

BUREAU OF INDIAN STANDARDS

MINUTES

Name of the Committee	No. of Meeting	Day	Date	Time	Venue
Winding Wire Sectional Committee, ETD 33	25	Friday	27 June 2024	14:30 hrs	Virtual meeting

CHAIRPERSON: Shri Ratnanav Acharya

MEMBER SECRETARY: Shri Jatin Tiwari

Item 0 Welcome and Opening Remarks by the Chairperson

Item 1 CONFIRMATION OF THE MINUTES OF THE LAST MEETING

The minutes of the 24nd meeting of Equipment for Winding Wire Sectional Committee, ETD 33 held on 15/3/24 were circulated. No comments were received.

ACTION- Minutes were confirmed.

Item 3 COMPOSITION OF SECTIONAL COMMITTEE ETD 13

3.1 The present composition of ETD 33 with attendance in the last 2 meetings is given at **Annex 1**. As per DG's letter ([LINK](#)) on standardization reform any organization not attending for consecutive 2 meetings have to be deleted. Inactive members reduce the efficiency index of the committee.

ACTION - The Committee noted the above information.

Item 4 Withdrawn IEC standards

The committee may approve for withdrawal for following standards as these IEC have been withdrawn:

IS Number	IEC status	Title
IS 13730 (Part 0/Sec 5) : 2012 EC 60317-0-5	IEC 60317-0-5:2006 Withdrawn	Specifications for particular types of winding wires: Part 0 general requirements: Sec 5 glass - Fibre braided, resin or varnish impregnated, bare or enamelled rectangular copper wire (First Revision)
IS 13730 (Part 3) : 2012 IEC 60317-3	IEC 60317-3:2004+AMD1:2010 CSV Withdrawn	Specifications for particular types of winding wires: Part 3 polyester enamelled round copper wire, class 155 (First Revision)

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IS 13730 (Part 4) : 2018 IEC 60317-4	IEC 60317-4:2015 Withdrawn	Specification for particular types of winding wires: Part 4 solderable polyurethane enamelled round copper wire, class 130, (Second Revision)
IS 13730 (Part 15) : 1994	IEC 60317-15:1990 Withdrawn	Particular types of winding wires: Part 15 polyesterimide enamelled round aluminium wire, class 180
IS 13730 (Part 16) : 1996 IEC 60317-16	IEC 60317-16:1990 withdrawn	Specifications for particular types of winding wires: Part 16 polyester enamelled rectangular copper wire class 155
IS 13730 (Part 26) : 1996 IEC 60317-26	IEC 60317-26:1990 Withdrawn	Specifications for particular types of winding wires: Part 26 polyamide - Imide enamelled round copper wire, class 200
IS 13730 (Part 27) : 2018 IEC 60317-27	IEC 60317-27:2013 Withdrawn IEC 60317-27-3:2019 /- AMD1	Specifications for Particular Types of Winding Wires Part 27 Paper Tape Covered Rectangular Copper Wire (First Revision)
IS 13730 (Part 34) : 2000 IEC 60317-34	IEC 60317-34:1997 withdrawn	Specifications for particular types of winding wires: Part 34 polyester enamelled round copper wire, class 130 L (First Revision)
IS 13730 (Part 39) : 2018 IEC 60317-39	<u>IEC 60317-39:2015</u> <u>withdrawn</u>	Specifications for particular types of winding wires: Part 39 glass - Fibre braided resin or varnish - Impregnated, bare or enamelled rectangular copper wire, temperature index 180 (First Revision)
IS 13730 (Part 45) : 1999 IEC 60317-45	IEC 60317-45:1998 withdrawn	Specifications for particular types of winding wires: Part 45 polyester enamelled round copper wire, class 130

ACTION - The committee noted the above list. Members asked to circulate the list again and decision has to be taken mandatorily by next meeting in August 2024.

Item 5 Pre 2000 Standards

According to Annual action plan of BIS following has to be completed this year with IS identified for revision, reaffirmation or archiving :

- All standards are to be reaffirmed after 5 years. Revision can also be taken up.
- Pre 2000 standards are to be withdrawn or revised.
- Standards in which there is no clarity are to be archived. These standards are still active but no work is being done on them.

ACTION - The committee noted the above information

There are many irrelevant pre2000 standards that are in the program of work of ETD 33. Previously, a list was circulated to get inputs from the working group and various members. No inputs have been received for pre 2000 standards. Following is analysis by member secretary of the old standards (Link below)

[Etd 33 pre 2000 comparison](#)

IS No.	LATEST	Title	Reaffirm	SCOPE	MEMBER
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	IEC		ation Details		SECRETARY RECOMMENDATI ON
IS 11174 : 1984		Specification for aromatic polyimide paper covered rectangular and square copper wires with temperature index 200	March, 2021	<p>1.This Indian Standard covers aromatic polyimide paper covered copper conductors suitable for temperature index 200.</p> <p>2.1.2 Sizes - The requirements of this standard are applicable to conductors having thickness from 0.80 up to and including 4.00 mm and width from 3 mm up to and including 13 mm. A schedule of preferred sizes is given in IS : 6160-1971.</p>	"IS 13730 (Part 44) : 2013 IEC 60317-44" IEC 60317-44:1997+A MD1:2010 CSV Specification for particular types of winding wires: Part 44 aromatic polyimide tape wrapped rectangular copper wire, class 240 (First Revision) covers this standard.
IS 11184 : 1984		Specification for enamelled and varnish bonded glass fibre covered round copper wires	March, 2021	<p>1.This standard covers the requirements and test methods of enamelled and varnish bonded glass fibre lapped round copper wires. The requirements of enamelled and varnish bonded glass covered rectangular copper wires are covered in IS: 10114-1982*</p> <p>2.This standard relates to round copper wires coated with enamel and covered with single or double glass fibre lapped, bonded with a suitable highly polymerised thermosetting varnish. The wires covered by this standard are suitable for temperature index 130, 155, 180 and 200. The type of enamel and varnish shall be based on the temperature index of the wire required by the purchaser.</p> <p>3. Sizes - The requirements of this standard are applicable to conductors having diameters 0.800 mm to 4000 mm. A schedule of preferred sizes of round conductor is given in Table 1 of IS :4800 (Part I)-1968t.</p>	Already covered in various parts and sections of IS 13730/IEC 60317 series Licenses are 0 and standard is not referred in any other standard

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IS 11395 : 1985		Specification for tape wrapped round copper wires with temperature index 220	March, 2020	<p>1.This standard relates to IS : 9148-1979*.</p> <p>2. For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-19607. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.</p> <p>3This standard relates to polyimide tape wrapped round conductors suitable for temperature index 220.</p> <p>4 The tape shall be coated with a suitable adhesive (for example, FEP). After wrapping, the tape shall be heat sealed to form a continuous and adherent sheath. It should be coated with adhesive on one side only.</p> <p>5 The requirements of the standard are applicable to conductor sizes from 1-O mm to 5.0 mm diameter.</p>	Covered in "IS 13730 (Part 53) : 2018 IEC60317-53"- Specifications for particular types of winding wires: Part 53 aromatic polyimide (Aramid) tape wrapped rectangular copper wire, temperature index 220 (First Revision) Licenses are 0 and standard is not referred in any other standard
IS 11597 : 1986		Specification for polyeste - R tape wrapped, varnish bonded glass - Fibre covered rectangular copper conductors	March, 2021	<p>1 This standard covers the requirements and test methods of polyester tape wrapped, varnish bonded glass-fibre covered rectangular copper conductors.</p> <p>2 In the preparation of this standard, assistance has been derived from ASTM D 3664- 1978 'Standard specification for biaxially oriented polyethylene terphthalate film for electrical insulation and dielectric application', issued by the American Society for Testing and Materials.</p> <p>3 This standard relates to rectangular copper conductors which are first wrapped by polyester tape (without any adhesive) in required thickness and subsequently covered with fibre glass and finally bonded with suitable thermosetting varnish depending on required temperature</p>	Covered in "IS 13730 (Part 32) : 2018 IEC 60317-32" IEC 60317-32:2015 Specifications for particular types of winding wires: Part 32 glass fibre wound, resin or varnish impregnated, bare or enamelled rectangular copper wire, temperature index 155 (First Revision) Licenses are 0 and standard is not referred in any other standard

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				index of the conductor as required by the purchaser.	
IS 13343 : 1992		Guide for thermal endurance of enamelled and varnish bonded glass covered rectangular copper conductor	August, 2018	<p>1 The test method covered in this Standard is intended primarily for comparing the thermal endurance of enamelled and varnish bonded glass covered rectangular copper conductors in air at atmospheric pressure. Similar standard for varnish bonded glass fibre covered rectangular copper conductors (IS 9778 :1981) and for enamelled wires (IS 5825 : 1970) are also available.</p> <p>2 This guide lays down a test procedure for evaluating the useful life of enamelled and varnish bonded glass fibre lapped or braided rectangular copper conductors generally covered in IS 10114 : 1982. The grade of insulation shall be according to IS 10114 : 1982.</p> <p>3This standard does not apply to unenamelled glass fibre covered rectangular copper conductors.</p>	<p>This is already covered in IS 13778 (Part 6) : 2018 IEC60851-6 : 2012 (Active) Winding wires - Test methods: Part 6 thermal properties (Second Revision) and IEC 60172</p>
IS 13730 (Part 1) : 1993	IEC 60317-1: 2010+A MD1:202 4	Particular types of winding wires: Part 1 Polyvinyl acetal enamelled round copper wire, class 105 (superseeding by IS 4800(Part 4):1968			<p>Being Updated to the latest versioni</p>

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<p>IS 13730 (Part 6) : 1994</p>		<p>Specification for particular types of winding wires: Part 6 oleo - Resinous enamelled round aluminium wire, class 105</p>	<p>March, 2021</p>	<p>1 This standard is a part of the new series of standards being brought out in dual number with the corresponding IEC Publications. The standards on aluminium wires could not be published in dual number because of differences in requirements of elongation, heat shock, etc, with respect to corresponding IEC requirements. However, clause numbers and format of these standards are kept same as for other standards under the same series. With the publication of this standard along with other related standards, existing Indian Standards on aluminium (Parts of IS 4800 series) wires would be withdrawn.</p> <p>2 Class 105 is a thermal class that requires a minimum temperature index of 105 and a heat shock temperature of atleast 125°C.</p> <p>3 The temperature in degrees Celsius corresponding to the temperature index is not necessarily that at which it is recommended that the wire be operated and this will depend on many factors, including the type of equipment involved. The range of nominal conductor diameters covered by this standard is: - Grade 1 : 0,250 mm up to and including 1.000 mm - Grade 2 : 0.250 mm up to and including 1.000 mm The nominal conductor diameters are specified in 4 of IS 13730 (Part O/Set 3) : 1994.</p>	<p>There are no licenses and no corresponding IEC standard. Members are requested to suggest relevance to withdraw or archive.</p>
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<p>IS 13730 (Part 9) : 1994</p>		<p>Specification for particular types of winding wires: Part 9 polyester enamelled round aluminium wire, class 138</p>	<p>March, 2021</p>	<p>1 This standard is a part of the new series of standards being brought out in dual number with the corresponding IEC Publications. The standards on aluminium wires could not be published in dual number because of differences in requirements of elongation, heat shock, etc, with respect to corresponding IEC requirements. However, clause numbers and format of these standards are kept same as for other standards under the same series. With the publication of this standard along with other related standards, existing Indian Standards on aluminium (Parts of IS 4800 series) wires would be withdrawn.</p> <p>2 Class 130 is a thermal class that requires a minimum temperature index of 130 and a heat shock temperature of atleast 155°C.</p> <p>3The temperature in degrees Celsius corresponding to the temperature index is not necessarily that at which it is recommended that the wire be operated and this will depend on many factors, including the type of equipment involved.</p> <p>The range of nominal conductor diameters covered by this standard is: - Grade 1 : ; ti\$ in up to and including. - Grade 2 : O-250 mm up to and including 2.500 mm</p> <p>4 The nominal conductor diameters are specified in 4 of IS 13730 (Part 0/Set 3) : 1994.</p>	<p>There are no licenses and no corresponding IEC standard. Members are requested to suggest relevance to withdraw or archive.</p>
<p>IS 13730 (Part 15) : 1994</p>		<p>Particular types of winding wires: Part 15 polyesterimide enamelled round aluminium wire, class 180</p>	<p>March, 2021</p>	<p>1 This standard specifies the requirements of enamelled round aluminium winding wire of Class 180 with a sole coating based on polyes- terimide resin, which may be modified, provided it retains the chemical identity of the original resin and meets all specified wire</p>	<p>There are no licenses and IEC standard has been withdrawn. Approval to withdraw</p>

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				<p>requirements.</p> <p>2 The range of nominal conductor diameters covered by this standard is:</p> <p>Grade 1: 0.250 mm up to and including 2.500 mm</p> <p>Grade 2 : 0-250 mm up to and including 2.500 mm</p>	
IS 13730 (Part 16) : 1996 IEC 60317-16	IEC 60317-16 :1990 withdrawn	Specifications for particular types of winding wires: Part 16 polyester enamelled rectangular copper wire class 155	December, 2016	<p>Class 155 is a thermal class that requires a minimum temperature index of 155 and a heat shock temperature of at least 175 C.</p> <p>The temperature In degrees Celsius corresponding to the temperature index is not necessarily that at which it is recommended that the wire be operated and this will depend on many factors, including the type of equipment involved.</p> <p>The range of nominal conductor dimensions covered by this standard is:</p> <ul style="list-style-type: none"> - width: min. 20 mm max. 16.0 mm; - thickness: min. 0,80 mm max. 5,60 mm. <p>Wires of grade 1 and grade 2 are included in this specification and apply to the complete range of conductors.</p> <p>The specified combinations of width and thickness as well as the specified ratio width/thickness are given In IEC 317-0-2.</p>	There are no licenses and IEC standard has been withdrawn. Approval to withdraw
IS 13730 (Part 26) : 1996 IEC 60317-26	IEC 60317-26 :1990 Withdrawn	Specifications for particular types of winding wires: Part 26 polyamide - Imide enamelled round copper wire, class 200	June, 2018	<p>1 This International Standard specifies the requirements of enamelled round copper winding wire of class 200 with a sole coating based on polamide-imide resin.</p> <p>2 Class 200 is a thermal class that requires a minimum temperature index of 200 and a heat shock temperature of at least 220 “C.</p> <p>3 The temperaturesin degrees Celsius corresponding to the temperature index is not necessarily that at which it is</p>	There are no licenses and IEC standard has been withdrawn. Approval to withdraw

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				<p>recommended that the wire be operated and this will depend on many factors, including the type of equipment involved.</p> <p>The range of nominal conductor diameters covered by this standard is:</p> <ul style="list-style-type: none"> - Grade 1: 0,071 mm up to and including 1,600 mm; - Grade 2: 0,071 mm up to and including 0,500 mm. <p>The nominal conductor diameters are specified in clause 4 of IEC 317-0-I.</p>	
IS 13730 (Part 29) : 1996 IEC 60317-29	IEC 60317-2 9:1990/AMD2:2010	Specifications for particular types of winding wires: Part 29 polyester or polyesterimide overcoated with polyamide - Imide enamelled rectangular copper wire, class 200	June, 2019	<p>This International Standard specifies the requirements of enamelled rectangular copper winding wire of class 200 with a dual coating. The underlying coating is based on polyester or polyesterimide resin, which may be modified providing it retains the chemical identity of the original resin and meets all specified wire requirements. The superimposed coating is based on polyamide-imide resin.</p>	IEC is same. Ammendment to be adopted standard has to be reaffirmed.
IS 13730 (Part 45) : 1999 IEC 60317-45	IEC 60317-4 5:1998 withdraw n	Specifications for particular types of winding wires: Part 45 polyester enamelled round copper wire, class 130	2019	<p>This part of IEC 60317 specifies the requirements of enamel led round copper winding wire of class 130 with a sole coating based on polyester resin, which may be modified providing it retains the chemical identity of the original resin and meets all specified wire requirements.</p> <p>NOTE - A modified resin is a resin that has undergone a chemical change, or contains one or more additives to enhance certain performance or application characteristics.</p> <p>Class 130 is a thermal class that requires a minimum temperature index of 130 and a heat shock temperature of at least 155 °C. The temperature in degrees Celsius (°C) corresponding to the temperature index is not necessarily that at which it is recommended that the wire be</p>	There are no licenses and IEC standard has been withdrawn. Approval to withdraw

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				<p>operated and this will depend on many factors, including the type of equipment involved.</p> <p>The range of nominal conductor diameters covered by this standard is</p> <ul style="list-style-type: none"> - grade 1:0,050 mm up to and including 3,150 mm; - grade 2:0,050 mm up to and including 5,000 mm. <p>The nominal conductor diameters are specified in clause 4 of IEC 60317-0-1.</p>	
IS 6162 (Part 1) : 1971	Specification for paper - Covered aluminium conductors: Part 1 round conductors	June, 2018	<p>1 General — This standard (Part I) gives requirements and tests for round aluminium conductors, covered with two or more layers of paper, primarily intended for transformer windings.</p> <p>2 Sizes — The requirements of this standard are applicable to conductors having diameters 0.500 to 5.000 mm, both inclusive.</p> <p>3 Grades of Covering — Three grades of covering are specified:</p> <ul style="list-style-type: none"> a) Double paper covering, Ordinary (O); b) Double paper covering, Fine (F); and c) Multiple paper covering, Special (S). 	"IEC 60317-27-2:2020+ AMD1:2024 CSV Specifications for particular types of winding wires - Part 27-2: Paper tape covered round aluminium wire to be adopted replacing this standard"	
IS 6162 (Part 2) : 1971	Specification for paper covered aluminium conductors: Part 2 rectangular conductors	June, 2018	<p>1 General — This standard (Part II) gives requirements and tests for solid aluminium conductors of rectangular section, covered with two or more layers of paper, primarily intended for transformer windings.</p> <p>2 Sizes — The requirements of the standard are applicable to conductors having thicknesses from 0.80 up to and including 5.6 mm and widths from 2 up to and including 16 mm. A schedule of preferred sizes is given in IS : 6160 - 1971*.</p> <p>3 Grades of Covering — Two</p>	IEC 60317-27-4:2020+ AMD1:2024 CSV Specifications for particular types of winding wires - Part 27-4: Paper tape covered rectangular aluminium wire to be adopted replacing this standard	

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				<p>grades of covering are specified:</p> <p>a) Double Paper Covered — with a minimum total increase in dimensions of 0.25 mm due to covering; and</p> <p>b) Multiple Paper Covered — with more than two layers of paper.</p>	
IS 6181 : 1971	Specification for varnish bonded glass - Fibre braided rectangular copper conductors	June, 2018	<p>1 General — This standard relates to varnish bonded glass fibre covered rectangular copper conductors, the glass covering being a single braid of glass fibre, bonded with a suitable highly polymerized thermo-setting varnish of temperature index at least 130°C.</p> <p>2 It does not apply to stranded or laminated conductors or to conductors covered with a layer of material other than the bonded glass braid.</p> <p>3 Sizes — The requirements of this standard are applicable to conductors having thicknesses from 0.80 up to and including 5.6 mm and widths from 2 up to and including 16 mm. A schedule of preferred sizes is given in IS: 6160-1971*.</p> <p>Grades of Covering — Three grades of covering are specified:</p> <p>a) Fine (F),</p> <p>b) Medium (M), and</p> <p>c) Thick (T).</p>	<p>IS 6181:1971 "- Specification For Varnish Bonded Glass-Fiber Braided Rectangular Copper Conductors"as mentioned in the report ;</p> <p>it is already covered under IS 13730 : Part 0 : Sec 5 : 2012 / IEC 60317-0-5 (Reaffirmed Year : 2017)-Particular Types of Winding Wires - Part 0 : General Requirements - Section 5 : Glass-Fibre Braided Resin or Varnish Impregnated, Bare or Enamelled Rectangular Copper Wire.</p>	
IS 7391 (Part 1) : 1974	Specification For cotton Covered Copper Conductors : Part 1 round conductors	June, 2018	<p>1 The cotton covered round copper conductors were originally covered in IS : 4501953 which was first revised in 1964 and is now being superseded by this standard. This standard has been lined up with the latest IEC Recommendations. To cover adequately the properties of cotton yarn, a reference has been made to IS 3567: 1966*</p> <p>2 The requirements of this standard are applicable to conductors having diameters 0· 140 to 5· 000 mm.</p>	<p>Not used in industry. Approval to withdraw</p>	

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IS 7391 (Part 2) : 1974		Specification for cotton covered copper conductors: Part 2 rectangular conductors	June, 2018	<p>1 The requirements of the standard are applicable to conductors having thicknesses from 0.80 up to and including 5.6 mm and widths from 2 up to and including 16 mm, A schedule of preferred sizes is given in IS 6160:1971*.</p> <p>2 The cotton covered rectangular copper conductors were originally covered in IS : 2068-1962 which is now being superseded by this standard.</p> <p>This standard has been lined up (especially the dimensional aspects 1 with IS : 6160-1971" which is based on the latest IEC Recommendations. To cover adequately the properties of cotton yarn, a reference has been made to IS : 3567-1966t.</p>	Not used in industry. Approval to withdraw
IS 7404 (Part 1) : 1991		Paper covered copper conductors - Specification: Part 1 round conductors (First Revision)	March, 2021	The cotton covered round copper conductors were originally covered in IS : 4501953 which was first revised in 1964 and is now being superseded by this standard. This standard has been lined up with the latest IEC Recommendations. To cover adequately the properties of cotton yarn, a reference has been made to IS : 35671966*	IEC 60317-27-1:2020 Specifications for particular types of winding wires - Part 27-1: Paper tape covered round copper wire to be adopted
IS 7576 : 1974		Specification for bunched enamelled copper wires with silk covering	June, 2018	This standard (Part 1) covers requirements and tests for round copper conductors, covered with two or more layers of paper, primarily intended for transformer windings.	IEC 60317-11:1999+A MD1:2005 CSV Withdrawn Consolidated version Specifications for particular types of winding wires - Part 11: Bunched solderable polyurethane enamelled round copper wires, class 130, with silk covering withdrawn and

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					product not in use
IS 8572 : 1993		Paper - Covered flexible/stranded copper conductors for transformer leads - Specification (First Revision)	June, 2018	1 This standard specifies the requirements of paper covered high conductivity annealed copper flexible/stranded conductors to be used as transformer connecting leads.	Product has 0 licenses, standard is not in use
IS 8783 (Part 1) : 1995		Winding wires for submersible motors - Specification: Part 1 conductor data (First Revision)	March, 2021	1 This standard was originally published in 1978 covering PVC insulated winding wires for submersible motors for 85°C operation. Two other standards on winding wires for submersible motors, namely, IS 10051 : 1981 'Specification for PVC insulated winding wires for submersible motors for 105°C operation' and IS 12788 : 1989 'Specification for PVC insulated winding wires overcoated with nylon for submersible motors' have also been in vogue 2 This standard (Part 1) covers the requirements of high conductivity annealed round and stranded copper conductors used for winding wires for submersible motors irrespective of types of insulation. The range of size include solid round conductor dia 0.4 mm to 5.0 mm and stranded conductor area 3.58 mm ² to 25.65 mm ² .	
IS 8783 (Part 2) : 1995		Winding wires for submersible motors - Specification: Part 2 materials for dielectric and jacket (First Revision)	March, 2021	1 This standard (Part 2) specifies the requirements of dielectric and jacket materials for winding wires for submersible motors. 2 The types of materials covered by this standard are as given below: Type 1 HR PVC insulated wires for maximum rated conductor temperature of 85°C. Type 2 XLPE insulated and polyamide jacketed wires for maximum rated conductor temperature of 105°C.	

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				Type 3 Polyester and polypropylene insulated wires for maximum rated conductor temperature of 105°C.	
IS 8783 (Part 3) : 1995		Winding wires for submersible motors - Specification: Part 3 methods of tests	March, 2021	1 Two other standards on winding wires for submersible motors, namely, IS 10051 : 1981 'Specification for PVC insulated winding wires for submersible motors for 105°C operation' and IS 12788 : 1989 'Specification for PVC insulated winding wires overcoated with nylon for submersible motors' have also been in vogue. 2 This standard prescribes methods of tests for winding wires for submersible motors.	
IS 8783 (Part 4/Sec 1) : 1995		Winding wires for submersible motors - Specification: Part 4 specification for individual wires: Sec 1 HR PVC insulated wires (First Revision)	March, 2021	1 This standard (Part 4/See 1) covers the requirements of high conductivity annealed round and stranded copper conductor PVC insulated winding wires for submersible motors. 2 The wires covered in this standard are suitable for use where the combination of ambient temperature and temperature rise due to load results in conductor temperature not exceeding 85°C.	
IS 8783 (Part 4/Sec 2) : 1995		Winding wires for submersible motors - specification: Part 4 specification for individual wires: Sec 2 crosslinked polyethylene insulated and polyamide jacketed wires (First Revision)	March, 2021	1 This standard (Part 4/See 2) covers the requirements of high conductivity annealed solid and stranded copper conductor, crosslinked polyethylene (hereafter referred as XLPE) insulated and overall polyamide (hereafter' referred as PA) jacketed winding wires for submersible motors. 2 The wires covered in this standard are suitable for use where combination of ambient temperature and temperature rise due to load results in conductor temperature not exceeding 105°C under normal operation.	

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IS 8783 (Part 4/Sec 3) : 1995		Winding wires for submersible motors - Specification: Part 4 specification for individual wires: Sec 3 polyester and polypropylene insulated winding wires (First Revision)	March, 2021	1 This standard (Part 4/sec 3) covers the requirements of high conductivity annealed solid and stranded copper conductor with polypropylene insulated winding wires for submersible motors. 2 The wires covered in the standard are suitable for use where the combination of ambient temperature in conductor temperature not exceeding 105 °C	
IS 2069 : 1991		Drums for covered winding wires and strips for electrical purposes - Specification Second Revision	March, 2021	This standard specifies the dimensional requirements for drums for covered winding wires and strips for electrical purposes. It includes essential requirements for materials, construction and marking.	
IS 9778 : 1981		Guide for evaluation of thermal endurance of varnish bonded glass fibre covered rectangular copper conductors	March, 2021	1 The test method covered in this standard is intended primarily for comparing the thermal endurance of varnish bonded glass fibre lapped or braided rectangular copper conductors in air at atmospheric pressure. In due course similar standard to cover round conductors will be prepared. 2 Exposure of some types of varnish bonded glass fibre lapped or braided rectangular conductors to heat in gaseous or liquid environments in the absence of air may give thermal endurance values different from those obtained in air. This fact must be considered when interpreting the results obtained by heating in air in respect to applications where the wire will not be exposed to air in service. 3 The method described covers only the evaluation of thermal endurance by changes in electric strength. In due course, other test methods to evaluate the changes in other properties will be formulated.	This is already covered in IS 13778 (Part 6) : 2018 IEC60851-6 : 2012 (Active) Winding wires - Test methods: Part 6 thermal properties (Second Revision).

ACTION - The committee noted the above list. Members asked to circulate the list again and decision has to be taken mandatorily by next meeting in August 2024.

Item 6 Standards to Reaffirmed

IS No.	LATEST IEC	Title	Reaffirmation Details
IS 13730 (Part 0/Sec 1) : 2018 IEC 60317-0-1: 2013	IEC 60317-0-1:2013+A MD1:2019 CSV	Specifications for particular types of winding wires: Part 0 general requirements: Sec 1 enamelled round copper wire (Second Revision)	
IS 13730 (Part 0/Sec 2) : 2018 IEC 60317-0-2 : 2013	IEC 60317-0-2:2020	Specifications for particular types of winding wires: Part 0 general requirements: Sec 2 enamelled rectangular copper wire (Second Revision)	-
IS 13730 (Part 0/Sec 3) : 2012 IEC 60317-0-3	IEC 60317-0-3:2008+A MD1:2013+AMD2:2019 CSV	Specifications for particular types of winding wires: Part 0 general requirements: Sec 3 enamelled round aluminium wire (First Revision)	
IS 13730 (Part 0/Sec 4) : 2018 IEC 60317-0-4: 2015	IEC 60317-0-4:2020	Specification for particular types of winding wires: Part 0 general requirements: Sec 4 glass - Fibre wound resin or varnish impregnated, bare or enamelled rectangular copper wire (Second Revision)	-
IS 13730 (Part 0/Sec 6) : 2012 IEC 60317-0-6	IEC 60317-0-6:2020	Specifications for particular types of winding wires: Part 0 general requirements: Sec 6 glass - Fibre wound resin or varnish impregnated, bare or enamelled round copper wire	May, 2017
IS 13730 (Part 1) : 1993	IEC 60317-1:2010+AMD 1:2024	Particular types of winding wires: Part 1 Polyvinyl acetal enamelled round copper wire, class 105 (superseding by IS 4800(Part 4):1968	
IS 13730 (Part 2) : 2018 IEC 60317-2: 2012	IEC 60317-2:2019	Specification for particular types of winding wires: Part 2 solderable polyurethane enamelled round copper wire, class 130, with a bonding layer (Second Revision)	-
IS 13730 (Part 5) : 2018		Specification for Particular Types of Winding Wires Part 5 Polyester Enamelled Round Aluminium Wire, Class 155	
IS 13730 (Part 12) : 2012 IEC 60317-12 : 2010	IEC 60317-12:2020	Specifications for particular types of winding wires: Part 12 polyvinyl acetal enamelled round copper wire, class 120	2017
IS 13730 (Part 20) : 2018 IEC 60317-20	IEC 60317-20:2013+A MD1:2019 CSV	Specifications for particular types of winding wires: Part 20 solderable polyurethane enamelled round copper wire, class 155 (Second Revision)	
IS 13730 (Part 21) : 2017 IEC 60317-21:2013	IEC 60317-21:2013+A MD1:2019 CSV	Specifications for particular types of winding wires: Part 21 solderable polyurethane enamelled round copper wire overcoated with polyamide, class 155	
IS 13730 (Part 23) : 2017 IEC 60317-23:2013	IEC 60317-23:2013+A MD1:2019 CSV	Specifications for particular types of winding wires: Part 23 solderable polyesterimide enamelled round copper wire, class 180	

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IS 13730 (Part 28) : 2018 IEC 60317-28	IEC 60317-28:2013	Specifications for particular types of winding wires: Part 28 polyesterimide enamelled rectangular copper wire, class 180 (First Revision)	
IS 13730 (Part 31) : 2018 IEC 60317-31	IEC 60317-31:2015	Specifications for particular types of winding wires: Part 31 glass fibre wound, resin or varnish impregnated, bare or enamelled rectangular copper wire, temperature index 180 (First Revision)	
IS 13730 (Part 32) : 2018 IEC 60317-32	IEC 60317-32:2015	Specifications for particular types of winding wires: Part 32 glass fibre wound, resin or varnish impregnated, bare or enamelled rectangular copper wire, temperature index 155 (First Revision)	
IS 13730 (Part 33) : 2018 IEC 60317-33	IEC 60317-33:2015	Specifications for particular types of winding wires: Part 33 glass fibre wound, resin or varnish impregnated, bare or enamelled rectangular copper wire, temperature index 200 (First Revision)	
IS 13730 (Part 35) : 2017 IEC 60317-35:2013	IEC 60317-35:2013+A MD1:2019 CSV	Specifications for particular types of winding wires: Part 35 solderable polyurethane enamelled round copper wire, class 155, with a bonding layer	
IS 13730 (Part 36) : 2017 IEC 60317-36:2013	IEC 60317-36:2013+A MD1:2019 CSV	Specifications for particular types of winding wires: Part 36 solderable polyesterimide enamelled round copper wire, class 180, with a bonding layer	
IS 13730 (Part 37) : 2017 IEC 60317-37:2013	Same	Specifications for particular types of winding wires: Part 37 polyesterimide enamelled round copper wire, class 180, with a bonding layer	
IS 13730 (Part 38) : 2018 IEC 60317-38	IEC 60317-38:2013	Specifications for particular types of winding wires: Part 38 polyester or polyesterimide overcoated with polyamide - Imide, enamelled round copper wire, class 200, with a bonding layer	
IS 13730 (Part 43) : 2013 IEC 60317-43	IEC 60317-43:1997+A MD1:2010 CSV	Specification for particular types of winding wires: Part 43 aromatic polyimide tape wrapped round copper wire, class 240 (First Revision)	2018
IS 13730 (Part 44) : 2013 IEC 60317-44	IEC 60317-44:1997+A MD1:2010 CSV	Specification for particular types of winding wires: Part 44 aromatic polyimide tape wrapped rectangular copper wire, class 240 (First Revision)	2018
IS 13730 (Part 46) : 2017 IEC 60317-46:2013	Same	Specifications for particular types of winding wires: Part 46 aromatic polyimide enamelled round copper wire, class 240	
IS 13730 (Part 47) : 2017 IEC 60317-47:2013	same	Specifications for particular types of winding wires: Part 47 aromatic polyimide enamelled rectangular copper wire, class 240	
IS 13730 (Part 48) : 2018 IEC 60317-48	IEC 60317-48:2012	Specifications for particular types of winding wires: Part 48 glass - Fibre wound resin or varnish impregnated, bare or enamelled round copper wire, temperature index 155 (First Revision)	-

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IS 13730 (Part 49) : 2018 IEC 60317-49	IEC 60317-49:2012	Specifications for particular types of winding wires: Part 49 glass - Fibre wound, high temperature resin or varnish - Impregnated, bare or enamelled round copper wire, class 180 (First Revision)	-
IS 13730 (Part 50) : 2018 IEC 60317-50	IEC 60317-50:2012	Specifications for particular types of winding wires: Part 50 glass - Fibre wound, silicone resin or varnish impregnated, bare or enamelled round copper wire, class 200 (First Revision)	-
IS 13730 (Part 53) : 2018 IEC60317-53	IEC 60317-53:2014	Specifications for particular types of winding wires: Part 53 aromatic polyimide (Aramid) tape wrapped rectangular copper wire, temperature index 220 (First Revision)	-
IS 13778 (Part 2) : 2013 IEC 60851-2	IEC 60851-2:2009+AMD 1:2015+AMD2:2019 CSV	Winding wires - Test methods: Part 2 determination of dimensions (First Revision)	2018
IS 13778 (Part 3) : 2012 IEC 60851-3	IEC 60851-3:2023	Winding wires - Test methods: Part 3 mechanical properties (First Revision)	2017
IS 13778 (Part 4) : 2018 IEC 60851-4	IEC 60851-4:2016	Winding wires - Test methods: Part 4 chemical properties (Second Revision)	-
IS 13778 (Part 5) : 2012 IEC 60851-5	IEC 60851-5:2008+AMD1:2011+AMD2:2019 CSV	Winding wires - Test methods: Part 5 electrical properties (First Revision)	2017
IS 13778 (Part 6) : 2018 IEC60851-6	IEC 60851-6:2012	Winding wires - Test methods: Part 6 thermal properties (Second Revision)	-
IS 14841 (Part 4/Sec 1) : 2013 IEC 60264-2-1	IEC 60264-2-1:1989/AMD1:2003	Packaging of winding wires: Part 4 methods of test: Sec 1 delivery spools made from thermoplastic materials (First Revision)	December, 2018
IS 5825 : 2018		Test procedure for the determination of the temperature index of enamelled and tape wrapped winding wires (Second Revision)	
IS 8572 : 1993		Paper - Covered flexible/stranded copper conductors for transformer leads - Specification (First Revision)	June, 2018

ACTION - The committee noted the above list. Members asked to circulate the list again and decision has to be taken mandatorily by next meeting in August 2024.

Item 7 Documents in process

ACTION- All documents below are approved for printing and final publication if no comments are received in the WC stage. CTC document ETD/33/25311 will be finalized in next meeting.

Docs in Printing Stage

Document Number	Document Title	Doc Type	Prio rity	Lan gua ge	Document Stage

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ETD/33/25016IS 13730 : Part 0 : Sec 1: 2018	Specifications for Particular Types of Winding Wires Part 0 General Requirements Section 1 Enamelled round copper wire (Second Revision) Amendment -1	Amendment	3	English	PDF Sent To Publication
ETD/33/25004IS 5825: 2018(Identical To: IEC 60172:2020)	Test Procedure for the Determination of the Temperature Index of Enamelled and Tape Wrapped Winding Wires (Third Revision)	Revision	3	English	ETDC chair approval awaited.
ETD/33/25014IS 13730 : Part 0 : Sec 2: 2018(Identical To: IEC 60317-0-2:2020)	Specifications for Particular Types of Winding Wires Part 0 General Requirements Section 2 Enamelled rectangular copper wire (Third Revision)	Revision	3	English	ETDC chair approval awaited.

Docs in Development stage

Document Number	Document Title	Doc Type	Document Stage
ETD/33/25304IS 13730 : Part 35: 2017	Specifications for particular types of winding wires: Part 35 solderable polyurethane enamelled round copper wire, class 155, with a bonding layer Amendment - 1	Amendment	WC-Draft
ETD/33/25284IS 13730 : Part 0 : Sec 3: 2012	Specifications for particular types of winding wires: Part 0 general requirements: Sec 3 enamelled round aluminium wire (First Revision) Amendment - 1	Amendment	WC-Draft
ETD/33/25302IS 13730 : Part 23: 2017	Specifications for particular types of winding wires: Part 23 solderable polyesterimide enamelled round copper wire, class 180 Amendment - 1	Amendment	WC-Draft

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ETD/33/25300IS 13730 : Part 20: 2018	Specifications for particular types of winding wires: Part 20 solderable polyurethane enamelled round copper wire, class 155 (Second Revision) Amendment - 1	Amendment	WC-Draft
ETD/33/25310IS 13778 : Part 5: 2012	Winding wires - Test methods: Part 5 electrical properties (First Revision) Amendment - 1	Amendment	WC-Draft
ETD/33/25297IS 13730 : Part 12: 2012(Identical To: IEC 60317-12:2020)	Specifications for particular types of winding wires - Part 12: Polyvinyl acetal enamelled round copper wire class 120	Revision	WC-Draft
ETD/33/25308IS 13778 Part 2: 2013	Winding wires - Test methods: Part 2 determination of dimensions (First Revision) Amendment - 1	Amendment	WC-Draft
ETD/33/25293IS 13730 : Part 1: 1993(Identical To: IEC 60317-1:2010+AMD1:2024 CSV)	Specifications for particular types of winding wires - Part 1: Polyvinyl acetal enamelled round copper wire class 105	Revision	WC-Draft
ETD/33/25305IS 13730 : Part 36: 2017	Specifications for particular types of winding wires: Part 36 solderable polyesterimide enamelled round copper wire, class 180, with a bonding layer Amendment - 1	Amendment	WC-Draft
ETD/33/25286IS 13730 : Part 0 : Sec 4: 2018(Identical To: IEC 60317-0-4:2020)	Specification for particular types of winding wires: Part 0 general requirements: Sec 4 glass - Fibre wound resin or varnish impregnated bare or enamelled rectangular copper wire Second Revision	Revision	WC-Draft
ETD/33/25303IS 13730 : Part 25: 2015(Identical To: IEC 60317-25:2020)	Specifications for particular types of winding wires - Part 25: Polyester or polyesterimide overcoated with polyamide-imide enamelled round aluminium wire class 200	Revision	WC-Draft
ETD/33/25301IS 13730 : Part 21: 2017	Specifications for particular types of winding wires: Part 21 solderable polyurethane enamelled round copper wire overcoated with	Amendment	WC-Draft

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	polyamide, class 155 Amendment - 1		
ETD/33/25311	Continuously Transposed Conductor CTC Copper Winding Wires	New	WC-Draft
ETD/33/25298IS 13730 : Part 17: 2014(Identical To: IEC 60317-17:2020)	Specifications for particular types of winding wires - Part 17: Polyvinyl acetal enamelled rectangular copper wire class 105	Revision	WC-Draft
ETD/33/25296IS 13730 : Part 2: 2018(Identical To: IEC 60317-2:2019)	Specifications for particular types of winding wires - Part 2: Solderable polyurethane enamelled round copper wire class 130 with a bonding layer	Revision	WC-Draft
ETD/33/25309IS 13778 : Part 3: 2012(Identical To: IEC 60851-3:2023)	Winding wires - Test methods - Part 3: Mechanical properties	Revision	WC-Draft
ETD/33/25306IS 13778 : PART 1: 2011(Identical To: IEC 60851-1:2021)	Winding wires - Test methods - Part 1: General	Revision	WC-Draft
ETD/33/25289IS 13730 : Part 0 : SEC 6: 2012(Identical To: IEC 60317-0-6:2020)	Specifications for particular types of winding wires - Part 0-6: General requirements - Glass-fibre wound resin or varnish impregnated bare or enamelled round copper wire	Revision	WC-Draft

Item 7 INTERNATIONAL ACTIVITIES

7.1 Membership in IEC/TC 55 and New Subjects for Harmonization

India is ‘P’ member of IEC TC 55.

IEC publications issued by IEC TC 55 and its Work Programme is given at following sheet:[IEC TCs mapped onto ETD 33](#)

The committee may consider identifying IEC publications from the programme of work of IEC TC 55 that may be considered for harmonization.

Document up for voting.

Reference, Title	Downloads	Circulation	Closing
		Date	Date

55/2045(F)/CDV

IEC 60851-1/AMD1 ED3:

Amendment 1 - Winding
wires - Test methods - Part
1: General

 **164 kB**

2024-06-21 2024-09-06

55/2049/FDIS

IEC 60317-0-3 ED4:

Specifications for
particular types of winding
wires - Part 0-3: General
requirements - Enamelled
round aluminium wire

 **487 kB**

2024-06-21 2024-08-02

55/2045/CDV

IEC 60851-1/AMD1 ED3:

Amendment 1 - Winding
wires - Test methods - Part
1: General

 **200 kB**

2024-06-14 2024-09-06

ACTION- The committee noted the above information. Mr Yogesh Kharat to be the point person for IEC documents.

Annexure 1

Sn.	Organization	Member Name	Member Email	Attendance Out of last 2 Meeting		
				22nd	23rd	24th
1	Bharat Heavy Electrical Limited, New Delhi	Shri Ratnanav Acharya (Chairperson)	ratnavacharya@gmail.com	Y	Y	Y
2	APAR Industries Limited, Silvassa	Shri Yogesh Kharat (Principal Member)	yogesh.khrat@apar.com	--	--	Y
		Shri. Siddhartha Sankar Maiti (Alternate Member)	siddhartha.maiti@apar.com			

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3	BEICO Industries Private Limited, Mumbai	Shri Suhridd Singhvi (Principal Member)	ssanghvi@beico.in	Y	Y	N
4	Bharat Heavy Electrical Limited, New Delhi	Shri Laxmi Rajam M (Principal Member)	mlrajam@bhelhyd.co.in	Y	Y	Y
5	Bharat Insulation Company India Private Limited, Thane	Dhiren Mehta (Principal Member)	mehtadhiren@bicwire.com	N	Y	Y
6	Central Electricity Authority, New Delhi	Shri Vivek Goel (Principal Member) Shri Faraz (Alternate Member)	ut.cea@rediffmail.com	N	N	N
7	Central Power Research Institute, Bengaluru	M. Moumita Naskar (Principal Member)	moumita@cpri.in	Y	Y	Y
8	Development Commissioner Micro-Small and Medium Enterprises	Dr. S.K. Sahoo (Principal Member) Shri S. Dharmaselvan (Alternate Member)	sksahoo.dcmsme@dcmsme.gov.in s.dharmaselvan@dcmsme.gov.in	N	Y	Y
9	ELANTAS Beck India Limited, New Delhi	Shri Babu Gowade (Principal Member) Ms. Rakhee Telkar (Alternate Member)	babu.gowade@altana.com rakhee.telkar@altana.com	Y	Y	Y
10	Electrical Research and Development Association, Vadodara	Shri Shailesh Patel (Principal Member) Shri Sheetal Panchal (Principal Member)	shailesh.patel@erda.org sheetal@erda.org	Y	Y	Y
11	Indian Electrical and Electronics Manufacturers Association, New Delhi	Shri Ashutosh Vasisht (Principal Member) Shri Navdeep Singh (Alternate Member)	ashutosh.vasisht@ieema.org navdeep.singh@ieema.org	Y	Y	N
12	International Copper Association India, Mumbai	Shri K N Hemanth Kumar (Principal Member) Shri Jyotish Pande	hemanth.kumar@copperalliance.org jyotish.pande@copperalliance.org	Y	Y	Y

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		(Alternate Member I) Sanjay Namdeo (Alternate Member II)	Sanjay.namdeo@co pperalliance.org			
13	Precision Wires India Limited, Mumbai	Shri Milan M. Metha (Principal Member) Shri Nirbhay Metha (Alternate Member	mumbai@pwil.net nirbhay@pwil.net	Y	Y	Y
14	Siemens Limited, Mumbai	Shri Nagabhushan Bhat (Principal Member) Shri Ashish Shere (Alternate Member)	<u>nagabhushan.bhat@</u> <u>siemens.com</u> <u>ashish.shere@sieme</u> <u>ns.com</u>	N	Y	Y
15	Slimlites Electricals Private Limited, Mumbai	Shri Vimal Jalan (Principal Member)	vimal.jalan@seplco. com	Y	Y	Y
16	Southern India Engineering Manufacturers Association, Coimbatore	Shri Keshavarajulu R.G. (Principal Member) Shri G. Rajendran (Alternate Member)	seuna@vsnl.com mail@grajendran.in	N	N	N
17	Vidya Wires Private Limited, Anand	Shri Shailesh Rathi (Principal Member)	shaileshrathi@vidya wire.com	N	N	Y
18	Winding Wires Manufacturers' Association of India, Greater Noida	Shri Sudhir Agarwal (Principal Member) Shri Anant Loya (Alternate Member)	bd@gkwwinding.com	N	Y	N