**IS 13730 (Part 0/Sec 4): 2024**

***भारतीय मानक Indian Standards***

**IEC 60317-0-4: 2020**

**विशेष प्रकार की कुंडलण तारों की**

**विशिष्टियाँ**

**भाग 0 सामान्य अपेक्षाएं**

**अनुभाग 4 काँच - तंतु की क्षत रेजिन अथवा वार्निश संचेचित, नंगी अथवा अनेमलित आयताकार कॉपर की तार**

***(तीसरा पुनरीक्षण)***

**Specification for Particular Types of Winding Wires**

Part 0 General Requirements

Section 4 Glass - Fibre Wound Resin or Varnish Impregnated, Bare or Enamelled Rectangular Copper Wire

*(Third Revision)*

ICS 29.060.10

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**September 2024 Price Group**

Winding Wire Sectional Committee, ETD 33

NATIONAL FOREWORD

This Indian Standard (Third Revision) which is identical with IEC 60317-0-4: 2020 ‘Specifications for particular types of winding wires – Part 0-4: General requirements – Glass-fibre wound, resin or varnish impregnated, bare or enamelled rectangular copper wire’ Issued by the International Electrotechnical Commission (IEC) was adopted by the Bureau of Indian Standards on the recommendation of the Winding Wire Sectional Committee and approval of the Electrotechnical Division Council.

This standard was originally published in 1993 and subsequently revised in 2011 and 2018. The third revision of this standard has been undertaken to align it with the latest version of IEC 60317-0-4: 2020.

This standard is published in various parts. Other parts in this series are:

|  |  |
| --- | --- |
| Part 0/Sec 1 | Specifications for particular types of winding wires Part 0 General requirements Sec 1 Enamelled round copper wire |
| Part 0/Sec 2 | Specifications for particular types of winding wires Part 0 General requirements Sec 2 Enamelled rectangular copper wire |
| Part 0/Sec 3 | Specifications for particular types of winding wires Part 0 General requirements Sec 3 Enamelled round aluminium wire |
| Part 0/Sec 5 | 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 |
| Part 0/Sec 6 | 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 |
| Part 1 | Particular types of winding wires Part 1 Polyvinyl acetal enamelled round copper wire, class 105 |
| Part 2 | Specification for particular types of winding wires Part 2 Solderable polyurethane enamelled round copper wire, class 130, with a bonding layer |
| Part 3 | Specifications for particular types of winding wires Part 3 Polyester enamelled round copper wire, class 155 |
| Part 4 | Specification for particular types of winding wires Part 4 Solderable polyurethane enamelled round copper wire, class 130, |
| Part 5 | Specification for particular types of winding wires Part 5 Polyester enamelled round aluminium wire, Class 155 |
| Part 6 | Specification for particular types of winding wires Part 6 Oleo - Resinous enamelled round aluminium wire, class 105 |
| Part 8 | Specification for particular types of winding wires Part 8 Polyesterimide enamelled round copper wire, class 180 |
| Part 9 | Specification for particular types of winding wires Part 9 Polyester enamelled round aluminium wire, class 138 |
| Part 12 | Specifications for particular types of winding wires Part 12 Polyvinyl acetal enamelled round copper wire, class 120 |
| Part 13 | Specifications for particular types of winding wires Part 13 Polyester or polyesterimide overcoated with polyamide - Imide enamelled round copper wire, class 200 |
| Part 15 | Particular types of winding wires Part 15 Polyesterimide enammelled round aluminium wire, class 180 |
| Part 16 | Specifications for particular types of winding wires Part 16 Polyester enamelled rectangular copper wire class 155 |
| Part 17 | Specifications for particular types of winding wires: Part 17 Polyvinyl acetal enamelled rectangular copper wire, class 105 |
| Part 20 | Specifications for particular types of winding wires Part 20 Solderable polyurethane enamelled round copper wire, class 155 |
| Part 21 | Specifications for particular types of winding wires Part 21 Solderable polyurethane enamelled round copper wire overcoated with polyamide, class 155 |
| Part 23 | Specifications for particular types of winding wires Part 23 Solderable polyesterimide enamelled round copper wire, class 180 |
| Part 25 | Specifications for particular types of winding wires Part 25 Polyester or polyesterimide overcoated with polyamide - Imide enamelled round aluminium wire, class 200 |
| Part 26 | Specifications for particular types of winding wires Part 26 Polyamide - Imide enamelled round copper wire, class 200 |
| Part 27 | Specifications for particular types of winding wires Part 27 Paper tape covered rectangular copper wire |
| Part 28 | Specifications for particular types of winding wires Part 28 Polyesterimide enamelled rectangular copper wire, class 180 |
| Part 29 | Specifications for particular types of winding wires Part 29 Polyester or polyesterimide overcoated with polyamide - Imide enamelled rectangular copper wire, class 200 |
| Part 31 | 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 |
| Part 32 | 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 |
| Part 33 | 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 |
| Part 34 | Specifications for particular types of winding wires Part 34 Polyester enamelled round copper wire, class 130 L |
| Part 35 | Specifications for particular types of winding wires Part 35 Solderable polyurethane enamelled round copper wire, class 155, with a bonding layer |
| Part 36 | Specifications for particular types of winding wires Part 36 Solderable polyesterimide enamelled round copper wire, class 180, with a bonding layer |
| Part 37 | Specifications for particular types of winding wires: Part 37 Polyesterimide enamelled round copper wire, class 180, with a bonding layer |
| Part 38 | 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 |
| Part 39 | 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 |
| Part 43 | Specification for particular types of winding wires Part 43 Aromatic polyimide tape wrapped round copper wire, class 240 |
| Part 44 | Specification for particular types of winding wires Part 44 Aromatic polyimide tape wrapped rectangular copper wire, class 240 |
| Part 45 | Specifications for particular types of winding wires Part 45 Polyester enamelled round copper wire, class 130 |
| Part 46 | Specifications for particular types of winding wires Part 46 Aromatic polyimide enamelled round copper wire, class 240 |
| Part 47 | Specifications for particular types of winding wires: Part 47 Aromatic polyimide enamelled rectangular copper wire, class 240 |
| Part 48 | 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 |
| Part 49 | 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 |
| Part 50 | 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 |
| Part 53 | Specifications for particular types of winding wires Part 53 Aromatic polyimide (Aramid) tape wrapped rectangular copper wire, temperature index 220 |

The text of the IEC Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

1. Wherever the words ‘International Standard’ appears referring to this standard, they should be read as ‘Indian Standard’.
2. Comma (,) has been used as a decimal marker, while in Indian Standards the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to International Standards for which Indian Standards also exists. The corresponding Indian Standards, which are to be substituted, are listed below along with their degree of equivalence for the editions indicated:

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| *International Standard* | *Corresponding Indian Standard* | *Degree of Equivalence* |
| IEC 60851 (all parts), Winding wires – Test methods | IS 13778 (Part 1) : 2011/ IEC 60851-1 : 1996 Winding wires - Test methods: Part 1 General (*first revision*) | Identical |
| IS 13778 (Part 2) : 2013/IEC 60851-2 : 2009 Winding wires - Test methods: Part 2 Determination of dimensions (*first revision*) | Identical |
| IS 13778 (Part 3) : 2012 IEC 60851-3 : 2009 Winding wires - Test methods: Part 3 Mechanical properties (*first revision*) | Identical |
| IS 13778 (Part 4) : 2018/IEC 60851-4 : 2016 Winding wires - Test methods: Part 4 Chemical properties (*second revision*) | Identical |
| IS 13778 (Part 5) : 2012/IEC 60851-5 : 2008 Winding wires - Test methods: Part 5 electrical properties (*first revision*) | Identical |
| IS 13778 (Part 6) : 2018/IEC 60851-6 : 2012 Winding wires - Test methods: Part 6 Thermal properties (*second revision*) | Identical |

The technical committee has reviewed the provisions of the following international standards referred in this adopted standard and decided that they are acceptable for use in conjunction with this standard.

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| *International Standard* | *Title* |
| ISO 3 | Preferred numbers – Series of preferred numbers |
| EN 1977 | Copper and copper alloys – Copper drawing stock (wire rod) |
| ISO 1190-1, | Copper and copper alloys − Code of designation – Part 1: Designation of materials for code of designation |
| ASTM B49 | Standard specification for copper rod for electrical purposes |

Only English language text has been retained while adopting it in this Indian Standard, and as such the page numbers given here are not the same as in the International Standard.

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: 2022 ‘Rules for rounding off numerical values (*second revision*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.