome these challenges, enhance safety, improve efficiency and remain competitive in the ever-evolving global landscape. The proposed framework provides a structured approach to address these requirements and pave the way for a more standardized, safe and technologically advanced future for the process industry.