# SLOVENSKI STANDARD

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Communication cables - Specifications for test methods - Part 3-15: Mechanical test methods - Underwater cable resistance to hydrostatic pressure



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English version

# Communication cables - Specifications for test methods Part 3-15: Mechanical test methods - Underwater cable resistance to hydrostatic pressure

Câbles de communication - Spécifications des méthodes d'essai Partie 3-15: Méthodes d'essais mécaniques - Résistance à la pression hydrostatique du câble immergé

Kommunikationskabel - Spezifikationen für Prüfverfahren Teil 3-15: Mechanische Prüfverfahren - Wasserdruck-Widerstandsfähigkeit von Unterwasserkabeln



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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.

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

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## Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 46X, Communication cables.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50289-3-15 on 2003-03-01.

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) 2004-03-01

- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2006-03-01

This European Standard has been prepared under the European Mandate M/212 given to CENELEC by the European Commission and the European Free Trade Association.

## Contents

## 1 Scope

This Part 3-15 of EN 50289 details the method of test to determine the ability of an underwater cable used in analogue and digital communication systems to withstand hydrostatic pressure,

It is to be read in conjunction with Part 3-1 of EN 50289, which contains essential provisions for its application.

## 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 50289-3-1 | 2001 | Communication cables – Specifications for test methods — Part 3-1: Mechanical test methods – General requirements |
| EN 50290-1-2 [1)] | | Communication cables – Part 1-2: Definitions |
| EN 60793-1-46 | 2002 | Optical fibres — Part 1-46: Measurement methods and test procedures – Monitoring of changes in optical transmittance (IEC 60793-1-46:2001) |



## 3 Definitions



For the purposes of this European Standard the definitions of EN 50290-1-2 apply.

## 4 Test method

### 4.1 Sample

The sample shall be of a sufficient length to be terminated outside each end of the pressure tube vessel.

The cable ends are prepared in order to allow transmitted electrical or optical power control in one or several fibres (as specified in the relevant specification) or in conductors during the test.

The minimum test length of the optical fibres shall be 100 m. If necessary, fibres have to be spliced at the cable ends.

### 4.2 Equipment

The apparatus consists of

- appropriate measuring apparatus for determining change in electrical or optical characteristics,
- pressure tube vessel. The size of the pressure tube vessel shall be sufficient to accommodate the minimum length required by the Detail Specification.

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[1)] At draft stage.

Optical cables

– Measuring apparatus shall be in accordance with EN 60793-1-46.

Copper cables

– Network analyser in the frequency range of interest.

### 4.3 Procedure

The test is to be carried out at ambient temperature. The pressure shall be maintained for 24 h, or a period agreed between the user and the manufacturer.

The cable shall be installed in the pressure vessel. The water pressure in the pressure vessel during the test shall be 1,1 times higher than the water pressure at the seabed where the cable shall be installed. The electrical or optical characteristics shall be measured before, during and after the test.

NOTE Special care should be taken for the tube ends sealed not to affect the results.

### 4.4 Details to be specified

The specification shall include the following:

a) pressure;

b) period of application of pressure;

c) electrical or optical tests to be performed.



## 5 Requirements



Unless otherwise specified in the relevant specification, there shall be no change in electrical or optical characteristics during or after the test.

Other requirements may be agreed between the manufacturer and the user.

## 6 Test report

The test report shall include the following:

– pressure;

– temperature;

– period of application of pressure;

– results of electrical or optical tests;

– length of cable and, if applicable, fibres tested (characteristics of the splices between fibres if they exist);

– frequency or wavelength at which power monitoring is conducted;

– characteristics of measuring equipment including the type of measuring sets and launching conditions.