



**SLOVENSKI STANDARD**  
**SIST EN 50642:2018/oprA1:2021**

**01-december-2021**

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**Sistemi za urejanje okablenja - Metoda za preskušanje vsebnosti halogenov -  
Dopolnilo A1**

Cable management systems - Test method for content of halogens

Kabelführungssysteme - Prüfverfahren für Halogengehalt

Systèmes de gestion de câblage - Méthode d'essai relative à la teneur en halogènes

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**Ta slovenski standard je istoveten z: EN 50642:2018/prA1**

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**ICS:**

29.060.20      Kabli      Cables

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**EN 50642:2018**

**prA1**

October 2021

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ICS 29.120.10

English Version

## Cable management systems - Test method for content of halogens

Systèmes de gestion de câblage - Méthode d'essai relative à la teneur en halogènes

Kabelführungssysteme - Prüfverfahren für Halogengehalt

This draft amendment prA1, if approved, will modify the European Standard EN 50642:2018; it is submitted to CENELEC members for enquiry.

Deadline for CENELEC: 2021-12-24.

It has been drawn up by CLC/TC 213.

If this draft becomes an amendment, CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

This draft amendment was established by CENELEC 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

## European foreword

This document (EN 50642:2018/prA1:2021) has been prepared by CLC/TC 213 "Cable management systems".

This document is currently submitted to the Enquiry.

The following dates are proposed:

- latest date by which the existence of this document has to be announced at national level (doa) dor + 6 months
- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) dor + 12 months
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) dor + 36 months (to be confirmed or modified when voting)

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EN 50642:2018/prA1:2021 (E)

## 1 Modification to Clause 1 “Scope”

**Replace** the first three paragraphs with the following:

“This document specifies a method for the determination of the content of halogens in Cable Management System (CMS) products or system components made completely or partly of combustible material(s). The determination is made by combustion and subsequent analysis of the combustion product by Ion Chromatography. This document specifies how CMS products or system components can be declared as halogen free.

This document is for environmental performance only.

Compliance with this document does not imply the absence of toxicity, corrosivity or opacity of produced smoke, or other reaction to fire characteristics. If any of these characteristics are to be evaluated, the appropriate standards can be used.”

## 2 Modifications to Clause 3 “Terms and definitions”

In 3.1, **replace** the Note 1 to entry with the following:

”

Note 1 to entry: The above definition is valid for this document only and does not strictly comply with scientific definition of halogen content.”

**Add** the following new term and definition:

”

### 3.2

#### combustible

capable of being ignited and burned

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[SOURCE: EN ISO 13943:2017]”

[SIST EN 50642:2018/oprA1:2021](http://standards.iteh.ai/catalog/standards/sist/bb205a06-ca48-4bab-844e-751ea6c6234e/sist-en-50642-2018-opra1-2021)

## 3 Modifications to Clause 4 “Principle”

<http://standards.iteh.ai/catalog/standards/sist/bb205a06-ca48-4bab-844e-751ea6c6234e/sist-en-50642-2018-opra1-2021>

**Add** the following as a new first paragraph of the clause:

“For the purpose of this document, a material is considered as being non-combustible if its gross calorific potential is assumed to be lower than 3,0 MJ/kg. In case of doubt EN ISO 1716 is used to measure the calorific potential.

Examples of non-combustible materials are:

- uncoated stainless steel,
- steel with metallic coating,
- uncoated aluminium,
- copper,
- ceramic.”

**Replace** the last sentence with the following:

“When this test method is used for poorly burning samples, a combustion enhancer may be used.”

## 4 Modifications to Clause 6 “Classifications, limits and declaration”

**Replace** the entire content of 6.2, “Limits”, with the following:

“A CMS product or system component classified according to 6.1.2 shall comply with the following specified limits:

- fluorine content (F) ≤ 3,0 g/kg (0,30 %)

- chlorine content (Cl)  $\leq 1,5$  g/kg (0,15 %)
- bromine content (Br)  $\leq 1,5$  g/kg (0,15 %)
- iodine content (I)  $\leq 3,0$  g/kg (0,30 %)
- total halogen content: fluorine content (F) + chlorine content (Cl) + bromine content (Br) + iodine content (I)  $\leq 4$  g/kg (0,40 %)."

**Replace the entire content of 6.3, "Declaration", with the following:**

"A CMS product or system component classified according to 6.1.2 can be declared as "halogen free according to EN 50642" if the CMS product or system component meets the requirements of 6.2."

## 5 Modifications to Clause 7 "Reagents and control mixtures"

**Replace the entire content of 7.1.4, "Absorption solution 2 for the determination of iodine", with the following:**

"Solution 2 shall be ascorbic acid-solution, (C<sub>6</sub>H<sub>8</sub>O<sub>3</sub>), 10 g/kg."

**Replace the entire content of 7.1.5, "Oxygen", with the following:**

"The oxygen shall be free of combustible material, available at a pressure of 3 MPa to 4 MPa (e.g. medical grade)."

## 6 Modification to Clause 8 "Sample preparation"

**Replace the entire content of the clause with the following:**

"For each product, non-combustible parts which can be completely separated through disassembling, cutting, crushing or grinding are separated and are not tested."

NOTE 1 Examples of parts which can be separated are screws, metal inserts and terminals.

The mass of all remaining combustible parts is measured.

A test sample representative of each part is cut or ground into pieces with a grain size not exceeding 2 mm.

NOTE 2 If the grain size is too small, there is a risk of blowing away the test sample when purging and filling the bomb with oxygen. Should this occur, an appropriate method can be adopted to prevent this.

A part made of multiple combustible materials is assessed on its averaged contents. This is achieved by grinding or sawing the part to produce a test sample containing a similar ratio of materials as the original part.

During preparation of the test sample, contact with halogenated polymers, e.g. PVC gloves, shall be avoided."

## 7 Modification to Clause 10 "Procedure"

*In 10.4, "Combustion":*

**add at the end of the second paragraph:**

"For parts consisting of combustible and non-combustible materials which cannot be separated, it is recommended to increase the total mass (sample and enhancer) to a maximum of 500 mg."

**replace in the seventh paragraph "35 ± 3 bar" with "(3,5 ± 0,3) MPa".**

## 8 Modification to Clause 13 "Evaluation"

**Replace the entire content of 13.1, "General" with the following:**

"Calculate the content of each halogen in g/kg per sample using the formula:

**EN 50642:2018/prA1:2021 (E)**

$$X_i = \left( C_i \times V \right) / m \quad (1)$$

where

- $X_i$  is the element content ("i" = Br, Cl, F or I) in the test sample, in g/kg;  
 $C_i$  is the concentration in mg/l of this element "i" in the absorption solution;  
 $V$  is the final volume of the absorption solution, in l;  
 $m$  is the mass of the test sample only, in g."

In 13.2, "Procedure to evaluate the test results", **replace** the third bulleted item with:

"

- If the difference between each of these results and the mean is > 20 % of the mean it is likely that the part is not homogeneous. In this case, a third test is carried out to improve the reliability of the conclusion in the next step."

**Replace** 13.3, "Determination of the halogen content of a CMS component or product made of multiple parts", with the following:

"

### **13.3 Determination of the halogen content of a CMS product or system component made of multiple parts**

A CMS product or system component made of multiple parts is assessed on its weighted halogen contents. The weighted average content for each halogen is calculated by using the mass of each combustible part.

EXAMPLE of a CMS product comprising parts A and B:

The part A made from combustible material has a mass of 100 g and contains 0,5 g/kg of halogen X.

The part B made partly from combustible material has a mass of 2 g and contains 10 g/kg halogen X.

The weighted average content of halogen X is calculated as:

$$X = (100 \text{ g} \times 0,5 \text{ g/kg} + 2 \text{ g} \times 10 \text{ g/kg}) / (100 + 2) \text{ g} = 0,07 \text{ g/kg}$$

"

**Replace** the entire content of 13.5, "Compliance" with the following:

"The CMS product or system component complies with 6.1.2 if the content of each halogen and the total halogen content are less than or equal to the limits specified in 6.2."

**Add** the following subclause:

"

### **13.6 Extended application**

Test result on a given CMS product or system component made from a single specific material compound can be extended to any CMS product or system component made from the same specific material compound and with the same process."

## **9 Modification to Clause 14 "Test report"**

**Replace** a) with the following:

"a) reference to this document;"

**Replace** e) with the following:

"e) details of all procedural steps which deviate from this document together with all circumstances that may have influenced the result;"