BUREAU OF INDIAN STANDARDS

AGENDA

Name of the Committee	No. of Meeting	Day	Date	Time	Venue
Power Cables Sectional Committee, ETD 09	**31st**	**Tuesday**	**22nd Oct 2024**	**1100 hrs**	**Physical CPRI Bengaluru**

CHAIRPERSON: Smt. Meena K.P. **MEMBER SECRETARY: Md. Israfil**

ITEM 0 WELCOME AND OPENING REMARKS BY THE CHAIRPERSON

ITEM 1 CONFIRMATION OF THE MINUTES OF THE LAST MEETING

1.1 The minutes of the last meeting (30th meeting) of Power Cables Sectional Committee, ETD 09 held on 16th May 2024, through hybrid mode were circulated vide BISDG letter No. ETD 09/A 2.30 dated 27 May 2024.

No comments received.

The Committee may formally confirm the minutes of the 30th meeting without any modification.

ITEM 2ACTIONS ARISING OUT OF PREVIOUS MEETING

Sl. No	Item of the last minutes	Draft Indian Standard/Document	Decision of Last Meeting	Action
Panel-1 (Low Voltage cables upto 1100 V)				
1.	**2.2**	To revise IS 14255:1995 i.e. **IS 14255 (Part 1)** Aerial Bunched Cables for Working Voltages upto and Including 1.1 kV.	Committee decided to wide circulate draft for revision of IS 14255 for 30 days	Doc under WC stage. Comments received, attached at Annex-5
2.	**2.5**	Revision of IS 694	Committee decided to wide circulate revision of IS 694 for a period of 30 days	Doc under WC stage. Comment received from 1. RR kabel, ICAI to consider addition of "Class-5 conductor not to be used in house wiring"

				under marking clause. And 2. Addition of 8 & 13 sqmm sizes from CTBO-BIS
3.	**2.5**	Draft Standard on screened cables	Circulate draft on screened cables to committee members as p-draft.	Doc under p-draft stage. No comments received, doc may be considered for WC for 30 days.
4.	**2.8**	Revision of IS 4289 (Part 1) standards for lifts	Committee decided to wide circulate revision of IS 4289 (part 1) for a period of 30 days	Doc under WC. No comments received, doc may be considered for printing
5.	**2.6**	Revision of IS 3961 (Part 3): 1968	Committee decided to consider draft IS 3961 (part 3) for wide circulation for a period of 30 days	Doc under WC. Comments received, attached at Annex-5
6.	**2.6**	Revision of IS 3961(Part 5): 1968	Committee requested panel-6 to submit draft for IS 3961 (part 5) within 30 days.	Draft for revision of IS 3961(Part 5) may be considered for WC.
7.	**2.7**	Revision of IS 1554 (part 1)	Committee decided to wide circulate revision of IS 1554 (part 1) for 30 days.	Doc under WC. Comments received, attached at Annex-5.
8.	**2.7**	Revision of IS 1554 (part 2)	Committee decided to wide circulate revision of IS 1554 (part 2) for 30 days.	Doc under WC. Comments received, attached at Annex-5.
9.	**2.7**	Revision of IS 7098 (part 1)	Committee decided to consider draft for revision of IS 7098 (part 1) for printing	Doc under printing
10.	**2.8**	NWIP (Flat polyvinyl chloride sheathed flexible cables) standard for cables for use in lifts applications.	Committee requested panel-5 to submit draft for circulation to	Doc circulated as p-draft, no comments received. Doc may be considered for WC

			committee members.	for a period of 30 days.
11.	**2.10**	NWIP on Power Cables for e-Vehicle Charging Systems	Committee decided to circulate the doc as P-draft for a period of 1 month.	Doc. Circulated as p-draft, no comments received. Doc. may be considered for wide circulation.
12.	**2.11**	IS 2465 "Cables for Motor Vehicles"	Committee requested Smt. Sheetal (ERDA) to submit draft within 15 days.	Doc may be reviewed as per IS/ISO 6722 (part 1 & 2) Road vehicles - 60 V and 600 V single-core cables (copper & Aluminum).
13.	**2.12**	IS 17293: 2020 Electric cables for photovoltaic systems for rated voltages 1 500 Volts	Shri Ronak Bhatt (RR Kabel) to provide inputs.	Comment submitted to IEC TC 20/WG17 for amendment in IWC 62930 in IR values of 25, 150, 240 sqmm.
14.	**2.14**	**ETD 09(24337)** NWIP on Instrumentation and control Cables	Committee decide to wide circulate the doc for a period of 01 month.	Comments attached at Annex-5
15.	**2.19**	IS 9968-1, comment	Committee decide to consider the doc for wide circulation for a period of 01 month.	Comments attached at Annex-5
16.	**2.21**	NWIP- FEP insulated single core shielded wire with FEP jacket.	Committee requested Shri Krishna Kumar (Lapp India) to provide the draft document.	Draft awaited
Panel-2 (High voltage cables above 1100V)				
17.	**2.1**	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	Document under Printing.	Printed as IS 18833:2024/IEC 62895:2017 For information

		applications - Test methods and requirements)		
18.	**2.2**	To formulate IS **14255(Part 2)-** Aerial Bunched Cables for Working Voltages from **3.3 kV upto and including 33 kV**	Requested panel-2 to convene the meeting and submit revised draft for IS 14255-2 within 30 days.	Comment attached at Annex-5
19.	**2.3**	**ETD 09 (22546)** 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	Committee decided to consider the draft doc. for printing.	Document Under Printing.
20.	**2.9**	IS 1255 Part 2: Code of practice for installation and maintenance of power cables from 66 kV up to and including 500 kV rating.	Committee requested panel 9 to convene the meeting and submit draft within 30 days for circulation.	Panel-2 to review the working draft and submit final draft for consideration to technical committee
21.	**2.13**	IS 1255 (Part 1) Code of Practice for Installation and Maintenance of Power Cables upto and including 33 kV Rating (*Third Revision*)	Committee agreed for Terms of Reference for R&D work.	Panel-2 to review the working draft and submit final draft for consideration to technical committee
22.	**2.18**	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 (*First Revision*)	Committee requested members to evaluate and provide technical input on comments.	Panel-2 to review the working draft and submit final draft for consideration to technical committee
Panel-3 (cable accessories and test methods)				
23.	**2.4**	-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.	Committee requested Panel-8 to convene the meeting and submit recommendation within 01 month.	Panel-3 to submit the draft for consideration to technical committee.

24.	**2.4**	Formulate new standard 13573-4 and accessories	Committee requested Panel-8 to convene the meeting and submit recommendation within 01 month.	Panel-3 to submit the draft for consideration to technical committee.
25.	**2.2**	To formulate **testing of Aerial Bunched Cables Accessories** covering voltages from 1.1 kV upto and including 33 kV- Test methods and test requirements	Committee assigned the task of formulation of new Standard for testing of ABC accessories to panel-8.	Panel-3 to submit the draft for consideration to technical committee.
26.	**2.15**	**ETD 09(24344)** - Methods of Test for Cables Part 65 Thermal Short Circuit Test Through Conductor/ Metallic Sheath/ Screen Armor	Committee required CPRI to submit technical input on comments within 15 days.	Comments attached at Annex-5
27.	**2.16**	IS 10810 (Part 62) : 1993 Methods of test for cables: Part 62 Fire resistance for bunched cables	Committee requested Shri Krishna Kumar (Lapp India) to review and submit the inputs.	Draft submitted, doc may be reviewed by the Panel-3 for circulation as WC.
28.	**2.17**	IS 10810 (Part 63) : 1993 Methods of test for cables: Part 63 Smoke density for electric cables under fire conditions		
29.	**2.20**	IS 17048- toxicity and flex test requirement	Committee requested CPRI to draft standard for toxicity test to be part 66 of IS 10810 series and. Delete flex test.	Draft for toxicity test submitted by CPRI, doc may be circulated to committee member as p-draft for 30 days.
30.	**5**	Review of IS 17505(part 1) a) Armour Coverage percentage b) Table-6 (missing range 45-50mm)	Committee agreed for Annex-B to be in line with IS 7098(part 2). Ronak Bhatt, Krishna Kumar and C S Mohanty to provide data for addition of requirements from 45-50 mm	Inputs awaited

ITEM 3.0 COMPOSITION OF SECTIONAL COMMITTEE AND PANELS

3.1 The present composition of Sectional Committee is given at **Annex 1**

The panels constituted for specific task are to be scrapped and new panels and working groups are to be constituted for development/review of the standards. Members are requested to nominate an expert based on the following grouping:

a) Panel-1 for **Low Voltage cables- up to 1100 V**

b) Panel-2 for **High voltage cables- above 1100V**

c) Panel-3 for **cable accessories and test methods**

The status of participation of members in the previous three meetings of ETD 09 is also given in **Annex-1**.

Co-option Received from-
1. NTPC New Delhi- Shri Deepak Kumar, Shri Rajesh Sharma
2. MSME, Puducherry- Shri S. Dharmaselvan

It is to be informed that absence from two consecutive meetings of the TC may result in the lapse of the membership.

The committee may review the participation and provide suggestions to improve the participation in the upcoming meetings.

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

4.1 The Present Position of technical work under ETD 09 is given in **ANNEX 2**.
The Committee may review.

4.2 Document under P-Draft and WC

S. No.	Document Number	Document Title	Doc. Type	Document Stage
1	ETD/09/24344	Thermal short circuit test through conductor metallic sheath screen armor	New	P-Draft
2	ETD/09/25338	Aerial bunched cables for working voltage up to 33 kV	New	P-Draft
3	ETD/09/26234	Cables for Electric Vehicle Charging system	New	P-Draft
4	ETD/09/26509	Polyvinyl chloride insulated screened flexible sheathed cables cords with two or more flexible conductor rated voltages up to and including 1 100 V	New	P-Draft
5	ETD/09/26527	Polyvinyl chloride insulated and sheathed flat cables with flexible conductor for rated voltages up to and including 450/750 V	New	P-Draft
6	ETD/09/24337	Instrumentation and Control Cables	New	WC-Draft

7	ETD/09/24440 IS 3961 : Part 3: 1968	Recommended Current Ratings for Cables Part 3 Rubber Insulated Cables	Revision	WC-Draft
8	ETD/09/24441 IS 14255: 1995	Aerial bunched cables for working Voltages up to and including 1 100 volts - Specification (First Revision)	Revision	WC-Draft
9	ETD/09/25316 IS 694: 2010	Polyvinyl Chloride Insulated Unsheathed and Sheathed Cables Cords with Rigid and Flexible Conductor for Rated Voltages up to and Including 1100 V	Revision	WC-Draft
10	ETD/09/25317 IS 4289 : Part 1: 1984	Specification for flexible cables for lifts and other flexible connections part 1 elastomer insulated cables	Revision	WC-Draft
11	ETD/09/26091 IS 9968 : Part 1: 1988	Specification for Elastomer Insulated Cables Part 1 for Working Voltages up to and including 1 100 volts (Second Revision)	Revision	WC-Draft
12	ETD/09/26510 IS 1554 : Part 1: 1988	PVC insulated Heavy Duty electric cables - Specification Part 1 for working voltages up to and including 1100 V	Revision	WC-Draft
13	ETD/09/26511 IS 1554 : Part 2: 1988	PVC insulated Heavy Duty electric cables - Specification Part 2 for working voltages from 33 kV up to and including 11 kV	Revision	WC-Draft
14	ETD/09/22546 IS 7098 : Part 3: 1993	Cross Linked Polyethylene Insulated Thermoplastic Sheathed Cables Specification Part 3 for working voltages above 33 kV up to and including 400 kV (First Revision)	Revision	F-Draft
15	ETD/09/23577 IS 7098 : Part 1: 1988	Specification for crosslinked polyethylene insulated thermoplastic sheathed cables part 1 for working voltages up to and including 1100 volts	Revision	F-Draft

ITEM 5 TECHNICAL ISSUES

Nil

ITEM 6 NEW WORK ITEM PROPOSOAL

1. Amendment to IS 7098(part 2)
2. Amendment to IS 16269: 2018
3. Revision of IS 12943 : 1990, harmonizing with IEC 62444
4. Part 2 of IS 17293 for working voltages upto 33kV.
5. Revision of IS 5831:1984 , draft submitted by Shakun polymers

ITEM 7INTERNATIONAL ACTIVITIES

The present position of work including list of published IEC Standards by the corresponding **IEC/TC 20** is given in **ANNEX 3**.

The Committee may consider formulation of Indian Standards on new subjects or revision of published standards taking into account the work done at International level.

ITEM 8 NEWSUBJECTSANDFUTUREPROGRAMMEOF WORK

Revision of all standards prior to year 2000 through Action Research Project.

The committee may consider harmonization with latest IEC publication

ITEM 9 DATE AND PLACE OF NEXT MEETING

ITEM 10 ANY OTHER BUSINESS

Annex 1

COMPOSITION OF
POWER CABLES SECTIONAL COMMITTEE ETD 09

Sl.	Organization	Member Name	Member Email	Out of Last 3 Meeting
1.	Central Power Research Institute, Bengaluru	Smt. Meena K.P. *(Chairperson)*	meena@cpri.in	3/3
2.	3 M ELECTRO & COMMUNICATION INDIA PRIVATE LIMITED	Shri Sanjay Jha *(Principal Member)*	sjha@mmm.com	3/3
		Shri Permeet Singh *(Alternate Member)*	psingh@mmm.com	
		Shri Ashish Agarwal *(Alternate Member)*	aagrawal@mmm.com	
3.	Apar Industries Limited, Mumbai	Shri Amit Kumar Samanta *(Principal Member)*	ak.samanta@apar.com	3/3
		Shri Bharat Patel *(Alternate Member)*	bharat.patel@apar.com	
4.	Bharat Heavy Electrical Limited, New Delhi	Ms. TI Santha *(Principal Member)*	tis@bhel.in	2/3
		Shri Saroj Kumar *(Alternate Member)*	sarojkumar@bhel.in	
5.	Calcutta Electric Supply Corporation Limited, Kolkata	Shri Kirit Rana *(Principal Member)*	kirit.rana@rpsg.in	2/3
		Shri Arnab Guha *(Alternate Member)*	arnab.guha@rpsg.in	
6.	Central Electricity Authority, New Delhi	Shri Bhanwar Singh Meena *(Principal Member)*	bhanwar.cea@gov.in	2/3
		Shri Mohit Mudgal *(Alternate Member)*	mohitmudgal@nic.in	
7.	Central Power Research Institute, Bengaluru	Shrimati R. Arunjothi *(Principal Member)*	arunjothi@cpri.in	3/3
		Shri Thirumurthy *(Alternate Member)*	thiru@cpri.in	
		Dr. Neha Adhikari *(Alternate Member)*	nehaadhikari@cpri.in	
		Shri P.V.Satheesh Kumar *(Alternate Member)*	pvskumar@cpri.in	
8.	Delhi Metro Rail Corporation Limited, Delhi	Shri Malay Saha *(Principal Member)*	malay_saha@dmrc.org	2/3
		Shri Ashish Arora *(Alternate Member)*	ashish_delhimetro@yahoo.co.in	

9.	Electrical Research and Development Association, Vadodara	Shri Sheetal Panchal *(Principal Member)*	sheetal@erda.org	3/3
		Shri Shailesh Patel *(Alternate Member)*	shailesh.patel@erda.org	
10.	Engineers India Limited, New Delhi	Shri A. Sai *(Principal Member)*	achutuni.sai@eil.co.in	2/3
		Shri Mehul Basu *(Alternate Member)*	mehul.basu@eil.co.in	
		Shri Virendra Tiwari *(Alternate Member)*	virendra.tiwari@eil.co.in	
11.	Finolex Cables Limited, Pune	Shri P.N. khairnar *(Principal Member)*	pkhairnar@finolex.com	2/3
		Shri Bipin Patil *(Alternate Member)*	bipin_patil@finolex.com	
12.	Finolex J-Power Systems Limited, Pune	Shri Avijit Chakraborty *(Principal Member)*	avijit_chakraborty@finolexjpower.com	3/3
		Shri Nilesh Bute *(Alternate Member)*	nilesh.bute@finolexjpower.com	
		Shri Harshal Toriya *(Alternate Member)*	harshal.toriya@finolexjpower.com	
13.	Gujarat Energy Transmission Corporation Limited, Vadodara	Shri A.A. Joshi *(Principal Member)*	deeng.getco@gebmail.com	2/3
		Ms. Dhara D. Bhatt *(Alternate Member)*	deengg5.getco@gebmail.com	
14.	Indian Electrical and Electronics Manufacturers Association, New Delhi	Shri Vivek Arora *(Principal Member)*	vivek.arora@ieema.org	2/3
		Shri Rishabh Joshi *(Alternate Member)*	rishabh.joshi@ieema.org	
15.	International Copper Association India, Mumbai	Shri Amol Kalsekar *(Principal Member)*	amol.kalsekar@copperalliance.org	3/3
		Shri Avinash Khemka *(Alternate Member)*	avinash.khemka@copperalliance.org	
		Shri Jyotish Pande *(Alternate Member)*	jyotish.pande@internationalcopper.org	
16.	KEC International Limited, Mumbai	Ms Rajani Pande *(Principal Member)*	pandera@kecrpg.com	3/3
		Shri Bhoopendra Singh *(Alternate Member)*	singhbc@kecrpg.com	
17.	LS Cable India Private Limited, Rewari	Shri Ajay Kumar Mishra *(Principal Member)*	ajay.mishra@lscable.in	1/1
		Shri Dinesh Kumthekar *(Alternate Member)*	dinesh.kumthekar@lscable.in	
18.	Lapp India Private Limited, Jigani	Shri Kumar Krishna S. *(Principal Member)*	krishna.kumar@lappindia.com	3/3
19.	National Capital Region Transport	Shri Pavan Kumar P. *(Principal Member)*	pavan.kumar@ncrtc.in	2/2

	Corporation, New Delhi	Shri Afroz Ansari *(Alternate Member)*	afroz.ansari@ncrtc.in	
20.	National Hydroelectric Power Corporation, Faridabad	Shri Pankaj Prasoon *(Principal Member)*	pankajprasoon@nhpc.nic.in	1/3
		Ms. Rashmi Sraswat *(Alternate Member)*	rashmisaraswat@nhpc.nic.in	
21.	Nuclear Power Corporation of India Limited, Mumbai	Shri Ananthachari Mannepalli *(Principal Member)*	ananthachari@npcil.co.in	2/3
		Shri. Shashank Singh *(Alternate Member)*	em.shashank@gmail.com	
22.	Paramount Communication Limited, Mumbai	Shri Arun Sharma *(Principal Member)*	arun@paramountcables.com	1/3
23.	Polycab Wires Private Limited, Mumabi	Shri Bharat Sehgal *(Principal Member)*	bharat.sehgal@polycab.com	2/3
24.	RR Kabel Limited, Silvassa	Shri Jose Thomas *(Principal Member)*	jose.thomas@rrglobal.com	3/3
		Shri Ronak Bhatt *(Alternate Member)*	ronak.bhatt@rrglobal.com	
		Shri Balachandran Dharman *(Alternate Member)*	Balachandran.Dharman@rrglobal.com	
25.	Raychem RPG Private Limited, Chennai	Shri R.S. Anekar *(Principal Member)*	ranekar@raychemrpg.com	2/3
		Shri Abhijit Dhamale *(Alternate Member)*	adhamale@raychemrpg.com	
26.	Shakun Polymers Limited, Vadodara	Shri Priten Shah *(Principal Member)*	technical@shakunpolymers.com	3/3
		Shri Pratik Nayak *(Alternate Member)*	qcdaman@shakunpolymers.com	
27.	Sterlite Power Transmission Limited, New Delhi	Shri Rajesh Gulati *(Principal Member)*	rajesh.gulati@sterlite.com	1/3
		Shri Kamal Khanna *(Alternate Member)*	Kamal.Khanna@sterlite.com	
28.	The Brihan Mumbai Electric Supply & Transport, Mumbai	Shri M. B. Bamble *(Principal Member)*	deen@bestundertaking.com	0/0
		Shri S. V. Fulpagare *(Alternate Member)*	dceds@bestundertaking.com	
29.	Tata Consulting Engineers Limited, Navi Mumbai	Shri K Prabhakar *(Principal Member)*	kprabhakar@tce.co.in	2/3
		Shri G.V. Chandra Shekhar *(Alternate Member)*	gvchandrasekhar@tce.co.in	
30.	Tata Power Delhi Distribution Limited, New Delhi	Shri Sanjeev Atri *(Principal Member)*	sanjeev.kumar@tatapower-ddl.com	2/3
		Shri Kapil Kumar	kapil.kumar@tatapower-	

		(Alternate Member)	ddl.com	
31.	Universal Cables Limited, Satna	Shri Yogendra Singh Tiwari *(Principal Member)*	yogendra.tiwari@unistar.co.in	3/3
		Shri C.S. Mohanty *(Alternate Member)*	csmohanty@unistar.co.in	
32.	IN PERSONAL CAPACITY	Shri B. Nageshwar Rao	nageshburjupati@gmail.com	3/3
33.	IN PERSONAL CAPACITY	Shri Sitaraman Rama Prasath	ramaprasath25@gmail.com	2/2

ANNEX 2

PROGRAM OF WORK

Scope : To prepare standards for electric cables and their accessories, without limitations of voltage, current or form of construction but excluding cables for telecommunications and electronic equipment and such other cables as fall within the scope of other committees.

Liaison :IEC TC 20 - Electric cables - Principle (P)

S. No.	IS No.	Title	Doc. Type
1.	IS 10418 : 2024	Drums for Electric Cables - Specification (First Revision)	Indigenous
2.	IS 10462 (Part 1) : 1983	Fictitious calculation method for determination of dimensions of protective coverings of cables: Part 1: elastomeric and thermoplastic insulated cables	Modified/Technically Equivalent
3.	IS 10810 (Part 0) : 1984	Methods of test for cables Part 0 General	Indigenous
4.	IS 10810 (Part 1) : 1984	Methods of test for cables: Part 1 annealing test for wires used as conductors	Indigenous
5.	IS 10810 (Part 2) : 1984	Methods of test for cables: Part 2 tensile test for aluminium wires	Indigenous
6.	IS 10810 (Part 3) : 1984	Methods of test for cables: Part 3 wrapping test for aluminium wires	Indigenous
7.	IS 10810 (Part 4) : 1984	Methods of test for cables: Part 4 persulphate test of conductor	Indigenous
8.	IS 10810 (Part 5) : 1984	Methods of test for cables: Part 5 conductor resistance test	Indigenous
9.	IS 10810 (Part 6) : 1984	Methods of test for cables: Part 6 thickness of thermoplastic and elastomeric insulation and sheath	Indigenous
10.	IS 10810 (Part 7) : 1984	Methods of test for cables: Part 7 tensile strength and elongation at break of thermoplastic and elastomeric iNsulation and sheath	Indigenous
11.	IS 10810 (Part 8) : 1984	Methods of test for cables: Part 8 breaking strength and elongation at break for	Indigenous

		impregnated paper insulation	
12.	IS 10810 (Part 9) : 1984	Methods of test for cables: Part 9 tear resistance for paper insulation	Indigenous
13.	IS 10810 (Part 10) : 1984	Methods of test for cables: Part 10 loss of mass test	Indigenous
14.	IS 10810 (Part 11) : 1984	Methods of test for cables: Part 11 thermal ageing in air	Indigenous
15.	IS 10810 (Part 12) : 1984	Methods of test for cables: Part 12 shrinkage test	Indigenous
16.	IS 10810 (Part 13) : 1984	Methods of test for cables: Part 13 ozone resistance test	Indigenous
17.	IS 10810 (Part 14) : 1984	Methods of test for cables: Part 14 heat shock test	Indigenous
18.	IS 10810 (Part 15) : 1984	Methods of test for cables: Part 15 hot deformation test	Indigenous
19.	IS 10810 (Part 16) : 1986	Methods of test for cables: Part 16 accelerated ageing test by oxygen pressure method	Indigenous
20.	IS 10810 (Part 17) : 1986	Methods of test for cables: Part 17 tear resistance test for heavy duty sheath	Indigenous
21.	IS 10810 (Part 19) : 1984	Methods of test for cables: Part 19 bleeding and blooming test	Indigenous
22.	IS 10810 (Part 20) : 1984	Methods of test for cables: Part 20 cold bend test	Indigenous
23.	IS 10810 (Part 21) : 1984	Methods of test for cables: Part 21 cold impact test	Indigenous
24.	IS 10810 (Part 22) : 1984	Methods of test for cables: Part 22 vicat softening point	Indigenous
25.	IS 10810 (Part 23) : 1984	Methods of test for cables: Part 23 melt - Flow index	Indigenous
26.	IS 10810 (Part 24) : 1984	Methods of test for cables: Part 24 water soluble impurities test of insulating paper	Indigenous
27.	IS 10810 (Part 25) : 1984	Methods of test for cables: Part 25 conductivity of water extract test of insulating paper	Indigenous
28.	IS 10810 (Part 26) : 1984	Methods of test for cables: Part 26 PH value of water extract test of insulating paper	Indigenous
29.	IS 10810 (Part 27) : 1984	Methods of test for cables: Part 27 ash content test of insulating paper	Indigenous
30.	IS 10810 (Part 28) : 1984	Methods of test for cables: Part 28 water absorption test (Electrical)	Indigenous
31.	IS 10810 (Part 29) : 1984	Methods of test for cables: Part 29 environmental stress cracking test	Indigenous
32.	IS 10810 (Part 30) : 1984	Methods of test for cables: Part 30 hot set test	Indigenous
33.	IS 10810 (Part 31) : 1984	Methods of test for cables: Part 31 oil resistance test	Indigenous
34.	IS 10810 (Part 32) : 1984	Methods of test for cables: Part 32 carbon content test for polyethylene	Indigenous

35.	IS 10810 (Part 33) : 1984	Methods of test for cables: Part 33 water absorption test (Gravimetric)	Indigenous
36.	IS 10810 (Part 34) : 1984	Methods of test for cables: Part 34 measurement of thickness of metallic sheath	Indigenous
37.	IS 10810 (Part 35) : 1984	Methods of test for cables: Part 35 determination of tin in lead alloy for	Indigenous
38.	IS 10810 (Part 36) : 1984	Methods of test for cables: Part 36 dimensions of armouring material	Indigenous
39.	IS 10810 (Part 37) : 1984	Methods of test for cables: Part 37 tensile strength and elongation at break of armouring materials	Indigenous
40.	IS 10810 (Part 38) : 1984	Methods of test for cables: Part 38 torsion test on galvanized steel wires for armouring	Indigenous
41.	IS 10810 (Part 39) : 1984	Methods of test for cables: Part 39 winding test on galvanizedsteel strips for armouring	Indigenous
42.	IS 10810 (Part 40) : 1984	Methods of test for cables: Part 40 uniformity of zinc coating on steel armour	Indigenous
43.	IS 10810 (Part 41) : 1984	Methods of test for cables: Part 41 mass of zinc coating on steel armour	Indigenous
44.	IS 10810 (Part 42) : 1984	Methods of test - For cables: Part 42 resistivity test of armour wires and strips and conductance test of armour (Wires strips)	Indigenous
45.	IS 10810 (Part 43) : 1984	Methods of test for cables: Part 43 insulation resistance	Indigenous
46.	IS 10810 (Part 44) : 1984	Methods of test for cables: Part 44 spark test	Indigenous
47.	IS 10810 (Part 45) : 1984	Methods of test for cables:Part 45 high voltage test	Indigenous
48.	IS 10810 (Part 46) : 1984	Methods of test for cables: Part 48 partial dischar6e test	Indigenous
49.	IS 10810 (Part 47) : 1984	Methods of test for cables: Part 47 impulse test	Indigenous
50.	IS 10810 (Part 48) : 1984	Ethods of test for cables: Part 48 dielectric power factor test	Indigenous
51.	IS 10810 (Part 49) : 1984	Methods of test for cables: Part 49 heating cycle test	Indigenous
52.	IS 10810 (Part 50) : 1984	Methods of test for cables: Part 50 bending test	Indigenous
53.	IS 10810 (Part 51) : 1984	Methods of test for cables: Part 51 dripping test	Indigenous
54.	IS 10810 (Part 53) : 1984	Methods of test for cables: Part 53 flammability test	Indigenous
55.	IS 10810 (Part 54) : 1984	Methods of test for cables: Part 54 static flexibility test	Indigenous
56.	IS 10810 (Part 55) : 1986	Methods of test for cables: Part 55 abrasion test	Indigenous
57.	IS 10810 (Part 56) : 1987	Methods of test for cables: Part 56 accelerated ageing test by air pressure method	Indigenous

58.	IS 10810 (Part 57) : 1987	Methods of test for cables apart 57 flexing test	Indigenous
59.	IS 10810 (Part 58) : 1998	Method of tests for cables:Part 58 oxygen index test	Modified/Technically Equivalent
60.	IS 10810 (Part 59) : 1988	Methods of test for cables Part 59 determination of the amount of halogen acid gas evolved during combustion of polymeric materials taken from cables	Indigenous
61.	IS 10810 (Part 60) : 1988	Methods of test for cables: Part 60 thermal stability of PVC insulation and sheath	Indigenous
62.	IS 10810 (Part 61) : 1988	Methods of test for cables: Part 61 flame retardant test	Indigenous
63.	IS 10810 (Part 62) : 1993	Method of tests for cables: Part 62 flame retardance test for bunched cables	Indigenous
64.	IS 10810 (Part 63) : 1993	Method of tests for cables: Part 63 measurement of smoke density of electric cables under fire conditions	Indigenous
65.	IS 10810 (Part 64) : 2003	Methods of test for cables: Part 64 measurement of temperature index	Indigenous
66.	IS 10877 : 1984	Dimensions for moulds for cast resin based indoor terminations for cables for working voltages from 3.3 kV up to and including 11 kV	Indigenous
67.	IS 11979 : 1987	Dimensions for moulds for cast resin based straight through joints for cables for working voltages from 3.3 kV up to and including 11 kV	Indigenous
68.	IS 1255 : 1983 Reviewed In : 2016	Code of practice for installation and maintenance of power cables up to and including 33 kV rating (Second Revision)	Indigenous
69.	IS 12909 : 1990	Power cables - Dimensions for moulds for cast resin based outdoor terminations for voltages above 1 100 volts and up to and including 1 1000 volts	Indigenous
70.	IS 12943 : 1990	Brass glands for PVC cables - Specification	Indigenous
71.	IS 13573 (Part 1) : 2011	Cable accessories for extruded power cables - Specification: Part 1 for working voltages from 1.1 kV up to and including 3.3 kV (E) - Test methods and test requirements (First Revision)	Modified/Technically Equivalent
72.	IS 13573 (Part 2) : 2011	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 (First Revision)	Modified/Technically Equivalent
73.	IS 13573 (Part 3) : 2011	Cable accessories for extruded power cables - Specification: Part 3 for working voltages from 3.3 kV (UE) up to and including 33 KV (E) - Test methods (First Revision)	Modified/Technically Equivalent
74.	IS 13705 : 1993	Transition joints of cables for working voltages from 11 kV up to and including 33	Indigenous

	Reaffirmed but not taken up for revision	kV - Performance requirements and type tests	
75.	IS 14255 : 1995	Aerial bunched cables - For working voltages up to and including 1 100 Volts - Specification	Indigenous
76.	IS 14494 : 2019	Elastomer insulated flexible cables for use in mines - Specification (First Revision)	Indigenous
77.	IS 1554 (Part 1) : 1988	Specification for PVC insulated (Heavy Duty) electric cables: Part 1 for working voltages up to and including 1 100 V (Third Revision)	Modified/Technically Equivalent
78.	IS 1554 (Part 2) : 1988	Specification for pvc insulated (Heavy Duty) electric cables: Part 2 for working voltages from 3.3 kV up to and including 11 kV (Second Revision)	Modified/Technically Equivalent
79.	IS 16246 : 2015	Elastomer insulated cables with limited circuit integrity when affected by fire - Specification	Modified/Technically Equivalent
80.	IS 16269 : 2018	Recommended Short Circuit Ratings of Electric Cables with Rated Voltage from 1.1 kV to 220 kV - Specification	Indigenous
81.	IS 17048 : 2018	Halogen free flame retardant (HFFR) cables for working voltages up to and including 1 100 Volts - Specification	Modified/Technically Equivalent
82.	IS 17293 : 2020	Electric Cables for Photovoltaic Systems for Rated Voltage 1 500 V d.c.	Indigenous
83.	IS 17505 (Part 1) : 2021	Specification for Thermosetting Insulated Fire Survival Cables for Fixed Installation having Low Emission of Smoke and Corrosive Gases when Affected by Fire for Working Voltages upto and including 1 100 V a.c. and 1 500 V d.c.	Indigenous
84.	IS 18833 : 2024 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	Identical under dual numbering
85.	IS 2465 : 1984	Specification for cables for motor vehicles (Second Revision)	Indigenous
86.	IS 2593 : 2023	Flexible Cables for Miners' Cap Lamps - Specification (Second Revision)	Indigenous
87.	IS 3961 (Part 2) : 2017	Recommended current ratings for cables: Part 2 PVC insulated and PVC sheathed heavy duty cables (First Revision)	Indigenous
88.	IS 3961 (Part 3) : 1968	Recommended current ratings for cables: Part 3 rubber insulated cables	Modified/Technically Equivalent
89.	IS 3961 (Part 5) : 1968	Recommended current ratings for cables: Part 5 pvc insulated light duty cables	Indigenous
90.	IS 3961 (Part 6) : 2016	Recommended Current Ratings for Cables Part 6 Crosslinked Polyethylene Insulated	Indigenous

		PVC Sheathed Cables	
91.	IS 3961 (Part 7) : 2017	Recommended current ratings for cables: Part 7 crosslinked polyethylene insulated thermoplastic sheathed cables	Indigenous
92.	IS 4289 (Part 1) : 1984	Specification for flexible cables for lifts and other flexible connections: Part 1 elastomer insulated cables (First Revision)	Modified/Technically Equivalent
93.	IS 4289 (Part 2) : 2000	Flexible cables for lifts and other flexible connections - Specification: Part 2 pvc insulated circular cables	Modified/Technically Equivalent
94.	IS 5819 : 2024	Recommended short-circuit ratings of high voltage PVC cables (First Revision)	Indigenous
95.	IS 5831 : 1984	Specification for PVC insulation and sheath of electric cables (First Revision)	Modified/Technically Equivalent
96.	IS 5950 : 2024	Shot Firing Cables (for Use Other than in Shafts) - Specification (Second Revision)	Indigenous
97.	IS 6380 : 2024	Elastomeric Insulation and Sheath of Electric Cables - Specification (Second Revision)	Indigenous
98.	IS 694 : 2010	Polyvinyl chloride insulated unsheathed and sheathed cables/cords with rigid and flexible conductor for rated voltages up to and including 1 100 V (Fourth Revision)	Modified/Technically Equivalent
99.	IS 7093 : 1973	Specification for straight through joint boxes and lead sleeves for paper insulated lead sheathed cables up to and including 11 kV	Indigenous
100.	IS 7098 (Part 1) : 1988	Specification for crosslinked polyethylene insulated PVC sheathed cables: Part 1 for working voltages up to and including 1 100 volts (First Revision)	Modified/Technically Equivalent
101.	IS 7098 (Part 2) : 2011	Crosslinked polyethylene insulated thermoplastic sheathed cables - Specification: Part 2 for working voltages from 3.3 kV up to and including 33 kV (Second Revision)	Modified/Technically Equivalent
102.	IS 7098 (Part 3) : 1993	Cross - Linked polyethylene insulated thermoplastic sheathed cables - Specification: Part 3 for working voltages from 66 kV up to and including 220 kV	Indigenous
103.	IS 8130 : 2013	Conductors for insulated electric cables and flexible cords - Specification (Second Revision)	Modified/Technically Equivalent
104.	IS 8308 : 1993	Compression type tubular in - Line connectors for aluminium conductors of insulated cables - Specification (First Revision)	Indigenous
105.	IS 8309 : 1993	Compression type tubular terminal ends for aluminium conductors of insulated cables - Specification (First Revision)	Indigenous
106.	IS 8337 : 1976	Specification for performance requirements of compression joints of aluminium	Modified/Technically Equivalent

		conductors in insulated cables	
107.	IS 8394 : 1977	Specification for soldering and welding type terminal ends for conductors of insulated cables	Indigenous
108.	IS 8438 : 1987	Specification for moulds for cast resin based straight through joints for cables for voltages up to and including 1 100 volts (First Revision)	Indigenous
109.	IS 9553 : 1987	Specification for moulds suitable for cast resin based terminations for cables for voltages up to and including 1 100 V (First Revision)	Indigenous
110.	IS 9646 : 1992	Moulds suitable for cast resin - Based joints for cables for voltages upto and including 1 100 V - Specification (First Revision)	Indigenous
111.	IS 9857 : 1990	Welding cables - Specification (First Revision)	Modified/Technically Equivalent
112.	IS 9968 (Part 1) : 1988	Specification for elastomer insulated cables: Part 1 for working voltages up to and including 1 100 volts (First Revision)	Indigenous
113.	IS 9968 (Part 2) : 2002	Specification for elastomer - Insulated cables: Part 2 for working voltages from 3.3 kV up to and including 33 kV (First Revision)	Indigenous

ANNEX 3
IEC TC Program of work

TC20 Work Programme			
Sl. No.	**Project Reference**	**Title**	**Document Reference**
1	IEC 60050-461 ED3	International Electrotechnical Vocabulary (IEV) - Part 461: Electric cables	20/2174/CD
2	IEC 60245-1 ED5	Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 1: General requirements	20/2167/CD
3	IEC 60245-3 ED3	Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 3: Heat resistant silicone insulated cables	20/2168/CD
4	IEC 60245-4 ED4	Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 4: Cords and flexible cables	20/2169/CD
5	IEC 60245-6 ED3	Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 6: Arc welding electrode cables	20/2170/CD
6	IEC 60245-7 ED2	Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 7: Heat resistant ethylene-vinyl acetate rubber insulated cables	20/2171/CD
7	IEC 60245-8 ED2	Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 8: Cords for applications requiring high flexibility	20/2172/CD
8	IEC 60287-1-4 ED1	Electric cables - Calculation of the current rating - Part 1-4: Current rating equations (100 % load factor) and calculations of losses - Losses in Armoured Three Core Power Cables	20/2180/NP
9	IEC 60287-3-2 ED3	Electric cables - Calculation of the current rating - Part 3-2: Sections on operating conditions - Economic optimization of power cable size	20/2151/CD
10	IEC 60287-3-3 ED2	Electric cables - Calculation of the current rating - Part 3-3: Sections on operating conditions - Cables crossing external heat sources	20/2152/CD
11	IEC 60331-4 ED1	Tests for electric cables under fire conditions – Circuit integrity – Part 4: Test method for fire with shock at a temperature of at least 830 °C for cables of rated voltage higher than 1kV up to and including 30 kV	20/2194/FDIS
12	IEC 60332-1-2 ED2	Tests on electric and optical fibre cables under fire conditions - Part 1-2: Test for vertical flame propagation for a single insulated wire or cable - Procedure for 1 kW pre-mixed flame	20/2148/CDV

TC 20 Publications		
Sl. No.	**Reference**	**Title**
1	IEC 60050-461:2008	International Electrotechnical Vocabulary (IEV) - Part 461: Electric cables
2	IEC 60055-1:1997+AMD1:2005 CSV	Paper-insulated metal-sheathed cables for rated voltages up to 18/30 kV (with copper or aluminium conductors and excluding gas-pressure and oil-filled cables) - Part 1: Tests on cables and their accessories
3	IEC 60055-1:1997	Paper-insulated metal-sheathed cables for rated voltages up to 18/30 kV (with copper or aluminium conductors and excluding gas-pressure and oil-filled cables) - Part 1: Tests on cables and their accessories
4	IEC 60055-1:1997/AMD1:2005	Amendment 1 - Paper-insulated metal-sheathed cables for rated voltages up to 18/30 kV (with copper or aluminium conductors and excluding gas-pressure and oil-filled cables) - Part 1: Tests on cables and their accessories

5	IEC 60055-2:1981	Paper-insulated metal-sheathed cables for rated voltages up to 18/30 kV (with copper or aluminium conductors and excluding gas-pressure and oil-filled cables). Part 2: General and construction requirements
6	IEC 60055-2:1981/AMD1:1989	Amendment 1 - Paper-insulated metal-sheathed cables for rated voltages up to 18/30 kV (with copper or aluminium conductors and excluding gas-pressure and oil-filled cables). Part 2: General and construction requirements
7	IEC 60055-2:1981/AMD2:2005	Amendment 2 - Paper-insulated metal-sheathed cables for rated voltages up to 18/30 kV (with copper or aluminium conductors and excluding gas-pressure and oil-filled cables) - Part 2: General and construction requirements
8	IEC 60141-1:1993	Tests on oil-filled and gas-pressure cables and their accessories - Part 1: Oil-filled, paper or polypropylene paper laminate insulated, metal-sheathed cables and accessories for alternating voltages up to and including 500 kV
9	IEC 60141-1:1993/AMD1:1995	Amendment 1 - Tests on oil-filled and gas-pressure cables and their accessories - Part 1: Oil-filled, paper or polypropylene paper laminate insulated, metal-sheathed cables and accessories for alternating voltages up to and including 500 kV
10	IEC 60141-1:1993/AMD2:1998	Amendment 2 - Tests on oil-filled and gas-pressure cables and their accessories - Part 1: Oil-filled, paper or polypropylene paper laminate insulated, metal-sheathed cables and accessories for alternating voltages up to and including 500 kV
11	IEC 60141-2:1963	Tests on oil-filled and gas-pressure cables and their accessories - Part 2: Internal gas-pressure cables and accessories for alternating voltages up to 275 kV
12	IEC 60141-2:1963/AMD1:1967	Amendment 1 - Tests on oil-filled and gas-pressure cables and their accessories - Part 2: Internal gas-pressure cables and accessories for alternating voltages up to 275 kV
13	IEC 60141-3:1963	Tests on oil-filled and gas-pressure cables and their accessories - Part 3: External gas-pressure (gas compression) cables and accessories for alternating voltages up to 275 kV
14	IEC 60141-3:1963/AMD1:1967	Amendment 1 - Tests on oil-filled and gas-pressure cables and their accessories - Part 3: External gas-pressure (gas compression) cables and accessories for alternating voltages up to 275 kV
15	IEC 60141-4:1980	Tests on oil-filled and gas-pressure cables and their accessories - Part 4: Oil-impregnated paper-insulated high pressure oil-filled pipe-type cables and accessories for alternating voltages up to and including 400 kV
16	IEC 60141-4:1980/AMD1:1990	Amendment 1 - Tests on oil-filled and gas-pressure cables and their accessories. Part 4: Oil-impregnated paper-insulated high pressure oil-filled pipe-type cables and accessories for alternating voltages up to and including 400 kV
17	IEC 60183:2015	Guidance for the selection of high-voltage A.C. cable systems
18	IEC 60227-1:2024 RLV	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V - Part 1: General requirements
19	IEC 60227-1:2024	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V - Part 1: General requirements
20	IEC 60227-3:2024	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V - Part 3: Non-sheathed cables for fixed wiring
21	IEC 60227-3:2024 RLV	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V - Part 3: Non-sheathed cables for fixed wiring
22	IEC 60227-4:2024	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V - Part 4: Sheathed cables for fixed wiring
23	IEC 60227-5:2024 RLV	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V - Part 5: Flexible cables (cords)
24	IEC 60227-5:2024	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V - Part 5: Flexible cables (cords)
25	IEC 60227-6:2001	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V - Part 6: Lift cables and cables for flexible connections
26	IEC 60227-7:2024 RLV	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V - Part 7: Flexible cables screened and unscreened with two or more conductors and of rated voltages up to and including 300/500 V

27	IEC 60227-7:2024	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V - Part 7: Flexible cables screened and unscreened with two or more conductors and of rated voltages up to and including 300/500 V
28	IEC 60228:2023 CMV	Conductors of insulated cables
29	IEC 60228:2023	Conductors of insulated cables
30	IEC 60229:2007	Electric cables - Tests on extruded oversheaths with a special protective function
31	IEC 60230:2018+AMD1:2021 CSV	Impulse tests on cables and their accessories
32	IEC 60230:2018	Impulse tests on cables and their accessories
33	IEC 60230:2018/AMD1:2021	Amendment 1 - Impulse tests on cables and their accessories
34	IEC 60245-1:2003+AMD1:2007 CSV	Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 1: General requirements
35	IEC 60245-1:2003	Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 1: General requirements
36	IEC 60245-1:2003/AMD1:2007	Amendment 1 - Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 1: General requirements
37	IEC 60245-3:1994	Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 3: Heat resistant silicone insulated cables
38	IEC 60245-3:1994/AMD1:1997	Amendment 1 - Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 3: Heat resistant silicone insulated cables
39	IEC 60245-3:1994/AMD2:2011	Amendment 2 - Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 3: Heat resistant silicone insulated cables
40	IEC 60245-4:2011	Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 4: Cords and flexible cables
41	IEC 60245-6:1994	Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 6: Arc welding electrode cables
42	IEC 60245-6:1994/AMD1:1997	Amendment 1 - Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 6: Arc welding electrode cables
43	IEC 60245-6:1994/AMD2:2003	Amendment 2 - Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 6: Arc welding electrode cables
44	IEC 60245-7:1994	Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 7: Heat resistant ethylene-vinyl acetate rubber insulated cables
45	IEC 60245-7:1994/AMD1:1997	Amendment 1 - Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 7: Heat resistant ethylene-vinyl acetate rubber insulated cables
46	IEC 60245-8:1998+AMD1:2003+AMD2:2011 CSV	Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 8: Cords for applications requiring high flexibility
47	IEC 60245-8:1998+AMD1:2003 CSV	Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 8: Cords for applications requiring high flexibility
48	IEC 60245-8:1998	Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 8: Cords for applications requiring high flexibility
49	IEC 60245-8:1998/AMD1:2003	Amendment 1 - Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 8: Cords for applications requiring high flexibility
50	IEC 60245-8:1998/AMD2:2011	Amendment 2 - Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 8: Cords for applications requiring high flexibility
51	IEC 60287:2024 SER	Electric cables - ALL PARTS
52	IEC 60287-1-1:2023 CMV	Electric cables - Calculation of the current rating - Part 1-1: Current rating equations (100 % load factor) and calculation of losses - General
53	IEC 60287-1-1:2023	Electric cables - Calculation of the current rating - Part 1-1: Current rating equations (100 % load factor) and calculation of losses - General
54	IEC 60287-1-2:2023	Electric cables - Calculation of the current rating - Part 1-2: Current rating equations (100 % load factor) and calculations of losses - Sheath eddy current loss factors for two circuits in flat formation
55	IEC 60287-1-3:2023 CMV	Electric cables - Calculation of the current rating - Part 1-3: Current rating equations (100 % load factor) and calculation of losses - Current sharing between parallel single-core cables and calculation of circulating current losses
56	IEC 60287-1-3:2023	Electric cables - Calculation of the current rating - Part 1-3: Current rating equations (100 % load factor) and calculation of losses - Current sharing between parallel single-core cables and calculation of

		circulating current losses
57	IEC 60287-2-1:2023 CMV	Electric cables - Calculation of the current rating - Part 2-1: Thermal resistance - Calculation of thermal resistance
58	IEC 60287-2-1:2023	Electric cables - Calculation of the current rating - Part 2-1: Thermal resistance - Calculation of thermal resistance
59	IEC 60287-2-2:1995	Electric cables - Calculation of the current rating - Part 2: Thermal resistance - Section 2: A method for calculating reduction factors for groups of cables in free air, protected from solar radiation
60	IEC 60287-2-3:2024	Electric cables - Calculation of the current rating - Part 2-3: Thermal resistance - Cables installed in ventilated tunnels
61	IEC 60287-2-3:2024 RLV	Electric cables - Calculation of the current rating - Part 2-3: Thermal resistance - Cables installed in ventilated tunnels
62	IEC 60287-3-1:2017	Electric cables - Calculation of the current rating - Part 3-1: Operating conditions - Site reference conditions
63	IEC 60287-3-1:2017 RLV	Electric cables - Calculation of the current rating - Part 3-1: Operating conditions - Site reference conditions
64	IEC 60287-3-2:2012	Electric cables - Calculation of the current rating - Part 3-2: Sections on operating conditions - Economic optimization of power cable size
65	IEC 60287-3-3:2007	Electric cables - Calculation of the current rating - Part 3-3: Sections on operating conditions - Cables crossing external heat sources
66	IEC 60331-1:2018	Tests for electric cables under fire conditions - Circuit integrity - Part 1: Test method for fire with shock at a temperature of at least 830 °C for cables of rated voltage up to and including 0,6/1,0 kV and with an overall diameter exceeding 20 mm
67	IEC 60331-1:2018 RLV	Tests for electric cables under fire conditions - Circuit integrity - Part 1: Test method for fire with shock at a temperature of at least 830°C for cables of rated voltage up to and including 0,6/1,0 kV and with an overall diameter exceeding 20 mm
68	IEC 60331-2:2018	Tests for electric cables under fire conditions - Circuit integrity - Part 2: Test method for fire with shock at a temperature of at least 830 °C for cables of rated voltage up to and including 0,6/1,0 kV and with an overall diameter not exceeding 20 mm
69	IEC 60331-2:2018 RLV	Tests for electric cables under fire conditions - Circuit integrity - Part 2: Test method for fire with shock at a temperature of at least 830°C for cables of rated voltage up to and including 0,6/1,0 kV and with an overall diameter not exceeding 20mm
70	IEC 60331-3:2018	Tests for electric cables under fire conditions - Circuit integrity - Part 3: Test method for fire with shock at a temperature of at least 830 °C for cables of rated voltage up to and including 0,6/1,0 kV tested in a metal enclosure
71	IEC 60331-3:2018 RLV	Tests for electric cables under fire conditions - Circuit integrity - Part 3: Test method for fire with shock at a temperature of at least 830°C for cables of rated voltage up to and including 0,6/1,0 kV tested in a metal enclosure
72	IEC 60331-11:1999+AMD1:2009 CSV	Tests for electric cables under fire conditions - Circuit integrity - Part 11: Apparatus - Fire alone at a flame temperature of at least 750 °C
73	IEC 60331-11:1999	Tests for electric cables under fire conditions - Circuit integrity - Part 11: Apparatus - Fire alone at a flame temperature of at least 750 °C
74	IEC 60331-11:1999/AMD1:2009	Amendment 1 - Tests for electric cables under fire conditions - Circuit integrity - Part 11: Apparatus - Fire alone at a flame temperature of at least 750 °C
75	IEC 60331-21:1999	Tests for electric cables under fire conditions - Circuit integrity - Part 21: Procedures and requirements - Cables of rated voltage up to and including 0,6/1,0 kV
76	IEC 60331-23:1999	Tests for electric cables under fire conditions - Circuit integrity - Part 23: Procedures and requirements - Electric data cables
77	IEC 60331-25:1999	Tests for electric cables under fire conditions - Circuit integrity - Part 25: Procedures and requirements - Optical fibre cables
78	IEC 60332:2024 SER	Tests on electric and optical fibre cables under fire conditions - ALL PARTS
79	IEC 60332-1-1:2004+AMD1:2015 CSV	Tests on electric and optical fibre cables under fire conditions - Part 1-1: Test for vertical flame propagation for a single insulatedwire or cable - Apparatus

80	IEC 60332-1-1:2004	Tests on electric and optical fibre cables under fire conditions - Part 1-1: Test for vertical flame propagation for a single insulated wire or cable - Apparatus
81	IEC 60332-1-1:2004/AMD1:2015	Amendment 1 - Tests on electric and optical fibre cables under fire conditions - Part 1-1: Test for vertical flame propagation for a single insulated wire or cable - Apparatus
82	IEC 60332-1-2:2004+AMD1:2015 CSV	Tests on electric and optical fibre cables under fire conditions - Part 1-2: Test for vertical flame propagation for a single insulatedwire or cable - Procedure for 1 kW pre-mixed flame
83	IEC 60332-1-2:2004	Tests on electric and optical fibre cables under fire conditions - Part 1-2: Test for vertical flame propagation for a single insulated wire or cable - Procedure for 1 kW pre-mixed flame
84	IEC 60332-1-2:2004/AMD1:2015	Amendment 1 - Tests on electric and optical fibre cables under fire conditions - Part 1-2: Test for vertical flame propagation for a single insulated wire or cable - Procedure for 1 kW pre-mixed flame
85	IEC 60332-1-3:2004+AMD1:2015 CSV	Tests on electric and optical fibre cables under fire conditions - Part 1-3: Test for vertical flame propagation for a single insulatedwire or cable - Procedure for determination of flamingdroplets/particles
86	IEC 60332-1-3:2004	Tests on electric and optical fibre cables under fire conditions - Part 1-3: Test for vertical flame propagation for a single insulated wire or cable - Procedure for determination of flaming droplets/particles
87	IEC 60332-1-3:2004/AMD1:2015	Amendment 1 - Tests on electric and optical fibre cables under fire conditions - Part 1-3: Test for vertical flame propagation for a single insulated wire or cable - Procedure for determination of flaming droplets/particles
88	IEC 60332-2-1:2004	Tests on electric and optical fibre cables under fire conditions - Part 2-1: Test for vertical flame propagation for a single small insulated wire or cable - Apparatus
89	IEC 60332-2-2:2004	Tests on electric and optical fibre cables under fire conditions - Part 2-2: Test for vertical flame propagation for a single small insulated wire or cable - Procedure for diffusion flame
90	IEC 60332-3-10:2018 RLV	Tests on electric and optical fibre cables under fire conditions - Part 3-10: Test for vertical flame spread of vertically-mounted bunched wires or cables - Apparatus
91	IEC 60332-3-10:2018	Tests on electric and optical fibre cables under fire conditions - Part 3-10: Test for vertical flame spread of vertically-mounted bunched wires or cables - Apparatus
92	IEC 60332-3-10:2018/COR1:2018	Corrigendum 1 - Tests on electric and optical fibre cables under fire conditions - Part 3-10: Test for vertical flame spread of vertically-mounted bunched wires or cables - Apparatus
93	IEC 60332-3-21:2018	Tests on electric and optical fibre cables under fire conditions - Part 3-21: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category A F/R
94	IEC 60332-3-21:2018 RLV	Tests on electric and optical fibre cables under fire conditions - Part 3-21: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category A F/R
95	IEC 60332-3-22:2018 RLV	Tests on electric and optical fibre cables under fire conditions - Part 3-22: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category A
96	IEC 60332-3-22:2018	Tests on electric and optical fibre cables under fire conditions - Part 3-22: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category A
97	IEC 60332-3-23:2018 RLV	Tests on electric and optical fibre cables under fire conditions - Part 3-23: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category B
98	IEC 60332-3-23:2018	Tests on electric and optical fibre cables under fire conditions - Part 3-23: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category B
99	IEC 60332-3-24:2018	Tests on electric and optical fibre cables under fire conditions - Part 3-24: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category C
100	IEC 60332-3-24:2018 RLV	Tests on electric and optical fibre cables under fire conditions - Part 3-24: Test for vertical flame spread of vertically-mounted bunched wires

		or cables - Category C
101	IEC 60332-3-24:2018/ISH1:2019	Interpretation sheet 1 - Tests on electric and optical fibre cables under fire conditions - Part 3-24: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category C
102	IEC 60332-3-25:2018	Tests on electric and optical fibre cables under fire conditions - Part 3-25: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category D
103	IEC 60332-3-25:2018 RLV	Tests on electric and optical fibre cables under fire conditions - Part 3-25: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category D
104	IEC 60502:2024 SER	Power cables with extruded insulation and their accessories for rated voltages from 1 kV (U_m = 1,2 kV) up to 30 kV (U_m = 36 kV) - ALL PARTS
105	IEC 60502-1:2021	Power cables with extruded insulation and their accessories for rated voltages from 1 kV (Um = 1,2 kV) up to 30 kV (Um = 36 kV) - Part 1: Cables for rated voltages of 1 kV (Um = 1,2 kV) and 3 kV (Um = 3,6 kV)
106	IEC 60502-1:2021 RLV	Power cables with extruded insulation and their accessories for rated voltages from 1 kV (Um = 1,2 kV) up to 30 kV (Um = 36 kV) - Part 1: Cables for rated voltages of 1 kV (Um = 1,2 kV) and 3 kV (Um = 3,6 kV)
107	IEC 60502-2:2014+AMD1:2024 CSV	Power cables with extruded insulation and their accessories for rated voltages from 1 kV (Um = 1,2 kV) up to 30 kV (Um = 36 kV) - Part 2: Cables for rated voltages from 6 kV (Um = 7,2 kV) up to 30 kV (Um = 36 kV)
108	IEC 60502-2:2014 RLV	Power cables with extruded insulation and their accessories for rated voltages from 1 kV (U_m = 1,2 kV) up to 30 kV (U_m = 36 kV) – Part 2: Cables for rated voltages from 6 kV (U_m = 7,2 kV) up to 30 kV (U_m = 36 kV)
109	IEC 60502-2:2014	Power cables with extruded insulation and their accessories for rated voltages from 1 kV (U_m = 1,2 kV) up to 30 kV (U_m = 36 kV) - Part 2: Cables for rated voltages from 6 kV (U_m = 7,2 kV) up to 30 kV (U_m = 36 kV)
110	IEC 60502-2:2014/AMD1:2024	Amendment 1 - Power cables with extruded insulation and their accessories for rated voltages from 1 kV (Um = 1,2 kV) up to 30 kV (Um = 36 kV) - Part 2: Cables for rated voltages from 6 kV (Um = 7,2 kV) up to 30 kV (Um = 36 kV)
111	IEC 60502-4:2023	Power cables with extruded insulation and their accessories for rated voltages from 1 kV (U_m = 1,2 kV) up to 30 kV (U_m = 36 kV) - Part 4: Test requirements on accessories for cables with rated voltages from 6 kV (U_m = 7,2 kV) up to 30 kV (U_m = 36 kV)
112	IEC 60702-1:2002+AMD1:2015 CSV	Mineral insulated cables and their terminations with a rated voltage not exceeding 750 V - Part 1: Cables
113	IEC 60702-1:2002	Mineral insulated cables and their terminations with a rated voltage not exceeding 750 V - Part 1: Cables
114	IEC 60702-1:2002/AMD1:2015	Amendment 1 - Mineral insulated cables and their terminations with a rated voltage not exceeding 750 V - Part 1: Cables
115	IEC 60702-2:2002+AMD1:2015 CSV	Mineral insulated cables and their terminations with a rated voltagenot exceeding 750 V - Part 2: Terminations
116	IEC 60702-2:2002	Mineral insulated cables and their terminations with a rated voltage not exceeding 750 V - Part 2: Terminations
117	IEC 60702-2:2002/AMD1:2015	Amendment 1 - Mineral insulated cables and their terminations with a rated voltage not exceeding 750 V - Part 2: Terminations
118	IEC 60702-3:2016	Mineral insulated cables and their terminations with a rated voltage not exceeding 750 V - Part 3: Guide for use
119	IEC 60719:1992	Calculation of the lower and upper limits for the average outer dimensions of cables with circular copper conductors and of rated voltages up to and including 450/750 V
120	IEC 60724:2000+AMD1:2008 CSV	Short-circuit temperature limits of electric cables with rated voltages of

		1 kV (U_m = 1,2 kV) and 3 kV (U_m = 3,6 kV)
121	IEC 60724:2000	Short-circuit temperature limits of electric cables with rated voltages of 1 kV (U_m = 1,2 kV) and 3 kV (U_m = 3,6 kV)
122	IEC 60724:2000/AMD1:2008	Amendment 1 - Short-circuit temperature limits of electric cables with rated voltages of 1 kV (U_m = 1,2 kV) and 3 kV (U_m = 3,6 kV)
123	IEC 60754-1:2011+AMD1:2019 CSV	Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content
124	IEC 60754-1:2011	Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content
125	IEC 60754-1:2011/COR1:2013	Corrigendum 1 - Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content
126	IEC 60754-1:2011/AMD1:2019	Amendment 1 - Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content
127	IEC 60754-2:2011+AMD1:2019 CSV	Test on gases evolved during combustion of materials from cables - Part 2: Determination of acidity (by pH measurement) and conductivity
128	IEC 60754-2:2011	Test on gases evolved during combustion of materials from cables - Part 2: Determination of acidity (by pH measurement) and conductivity
129	IEC 60754-2:2011/AMD1:2019	Amendment 1 - Test on gases evolved during combustion of materials from cables - Part 2: Determination of acidity (by pH measurement) and conductivity
130	IEC 60754-3:2018	Test on gases evolved during combustion of materials from cables - Part 3: Measurement of low level of halogen content by ion chromatography
131	IEC 60800:2021 RLV	Heating cables with a rated voltage up to and including 300/500 V for comfort heating and prevention of ice formation
132	IEC 60800:2021	Heating cables with a rated voltage up to and including 300/500 V for comfort heating and prevention of ice formation
133	IEC 60811-100:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 100: General
134	IEC 60811-201:2012+AMD1:2017+AMD2:2023 CSV	Electric and optical fibre cables - Test methods for non-metallic materials - Part 201: General tests - Measurement of insulation thickness
135	IEC 60811-201:2012+AMD1:2017 CSV	Electric and optical fibre cables - Test methods for non-metallic materials - Part 201: General tests - Measurement of insulation thickness
136	IEC 60811-201:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 201: General tests - Measurement of insulation thickness
137	IEC 60811-201:2012/AMD1:2017	Amendment 1 - Electric and optical fibre cables - Test methods for non-metallic materials - Part 201: General tests - Measurement of insulation thickness
138	IEC 60811-201:2012/AMD2:2023	Amendment 2 - Electric and optical fibre cables - Test methods for non-metallic materials - Part 201: General tests - Measurement of insulation thickness
139	IEC 60811-202:2012+AMD1:2017+AMD2:2023 CSV	Electric and optical fibre cables - Test methods for non-metallic materials - Part 202: General tests - Measurement of thickness of non-metallic sheath
140	IEC 60811-202:2012+AMD1:2017 CSV	Electric and optical fibre cables - Test methods for non-metallic materials - Part 202: General tests - Measurement of thickness of non-metallic sheath
141	IEC 60811-202:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 202: General tests - Measurement of thickness of non-metallic sheath
142	IEC 60811-202:2012/AMD1:2017	Amendment 1 - Electric and optical fibre cables - Test methods for non-metallic materials - Part 202: General tests - Measurement of thickness of non-metallic sheath
143	IEC 60811-202:2012/AMD2:2023	Amendment 2 - Electric and optical fibre cables - Test methods for non-metallic materials - Part 202: General tests - Measurement of thickness of non-metallic sheath
144	IEC 60811-203:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 203: General tests - Measurement of overall dimensions

145	IEC 60811-301:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 301: Electrical tests - Measurement of the permittivity at 23 °C of filling compounds
146	IEC 60811-302:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 302: Electrical tests - Measurement of the d.c. resistivity at 23 °C and 100 °C of filling compounds
147	IEC 60811-401:2012+AMD1:2017 CSV	Electric and optical fibre cables - Test methods for non-metallic materials - Part 401: Miscellaneous tests - Thermal ageing methods - Ageing in an air oven
148	IEC 60811-401:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 401: Miscellaneous tests - Thermal ageing methods - Ageing in an air oven
149	IEC 60811-401:2012/AMD1:2017	Amendment 1 - Electric and optical fibre cables - Test methods for non-metallic materials - Part 401: Miscellaneous tests - Thermal ageing methods - Ageing in an air oven
150	IEC 60811-402:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 402: Miscellaneous tests - Water absorption tests
151	IEC 60811-403:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 403: Miscellaneous tests - Ozone resistance test on cross-linked compounds
152	IEC 60811-404:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 404: Miscellaneous tests - Mineral oil immersion tests for sheaths
153	IEC 60811-405:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 405: Miscellaneous tests - Thermal stability test for PVC insulations and PVC sheaths
154	IEC 60811-406:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 406: Miscellaneous tests - Resistance to stress cracking of polyethylene and polypropylene compounds
155	IEC 60811-407:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 407: Miscellaneous tests - Measurement of mass increase of polyethylene and polypropylene compounds
156	IEC 60811-408:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 408: Miscellaneous tests - Long-term stability test of polyethylene and polypropylene compounds
157	IEC 60811-409:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 409: Miscellaneous tests - Loss of mass test for thermoplastic insulations and sheaths
158	IEC 60811-410:2012+AMD1:2017 CSV	Electric and optical fibre cables - Test methods for non-metallic materials - Part 410: Miscellaneous tests - Test method for copper-catalyzed oxidative degradation of polyolefin insulated conductors
159	IEC 60811-410:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 410: Miscellaneous tests - Test method for copper-catalyzed oxidative degradation of polyolefin insulated conductors
160	IEC 60811-410:2012/AMD1:2017	Amendment 1 - Electric and optical fibre cables - Test methods for non-metallic materials - Part 410: Miscellaneous tests - Test method for copper-catalyzed oxidative degradation of polyolefin insulated conductors
161	IEC 60811-411:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 411: Miscellaneous tests - Low-temperature brittleness of filling compounds
162	IEC 60811-412:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 412: Miscellaneous tests - Thermal ageing methods - Ageing in an air bomb
163	IEC 60811-501:2012+AMD1:2018+AMD2:2023 CSV	Electric and optical fibre cables - Test methods for non-metallic materials - Part 501: Mechanical tests - Tests for determining the mechanical properties of insulating and sheathing compounds
164	IEC 60811-501:2012+AMD1:2018 CSV	Electric and optical fibre cables - Test methods for non-metallic materials - Part 501: Mechanical tests - Tests for determining the mechanical properties of insulating and sheathing compounds
165	IEC 60811-501:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 501: Mechanical tests - Tests for determining the mechanical properties of insulating and sheathing compounds

166	IEC 60811-501:2012/AMD1:2018	Amendment 1 - Electric and optical fibre cables - Test methods for non-metallic materials - Part 501: Mechanical tests - Tests for determining the mechanical properties of insulating and sheathing compounds
167	IEC 60811-501:2012/AMD2:2023	Amendment 2 - Electric and optical fibre cables - Test methods for non-metallic materials - Part 501: Mechanical tests - Tests for determining the mechanical properties of insulating and sheathing compounds
168	IEC 60811-502:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 502: Mechanical tests - Shrinkage test for insulations
169	IEC 60811-503:2012+AMD1:2023 CSV	Electric and optical fibre cables - Test methods for non-metallic materials - Part 503: Mechanical tests - Shrinkage test for sheaths
170	IEC 60811-503:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 503: Mechanical tests - Shrinkage test for sheaths
171	IEC 60811-503:2012/AMD1:2023	Amendment 1 - Electric and optical fibre cables - Test methods for non-metallic materials - Part 503: Mechanical tests - Shrinkage test for sheaths
172	IEC 60811-504:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 504: Mechanical tests - Bending tests at low temperature for insulation and sheaths
173	IEC 60811-505:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 505: Mechanical tests - Elongation at low temperature for insulations and sheaths
174	IEC 60811-506:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 506: Mechanical tests - Impact test at low temperature for insulations and sheaths
175	IEC 60811-507:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 507: Mechanical tests - Hot set test for cross-linked materials
176	IEC 60811-508:2012+AMD1:2017+AMD2:2023 CSV	Electric and optical fibre cables - Test methods for non-metallic materials - Part 508: Mechanical tests - Pressure test at high temperature for insulation and sheaths
177	IEC 60811-508:2012+AMD1:2017 CSV	Electric and optical fibre cables - Test methods for non-metallic materials - Part 508: Mechanical tests - Pressure test at high temperature for insulation and sheaths
178	IEC 60811-508:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 508: Mechanical tests - Pressure test at high temperature for insulation and sheaths
179	IEC 60811-508:2012/AMD1:2017	Amendment 1 - Electric and optical fibre cables - Test methods for non-metallic materials - Part 508: Mechanical tests - Pressure test at high temperature for insulation and sheaths
180	IEC 60811-508:2012/AMD2:2023	Amendment 2 - Electric and optical fibre cables - Test methods for non-metallic materials - Part 508: Mechanical tests - Pressure test at high temperature for insulation and sheaths
181	IEC 60811-509:2012+AMD1:2017 CSV	Electric and optical fibre cables - Test methods for non-metallic materials - Part 509: Mechanical tests - Test for resistance of insulations and sheaths to cracking (heat shock test)
182	IEC 60811-509:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 509: Mechanical tests - Test for resistance of insulations and sheaths to cracking (heat shock test)
183	IEC 60811-509:2012/AMD1:2017	Amendment 1 - Electric and optical fibre cables - Test methods for non-metallic materials - Part 509: Mechanical tests - Test for resistance of insulations and sheaths to cracking (heat shock test)
184	IEC 60811-510:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 510: Mechanical tests - Methods specific to polyethylene and polypropylene compounds - Wrapping test after thermal ageing in air
185	IEC 60811-511:2012+AMD1:2017 CSV	Electric and optical fibre cables - Test methods for non-metallic materials - Part 511: Mechanical tests - Measurement of the melt flow index of polyethylene and polypropylene compounds
186	IEC 60811-511:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 511: Mechanical tests - Measurement of the melt flow index of polyethylene compounds
187	IEC 60811-511:2012/AMD1:2017	Amendment 1 - Electric and optical fibre cables - Test methods for non-metallic materials - Part 511: Mechanical tests - Measurement of the

		melt flow index of polyethylene and polypropylene compounds
188	IEC 60811-512:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 512: Mechanical tests - Methods specific to polyethylene and polypropylene compounds - Tensile strength and elongation at break after conditioning at elevated temperature
189	IEC 60811-513:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 513: Mechanical tests - Methods specific to polyethylene and polypropylene compounds - Wrapping test after conditioning
190	IEC 60811-601:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 601: Physical tests - Measurement of the drop point of filling compounds
191	IEC 60811-602:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 602: Physical tests - Separation of oil in filling compounds
192	IEC 60811-603:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 603: Physical tests - Measurement of total acid number of filling compounds
193	IEC 60811-604:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 604: Physical tests - Measurement of absence of corrosive components in filling compounds
194	IEC 60811-605:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 605: Physical tests - Measurement of carbon black and/or mineral filler in polyethylene compounds
195	IEC 60811-606:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 606: Physical tests - Methods for determining the density
196	IEC 60811-607:2012	Electric and optical fibre cables - Test methods for non-metallic materials - Part 607: Physical tests - Test for the assessment of carbon black dispersion in polyethylene and polypropylene
197	IEC 60840:2020+AMD1:2023 CSV	Power cables with extruded insulation and their accessories for rated voltages above 30 kV (Um= 36 kV) up to 150 kV (Um = 170 kV) - Test methods and requirements
198	IEC 60840:2020 RLV	Power cables with extruded insulation and their accessories for rated voltages above 30 kV (U_m= 36 kV) up to 150 kV (U_m = 170 kV) - Test methods and requirements
199	IEC 60840:2020	Power cables with extruded insulation and their accessories for rated voltages above 30 kV (U_m= 36 kV) up to 150 kV (U_m = 170 kV) - Test methods and requirements
200	IEC 60840:2020/COR1:2021	Corrigendum 1 - Power cables with extruded insulation and their accessories for rated voltages above 30 kV (U_m= 36 kV) up to 150 kV (U_m = 170 kV) - Test methods and requirements
201	IEC 60840:2020/AMD1:2023	Amendment 1 - Power cables with extruded insulation and their accessories for rated voltages above 30 kV (Um= 36 kV) up to 150 kV (Um = 170 kV) - Test methods and requirements
202	IEC 60853-1:1985	Calculation of the cyclic and emergency current rating of cables. Part 1: Cyclic rating factor for cables up to and including 18/30(36) kV
203	IEC 60853-1:1985/AMD1:1994	Amendment 1 - Calculation of the cyclic and emergency current rating of cables. Part 1: Cyclic rating factor for cables up to and including 18/30(36) kV
204	IEC 60853-1:1985/AMD2:2008	Amendment 2 - Calculation of the cyclic and emergency current rating of cables - Part 1: Cyclic rating factor for cables up to and including 18/30 (36) kV
205	IEC 60853-2:1989	Calculation of the cyclic and emergency current rating of cables. Part 2: Cyclic rating of cables greater than 18/30 (36) kV and emergency ratings for cables of all voltages
206	IEC 60853-2:1989/AMD1:2008	Amendment 1 - Calculation of the cyclic and emergency current rating of cables - Part 2: Cyclic rating of cables greater than 18/30 (36) kV and emergency ratings for cables of all voltages
207	IEC 60853-3:2002	Calculation of the cyclic and emergency current rating of cables - Part 3: Cyclic rating factor for cables of all voltages, with partial drying of the soil

208	IEC 60885-3:2015 RLV	Electrical test methods for electric cables - Part 3: Test methods for partial discharge measurements on lengths of extruded power cables
209	IEC 60885-3:2015	Electrical test methods for electric cables - Part 3: Test methods for partial discharge measurements on lengths of extruded power cables
210	IEC 60949:1988	Calculation of thermally permissible short-circuit currents, taking into account non-adiabatic heating effects
211	IEC 60949:1988/AMD1:2008	Amendment 1 - Calculation of thermally permissible short-circuit currents, taking into account non-adiabatic heating effects
212	IEC 60986:2000+AMD1:2008 CSV	Short-circuit temperature limits of electric cables with rated voltages from 6 kV (U_m = 7,2 kV) up to 30 kV (U_m = 36 kV)
213	IEC 60986:2000	Short-circuit temperature limits of electric cables with rated voltages from 6 kV (U_m = 7,2 kV) up to 30 kV (U_m = 36 kV)
214	IEC 60986:2000/AMD1:2008	Amendment 1 - Short-circuit temperature limits of electric cables with rated voltages from 6 kV (U_m = 7,2 kV) up to 30 kV (U_m = 36 kV)
215	IEC 61034-1:2005+AMD1:2013+AMD2:2019 CSV	Measurement of smoke density of cables burning under defined conditions - Part 1: Test apparatus
216	IEC 61034-1:2005+AMD1:2013 CSV	Measurement of smoke density of cables burning under defined conditions - Part 1: Test apparatus
217	IEC 61034-1:2005	Measurement of smoke density of cables burning under defined conditions - Part 1: Test apparatus
218	IEC 61034-1:2005/AMD1:2013	Amendment 1 - Measurement of smoke density of cables burning under defined conditions - Part 1: Test apparatus
219	IEC 61034-1:2005/AMD2:2019	Amendment 2 - Measurement of smoke density of cables burning under defined conditions - Part 1: Test apparatus
220	IEC 61034-2:2005+AMD1:2013+AMD2:2019 CSV	Measurement of smoke density of cables burning under defined conditions - Part 2: Test procedure and requirements
221	IEC 61034-2:2005+AMD1:2013 CSV	Measurement of smoke density of cables burning under definedconditions - Part 2: Test procedure and requirements
222	IEC 61034-2:2005	Measurement of smoke density of cables burning under defined conditions - Part 2: Test procedure and requirements
223	IEC 61034-2:2005/COR1:2006	Corrigendum 1 - Measurement of smoke density of cables burning under defined conditions - Part 2: Test procedure and requirements
224	IEC 61034-2:2005/AMD1:2013	Amendment 1 - Measurement of smoke density of cables burning under defined conditions - Part 2: Test procedure and requirements
225	IEC 61034-2:2005/AMD2:2019	Amendment 2 - Measurement of smoke density of cables burning under defined conditions - Part 2: Test procedure and requirements
226	IEC 61138:2007	Cables for portable earthing and short-circuiting equipment
227	IEC 61238-1-1:2018	Compression and mechanical connectors for power cables - Part 1-1: Test methods and requirements for compression and mechanical connectors for power cables for rated voltages up to 1 kV (U_m = 1,2 kV) tested on non-insulated conductors
228	IEC 61238-1-2:2018	Compression and mechanical connectors for power cables - Part 1-2: Test methods and requirements for insulation piercing connectors for power cables for rated voltages up to 1 kV (U_m = 1,2 kV) tested on insulated conductors
229	IEC 61238-1-3:2018	Compression and mechanical connectors for power cables - Part 1-3: Test methods and requirements for compression and mechanical connectors for power cables for rated voltages above 1 kV (U_m = 1,2 kV) up to 30 kV (U_m = 36 kV) tested on non-insulated conductors
230	IEC 61442:2023 RLV	Test methods for accessories for power cables with rated voltages from 6 kV (Um = 7,2 kV) up to 30 kV (Um = 36 kV)
231	IEC 61442:2023	Test methods for accessories for power cables with rated voltages from 6 kV (Um = 7,2 kV) up to 30 kV (Um = 36 kV)
232	IEC 61443:1999+AMD1:2008 CSV	Short-circuit temperature limits of electric cables with rated voltages above 30 kV (U_m = 36 kV)
233	IEC 61443:1999	Short-circuit temperature limits of electric cables with rated voltages above 30 kV (Um = 36 kV)

234	IEC 61443:1999/AMD1:2008	Amendment 1 - Short-circuit temperature limits of electric cables with rated voltages above 30 kV (U_m = 36 kV)
235	IEC TR 61901:2016	Tests recommended on cables with a longitudinally applied metal foil for rated voltages above 30 kV (U_m = 36 kV) up to and including 500 kV (U_m = 550 kV)
236	IEC 62067:2022 RLV	Power cables with extruded insulation and their accessories for rated voltages above 150 kV (U_m = 170 kV) up to 500 kV (U_m = 550 kV) - Test methods and requirements
237	IEC 62067:2022	Power cables with extruded insulation and their accessories for rated voltages above 150 kV (U_m = 170 kV) up to 500 kV (U_m = 550 kV) - Test methods and requirements
238	IEC TR 62095:2003	Electric cables - Calculations for current ratings - Finite element method
239	IEC TS 62100:2004	Cables for aeronautical ground lighting primary circuits
240	IEC 62125:2019	Environmental considerations specific to insulated electrical power and control cables
241	IEC 62230:2006+AMD1:2013 CSV	Electric cables - Spark-test method
242	IEC 62230:2006	Electric cables - Spark-test method
243	IEC 62230:2006/AMD1:2013	Amendment 1 - Electric cables - Spark-test method
244	IEC 62440:2008	Electric cables with a rated voltage not exceeding 450/750 V - Guide to use
245	IEC TR 62602:2009	Conductors of insulated cables - Data for AWG and KCMIL sizes
246	IEC 62821-1:2015	Electric cables - Halogen-free, low smoke, thermoplastic insulated and sheathed cables of rated voltages up to and including 450/750 V - Part 1: General requirements
247	IEC 62821-3:2015	Electric cables - Halogen-free, low smoke, thermoplastic insulated and sheathed cables of rated voltages up to and including 450/750 V - Part 3: Flexible cables (cords)
248	IEC 62893-1:2017+AMD1:2020 CSV	Charging cables for electric vehicles for rated voltages up to and including 0,6/1 kV - Part 1: General requirements
249	IEC 62893-1:2017	Charging cables for electric vehicles for rated voltages up to and including 0,6/1 kV - Part 1: General requirements
250	IEC 62893-1:2017/AMD1:2020	Amendment 1 - Charging cables for electric vehicles for rated voltages up to and including 0,6/1 kV - Part 1: General requirements
251	IEC 62893-2:2017	Charging cables for electric vehicles for rated voltages up to and including 0,6/1 kV - Part 2: Test methods
252	IEC 62893-3:2017	Charging cables for electric vehicles for rated voltages up to and including 0,6/1 kV - Part 3: Cables for AC charging according to modes 1, 2 and 3 of IEC 61851-1 of rated voltages up to and including 450/750 V
253	IEC 62893-4-1:2020	Charging cables for electric vehicles of rated voltages up to and including 0,6/1 kV - Part 4-1: Cables for DC charging according to mode 4 of IEC 61851-1 - DC charging without use of a thermal management system
254	IEC TS 62893-4-2:2021	Charging cables for electric vehicles of rated voltages up to and including 0,6/1 kV - Part 4-2: Cables for DC charging according to mode 4 of IEC 61851-1 - Cables intended to be used with a thermal management system
255	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
256	IEC 62930:2017	Electric cables for photovoltaic systems with a voltage rating of 1,5 kV DC
257	IEC 63010-1:2017	Halogen-free thermoplastic insulated and sheathed flexible cables of rated voltages up to and including 300/300 V - Part 1: General requirements and cables
258	IEC 63026:2019	Submarine power cables with extruded insulation and their accessories for rated voltages from 6 kV (U_m = 7,2 kV) up to 60 kV (U_m = 72,5 kV) - Test methods and requirements
259	IEC 63075:2019	Superconducting AC power cables and their accessories for rated voltages from 6 kV to 500 kV - Test methods and requirements

260	IEC 63294:2021	Test methods for electric cables with rated voltages up to and including 450/750 V

Annex-4

TC Voting List
(26/04/2024 to 18/10/2024)

TC 20

Document no.	Last date	Vote
20/2148/CDV	03-05-2024	In favour comment sent
20/2175/FDIS	03-05-2024	Abstain
20/2180/NP	24-05-2024	Abstain
20/2167/CD	31-05-2024	Comment sent
20/2168/CD	31-05-2024	No comment
20/2169/CD	31-05-2024	No comment
20/2170/CD	31-05-2024	Comment sent
20/2171/CD	31-05-2024	No comment
20/2172/CD	31-05-2024	No comment
20/2174/CD	05-07-2024	No comment
20/2194/FDIS	04-10-2024	In favour
20/2195/Q	04-10-2024	In favour

Annex-5
Comments

IS 14255

Sl. No.	Member basic details	Clause/Sub clause No.& Attachment	Paragraph No./Figure No./Table No.	Type of Comment	Comments/Suggestions along with Justification for the Proposed Change	Proposed Change/Modified Wordings
1	**BIS- GZBO**	**6.1**	**-**	**Ed**	Power should be corrected with phase	Power should be corrected with phase
			Table 1 Sr. no. viii (Volume resistivity) b)	**Te**	Since Table 1 is for Cross linked polyethylene requirements for which temperature under Normal Continuous Operation is mentioned as 90 Deg Celsius as per cl. 1.3 therefore Volume resistivity at b) should be done at 90 degree Celsius instead of 70 degree Celsius	Volume resistivity at b) should be done at 90 degree Celsius instead of 70 degree Celsius
		Cl. 4.2		**Te**	It is mentioned that the conductor shall be of heat treated aluminium – magnesium – silicon alloy having a composition appropriate to the mechanical and electrical properties specified in Table 3. However, no composition has been defined for Al-Mg-Si requirements. However, these composition are already given in IS 9997.	
		9.1		**Te**	As per cl. 9.5, it is mentioned that Single insulated phase conductor or Three insulated phase conductor, one insulated neutral conductor (if required) and a street lighting conductor (if required) shall be laid up along with the bare (or insulated) messenger conductor without filler with a lay not exceed 35 times the diameter of the insulated phase conductor. It should not exceed 35 times the diameter of the insulated phase conductor for size upto 50 sq.mm and should not exceed 40 times the diameter of the insulated phase conductor for size above 50sq.mm. This is due to practicability in maintaining this lay length so it should be increased as.	It should not exceed 35 times the diameter of the insulated phase conductor for size upto 50 sq.mm and should not exceed 40 times the diameter of the insulated phase conductor for size above 50sq.mm.

ETD 9 (24441) IS 14255-2

Sl. No.	Member basic details	Clause/ Sub clause No.& Attachment	Paragraph No./Figure No./Table No.	Type of Comment	Comments/Suggestions along with Justification for the Proposed Change	Proposed Change/Modified Wordings
1.	Shri Sanjeev Atri (Tata Power) sanjeev.kumar@tatapower-ddl.com	4.1	1	Technical	Water tight stranded Conductor may be incorporated in Aluminium conductor of sizes 150 sq.mm and above inline with EN50397 Part-1 standard. Water ingress in between conductor strands can be prevented by water blocking yarn or tape or combination of both in interstics of conductor strands. Preventing oxidization of Aluminium conductor due to water ingress in the conductor.	Water tight stranded Conductor may be incorporated in Aluminium conductor of sizes 150 sq.mm and above inline with EN50397 Part-1 standard .
		10.1 &10.2	1	Technical	Carbon black dispersion test inline with 60811 Part 607 may also be included	Carbon black dispersion test inline with 60811 Part 607 may also be included
2.	Shri Nitin Pandurang Soman Email: nitin.soman@3b-fibreglass.com	1	Scope	Technical	This being arial cable the entire load is transferred while laying and usage on aluminium / conductor. Please use "Central Strength Member - CSM" manufactured using glassfibre, which will take load and avoid load getting transferred on metal. CSM is widely used in optical cables and other types of cables by many cable manufacturers (https://www.vtlrewa.com; https://ushamartin.com/optical-fiber-cables) in India. There are many manufacturers who are manufacturing CSM commercially (https://indore.co.in; https://www.akshoptifibre.com and many	Please refer comments

					more).	

ETD 9(25316) IS 694

Sl. No.	Member basic details	Clause/Sub clause No.& Attachment	Paragraph No./Figure No./Table No.	Type of Comment	Comments/Suggestions along with Justification for the Proposed Change	Proposed Change/Modified Wordings
1.	Shri Pyla Deshick Organization: Bureau of Indian Standards Email: deshickp@bis.gov.in	5.4	2	Technical	After completion of ageing, there will be a slight increase in the diameter of the sample. However, it is not clear in the standard whether to consider the diameter of the sample before / after ageing while calculating the tensile strength. Since engineering stress is calculated, diameter of sample before ageing is generally considered in the final calculation.	Compliance shall be checked by carrying out tensile strength and elongation test, and shall meet the requirements given in Table 1 of IS 5831, for respective type of PVC. Dimensions of the sample before ageing to be considered in the calculation of tensile strength and elongation.
2.	WRL, BIS	Cl 5.2	-	Technical	Cl 5.2 mentions "It shall be possible to remove… to the conductor or to the tin coating, if any. However, it does not specify the ways to check compliance.	Visual examination or any other suitable methodology may be incorporated in the standard to check compliance.
3.	WRL BIS	Cl 9	-	Technical	Overall dimension: In the methodology standard, IS 10810 (Part 6), Cl 8.1 Procedure for measuring the diameter over and below the insulation/sheath, the standard prescribes a micrometer gauge or a vernier caliper for measurement. However, measuring devices with advanced techniques like image processing, machine vision are nowadays used widely to take such measurements. The standard can incorporate these provisions.	Measuring devices with advanced techniques like image processing, machine vision are nowadays used widely to take such measurements. The standard can incorporate these provisions.
4.	RTRC	Cl water of less 10.1		Technical	Draft Standards specify that "water of less hardness (preferably potable water)" But not specify the hardness level. It would be beneficial if the standard could provide more clarity on t	The standards should specify the hardness level.

					he quality of water to b e used for high voltage t ests, as this could impa ct test results.	
5.	By Manufacture during manak manthan	Cl 22.1.1		Technica l	"For 0.50 mm^2, 0.75 mm^2, 1.00 mm^2, 4 mm^2 and above, the conductor shall be flexible(Class 5)" mentioned in the Draft IS but Size 1.50 mm^2 and 2.50 mm^2 not mentioned for Flexible Class 5.	Size 1.50 mm^2 and 2.50 mm^2 may also be included for the conductor of Flexible Class-5 as these are the manufacturing practices.
6.	RTRC	Forward		Technica l	The current draft defines the terms "Fixed wiring connection" and "Flexible connection." I kindly request the committee to elaborate further on the term "flexibility" and its applicability concerning the "Flex test" to ensure flexibility of cable at the time of manufacturing.	"Flex test" to ensure flexibility of cable may be incorporated in the ISs
7.	RTRC	Cl 1 Scope		General	Panel Wire is not incorporated in the current version of IS. I would also like to request the committee to consider "Panel Wire" in the current version of the specification, as it represents a significant segment of consumption.	Panel wire may be incorporated in the Draft IS 694.
8.	RTRC	Cl 1 Scope		General	To enhance the global acceptability of the Indian standards, I propose the inclusion of the following in the new version: 1. **RoHS Requirements:** Consideration of the Restriction of Hazardous Substances (RoHS) requirements. 2. **CPR Requirements:** Consideration of the Construction Product Regulation (CPR) requirements, which will support making ISI-marked products	1.**RoHS Requirements** and 2.**CPR Requirements**. may be incorporated in the IS 694.

					acceptable at the international level and compliance with international safety standards.	
9.	PN Khairnar /Finolex Cables Ltd., Pune	1, Page 3 Line No.6		Technical	Category Code HR is missing	Please add one more category CODE as HR - Heat Resistant
10.	PN Khairnar /Finolex Cables Ltd., Pune	13 Cable Code		General	HR-Category missing in table	Constituent – PVC with HR Properties Code Letter - HR
11.	PN Khairnar /Finolex Cables Ltd., Pune			General	HR-Category missing in table	Please add HR in category, column 3

IS 1554 (Part 1)

Sl. No.	Member basic details	Clause/Sub clause No.& Attachment	Paragraph No./Figure No./Table No.	Type of Comment	Comments/ Suggestions along with Justification for the Proposed Change	Proposed Change/Modified Wordings
1.	Shri Vinod Chhajer Email: gemcalibration@yahoo.co.in	Heading of this Indian Standard		Technical		add the words after electric & mining
2.		New				Add new clause 11.3.1 – same as clause 10.3.1 & Fig. 1 given in
3.		New				Add new clause 14.5.3 – If required by the purchaser for Cat. 01 cables (other than mining cables) , the DC resistance of complete armour wires of cable shall be measured & shall comply with Table No…. (Table 6)
4.		Clause 16.1 d) Optional Tests				4.Armour Resistance Test ((other than mining cables)--- 14.5.3
5.		19.2				Clause 19.2 add …. q) Batch / Lot No
6.		Appendix C				Percentage Coverage = $\frac{N \times d \times 100}{W}$

ETD 9(24344) - Thermal Short Circuit Test Through Conductor Metallic Sheath Screen Armor

Sl. No.	Member basic details	Clause/Sub clause No.& Attachment	Paragraph No./Figure No./Table No.	Type of Comment	Comments/Suggestions along with Justification for the Proposed Change	Proposed Change/Modified Wordings
1.	Shri Anandu Gopan Email: ag@capeindia.net	Figure 1	Figure 1	Technical	The wiring of measuring system in the document is wrong. There is no distributed neutral for the secondary transformer and it is earthed (this type of electrical system is not a properly defined system (TNS, TNCS, TT or IT for a three/four wire system)). if this is a three wire system, then measuring system (current measurement) N is not correct and it is E (earth) and this E (earth) has to be connected to the earthing (generally there wil be a seprate terminal to do this). if it is a four wire system, a neutral has to be added and the current N has to be changed to E and has to be connected to the earthing.	

ETD 9 (24337) Instrumentation and Control Cables

Sl. No.	Member basic details	Clause/Sub clause No.& Attachment	Paragraph No./Figure No./Table No.	Type of Comment	Comments/Suggestions along with Justification for the Proposed Change	Proposed Change/Modified Wordings
1.	Shri C.S. Mohanty Email: csmohanty@unistar.co.in	5.1	1	Technical	Temperature rating of each insulation compound be specified in this clause, so that proper cable can be selected for the relevant application	Temperature rating of insulation compounds be specified
2.		6.3	1,3	Technical	Cl 6.3,Para 1-Formula for Filling factor calculation to be	Cl 6.3 Formula for filling factor to be included Cls 11 Requirement and formula for Armour coverage to be included

					included Cls 11, Armour coverage % and method of calculation to be included Table 6, to be aligned with IEN 50288 Cls 13 Sampling Plan for Acceptance Test to be included Cls 13 Type Test-Acceptance criteria for test of armouring to be included Tests for HFFR cable to be included	Table 6 To be aligned with EN 50288 Cls 13, sampling Plan for Acceptance test to be included Cls 13, Acceptance criteria for test on armouring to be included Cls 13 Tests for HFFR cables to be included

ETD 9(26091) IS 9968: Part 1: 1988

Sl. No.	Member basic details	Clause/Sub clause No.& Attachment	Paragraph No./Figure No./Table No.	Type of Comment	Comments / Existing	Comments/Suggestions along with Justification for the Proposed Change	Proposed Change/Modified Wordings
1.	Universal Cables Ltd, Satna	FOREWORD	New	General	Nil	Add :.) Current Rating of cables covered under this standard, reference may be made to IS 3961-Part 3. .) Short circuit Rating of cables, reference may be made to IS 16296.	These standards are required to be referred.
2.	Universal Cables Ltd, Satna	9	New	Technical	Nil	9.3 Silicone rubber insulated cables- The sheath shall consist of silicone rubber compound complying with requirements of type SE5 of IS 6380.	Omissions
3.	Universal Cables Ltd, Satna	22.1	Type Test- Sl no 11	Technical	SE3 & SE4	To include “SE 5” sheath	Omissions
4.	Universal Cables Ltd, Satna	Table 2	Construction 3)- new	Technical	To add	3) Silicone Rubber (5.3)	Omissions
5.	Universal Cables Ltd, Satna		e) under Single core cables	Technical	To add	Silicone Rubber sheath in case of Silicone Rubber insulation (9.3)	Omissions
6.	Universal Cables Ltd, Satna		h) under 2,3 and 4 core cables	Technical	To add	Silicone Rubber sheath in case of Silicone Rubber insulation (9.3)	Omissions

7.	Universal Cables Ltd, Satna	Table 4	Constructi on f)	Technical	To add	f) Optional binder tape (6.3)	Omissions
8.	Universal Cables Ltd, Satna		Sl 10 (column 3 & 4)	Editorial	To change	1.2 to 1.4 (both columns 3 & 4)	Printing error
9.	Universal Cables Ltd, Satna	Table 5	Constructi on 3) - new	Technical	To add	3) Silicone Rubber (5.3)	Omissions
10.	Universal Cables Ltd, Satna		Single core cables e)	Technical	To add	HFFR to be replaced with HOFR	Omissions
11.	Universal Cables Ltd, Satna		2,3,4 and 5 core cables	Technical	To add	HFFR to be replaced with HOFR	Omissions
12.	Universal Cables Ltd, Satna		Single core cables e)	Technical	To add	Silicone Rubber sheath in case of Silicone Rubber insulation (9.3)	Omissions
13.	Universal Cables Ltd, Satna		2,3,4 and 5 core cables	Technical	To add	Silicone Rubber sheath in case of Silicone Rubber insulation (9.3)	Omissions
14.	Universal Cables Ltd, Satna	Table 6	Constructi on f)	Technical	To add	Silicone Rubber sheath in case of Silicone Rubber insulation (9.3)	Omissions
15.	Shri C.S. Mohanty	Table 6,7,8,9,10		Technical		The Tables 6, 7,8,9,10 are not in line with the amendment no 3, sept 2016	The tables 6,7,8,9,10 to be corrected in line with amendment 3, sept 2016 to IS 9968 (part 1)
16.	Shri OMNARAYA N KUMAR Organisation: Bureau of Indian Standards Email: kumaromnaray an90@gmail.c om	25.2(f)	Second	General		There is a requirement for a Cable Code in Packaging and Marking Clause 25.2(f), but there is no description for the Cable Code Clause, including which Code letter should be used for the cable code."	There is a requirement for a Cable Code in Packaging and Marking Clause 25.2(f), but there is no description for the Cable Code Clause, including which Code letter should be used for the cable code."
17.	WRL	25.2		Technical		One of the marking requirements in Cl 25.2 is Cable code. However, Cable code is not mentioned in the draft standard.	Incorporate cable code in the document.
18.	WRL	24		General		There is no clause regarding the Standard mark in the Draft ISs.	The cable [reel, drum or label) may also be marked with the Standard Mark. may be incorporated

Comment from Shri Ramprastha on 15.10.2024

IS 1554-1 Draft –PVC insulated (Heavy duty) electric cables-Specification
Part 1- For working voltages up to and including 1100V

1. Cl 8 Outer sheath
   Cl 8.1.3 Improved fire performance Category (Cl 16.1.1 & 16.1.2)
   The O/S shall, in addition, meet the requirements of test applicable for the required category (Cl 16.1.1 & 16.1.2)
2. Cl 9: Cl 9.1 Note: Tinned copper conductors may also be used as agreed between purchaser & manufacturers. The conductor resistance will be higher for tinned copper. This should be specified in this clause.
3. Cl 14.5 Resistance
   Cl 14.5.1 If specified by the purchaser, the dc resistance of the galvanised steel wire /strip armour shall be measured. Delete the word "If specified by the purchaser". Since the fault current will be carried through the armour, the dc resistance needs to be measured. This is supplemented as resistivity values in Cl 14.6(h).
4. Cl 17.3.1 Third para: Replace "SO" by "so"
5. Cl 17.3.2 Note: Replace the word "colours" by "cores/colours".
6. Annex A (Cl 16.1.1)
   Table titled "Classification of cable for improved fire performance"
   4th row under C2-4thColumn.

Replace the word "evaluation" by "evolved" and add "low" before the word "smoke".

IS 1554-2 Draft –PVC insulated (Heavy duty) electric cables-Specification
Part 2- For working voltages from 3.3kV up to and including 11kV

1. Annexure A:
   Last row, under C2 in the last column, insert "low" before "smoke"

ET 09 (24344) P-Draft

Methods of test for cables Part-65-Thermal short circuit test through conductor/metallic sheath /screen/armour

1	S RamaPrasath	Title	Typographical error	Replace “ARMOR” by “ARMOUR’
2	S RamaPrasath	1 Scope	. The duration of thermal short circuit test is one second only	Replace “Armor” by “Armour ” Include “The duration of test is for one second only”
3	S RamaPrasath	6	Typographical error	Add “kV” after the number “66”
4	S RamaPrasath	6	Typographical error	Add “kV” after the number “66”
5	S RamaPrasath	7	Typographical error	Add “ ºC” after “90”
6	S RamaPrasath	7	Typographical error	Add “ ºC” after “90”
7	S RamaPrasath	8	If the cable lug/Power connector snaps/cracks during the test, the current will not be recorded in the data acquisition system. Hence if the lug/Power connector fails during the test, the test needs to be repeated. It does not imply that the cable has failed in the test.	Add a new Clause 8.6 “If the lug/Power connector fails during the test, the test needs to be repeated. It does not imply that the cable has failed in the test.”
	S RamaPrasath	8.4	Typographical error	Add “kV” after the number “66”
	S RamaPrasath	8.4	The thickness of insulation decides the capacitance value. Lesser the thickness, the capacitance is more. In the eight line it is specified that the post-test capacitance shall not exceed the pre-test measured value by 8%. The capacitance value both before and after the short circuit should not exceed 8% of the value declared by the manufacturer.	Replace “post test capacitance value shall not exceed measured value(pre-test) by 8%” by “The capacitance value after the short circuit should not exceed 8% of the value declared by the manufacturer”
	S RamaPrasath	8.4	The conductor resistance value should be as per the standard IEC/IS requirement	Replace “resistance shall not exceed specified norms in IS/IEC in pre short circuit test and should not exceed pre short circuit test measured value by 5 % in post test measurement.For screen/armour short circuit test , value measured before short circuit shall not vary from manufacturer declared value by more than 5 %, for post short circuit test measured value shall not exceed the pre test value by 5%” by “resistance value for conductor both before and

				after short circuit should not exceed the requirements as per IEC/IS and resistance value for metallic screen/armour should not exceed the value declared by the manufacturer both before and after short circuit test"
	S RamaPrasath	9.1	Visual inspection of the cable to be report in the final report	Prefix "visual" before the word "observation"
	KEC International Limited, Vadodara	7.	The cable conductor shall be heated using a suitable induction heating source and stabilized for at least 2 h at a temperature of 5 K to 10 K above the maximum cable conductor temperature	To replace "and stabilized for 2 hours at a temperature 5K to 10 K above" with "the test specimen is to be heated to a temperature 5 deg above "
	-do-	8.3	The short circuit current is applied for the duration specified for the test and waveform shall be recorded.	"The short circuit current is applied for the duration specified by end customer/end client"
	-do-	8.4	To delete the clause and include observation.	To delete the clause and replace with "One meter sample of the cable under test shall be visually examined. The cable should not show any sign of deterioration."
	-do-	8.5	Resistance method is already specified in IS 10810 part 5 & part 42	To change existing to "Method of resistance measurement shall be generally as per IS 10810 Part 5 & IS 10810 part 42 as relevant"