**भारतीय मानक**

**हाइब्रिड संचार केबल –**

**भाग 3 आउटडोर हाइब्रिड केबल –**

**अनुभागीय विशिष्टता**

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***Indian Standard***

**Hybrid Communication Cables – Part 3 Outdoor Hybrid Cables – Sectional Specification**

***ICS 33.120.20***

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**October 2024 Price Group XXXX**

Wires, Cables, Waveguides & Accessories Sectional Committee, LITD 06

**NATIONAL FOREWORD**

This Indian Standard (Part 3) which is identical with IEC 62807-3:2023. ‘Hybrid communication cables –Part 3: Outdoor hybrid cables – Sectional specification’ issued by the International Electrotechnical Commission (IEC) wasadopted by the Bureau of Indian Standards on the recommendations of the Dependability of Electronic, Electrical Components, Equipment and Systems Sectional Committee and approval of the Electronics and Information Technology Division Council.

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

1. Wherever the words ‘International Standard’ appear referring to this standard, theyshould be read as ‘Indian Standard’, and
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 the following International Standard for which Indian Standard also exists. The corresponding Indian Standard which is to be substituted in its place is listed below along with its degree of equivalence for the edition indicated. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies:

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| **International Standards** | **Corresponding Indian Standard** | **Degree of Equivalence** |
| IEC 60050-461 International Electrotechnical Vocabulary – Part 461: Electric cables | IS 1885 (Part 32) : 2019  Electrotechnical Vocabulary Part 32 Electric Cables (*Second Revision*) | Identical with IEC 60050-461:  2008 |
| IEC 60227 (all parts) Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V | IS 694 : 2010 Polyvinyl chloride insulated unsheathed and sheathed cables/cords with rigid and flexible conductor for rated voltages up to and including 450/750 v (*Fourth Revision*) | Technical Equivalent |
| IEC 60227-1 Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V – Part 1: General requirements |
| IEC 60228 Conductors of insulated cables | IS 8130 : 2013 Conductors for insulated electric cables and flexible cords - Specification (*Second Revision*) | Identical |

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| IEC 60793-1-40 Optical fibres – Part 1- 40: Attenuation measurement methods | IS/IEC 60793-1-40 : 2001 Optical  fibres: Part 1 measurement methods and test procedures: Sec 40 attenuation | -do- |
| IEC 60793-1-44 Optical fibres – Part 1- 44: Measurement methods and test procedures – Cut-off wavelength | IS/IEC 60793-1-44 : 2011 Optical  fibres: Part 1 measurement methods and test procedures: Sec 44 cut - Off wavelength | -do- |
| IEC 60793-1-46 Optical fibres – Part 1- 46: Measurement methods and test procedures –Monitoring of changes in optical transmittance | IS/IEC 60793-1-46 : 2001 Optical  fibres: Part 1 measurement methods and test procedures: Sec 46 monitoring of changes in optical  transmittance | -do- |
| IEC 60793-1-48 Optical fibres – Part 1- 48: Measurement methods and test procedures – Polarization mode dispersion | IS/IEC 60793-1-48 : 2017 Optical  Fibres Part 1 Measurement Methods and Test Procedures Section 48 Polarization mode Dispersion (*First Revision* ) | -do- |
| IEC 60794-1-1 Optical fibre cables – Part 1-1: Generic specification –  General test procedures – Mechanical test methods | IS/IEC 60794-1-1 : 2015 Optical  Fibre Cables Part 1 Generic  Specification Section 1 General (*First Revision*) | -do- |
| IEC 62807-1 Hybrid telecommunication cables – Part 1: Generic specification | IEC 62807-1: 2017  Hybrid telecommunication cables – Part 1: Generic specification [Under preparation Doc No. LITD 06  (23349)] | Identical |
| IEC 61156 (all parts) Multicore and symmetrical pair/quad cables for digital  communications | IS 14493 (all parts) Multicore And Symmetrical Pair / Quad Cables For  Digital Communications | -do- |
| IEC 61156-1 Multicore and symmetrical pair/quad cables for digital communications – Part 1: Generic specification | IS 14493 (Part 1) : 2020 Multicore And Symmetrical Pair / Quad Cables For Digital Communications Part 1 Generic Specification (*First Revision*  ) | -do- |
| IEC 61196 (all parts) Coaxial communication cables | IS 61196 (All Parts) Coaxial communication cables | -do- |
| IEC 61196-1 Coaxial communication cables – Part 1: Generic specification – General, definitions and requirements | IS/IEC 61196-1: 2005  Coaxial communication cables: Part  1 generic specification - General, definitions and requirements | -do- |

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| IEC 61196-1-102 Coaxial  communication cables – Part 1-102: Electrical test methods – Test for insulation resistance of cable dielectric | IS/IEC 61196-1-102 : 2005  Coaxial communication cables: Part 1 - 102 electrical test methods - Test for insulation resistance of cable  dielectric | -do- |
| IEC 61196-1-105 Coaxial  communication cables – Part 1-105: Electrical test methods – Test for withstand voltage of cable dielectric | IS/IEC 61196-1-105 : 2005  Coaxial communication cables: Part 1 - 105 electrical test methods - Test for withstand voltage of cable dielectric | -do- |
| IEC 61196-1-108 Coaxial  communication cables – Part 1-108: Electrical test methods – Test for characteristic impedance, phase and  group delay, electrical length and propagation velocity | IS/IEC 61196-1-108 : 2005  Coaxial communication cables: Part 1 - 108 electrical test methods - Test for characteristic impedance, phase  and group delay, electrical length and propagation velocity | -do- |
| IEC 61196-1-112 Coaxial  communication cables – Part 1-112: Electrical test methods – Test for return loss (uniformity of impedance) | IS/IEC 61196-1-112 : 2006  Coaxial communication cables: Part 1 - 112 electrical test methods - Test for return loss (Uniformity Of Impedance) | -do- |
| IEC 61196-1-113 Coaxial  communication cables – Part 1-113: Electrical test methods – Test for attenuation constant | IS/IEC 61196-1-113 : 2018  Coaxial communication cables Part 1- 113 Electrical Test Methods — Test for Attenuation Constant | -do- |
| IEC 61196-1-122 Coaxial communication cables – Part 1-122: Electrical test methods – Test for cross-talk between coaxial cables | IS/IEC 61196-1-122 : 2006  Coaxial communication cables: Part 1 - 122 electrical test methods - Test for cross - Talk between coaxial  cables | Identical |
| IEC 61196-1-201 Coaxial  communication cables – Part 1-201: Environmental test methods –Test for cold bend performance of cable | IS/IEC 61196-1-201 : 2009  Coaxial communication cables Part 1 Test methods Section 201 Environmental Test for cold bend performance of cable | -do- |
| IEC TR 61931 Fibre optic – Terminology | IS 16283 : 2014 Fibre  Optic Terminology | Identical with IEC 61931 : 1998 |
| IEC 62153-4-3 Metallic communication cable test methods – Part 4-3: Electromagnetic Compatibility (EMC) – Surface transfer impedance – Triaxial | IS/IEC 62153-4-3: 2013  Metallic communication cable test methods Part 4 Electromagnetic compatibility EMC Section 3 Surface transfer impedance-Triaxial | Identical |

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| method | method |  |
| IEC 62153-4-4 Metallic communication | IS/IEC 62153-4-4: 2015  Metallic communication cable test methods Part 4 Electromagnetic compatibility EMC Section 4 Test method for measuring of the screening attenuation a s up to and above 3 GHz triaxial method |  |
| cable test methods – Part 4-4: |  |
| Electromagnetic compatibility (EMC) –  Test method for measuring of the | -do- |
| screening attenuation as up to and |  |
| above3 GHz, triaxial method |  |
| ISO/IEC 11801-1 Information | IS/ISO/IEC 11801-1 : 2017 |  |
| technology Generic cabling for customer premises Part 1: General | Information technology Generic  cabling for customer premises Part 1: | -do- |
| requirements | General requirements |  |

The technical committee has reviewed the provisions of the following International Standards referred in this adopted standard and has decided that they are acceptable for use in conjunction with this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies:

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| ***International Standard*** | ***Title*** |
| IEC 60050-731 | International Electrotechnical Vocabulary (IEV) – Part 731: Optical fibre communication |
| IEC 60502-1 | 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 1: Cables for rated voltages of 1 kV (Um = 1,2 kV) and 3 kV (Um = 3,6 kV) |
| IEC 60794-1-21 | Optical fibre cables – Part 1-21: Generic specification – Basic optical cable |
| IEC 60794-1-22 | Optical fibre cables – Part 1-22: Generic specification – Basic optical cable test procedures – Environmental test methods |
| IEC 60811-501 | 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 |
| IEC 62153-4-9 | Metallic communication cable test methods – Part 4-9: Electromagnetic compatibility (EMC) – Coupling attenuation of screened balanced cables, triaxial method |
| IEC 62821(All Parts) | Electric cables – Halogen-free, low smoke, thermoplastic insulated and sheathed cables of rated voltages up to and including 450/750 V |

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| IEC 62821-1 | 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 |
| IEC 63294 | 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 |

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 or analysis, 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 same as that of the specified value in this standard.