



## Minutes

Name of the Committee	No. of Meeting	Day	Date	Time	Venue
Power Cables Sectional Committee, ETD 09	30 <sup>th</sup>	Thursday	16 <sup>th</sup> May 2024	1100 hrs	Hybrid (Virtual + Physical) BIS HQ

**Chairperson: Smt. Meena K.P.**

**Member Secretary: Md. Israfil**

### Members Present:

Sl.	Organization	Member Name	Member Email
1.	Central Power Research Institute, Bengaluru	Smt. Meena K.P.	meena@cpri.in
2.	Bureau of Indian Standards, New Delhi	Md. Israfil	eetd@bis.gov.in
3.	3 M Electro & Communication India Private Limited	Shri Permeet Singh	psingh@mmm.com
		Shri Ashish Agarwal	aagrawal@mmm.com
4.	Apar Industries Limited, Mumbai	Shri Amit Kumar Samanta	ak.samanta@apar.com
5.	Bharat Heavy Electrical Limited, New Delhi	Ms. T I Santha	tis@bhel.in
6.	Calcutta Electric Supply Corporation Limited, Kolkata	Shri Arnab Guha	arnab.guha@rpsg.in
		Shri Prasenjit (Invitee)	prasenjit.karmakar@rpsg.in
7.	Central Electricity Authority, New Delhi	Shri Bhanwar Singh Meena	bhanwar.cea@gov.in
8.	Central Power Research Institute, Bengaluru	Smt. R. Arunjothi	arunjothi@cpri.in
		Shri P.V.Satheesh Kumar	pvs Kumar@cpri.in
		Dr. Neha Adhikari	nehaadhikari2008@gmail.com
9.	Delhi Metro Rail Corporation Limited, Delhi	Shri. Ashish Arora	ashish_delhimetro@yahoo.co.in
10.	Electrical Research and Development Association, Vadodara	Smt. Sheetal Panchal	sheetal@erda.org
		Shri Shailesh Patel	shailesh.patel@erda.org
11.	Engineers India Limited, New Delhi	Shri A. Sai	achutuni.sai@eil.co.in
		Shri Mehul Basu	mehul.basu@eil.co.in
12.	Finolex Cables Limited, Pune	Shri P.N. khairnar	pkhairnar@finolex.com
		Shri Bipin Patil	bipin_patil@finolex.com
13.	Finolex J-Power Systems Limited, Pune	Shri Nilesh Bute(Invitee)	nilesh.bute@finolexpower.com
		Shri Avijit Chakraborty	avijit_chakraborty@finolexpower.com
		Shri Harshal Toriya	harshal.toriya@finolexpower.com



14.	Gujarat Energy Transmission Corporation Limited, Vadodara	Shri A.A. Joshi	deeng.getco@gebmail.com
15.	Indian Electrical and Electronics Manufacturers Association, New Delhi	Smt. Vishakha Chaudhary (Invitee)	vishakha.chaudhary@ieema.org
16.	International Copper Association India, Mumbai	Shri Jyotish Pande	jyotish.pande@internationalcopper.org
17.	KEC International Limited, Mumbai	Shri Bhoopendra Singh	singhbc@kecrpg.com
		Smt. Rajani Pande (Attended Physically)	pandera@kecrpg.com
18.	LS Cable India Private Limited, Rewari	Shri Ajay Kumar Mishra (Attended Physically)	ajay.mishra@lscable.in
		Shri Dinesh Kumthekar (Attended Physically)	dinesh.kumthekar@lscable.in
19.	Lapp India Private Limited, Jigani	Shri Kumar Krishna S.	krishna.kumar@lappindia.com
20.	National Capital Region Transport Corporation, New Delhi	Shri Afroz Ansari	afroz.ansari@ncrtc.in
21.	Nuclear Power Corporation of India Limited, Mumbai	Shri. Shashank Singh	em.shashank@gmail.com
22.	Paramount Communication Limited, Mumbai	Shri Arun Sharma	arun@paramountcables.com
23.	Polycab Wires Private Limited, Mumbai	Shri Bharat Sehgal	bharat.sehgal@polycab.com
24.	RR Kabel Limited, Silvassa	Shri Jose Thomas	jose.thomas@rrglobal.com
		Shri Ronak Bhatt	ronak.bhatt@rrglobal.com
		Shri Balachandran Dharman	Balachandran.Dharman@rrglobal.com
25.	Shakun Polymers Limited, Vadodara	Shri Priten Shah	technical@shakunpolymers.com
		Shri Pratik Nayak	qcdaman@shakunpolymers.com
26.	Tata Power Delhi Distribution Limited, New Delhi	Shri Kapil Kumar	kapil.kumar@tatapower-ddl.com
		Shri Sanjeev Atri	sanjeev.kumar@tatapower-ddl.com
27.	Universal Cables Limited, Satna	Shri Yogendra Singh Tiwari	yogendra.tiwari@unistar.co.in
		Shri C.S. Mohanty	csmohanty@unistar.co.in
28.	IN PERSONAL CAPACITY	Shri B. Nageshwar Rao	nageshburjupati@gmail.com
29.	IN PERSONAL CAPACITY	Shri Sitaraman Rama Prasath	ramaprasath25@gmail.com



## ITEM 0 WELCOME AND OPENING REMARKS BY THE CHAIRPERSON

The Chairperson, Smt. Meena K.P. welcomed all the members present in the 30th meeting. She requested all the members to actively participate in the discussion during the meeting to arrive at the decision for documents under consideration. She apprised the members regarding discussion/decision on various subjects/documents during the meeting and the new subjects taken by IEC TC 20 for formulation of new standards. She requested subcommittee/Panel members to actively work on the assigned committee work.

## ITEM 1 CONFIRMATION OF THE MINUTES OF THE LAST MEETING

1.1 The committee formally confirmed the minutes of the last meeting (29<sup>th</sup> meeting) of Power Cables Sectional Committee, ETD 09 held on 30<sup>th</sup> January 2024, through hybrid mode which were circulated vide BISDG letter No. ETD 09/A 2.29 dated 09 February 2024.

## ITEM 2 ACTIONS ARISING OUT OF PREVIOUS MEETING

S. No.	Item of the last minutes	Draft Indian Standard/Document	Action	Decision of Last Meeting
1.	2.25	NWIP received to formulate Indian standard based on IEC 62895: 2017 (High voltage direct current (HVDC) power transmission - Cables with extruded insulation and their accessories for rated voltages up to 320 kV for land applications - Test methods and requirements)	Document under wide circulation, no comments received.  Document to be considered for printing.	Committee decided to consider the doc. for printing.
2.	2.3	IS 14255: 1995 Aerial Bunched Cables for working voltages up to and including 1100Volts – Specification a) To revise IS 14255:1995 i.e. <b>IS 14255 (Part 1)</b> Aerial Bunched Cables for Working Voltages upto and Including 1.1 kV. b) To formulate IS <b>14255(Part 2)-</b> Aerial Bunched Cables for Working Voltages from <b>3.3 kV upto and including 33 kV</b> c) To formulate <b>testing of Aerial Bunched Cables Accessories</b> covering voltages from 1.1 kV upto and including 33 kV- Test methods and test requirements	Doc for revision of IS 14255 and new standard 14255-2 are under p-draft stage. Doc to be considered for wide circulation.  No input received to formulate standard for testing of Aerial Bunched cables accessories. Hence, subject may be dropped and to be considered after receipt of working draft.	Committee decided to wide circulate draft for revision of IS 14255 for 30 days and. Requested panel-2 to convene the meeting and submit revised draft for IS 14255-2 within 30 days.  Committee assigned the task of formulation of new Standard for testing of ABC accessories to panel-8.

3.	2.10 & 2.11	<b>ETD 09 (22546)</b> IS 7098: part 3 (revision) Cross-linked polyethylene insulated thermoplastic sheathed cables- specification part 3 for working voltages above 33 kv and up to including 400 kv	Modified document incorporating suggested changes was circulated, no comments received. Hence, doc. to be considered for printing.	Committee decided to consider the draft doc. for printing.
4.	2.27	-Revision of IS 13573 (Part -2) :2011/ IEC 60502-4:2005 (Cable accessories for extruded power cables - Specification: Part 2 for working voltages from 3.3 kV(Ue) up to and including 33 kV(E) - Test requirements. -To formulate new standard 13573-4 and accessories	Working draft awaited.	Committee requested Panel-8 to convene the meeting and submit recommendation within 01 month.
5.	2.1	a. Revision of IS 694  b. Draft Standard on screened cables	Draft for revision of IS 694 circulated as p-draft.	a) Committee decided to wide circulate revision of IS 694 for a period of 30 days and. b) Circulate draft on screened cables to committee members as p-draft.
6.	2.2	Revision of IS 3961 (Part 3): 1968 & IS 3961(Part 5) : 1968	Revision of IS 3961 (part 3) under P-draft stage, no comments received. Document to be processed for wide circulation. Draft for revision of IS 3961(part 5) awaited.	Committee decided to consider draft IS 3961 (part 3) for wide circulation for a period of 30 days and. Requested panel-6 to submit draft for IS 3961 (part 5) within 30 days.
7.	2.5 & 2.29	Revision of IS 1554 (part 1 & 2), IS 7098 (part 1)	IS 7098 (part 1) under wide circulation, no comments received. Panel-7 recommended to wide circulate draft for revision of IS 1554 (part 1 & 2)	Committee decided to consider draft for revision of IS 7098 (part 1) for printing and wide circulate revision of IS 1554 (part 1 & 2) for 30 days.
8.	2.26	a) Draft of revision of IS 4289 (Part 1) standards	Working draft awaited from panel-5	a) Committee decided to wide

		<p>for lifts.</p> <p>b) NWIP based on EN 50214:2006 (Flat polyvinyl chloride sheathed flexible cables) and/or other relevant IEC/ISO standard for cables for use in lifts applications.</p>		<p>circulate revision of IS 4289 (part 1) for a period of 30 days and.</p> <p>b) Committee requested panel-5 to submit draft for circulation to committee members.</p>
9.	2.16	IS 1255 Part 2: Code of practice for installation and maintenance of power cables from 33KV up to and including 400 KV rating.	Draft awaited from panel-9	Committee requested panel 9 to convene the meeting and submit draft within 30 days for circulation.
10.	2.15	NWIP on Power Cables for e-Vehicle Charging Systems	Draft submitted for consideration by panel-11.	Committee decided to circulate the doc as P-draft for a period of 1 month. If no comment received then document to be wide circulated for 1 month.
11.	2.4	IS 2465 "Cables for Motor Vehicles"	Draft awaited	Committee requested Smt. Sheetal (ERDA) to submit draft within 15 days.
12.	2.9	IS 17293:2020 Electric cables for photovoltaic systems for rated voltages 1 500 Volts	Comments circulated to committee members. No input received on comments.	Shri Ronak Bhatt (RR Kabel) to provide inputs.
13.	2.14	IS 1255 (Part 1) Code of Practice for Installation and Maintenance of Power Cables upto and including 33 kV Rating ( <i>Third Revision</i> )	Project to be considered for R&D.	Committee agreed for Terms Of Reference for R&D work.
14.	2.20	<b>ETD 09(24337)</b> NWIP on Instrumentation and control Cables	Draft document under p-draft stage, no comments received. Document to be considered for wide circulation.	Committee decide to wide circulate the doc for a period of 01 month.
15.	2.24	<b>ETD 09(24344)</b> - Methods of Test for Cables Part 65 Thermal Short Circuit Test Through Conductor/ Metallic Sheath/ Screen Armor	CPRI to submit technical input on comments.	Committee requested CPRI to submit technical input on comments within 15 days.

16.	6.2	IS 10810 (Part 62) : 1993 Methods of test for cables: Part 62 Fire resistance for bunched cables	Lapp India to submit technical inputs	Committee requested Shri Krishna Kumar (Lapp India) to review and submit the inputs.
17.	6.2 & 5.4	IS 10810 (Part 63) : 1993 Methods of test for cables: Part 63 Smoke density for electric cables under fire conditions	Lapp India to submit technical inputs considering comment submitted by CPRI.	
18.	12.3	Amendment 3 to IS 9968-2:2002 (Specification for elastomer - Insulated cables: Part 2 for working voltages from 3.3 kV up to and including 33 kV ( <i>First Revision</i> ))	Comments circulated, no input from committee members.	Committee requested members to evaluate and provide technical input on comments.
19.	5.1	IS 9968-1, comment	Standard to be considered for revision incorporating comments received from Shri A K Samanta	Committee decide to consider the doc for wide circulation for a period of 01 month.
20.	5.4	IS 17048- toxicity and flex test requirement	Draft awaited from CPRI.	Committee requested CPRI to submit draft standard for toxicity test which is to be part 66 of IS 10810 series and. Delete flex test.
21.	6	NWIP- FEP insulated single core shielded wire with FEP jacket.	Committee to discuss.	Committee requested Shri Krishna Kumar (Lapp India) to provide the draft document.

### ITEM 3.0 COMPOSITION OF SECTIONAL COMMITTEE AND PANELS

3.1 The committee considered the nominations for co-option in the committee for:

The Brihan Mumbai Electric Supply & Transport, Mumbai- Shri M. B. Bamble, Shri S. V. Fulpagare

The committee noted the information given in the Agenda and revised composition of panel as:

1. Delete Panel-4, panel-10, panel-11
2. Addition in scope of panel-8 i.e. testing of accessories for Aerial Bunched cables.
3. Addition of Ajay Kumar, L. S. cables in panel-8 and panel-9.

### ITEM 4 PRESENT POSITION OF WORK UNDER THE SCOPE OF ETD 09

4.1 The committee noted the information given in the Agenda.

4.2 The committee noted the information given in the Agenda.

## ITEM 5 TECHNICAL ISSUES

Comment on IS 17505 (part 1)

Clause/subclause	Comment	Proposed change	Decision
Annex – B Armour Coverage Percentage	For armoring, only galvanized round steel wires are permitted as per 15.2. Key in Annex – B may be modified in line with the requirements.	<del>d = diameter of wire/width of formed wires</del> D = diameter under armour + <del>thickness/diameter of armour</del> a = angle between armoring wire/ <del>formed wires</del> and axis of cable. C = lay length of armoring wires/ <del>formed wires</del>	Comment agreed, Annex-B to be in line with IS 7098-2
Annex – D Abrasion Resistance Test	Dimension of Steel Angle	The dimensions/size of steel angle for ensuring uniformity of contact area may be specified.	Comment not agreed
Table-6	Missing range in Table 6 of IS 17505-1, which is between 45 mm and 50 mm, including the corresponding value. The range of the inner sheath and outer sheath for the calculated cable diameter is the same for both.	We would like to clarify if the thickness of both the inner and outer sheath should be derived from the calculated diameter of the laid-up core or if the thickness of the outer sheath should be derived from the armor thickness calculated as per IS 10462-1.	Comment agreed, inputs to be provided by Ronak Bhatt, Krishna Kumar and C S Mohanty for addition of requirements from 45 to 50 mm.

## ITEM 6 NEW WORK ITEM PROPOSAL

Nil

## ITEM 7 INTERNATIONAL ACTIVITIES

1. New Work Item proposal to IEC- **FRLSH** Properties of PVC.

**Committee agreed**

2. Nomination invited to participate in **IEC TC 20** scheduled from **11.11.2024-15.11.2024** in Germany (hybrid mode).

Nomination received from following members for participation: –

Organization	Member
Central Power Research Institute, Bengaluru	Smt. Meena K.P.
RR Kabel Limited, Silvassa	Shri Ronak Bhatt
Universal Cables Limited, Satna	Shri Yogendra Tiwari, Shri C.S Mohanty
KEC International Limited, Mumbai	Smt. Rajani Pande
Lapp India Private Limited, Jigani	Shri Kumar Krishna S.
IN PERSONAL CAPACITY	Shri Sitaraman Rama Prasath
BIS	Md. Israfil





**Committee decided to nominate the experts in following IEC-TC 20 Subcommittee(s) and/or Working Group(s)**

<b>Label</b>	<b>Title</b>	<b>Experts</b>	<b>Decision</b>
<b>Working Group</b>			
WG 16	High voltage cables (1kV and above), their accessories and cable systems	Nageshwar Rao	-
WG 17	Low voltage cables below 1kV	Sudheer Bishnoi Nageshwar Rao	Removal of Sudheer Bishnoi and addition of Krishna Kumar and Md. Israfil
WG 18	Burning characteristics of electric cables	Sudheer Bishnoi Nageshwar Rao	Removal of Sudheer Bishnoi
WG 19	Current rating and short-circuit limits of cables	--	-
<b>Maintenance Teams</b>			
MT 21	Review and Maintenance team of IEC 60050-461	--	-
<b>Joint Maintenance Teams</b>			
JMT 18	IEC/TR 62271-209: High-voltage switchgear and control gear - Part 209: Cable connections for gas-insulated metal-enclosed switchgear for rated voltages above 52 kV - Fluid-filled and extruded insulation cables - Fluid-filled and dry type cable-terminations Managed by SC 17C	--	-

## **ITEM 8 NEW SUBJECTS AND FUTURE PROGRAMME OF WORK**

The committee noted the information given in the Agenda.

## **ITEM 9 DATE AND PLACE OF NEXT MEETING**

The date of the next meeting shall be 22.10.2024 and place of the next meeting shall be as decided in consultation with the chairperson.

## **ITEM 10 ANY OTHER BUSINESS**

Committee discussed on cables to be used in water for floating solar PV installation, and explore the International standards/guidelines related to the subject.

There being no other business, the meeting ended with a vote of thanks to the Chairperson.