

INTERNATIONAL STANDARD

IEC
61156-7-2

First edition
2003-05

Multicore and symmetrical pair/quad cables for digital communications –

Part 7-2:

**Symmetrical pair cables with transmission
characteristics up to 1 200 MHz –**

Quality assessment procedure –

**Sectional specification for digital and
analog communication cables**

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International Electrotechnical Commission
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**MULTICORE AND SYMMETRICAL PAIR/QUAD CABLES
FOR DIGITAL COMMUNICATIONS –**

**Part 7-2: Symmetrical pair cables with transmission characteristics
up to 1 200 MHz – Quality assessment procedure –
Sectional specification for digital and analog communication cables**

FOREWORD

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International Standard IEC 61156-7-2 has been prepared by subcommittee 46C: Wires and symmetric cables, of IEC technical committee 46: Cables, wires, waveguides, r.f. connectors, r.f. and microwave passive components and accessories.

The text of this standard is based on the following documents:

FDIS	Report on voting
46C/575/FDIS	46C/593/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

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

The committee has decided that the contents of this publication will remain unchanged until 2008. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

The contents of the corrigendum of September 2003 have been included in this copy.

MULTICORE AND SYMMETRICAL PAIR/QUAD CABLES FOR DIGITAL COMMUNICATIONS –

Part 7-2: Symmetrical pair cables with transmission characteristics up to 1 200 MHz – Quality assessment procedure – Sectional specification for digital and analog communication cables

1 General

1.1 Scope

This part of IEC 61156 applies to capability approval requirements for cables for various communication systems as well as to analog systems, such as video, that exist or are under development and which may use as many as four pairs simultaneously.

Clause 2 and its subclauses refer to the content of the capability manual.

Clause 3 and its subclauses refer to the related quality layout.

Clause 4 is related to the maintenance of the capability approval.

NOTE Quality assessment belongs to the negotiation between customers and manufacturers. The following clauses are intended as a guide when there is a request for a third-party capability approval. However, it may also be used as the basis for second party or self-certification.

1.2 Normative references

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.

IEC 61156-1-1:2001, *Multicore and symmetrical pair/quad cables for digital communications – Part 1-1: Capability approval – Generic specification*

2 Contents of the capability manual

2.1 Description of the cable families related to the capability domain

This subclause of the capability manual describes the family/families of cables for which capability approval is required as follows.

- a) Reference to the applicable standards (for example, sectional specification, detail specifications, etc.).
- b) Description of the cable constructional details, for example, size of conductors, insulation material and insulation dimensions, screening material and dimensions, screen construction, sheath material and dimensions, outer diameter, maximum cable size and maximum cable length.
- c) Additional characteristic or requirements not covered by the applicable standard.

2.2 Identification of the manufacturing process, equipment utilization and manufacturing instructions

For each family of cables the manufacturing processes shall be identified; for instance, by means of a flow chart as given in Annex A. For each manufacturing phase it is required to specify

- a) the description of available machinery and corresponding working instructions;
- b) the construction techniques;
- c) the process boundaries related to each phase of manufacturing;
- d) the test and control points in the manufacturing process.

An example of such a manufacturing process step identification is given in Annex B.

2.3 Policy on rework and repair

This subclause describes the permissible operations of rework and repair and their related operative instructions.

3 Quality plan

3.1 General

Reference is made to 2.2.4 of IEC 61156-1-1 with regard to process control. As a minimum, the following items shall be identified and considered with regard to process control:

- a) identification of manufacturing stages;
- b) identification of those characteristics which depend upon process phases and related tests.
- c) identification of all testing procedures;
- d) acceptance limits and criteria for the process and manufacturing stages;
- e) sampling and sampling plan. An example of such a sampling plan is given in Annex C.

3.2 Selection of Capability Qualifying Components (CQCs)

It is necessary to point out that the manufacture of cables is composed of many process phases that are continuous and not independent of each other. Hence, the products in each phase are not discrete production components.

For this reason the CQCs are presented by representative samples taken from each phase or from the finished products.

NOTE It is recommended to examine the trend of the results and/or statistical quality indices related to the tests carried out.

3.3 Purchased raw materials

The Quality Plan shall include a list of the raw materials used for the manufacture of a cable family, their corresponding purchasing specifications, and procedures for incoming inspections.

3.4 Design criteria

The Quality Plan shall include a list of the documentation concerning the design of the cable family either directly or by reference to the manufacturer's internal instructional documents.