



# SLOVENSKI STANDARD

## SIST EN 50168:1996

01-maj-1996

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### Sectional specification for work area wiring cables with a common overall screen for use in digital communication

Sectional specification for work area wiring cables with a common overall screen for use in digital communication

Rahmenspezifikation für Geräteanschlußkabel mit gemeinsamem Schirm für digitale Kommunikation

**iTeh STANDARD PREVIEW**  
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Spécification intermédiaire de câbles avec écran extérieur pour transmissions numériques destinés au câblage de raccordement de terminal

<https://standards.iteh.ai/catalog/standards/sist/85a922fc-77a6-40c2-b688-8a5e57ecab8a/sist-en-50168-1996>

Ta slovenski standard je istoveten z: **EN 50168:1994**

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#### **ICS:**

33.120.01	Komponente in pribor na splošno	Components and accessories in general
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**SIST EN 50168:1996**

**en**

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EUROPEAN STANDARD

EN 50168

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October 1994

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Descriptors: Work area wiring cables, digital communication

## ENGLISH VERSION

Sectional specification for work area wiring  
cables with a common overall screen for use in  
digital communication

Spécification intermédiaire de  
câbles avec écran extérieur  
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raccordement de terminal

Bauart-Spezifikation für  
Geräteanschlußkabel  
mit gemeinsamen Schirm für  
digitale Kommunikation

## ITeh STANDARD PREVIEW

This European Standard was approved by CENELEC on 1994-07-05.  
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.

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Up-to-date list 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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy,  
Luxembourg, Netherlands, Norway, Portugal, 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 CENELEC Subcommittee SC 46XC, Multicore, Multipair and Quad Data communication cables.

It was submitted to the CENELEC Unique Acceptance Procedure (UAP) in November 1993 and was approved by CENELEC as EN 50168 on 1994-07-05.

The following dates were fixed:

- latest date of publication of an identical national standard (dop) 1995-07-15
- latest date of withdrawal of conflicting national standards (dow) 1995-07-15

Wherever this standard refers to "Generic Specification", HD 608 S1:1992 is meant.

NOTE: This HD 608 will be updated into a European Standard.

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## 1 GUIDE TO USE

### 1.1 Scope

This standard refers to HD 608 S1:1992, Generic specification for symmetrical pair/quad or multicore cables for digital communications. It covers individually screened pair(s) or quad(s) in cables for work area wiring. The cables shall be provided with a common overall screen. These cables are suitable for different communication systems to which reference is made in detail specifications.

The cables covered by this specification are intended to operate with voltages and currents normally adopted for communication systems. These cables shall not be connected to low impedance sources, for example, the public mains electricity supply.

### 1.2 Introduction

See Generic Specification.

### 1.3 Installation considerations

See Generic Specification.

### 1.4 Object

The cables specified in this standard shall meet the requirements of the Generic Specification. This sectional specification may be supplemented with specific specifications given additional information if required by a particular application (e.g. regarding safety and reliability conditions).

## 2 DEFINITIONS AND REQUIREMENTS

### 2.1 General

See Generic Specification. [standards.iteh.ai/catalog/standards/sist/85a922fc-77a6-40c2-b688-8a5e57ecab8a/sist-en-50168-1996](https://standards.iteh.ai/catalog/standards/sist/85a922fc-77a6-40c2-b688-8a5e57ecab8a/sist-en-50168-1996)

### 2.2 Reference publications

Add to 2.2.1 of the Generic Specification:

HD 602	Test on gases evolved during the combustion of materials from cables - Part 2: Determination of degree of acidity (corrosivity) of gases by measuring pH and conductivity (IEC 754-2)
HD 606.1	Measurement of smoke density of electric cables under defined conditions Part 1: Test apparatus (IEC 1034-1 modified)
HD 606.2	Part 2: Test procedures and requirements (IEC 1034-2 modified)
HD 624	Materials used in communication cables
HD 624.3	Part 3: PE insulation
HD 624.5	Part 5: Polypropylene insulation compounds (in preparation)
HD 624.6	Part 6: Halogen free flame-retardant insulation compounds (in preparation)
HD 624.7	Part 7: Halogen free flame-retardant thermoplastic sheathing compound
IEC 96-1	Radio frequency cables - Part 1: General requirements and measuring methods
IEC 189	Low-frequency cables and wires with PVC insulation and PVC sheath
IEC 344	Guide to the calculation of resistance of plain and coated copper conductors of low-frequency cables and wires

Add to 2.2.2 of the Generic Specification:

ITU G 117	Transmission aspects of unbalance about earth (definitions and methods)
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### 2.3 Definitions

See Generic Specification.

### 2.4 Materials and cable construction

#### 2.4.1 General

See Generic Specification.

#### 2.4.2 Cable construction

See Generic Specification.

#### 2.4.3 Conductor

The conductor shall consist of annealed copper.

The conductor shall be stranded. The stranded conductor shall consist of seven wires each with a minimum nominal diameter of 0,1 mm to 0,2 mm.

The conductor shall be plain or metal coated.

The conductor may consist of one or more elements of thin copper or copper alloy tape which shall be applied spirally over a fibrous thread (Tinsel). The maximum conductor resistance shall be specified in the relevant detail specifications. Joints in the complete element shall not be permitted.

#### 2.4.4 Insulation

The conductor shall be insulated with a suitable thermoplastic material meeting the requirements specified in the relevant detail specification.

Materials are:

- Polyolefin (HD 624.3 or HD 624.5)
- Low smoke zero halogen thermoplastic material (HD 624.6)

The insulation may be solid or cellular with or without a solid dielectric skin. The insulation shall be continuous and shall have a thickness such that the completed cable meets the electrical requirements specified in the relevant detail specifications. The maximum overall diameter of the insulated conductor and conductor eccentricity shall be compatible with the method of conductor connection as specified in the relevant detail specification.

#### 2.4.5 Cable element

The cable element shall be a pair or a quad. The maximum length of lay in the finished cable shall not exceed 150 mm.

#### 2.4.6 Screening of the cable element

When required in the relevant detail specification a screen for the cabling element shall be provided. The screen shall be in accordance with subclause 2.4.6 of the Generic Specification.

Where a copper braid is used it shall have a minimum filling factor of 0,41 (65% coverage). Where a tape and braid screen is used the minimum filling factor of the braid shall be 0,16 (30% coverage). The filling factor is defined in the Generic Specification.

#### 2.4.7 Colour code of insulation

The colour code shall be indicated in the relevant detail specification. The colours shall be readily identifiable and the shade of colour shall correspond reasonably with the standard colours shown in HD 402 (IEC 304).



#### 2.4.8 Cable make-up

The cable elements shall be assembled to form the cable core.

The core of the cable may be wrapped with a protective layer of non-hygroscopic material.

#### 2.4.9 Screening of the cable core

The screen shall be in accordance with subclause 2.4.9 of the Generic Specification. Where a copper braid is used it shall have a minimum filling factor of 0,41 (65% coverage). Where a tape and braid screen is used the minimum filling factor of the braid shall be 0,16 (30% coverage). The filling factor is defined in the Generic Specification.

#### 2.4.10 Sheath

The sheath shall consist of a low smoke zero halogen thermoplastic material (HD 624.7). The sheath shall be continuous having a thickness as uniform as possible and with a value indicated in the relevant detail specification.

A non-metallic rip cord may be provided.

#### 2.4.11 Colour of sheath

See Generic Specification.

#### 2.4.12 Identification

Colour code preferably in accordance with IEC 189.

#### 2.4.13 Finished cable

See Generic Specification.

#### 2.4.14 Cable overall diameter

The overall diameter of the cable shall not exceed the value specified in the relevant detail specifications.

### 3 CHARACTERISTICS AND REQUIREMENTS

#### 3.1 General

The relevant detail specification defines the performance criteria of a cable and shall indicate the limits required for tests which shall be selected from the following. The test methods shall be in accordance with the Generic Specification unless otherwise specified.

NOTE: For any cable not all the tests listed may be required.

#### 3.2 Electrical tests

The tests shall be carried out on a cable length of not less than 100 m.

##### 3.2.1 Conductor resistance

The conductor resistance shall be measured in accordance with subclause 3.2.1 of the Generic Specification. The values shall comply with the requirements of IEC 344.

##### 3.2.2 Resistance unbalance

The value of resistance unbalance shall be better than 2%.