#### PD CEN/TS 15398:2016



## **BSI Standards Publication**

Resilient, textile and laminate floor coverings — Floor covering standard symbols — Complementary element



#### National foreword

This Published Document is the UK implementation of CEN/TS 15398:2016. It supersedes DD CEN/TS 15398:2008 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PRI/3, Textile floor coverings.

A list of organizations represented on this committee can be obtained on request to its secretary.

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# TECHNICAL SPECIFICATION SPÉCIFICATION TECHNIQUE TECHNISCHE SPEZIFIKATION

### **CEN/TS 15398**

January 2016

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Supersedes CEN/TS 15398:2008

#### **English Version**

## Resilient, textile and laminate floor coverings - Floor covering standard symbols - Complementary element

Revêtements de sol résilients, textiles et stratifiés -Symboles normalisés de revêtements de sol Elastische, textile und Laminat-Bodenbeläge -Standardisierte Symbole für Bodenbeläge

This Technical Specification (CEN/TS) was approved by CEN on 24 November 2015 for provisional application.

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#### **European foreword**

This document (CEN/TS 15398:2016) has been prepared by Technical Committee CEN/TC 134 "Resilient, textile and laminate floor coverings", the secretariat of which is held by NBN.

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#### Introduction

Resilient, textile and laminate floor coverings and in case of floating installation with underlays, the combination of these floorcoverings with underlays, have a number of specific characteristics and are classified in a number of use classes.

In order to make the classification and these specific characteristics understandable and recognizable to the consumer, graphic symbols have been developed.

For practical reasons, only symbols for characteristics linked directly to a European or ISO Standard have been developed.

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#### 1 Scope

This Technical Specification establishes a system of graphic symbols for use in the marking of the following floor coverings and specifies the use of these symbols:

- resilient floor coverings manufactured from plastics, linoleum, cork or rubber, excluding loose-laid mats;
- textile floor coverings, excluding loose-laid mats;
- laminate floor coverings;
- floor panels for floating installation.

#### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 425, Resilient and laminate floor coverings - Castor chair test

EN 438-1, High-pressure decorative laminates (HPL) - Sheets based on thermosetting resins (Usually called Laminates) - Part 1: Introduction and general information

EN 660-2, Resilient floor coverings - Determination of wear resistance - Part 2: Frick-Taber test

EN 669, Resilient floor coverings - Determination of dimensional stability of linoleum tiles caused by changes in atmospheric humidity

EN 717-1, Wood-based panels - Determination of formaldehyde release - Part 1: Formaldehyde emission by the chamber method

EN 717-2, Wood-based panels - Determination of formaldehyde release - Part 2: Formaldehyde release by the gas analysis method

EN 985, Textile floor coverings - Castor chair test

EN 986, Textile floor coverings - Tiles - Determination of dimensional changes due to the effects of varied water and heat conditions and distortion out of plane

EN 994, Textile floor coverings - Determination of the side length, squareness and straightness of tiles

EN 1081, Resilient floor coverings - Determination of the electrical resistance

EN 1307, Textile floor coverings - Classification

EN 1399, Resilient floor coverings - Determination of resistance to stubbed and burning cigarettes

EN 1814, Textile floor coverings - Determination of resistance to damage at cut edges using the modified Vettermann drum test

EN 1815, Resilient and textile floor coverings - Assessment of static electrical propensity

EN 1963, Textile floor coverings — Tests using the Lisson Tretrad Machine

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EN 13329, Laminate floor coverings — Elements with a surface layer based on aminoplastic thermosetting resins — Specifications, requirements and test methods

EN 13501-1, Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests

EN 13553, Resilient floor coverings - Polyvinyl chloride floor coverings for use in special wet areas - Specification

EN 13745, Surfaces for sports areas - Determination of specular reflectance

EN 13845, Resilient floor coverings - Polyvinyl chloride floor coverings with particle based enhanced slip resistance - Specification

EN 13893, Resilient, laminate and textile floor coverings - Measurement of dynamic coefficient of friction on dry floor surfaces

EN 14041, Resilient, textile and laminate floor coverings - Essential characteristics

EN 14215, Textile floor coverings - Classification of machine-made pile rugs and runners

EN 14978, Laminate floor coverings - Elements with acrylic based surface layer, electron beam cured - Specifications, requirements and test methods

EN 15468, Laminate floor coverings - Elements with directly applied printing and resin surface layer - Specifications, requirements and test methods

EN 16205, Laboratory measurement of walking noise on floors

CEN/TS 16354, Laminate floor coverings - Underlays - Specification, requirements and test methods

EN ISO 105-B02, Textiles - Tests for colour fastness - Part B02: Colour fastness to artificial light: Xenon arc fading lamp test (ISO 105-B02)

EN ISO 354, Acoustics - Measurement of sound absorption in a reverberation room (ISO 354)

EN ISO 717-2, Acoustics - Rating of sound insulation in buildings and of building elements - Part 2: Impact sound insulation (ISO 717-2)

EN ISO 10874, Resilient, textile and laminate floor coverings - Classification (ISO 10874)

EN ISO 11654, Acoustics - Sound absorbers for use in buildings - Rating of sound absorption (ISO 11654)

EN ISO 14025, Environmental labels and declarations - Type III environmental declarations - Principles and procedures (ISO 14025)

EN ISO 23997, Resilient floor coverings - Determination of mass per unit area (ISO 23997)

EN ISO 24340, Resilient floor coverings - Determination of thickness of layers (ISO 24340)

EN ISO 24341, Resilient and textile floor coverings - Determination of length, width and straightness of sheet (ISO 24341)

EN ISO 24342, Resilient and textile floor-coverings - Determination of side length, edge, straightness and squareness of tiles (ISO 24342)

EN ISO 24344, Resilient floor coverings - Determination of flexibility and deflection (ISO 24344)

EN ISO 24346, Resilient floor coverings - Determination of overall thickness (ISO 24346)

EN ISO 26987, Resilient floor coverings - Determination of staining and resistance to chemicals (ISO 26987)

ISO 1765, Machine-made textile floor coverings — Determination of thickness

ISO 6356, Textile and laminate floor coverings — Assessment of static electrical propensity — Walking test

ISO 8302, Thermal insulation — Determination of steady-state thermal resistance and related properties — Guarded hot plate apparatus

ISO 8543, Textile floor coverings — Methods for determination of mass

ISO 10965, Textile floor coverings — Determination of electrical resistance

ISO 24334, Laminate floor coverings — Determination of locking strength for mechanically assembled panels

ISO 24338, Laminate floor coverings — Determination of abrasion resistance

ISO 24343 (all parts), Resilient and laminate floor coverings — Determination of indentation and residual indentation

#### 3 Descriptions and definitions of symbols

#### 3.1 General

If a specific standard is not valid for all three product groups, the relevant product group(s) will be mentioned below using one of the following abbreviations:

**T** = Textile floor coverings; **R** = Resilient floor coverings; **L** = Laminate floor coverings.

Where relevant the value of the technical characteristic needs to be given in the technical documentation. For example the pictogram for thermal resistance (Figure 35) should be accompanied by the value of the thermal resistance.

#### 3.2 Classification according to EN ISO 10874

In EN ISO 10874 a classification system for different use classes is described, with references to the relevant product standards. In the following the pictograms, as defined in EN ISO 10874.

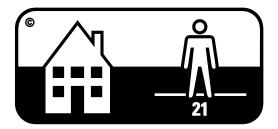


Figure 1 — Class 21 Domestic moderate/light



 $Figure\ 2-Class\ 22\ Domestic\ general/medium$ 



Figure 3 — Class 22+ Domestic general



Figure 4 — Class 23 Domestic heavy

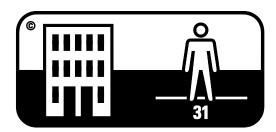


Figure 5 — Class 31 Commercial moderate

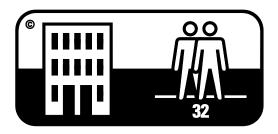


Figure 6-32 Commercial general



 $Figure \ 7 - Class \ 33 \ Commercial \ heavy$ 

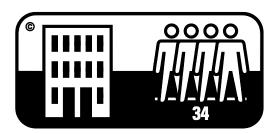


Figure 8 — Class 34 Commercial very heavy

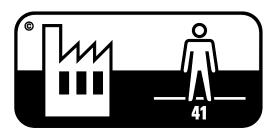


Figure 9 — Class 41 Industrial moderate



Figure 10 — Class 42 Industrial general

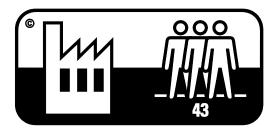


Figure 11 — Class 43 Industrial heavy

#### 3.3 Pictograms related to essential requirements

#### 3.3.1 General

EN 14041 specifies the health, safety and energy saving requirements of floor coverings under the CE marking.

#### 3.3.2 CE marking



Figure 12 — CE mark (EU Regulation 765/2008/EC, Annex II)

#### 3.3.3 Electrical behaviour

The electrical behaviour of textile, laminate and resilient floor coverings – antistatic floor covering - is specified in EN 14041 (R + L + T), EN 1815 (R + L), ISO 6356 (T).



Figure 13 — Electrical behaviour - Antistatic floor covering

The electrical behaviour of textile, laminate and resilient floor covering – vertical resistance is specified in EN 14041(R+L+T), EN 1081 (R+L), ISO 10965 (T).



Figure 14 — Electrical behaviour - Vertical resistance - Static dissipative floor covering



Figure 15 — Electrical behaviour - Vertical resistance - Conductive floor covering

#### 3.3.4 Fire

The reaction to fire of textile, laminate and resilient floor coverings is specified in EN 14041 (R+L+T) and EN 13501-1.



Figure 16 — Reaction to fire - Class A1<sub>fl</sub>



Figure 17 — Reaction to fire - Class A2<sub>fl</sub>-s1



Figure 18 — Reaction to fire - Class A2<sub>fl</sub>-s2



Figure 19 — Reaction to fire - Class B<sub>fl</sub>-s1



Figure 20 — Reaction to fire – Class  $B_{\mbox{\scriptsize fl}}$ -s2



Figure 21 — Reaction to fire – Class  $C_{\mathrm{fl}}\text{-s}\mathbf{1}$ 



Figure 22 — Reaction to fire - Class C<sub>fl</sub>-s2



Figure 23 — Reaction to fire - Class Dfl-s1



Figure 24 — Reaction to fire - Class D<sub>fl</sub>-s2



Figure 25 — Reaction to fire – Class  $E_{\rm fl}$ 



Figure 26 — Reaction to fire - Class F<sub>fl</sub>

#### 3.3.5 Slip

The slip resistance of textile, resilient and laminate floor coverings is specified in EN 14041 (R+L+T) and EN 13893.



Figure 27 — Slip resistance - Class NPD



Figure 28 — Slip resistance - Class DS

#### 3.3.6 Water tightness

The water tightness resilient floor coverings is specified in EN 14041 and EN 13553 (R).



Figure 29 — Water tightness for resilient floor coverings

#### 3.3.7 Dangerous substances

The content of dangerous substances and the emissions of volatile organic compounds in textile, resilient and laminate floor coverings is specified in EN 14041, EN 717-1 and EN 717-2.



Figure 30 — Formaldehyde emission HCHO - Class E1



Figure 31 — Formaldehyde emission HCHO - Class E2



Figure 32 — Formaldehyde emission HCHO - Class NA (not added)



Figure 33 — PCP emission - Class DL (detection limit)



Figure 34 — VOC classes, example class Af1

NOTE The VOC class is noted in the circle. There are 30 possible classes: A, B, C, D and E in combination with f1, f2, f3, f4, f5 and f6.

#### 3.3.8 Thermal resistance

The thermal resistance of textile, resilient and laminate floor coverings is determined according to EN 14041 (R+L+T), EN 1307 (T) and ISO 8302. The pictogram should be accompanied by the determined value.



Figure 35 — Thermal resistance

#### 3.4 Additional characteristics

#### 3.4.1 General

Besides essential requirements a number of additional characteristics can be claimed.

#### 3.4.2 Castor chair suitability

The suitability for castor chair use of textile, resilient and laminate floor coverings is specified in EN 1307 (T), EN 985 (T), EN 14215 (T), EN 425 (R+L), EN 13329 (L), EN 14978 (L), EN 15468 (L).



Figure 36 — Castor chair occasional use



Figure 37 — Castor chair continuous use

#### 3.4.3 Stairs suitability

The stair suitability for textile floor coverings is specified in EN 1307 (T), EN 1963 (T), EN 14215 (T).



Figure 38 — Stairs occasional use



Figure 39 — Stairs continuous use

#### 3.4.4 Fraying behaviour

The fraying behaviour of textile floor coverings is specified in EN 1307 (T), EN 1814 (T).



Figure 40 — Resistance to fraying

#### 3.4.5 Luxury classes

The luxury class of textile floor coverings is specified in EN 1307 (T), EN 14215 (T).



Figure 41 — Luxury class LC1



Figure 42 — Luxury class LC2



Figure 43 — Luxury class LC3



Figure 44 — Luxury class LC4



Figure 45 — Luxury class LC5

#### 3.4.6 Light fastness

The light fastness of textile floor coverings is specified in EN 1307 (T), EN ISO 105-B02.



Figure 46 — Light fastness

#### 3.4.7 Acoustic properties

The sound absorption properties of textile resilient and laminate floor coverings are determined according to EN ISO 354, EN ISO 11654. The pictogram should be accompanied by the determined value.



Figure 47 — Acoustical - Sound absorption

The walking noise properties of textile resilient and laminate floor coverings are determined according to EN 16205. The pictogram should be accompanied by the determined value.



Figure 48 — Acoustical - Walking Noise

The impact noise reduction properties of textile resilient and laminate floor coverings are determined according to EN ISO 717-2. The pictogram should be accompanied by the determined value.



Figure 49 — Acoustical - Impact noise reduction

#### 3.4.8 Resistance

The abrasion resistance of laminate and resilient floor coverings is specified in ISO 24338 (L), EN 660-2 (R).



Figure 50 — Abrasion resistance

The cigarette resistance of laminate floor coverings is specified in EN 438-1 (L).



Figure 51—Cigarette resistance

The impact resistance of laminate and resilient floor coverings is specified in EN 13329 (L), EN 14978 (L), EN 15468 (L) and EN 1399 (R).



Figure 52 — Impact resistance

The staining resistance of laminate and resilient floor coverings is specified in EN ISO 26987 (R), EN 438-1 (L).



Figure 53 — Staining resistance

The resistance to chemicals of resilient floor coverings is specified in EN ISO 26987 (R).



Figure 54 — Resistance to chemicals

#### 3.4.9 Locking strength

The locking strength of laminate floor coverings is specified in ISO 24334 (L).



Figure 55 — Locking strength of mechanically assembled panels

#### **3.4.10 Swelling**

The swelling behaviour of laminate floor coverings is specified in EN 13329 (L), EN 14978 (L), EN 15468 (L).



Figure 56 — Thickness swelling - Residential



Figure 57 — Thickness swelling - Commercial

#### 3.4.11 Flexibility

The flexibility of resilient floor coverings is specified in EN ISO 24344 (R).



Figure 58 — Flexibility

#### 3.4.12 Dimensional stability

The dimensional stability of textile, resilient and laminate floor coverings is specified in EN 669 (R), EN 13329 (L), EN 14978 (L), EN 15468 (L), EN 986 (T), EN 1307 (T).

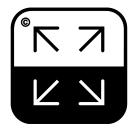


Figure 59 — Dimensional stability

#### 3.4.13 Residual indentation

The residual indentation of resilient and laminate floor coverings is determined according to ISO 24343 (all parts) (R+L). The pictogram should be accompanied by the determined value.



Figure 60 — Indentation - Residual

#### 3.4.14 Effect of a furniture leg

The effect of a furniture leg on resilient floor coverings is determined according to ISO 24343 (all parts) (R+L). The pictogram should be accompanied by the determined value.



Figure 61 — Effect of a furniture leg

#### 3.4.15 Enhanced slip property

The enhanced slip property of a resilient floor covering is specified in EN 13845 (R).



Figure 62 — Enhanced slip

#### 3.4.16 Suitability for use in incidental humid conditions

The suitability for use in incidental humid conditions of textile floor coverings is specified in EN 1307 (T).



Figure 63 — Suitability for use in incidental humid conditions

#### 3.4.17 Horizontal electrical resistance

The horizontal resistance of textile, resilient and laminate floor coverings is determined according to EN 1081 (R+L), ISO 10965 (T).



Figure 64 — Horizontal Resistance  $\leq 10^9 \Omega$ 



Figure 65 — Horizontal resistance  $\leq 10^6 \Omega$ 

#### 3.4.18 Roll length and roll width

The roll length and roll width of textile, resilient and laminate floor coverings are determined according to EN ISO 24341(R+T). The pictogram should be accompanied by the determined value.



Figure 66 — Roll length



Figure 67 — Roll width

#### 3.4.19 Thickness characteristics

The total thickness of textile, resilient and laminate floor coverings is determined according to EN ISO 24346 (R), EN ISO 24340 (R), ISO 1765 (T). The pictogram should be accompanied by the determined value.



Figure 68 — Total thickness



Figure 69 — Thickness of wear layer

#### **3.4.20** Tile size

The size of tiles of textiles and resilient floor coverings is determined according to EN ISO 24342 (R+T), EN 994 (T). The pictogram should be accompanied by the determined value.



Figure 70 — Tile size

#### 3.4.21 Total mass

The total mass of textiles and resilient floor coverings is determined according to EN ISO 23997 (R), ISO 8543 (T). The pictogram should be accompanied by the determined value.



Figure 71 — Total weight

#### 3.4.22 Light reflection

The light reflection for resilient floor coverings is specified in EN 13745 (R).



Figure 72 — Light reflection

#### 3.5 Fibre composition (only of relevance for textile floorcoverings)

The fibre composition of the use surface of textiles floor coverings can be identified by the following pictograms and are related to the EU regulation (EU) No 1007/2011 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 September 2011 on textile fibre names and related labelling and marking of the fibre composition of textile products and repealing Council Directive 73/44/EEC and Directives 96/73/EC and 2008/121/EC of the European Parliament and of the Council.



Figure 73 — Cotton



Figure 74 — Hair



Figure 75 — Jute



Figure 76 — Polyamide



Figure~77 - Polyacryl-nitrile



Figure 78 — Polyester



Figure 79 — Polypropylene



Figure 80 — Sisal



Figure 81 — Wool



Figure 82 — Viscose

#### 3.6 Underlays for laminate floorcoverings

The following pictograms are related to the characteristics of underlays of laminate floor coverings and are determined according to CEN/TS 16354 (L). (All symbols below need to be accompanied by the corresponding value of the characteristic, e.g.  $R = 0.05 \text{ m}^2\text{K/W}$  or CS = 10kPa).



Figure 83 — CS Compressive strength



Figure 84 — DL Dynamic loading



Figure 85 — RWS Reflected walking sound



Figure 86 — IS Impact sound reduction

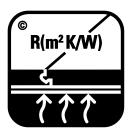


Figure 87 — R Thermal resistance



Figure 88 — SD Water vapour diffusion resistance

#### 3.7 Environmental Product Declaration

Claims are made for EPD according to EN ISO 14025, EN 15804 and can be visualized with the following pictogram:



Figure 89 — EPD Environmental product declaration

#### **Bibliography**

- [1] EN 424, Resilient floor coverings Determination of the effect of simulated movement of a furniture leg
- [2] EN 12524, Building materials and products Hygrothermal properties Tabulated design values
- [3] EN ISO 2076, Textiles Man-made fibres Generic names (ISO 2076)
- [4] EU regulation (EU) No 1007/2011 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 September 2011 on textile fibre names and related labelling and marking of the fibre composition of textile products



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