

Koaksiaalkaablid. Osa 1: Üldliigitus

Coaxial cables - Part 1: Generic specification

This document is a preview generated by EVS

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 50117-1:2002 sisaldab Euroopa standardi EN 50117-1:2002 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 18.12.2002 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 05.07.2002.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 50117-1:2002 consists of the English text of the European standard EN 50117-1:2002.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 18.12.2002 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>Date of Availability of the European standard text 05.07.2002.</p> <p>The standard is available from Estonian standardisation organisation.</p>
--	---

ICS 33.120.10

Võtmesõnad: coaxial cables, generic, networks

Standardite reprodutseerimis- ja levitamiseõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:
Aru 10 Tallinn 10317 Eesti; www.evs.ee; Telefon: 605 5050; E-post: info@evs.ee

EUROPEAN STANDARD

EN 50117-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2002

ICS 33.120.10

Supersedes EN 50117-1:1995 + A1:1997 + A2:1997

English version

Coaxial cables

Part 1: Generic specification

Câbles coaxiaux
Partie 1: Spécification générique

Koaxialkabel
Teil 1: Fachgrundspezifikation

This European Standard was approved by CENELEC on 2001-12-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

This European Standard was prepared by SC 46XA, Coaxial cables, of Technical Committee CENELEC TC 46X, Communication cables.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50117-1 on 2001-12-01.

This European Standard supersedes EN 50117-1:1995 + corrigendum July 1997 + A1:1997 + A2:1997.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2003-01-01
 - latest date by which the national standards
conflicting with the EN have to be withdrawn (dow) 2004-12-01
-

Documents a preview generated by EVS

Contents

1	Scope	4
2	Normative references	4
3	Definitions	6
4	Requirements for cable construction	6
4.1	General.....	6
4.2	Inner conductor.....	7
4.2.1	Conductor material.....	7
4.2.2	Conductor construction.....	7
4.3	Dielectric.....	7
4.4	Outer conductor or screen.....	8
4.5	Filling compounds.....	9
4.6	Moisture barriers.....	9
4.7	Wrapping layers.....	9
4.8	Sheath.....	9
4.9	Metallic protection.....	9
4.10	Cable integral suspension strand (messenger wire).....	9
4.11	Oversheath.....	9
4.12	Fauna proofing.....	10
4.13	Chemical and/or environmental proofing.....	10
4.14	Cable identification.....	10
4.14.1	Sheath marking.....	10
4.14.2	Labelling.....	10
5	Test methods for completed cables	11
5.1	Electrical test methods.....	11
5.1.1	Low frequency and d.c. electrical measurements.....	11
5.1.2	High-frequency electrical and transmission measurements.....	12
5.2	Mechanical test methods.....	12
5.3	Environmental test methods.....	13
5.4	Fire performance test methods.....	13
	Table 1 – Low frequency and d.c. electrical measurements.....	11
	Table 2 – High frequency electrical and transmission measurements.....	12
	Table 3 – Mechanical test methods.....	12
	Table 4 – Environmental test methods.....	13
	Table 5 – Fire performance test methods.....	13

1 Scope

This European Standard covers coaxial cables for use in analogue and digital systems. This standard should be used in conjunction with EN 50290-1-1.

Coaxial cables covered by this standard operate in transverse electromagnetic mode (TEM) and are suitable for use in a wide range of digital and analogue applications including CATV, radio frequency systems, instrumentation, broadcasting, telecommunications and data network systems. Various constructions and materials provide for indoor and outdoor applications, including underground and overhead installations, and other environmental protection characteristics.

Generally, cables are designed for use in 50 Ohm and 75 Ohm characteristic impedance systems, although other types (e.g. 93/95 Ohm) are also covered.

Coaxial cables defined by this standard may be incorporated into hybrid cable constructions with optical fibre or multi-element cable components.

All cables covered by this standard may be subjected to voltages greater than 50 V a.c. or 75 V d.c. However, these cables are not intended for direct connection to the mains electricity supply or other low impedance sources.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies, (including amendments).

EN 50289-1-2	Communication cables - Specifications for test methods – Part 1-2: Electrical test methods – DC resistance
EN 50289-1-3	Communication cables - Specifications for test methods – Part 1-3: Electrical test methods – Dielectric strength
EN 50289-1-4	Communication cables - Specifications for test methods – Part 1-4: Electrical test methods – Insulation resistance
EN 50289-1-5	Communication cables - Specifications for test methods – Part 1-5: Electrical test methods – Capacitance
EN 50289-1-6	Communication cables - Specifications for test methods – Part 1-6: Electrical test methods – Electromagnetic performance
EN 50289-1-7	Communication cables - Specifications for test methods – Part 1-7: Electrical test methods – Velocity of propagation
EN 50289-1-8	Communication cables - Specifications for test methods – Part 1-8: Electrical test methods – Attenuation
EN 50289-1-11	Communication cables - Specifications for test methods – Part 1-11: Electrical test methods – Characteristic impedance, input impedance, return loss

EN 50289-3-2	Communication cables – Specifications for test methods – Part 3-2: Mechanical test methods – Tensile strength and elongation for conductor
EN 50289-3-5	Communication cables – Specifications for test methods – Part 3-5: Mechanical test methods – Crush resistance of the cable
EN 50289-3-6	Communication cables – Specifications for test methods – Part 3-6: Mechanical test methods – Impact resistance of the cable
EN 50289-3-7	Communication cables – Specifications for test methods – Part 3-7: Mechanical test methods – Abrasion resistance of the cable sheath
EN 50289-3-8	Communication cables – Specifications for test methods – Part 3-8: Mechanical test methods – Abrasion resistance of cable sheath markings
EN 50289-3-9	Communication cables – Specifications for test methods – Part 3-9: Mechanical test methods – Bending tests
EN 50289-3-16	Communication cables – Specifications for test methods – Part 3-16: Mechanical test methods – Cable tensile performance
EN 50289-3-17	Communication cables – Specifications for test methods – Part 3-17: Mechanical test methods – Adhesion of dielectric and sheath
EN 50289-4-2	Communication cables – Specifications for test methods – Part 4-2: Environmental test methods – Water penetration
EN 50289-4-3 ¹⁾	Communication cables – Specifications for test methods – Part 4-3: Environmental test methods – Moisture permeation
EN 50289-4-4 ¹⁾	Communication cables – Specifications for test methods – Part 4-4: Environmental test methods – Resistance to solvents and contaminating fluids
EN 50289-4-6	Communication cables – Specifications for test methods – Part 4-6: Environmental test methods – Temperature cycling
EN 50289-4-13 ¹⁾	Communication cables – Specifications for test methods – Part 4-13: Environmental test methods – Smoke generation
EN 50290-1-1	Communication cables – Part 1-1: General
EN 50290-1-2 ²⁾	Communication cables – Part 1-2: Definitions
EN 50290-2-20	Communication cables – Part 2-20: Common design rules and construction – General
EN 50290-2-28	Communication cables – Part 2-28: Common design rules and construction – Filling compounds for filled cables
EN 50290-4-1	Communication cables – Part 4-1: General considerations for the use of cables – Environmental conditions and safety aspects

1) Under consideration.

2) At draft stage.

EN 60811-1-1	Insulating and sheathing materials of electric cables – Common test methods – Part 1-1: General application - Measurement of thickness and overall dimensions – Tests for determining the mechanical properties
IEC 60028	International standard of resistance for copper
IEC 61196-1	Radio-frequency cables – Part 1: Generic specification - General, definitions, requirements and test methods

3 Definitions

For the purposes of this European Standard, the definitions given in EN 50290-1-2 and EN 50289-1 apply, together with the following:

3.1

air-spaced cables

cables in which the dielectric is air, except for a portion occupied by insulating spacers assembled on the inner conductor at regular intervals, or helically applied tapes and/or threads. It is characteristic of this type of cable that outside the spacers, it is possible to pass from the inner conductor to the outer conductor without passing through a layer of solid plastic dielectric

3.2

semi-air-spaced cables

cables in which the dielectric is a plastics/air construction comprising either a cellular polymer or an insulating tube at the centre of which the inner conductor is supported by discs or another plastic construction. It is characteristic of this type of cable that it is not possible to pass from the inner conductor to the outer conductor without passing through a layer of plastic dielectric

3.3

solid dielectric cables

cables in which the space between the inner conductor and outer conductor is substantially filled by solid plastic dielectric. The dielectric may be homogeneous or composite, the latter comprising two or more concentric layers which may have different properties

4 Requirements for cable construction

4.1 General

Designing the cable, consideration should be paid to the maximum admissible current stated in the detail specification. It is assumed that the raise of temperature of the inner conductor when submitted to the maximum current under nominal ambient conditions does not affect the mechanical properties of the cable. (Details are under consideration).