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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Radio frequency and coaxial cable assemblies – Part 4: Sectional specification for semi-rigid coaxial cable assemblies

Cordons coaxiaux et cordons pour fréquences radioélectriques – Partie 4 : Spécification intermédiaire pour cordons coaxiaux semi-rigides



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RADIO FREQUENCY AND COAXIAL CABLE ASSEMBLIES –

Part 4: Sectional specification for semi-rigid coaxial cable assemblies

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IEC 60966-4 has been prepared by IEC technical committee 46: Cables, wires, waveguides, RF connectors, RF and microwave passive components and accessories. It is an International Standard.

This third edition cancels and replaces the second edition published in 2003. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) added Subclause 4.3 "The relative position dimensions of the interface";
b) added Figure 2;
c) added Clause 6 "IEC type designation";
d) modified Figure 3;

e) added Clause 7 "Rating and characteristics";

f) added "Requirements/Remarks" to all the tests in Clause 8;

g) added "Corona extinction voltage" in Table 3;

h) rewrote test schedules;

i) added Annex A and Annex B.

The text of this International Standard is based on the following documents:

Draft	Report on voting
46/964/FDIS	46/994/RVD

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts in the IEC 60966, published under the general title *Radio frequency and coaxial cable assemblies*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

RADIO FREQUENCY AND COAXIAL CABLE ASSEMBLIES –

Part 4: Sectional specification for semi-rigid coaxial cable assemblies

1 Scope

This part of IEC 60966 is a sectional specification that relates to semi-rigid coaxial cable assemblies operating in the transverse electromagnetic mode (TEM). It specifies the design and construction, IEC type designation, workmanship, marking and packaging, standard rating and characteristics, electrical, mechanical and environmental requirements of finished semi-rigid cable assemblies, quality assessment, delivery and storage, etc.

This part of IEC 60966 applies to semi-rigid cable assemblies composed of semi-rigid coaxial cables and coaxial connectors. Semi-rigid cable assemblies are widely used in mobile communication systems, microwave test equipment, radar, aerospace and other fields.

NOTE 1 For the purpose of this sectional specification, a cable assembly is always regarded as an integral unit. All specifications apply to the finished assembly and not to individual and non-assembled parts thereof.

NOTE 2 This sectional specification can be supplemented with detail specifications giving additional details as required by the particular application. This application will not necessarily require all tests.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60068-1:2013, *Environmental testing − Part 1: General and guidance*

IEC 60966-1:2019, *Radio frequency and coaxial cable assemblies – Part 1: Generic specification – General requirements and test methods*

IEC 61169 (all parts), *Radio frequency connectors*

IEC 61196-1-126, *Coaxial communication cables – Part 1-126: Electrical test methods – Corona extinction voltage*

IEC 61196-10, *Coaxial communication cables − Part 10: Sectional specification for semi-rigid cables with fluoropolymer dielectric*

IEC 61196-11, *Coaxial communication cables – Part 11: Sectional specification for semi-rigid cables with polyethylene (PE) dielectric*

3 Terms and definitions

For the purposes of this document, the definitions given in IEC 60966-1:2019 apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at https://www.electropedia.org/
- ISO Online browsing platform: available at https://www.iso.org/obp

4 Design and construction

4.1 Cable design and construction

Cables should conform to IEC 61196-10 or IEC 61196-11 and their related detail specifications. Where cable designs deviating from these publications are required, they shall comply with the requirements of the relevant detail specification of the cable.

If required, the manufacturer can use additional protective tubing or cable deviating from IEC 61196-10 or IEC 61196-11 to comply with the requirements of the relevant detail specification.

The materials used in the cable shall be given as engineering information in the relevant detail specification.

4.2 Connector design and construction

Connectors should conform to the IEC 61169 series. Where connector designs deviating from the IEC 61169 series are required, the interface should conform to the relevant part of IEC 61169 where available and shall comply with the requirements of the relevant detail specification.

The materials used in the connector shall be given as engineering information in the relevant detail specification.

4.3 The relative position dimensions of the interface

The relative position dimensions of the interface of end connector(s) of the cable assemblies shall comply with the interface of the relevant part of IEC 61169 or the relevant detail specification. The relative position dimensions of the interface of end connector(s) include the dimension of inner conductor relative to dielectric and inner conductor relative to outer conductor.

The relative position dimensions of the interface of some typical connectors are shown in Annex A.

4.4 Outline of the cable assembly

The outline shall be in accordance with the relevant detail specification of the cable assembly.

The length, unless otherwise specified in the relevant detail specification, is defined as between the reference planes of the connectors. In the case of right-angle connectors, the length applies to the axis of the connectors (see Figure 1 and Figure 2).

Unless specified in the relevant detail specification, the length tolerance shall be ±1 % for cables equal to or longer than 300 mm and ±3 mm for cables shorter than 300 mm.