

This is a preview - click here to buy the full publication



ISO/IEC/TR 29106

Edition 1.1 2012-12

TECHNICAL REPORT



**Information technology – Generic cabling – Introduction to the MICE
environmental classification**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 35.200

ISBN 978-2-8322-0564-8

Warning! Make sure that you obtained this publication from an authorized distributor.

CONTENTS

FOREWORD.....	3
INTRODUCTION (to Amendment 1).....	5
1 Scope.....	6
2 Reference documents.....	6
3 Terms, definitions and abbreviations	7
3.1 Terms and definitions	7
3.2 Abbreviations	7
4 Application of environmental classification.....	7
4.1 MICE.....	7
4.2 Channel environment	7
4.3 Component selection.....	8
5 MICE system	11
5.1 General	11
5.2 Mechanical environment.....	11
5.3 Ingress protection and climatic environment	12
5.4 Chemical environment.....	14
5.5 Electromagnetic environment	16
Bibliography.....	17
Figure 1 – Example of variation of the environment along an industrial premises cabling channel.....	8
Figure 2 – The local environment.....	8
Table 1 – Details of environmental classification.....	9
Table 2 – Derivation of boundaries for mechanical criteria in Table 1.....	11
Table 3 – Derivation of boundaries for ingress protection criteria in Table 1.....	12
Table 4 – Derivation of boundaries for climatic criteria in Table 1.....	12
Table 5 – Derivation of boundaries for chemical criteria in Table 1.....	14
Table 6 – Derivation of boundaries for electromagnetic criteria in Table 1.....	16

INFORMATION TECHNOLOGY – GENERIC CABLING – INTRODUCTION TO THE MICE ENVIRONMENTAL CLASSIFICATION

FOREWORD

- 1) ISO (International Organization for Standardization) and IEC (International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards. Their preparation is entrusted to technical committees; any ISO and IEC member body interested in the subject dealt with may participate in this preparatory work. International governmental and non-governmental organizations liaising with ISO and IEC also participate in this preparation.
- 2) In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.
- 3) The formal decisions or agreements of IEC and ISO on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC and ISO member bodies.
- 4) IEC, ISO and ISO/IEC publications have the form of recommendations for international use and are accepted by IEC and ISO member bodies in that sense. While all reasonable efforts are made to ensure that the technical content of IEC, ISO and ISO/IEC publications is accurate, IEC or ISO cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 5) In order to promote international uniformity, IEC and ISO member bodies undertake to apply IEC, ISO and ISO/IEC publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any ISO/IEC publication and the corresponding national or regional publication should be clearly indicated in the latter.
- 6) ISO and IEC provide no marking procedure to indicate their approval and cannot be rendered responsible for any equipment declared to be in conformity with an ISO/IEC publication.
- 7) All users should ensure that they have the latest edition of this publication.
- 8) No liability shall attach to IEC or ISO or its directors, employees, servants or agents including individual experts and members of their technical committees and IEC or ISO member bodies for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication of, use of, or reliance upon, this ISO/IEC publication or any other IEC, ISO or ISO/IEC publications.
- 9) Attention is drawn to the reference documents cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 10) Attention is drawn to the possibility that some of the elements of this Technical Report, type 3 may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

This consolidated version of ISO/IEC 29106 consists of the first edition (2007) and its amendment 1 (2012). It bears the edition number 1.1.

The technical content is therefore identical to the base edition and its amendment and has been prepared for user convenience. A vertical line in the margin shows where the base publication has been modified by amendment 1. Additions and deletions are displayed in red, with deletions being struck through.

The main task of IEC and ISO technical committees is to prepare International Standards. In exceptional circumstances, ISO/IEC JTC 1 or a subcommittee may propose the publication of a technical report of one of the following types:

- type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;
- type 2, when the subject is still under technical development or where, for any other reason, there is the future but not immediate possibility of an agreement on an International Standard;
- type 3, when the technical committee has collected data of a different kind from that which is normally published as an International Standard, for example 'state of the art'.

ISO/IEC 29106, which is a Technical Report of type 3, has been prepared by subcommittee 25: Interconnection of information technology equipment, of ISO/IEC joint technical committee 1: Information technology.

Technical reports of types 1 and 2 are subject to review within three years of publication to decide whether they can be transformed into International Standards. Technical reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

This Technical Report of type 3 has been approved by vote of the member bodies, and the voting results may be obtained from the address given on the second title page.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

INTRODUCTION (to Amendment 1)

The Amendment has been developed to correct the misalignment of the MICE table with ISO/IEC 24702.

INFORMATION TECHNOLOGY – GENERIC CABLING – INTRODUCTION TO THE MICE ENVIRONMENTAL CLASSIFICATION

1 Scope

This Technical Report acts as an introduction to the concepts used to develop the MICE environmental classification system used in cabling standards developed by ISO/IEC. It also provides detailed explanation of the sources used to define the boundaries of MICE classifications.

2 Reference documents

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 11801, *Information technology – Generic cabling for customer premises*

ISO/IEC 15018, *Information technology – Generic cabling for homes*

ISO/IEC 24702, *Information technology – Generic cabling – Industrial premises*

IEC 60068-2-5:1975, *Environmental testing – Part 2: Tests. Test Sa: Simulated solar radiation at ground level*

IEC 60654-4:1987 *Operating conditions for industrial-process measurement and control equipment. Part 4: Corrosive and erosive influences*

IEC 60721-1, *Classification of environmental conditions – Part 1: Environmental parameters and their severities*

IEC 60721-3-3, *Classification of environmental conditions – Part 3-3: Classification of groups of environmental parameters and their severities - Stationary use at weatherprotected locations*

~~IEC 61000-2-5, *Electromagnetic compatibility (EMC) – Part 2: Environment – Section 5: Classification of electromagnetic environments. Basic EMC publication*~~

IEC 61000-6-1, *Electromagnetic compatibility (EMC) – Part 6-1: Generic standards – Immunity for residential, commercial and light-industrial environments*

IEC 61000-6-2, *Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity for industrial environments*

IEC 61131-2, *Programmable controllers – Part 2: Equipment requirements and tests*

~~IEC 61326:2001, *Electrical equipment for measurement, control and laboratory use – EMC requirements*~~

IEC 61918, *Industrial communication networks – Installation of communication networks in industrial premises*