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Resilient floor coverings — Heterogeneous poly(vinyl chloride) floor coverings — Specification

Revêtements de sol résilients — Revêtements de sol hétérogènes en poly(chlorure de vinyle) — Spécifications

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 10582 was prepared by Technical Committee ISO/TC 219, *Floor coverings*.

Resilient floor coverings — Heterogeneous poly(vinyl chloride) floor coverings — Specification

1 Scope

This International Standard specifies the characteristics of non-cushioned, heterogeneous floor coverings, based on poly(vinyl chloride) (PVC), supplied in either tile or roll form. Products may contain a transparent, non-PVC factory finish.

To encourage the consumer to make an informed choice, this International Standard includes a classification system (see ISO 10874) based on the intensity of use, which shows where these floor coverings give satisfactory service. It also specifies requirements for marking.

2 Normative references

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

ISO 105-B02:1994, *Textiles — Tests for colour fastness — Part B02: Colour fastness to artificial light: Xenon arc fading lamp test*

ISO 105-B02:1994, *Textiles — Tests for colour fastness — Part B02: Colour fastness to artificial light: Xenon arc fading lamp test*. Amendment 1:1998

ISO/TR 4918, *Textile floor coverings — Determination of wear — Castor chair test*

ISO 10874, *Resilient, textile and laminate floor coverings — Classification*

ISO 23996, *Resilient floor coverings — Determination of density*

ISO 23997, *Resilient floor coverings — Determination of mass per unit area*

ISO 23999, *Resilient floor coverings — Determination of dimensional stability and curling after exposure to heat*

ISO 24340, *Resilient floor coverings — Determination of thickness of layers*

ISO 24341, *Resilient and textile floor coverings — Determination of length, width and straightness of sheet*

ISO 24342, *Resilient and textile floor-coverings — Determination of side length, edge straightness and squareness of tiles*

ISO 24343-1, *Resilient and laminate floor coverings — Determination of indentation and residual indentation — Part 1: Residual indentation*

ISO 24344:2008, *Resilient floor coverings — Determination of flexibility and deflection*

ISO 24346, *Resilient floor coverings — Determination of overall thickness*

ASTM F1515, *Standard test method for measuring light stability of resilient flooring by color change*

EN 684, *Resilient floor coverings — Determination of seam strength*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
heterogeneous floor covering
floor covering consisting of a wear layer and other layer(s) which differ in composition and/or design and can contain a reinforcement

3.2
poly(vinyl chloride) floor covering
floor covering with surface layer(s) which are produced using poly(vinyl chloride) as the binder

3.3
wear layer
layer of the floor covering directly exposed to wear

3.4
factory finish
transparent coating applied during the manufacture, usually not thicker than 0,03 mm

3.5
binder content
that portion of the flooring composition, consisting of poly(vinyl chloride) (PVC) resin, plasticizers and stabilizers

NOTE Binder content is expressed as a percentage mass fraction of the total composition.

4 Requirements

4.1 Identification requirements

Products described in this International Standard shall be identified by wear-layer binder content by mass as shown in Table 1.

Table 1 — Identification requirements

Type	Wear-layer binder content
I	Minimum 80 %
II	Minimum 30 %

4.2 General requirements

Floor coverings described in this International Standard shall conform to the appropriate general requirements specified in Table 2, when tested in accordance with the methods given therein.

Table 2 — General requirements

Characteristic	Requirement	Test method
Roll form: length: m width: mm	Not less than the nominal values	ISO 24341
Tiles: side length mm Does not apply to planks squareness and straightness for side length: mm $\leqslant$ 400 mm > 400 mm > 400 mm (intended for heat welding)	Deviation $\leqslant$ 0,15 % of nominal length up to 0,5 mm maximum Deviation allowed at any point $\leqslant$ 0,25 $\leqslant$ 0,35 $\leqslant$ 0,50	ISO 24342
Overall thickness: mm Average Individual results	Nominal value $^{+0,13}_{-0,10}$ Average value ±0,15	ISO 24346
Total mass per unit area (average) g/m^2	Nominal value $^{+13}_{-10}$ %	ISO 23997
Dimensional stability after exposure to heat: % Sheets and tiles (intended for welding) Tiles (intended for dry-joint laying)	$\leqslant$ 0,4 $\leqslant$ 0,25	ISO 23999
Curling after exposure to heat: mm Sheets and tiles (intended for heat welding) Tiles (intended for dry-joint laying)	$\leqslant$ 8 $\leqslant$ 2	ISO 23999
Flexibility	Test using a 20 mm mandrel. For products which show signs of cracking, perform a further test using a 50 mm mandrel. If results show no further cracking, record the use of a 50 mm mandrel	ISO 24344:2008, Method A
Residual indentation (average) mm	$\leqslant$ 0,1	ISO 24343-1
Effect of castor chair	After 25 000 cycles, no delamination shall occur. No disturbance to the surface other than a slight change in appearance	ISO 4918
Colour fastness to artificial light	6 minimum or $\Delta E \leqslant$ 8 after 300 h, where E is the irradiance, expressed in watts per square metre	ISO 105-B02:1994, Method 3[a] ASTM F1515

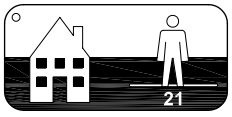
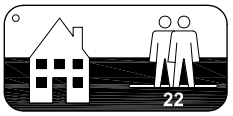
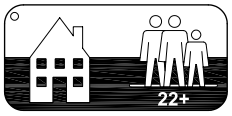
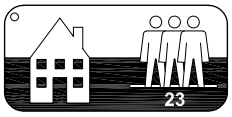
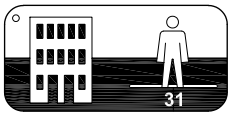
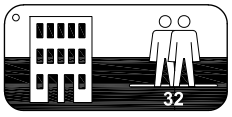
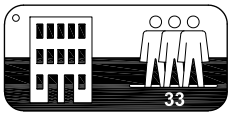
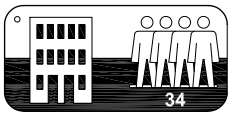
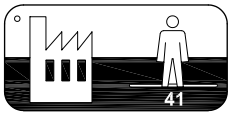
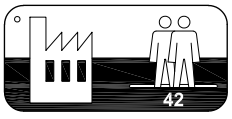
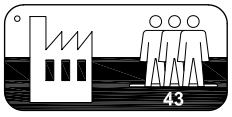
[a] Expose a full size test specimen. Store a further test specimen in the dark, which will constitute the reference standard for assessment of colour change.

5 Classification

The classification scheme for resilient floor coverings is described in ISO 10874. The requirements for the use of heterogeneous poly(vinyl chloride) floor covering in accordance with this scheme are specified in Table 3.

Table 3 — Classification requirement for level of use (minimal)

Dimensions in millimetres

Class	Symbol	Level of use	Thickness of wear layer, nominal value		Nominal overall thickness	Seam strength N/50 mm
		Domestic	**Type I**	**Type II**	**All types**	
21		Moderate/light	0,15	0,40	1,0	No requirement
22		General/medium	0,20	0,50	1,5	
22+		General	0,20	0,50	1,5	
23		Heavy	0,30	0,65	1,5	
		Commercial				When welded in accordance with the manufacturer's instructions: Average value ⩾ 240 Individual values ⩾ 180
31		Moderate	0,30	0,65	2,0	
32		General	0,40	0,80	2,0	
33		Heavy	0,55	1,00	2,0	
34		Very heavy	0,70	1,50	2,0	
		Light industrial				
41		Moderate	0,40	0,80	2,0	
42		General	0,55	1,00	2,0	
43		Heavy	0,70	1,50	2,0	
Test method			ISO 24340		ISO 24346	EN 684

6 Marking, labelling and packaging

Floor coverings covered by this International Standard and/or their packaging shall bear the following marking:

a) number and date of this International Standard, i.e. ISO 10582:2010;

b) manufacturer's or supplier's identification;

c) product name;

d) colour/pattern, batch number and, if applicable, roll number;

e) classes/symbols appropriate for the product;

f) for rolls: the length, width and thickness;

g) for tiles: the dimensions of a tile and the area, in square metres, contained in the package.

Annex A
(informative)

Optional properties

Where the following properties are required for specific applications, the floor covering should be tested in accordance with the appropriate methods:

— electrical resistance (ASTM F150, EN 1081, ANSI/ESD S7.1, ANSI/ESD STM 97.1);

— electrical propensity (EN 1815, ANSI/ESD STM 97.2);

— effects of stains (ASTM F925, EN 423, ISO 26987:2008);

— reaction to fire; determination of the burning behaviour using a radiant heat source (ISO 9239-1:2010, ASTM E648);

— reaction to fire; ignitability when subject to direct impingement of flame (ISO 11925-2:2010);

— reaction to fire; specific optical density of smoke generated (ASTM E662);

— resistance to heat (ASTM F1514).

Bibliography

[1] ISO 9239-1:2010, *Reaction to fire tests for floorings — Part 1: Determination of the burning behaviour using a radiant heat source*

[2] ISO 11925-2:2010, *Reaction to fire tests — Ignitability of products subjected to direct impingement of flame — Part 2: Single-flame source test*

[3] ISO 26987:2008, *Resilient floor coverings — Determination of staining and resistance to chemicals*

[4] ANSI/ESD S7.1, *Resistive Characterization of Materials — Floor Materials*

[5] ANSI/ESD STM 97.1, *Floor Materials and Footwear — Resistance Measurement in Combination with a Person*

[6] ANSI/ESD STM 97.2, *Floor Materials and Footwear — Voltage Measurement in Combination with a Person*

[7] ASTM E648, *Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source*

[8] ASTM E662, *Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials*

[9] ASTM F150, *Standard Test Method for Electrical Resistance of Conductive and Static Dissipative Resilient Flooring*

[10] ASTM F925, *Standard Test Method for Resistance to Chemicals of Resilient Flooring*

[11] ASTM F1303, *Standard Specification for Sheet Vinyl Floor Covering with Backing*

[12] ASTM F1514, *Standard Test Method for Measuring Heat Stability of Resilient Flooring by Color Change*

[13] ASTM F1700, *Standard Specification for Solid Vinyl Floor Tile*

[14] EN 423, *Resilient floor coverings — Determination of resistance to staining*

[15] EN 649, *Resilient floor coverings — Homogeneous and heterogeneous polyvinyl chloride floor coverings — Specification*

[16] EN 1081, *Resilient floor coverings — Determination of the electrical resistance*

[17] EN 1815, *Resilient and textile floor coverings — Assessment of static electrical propensity*

[18] JIS A 1454, *Japanese Industrial Standard, Test methods — Resilient floorcoverings*

[19] JIS A 5705, *Japanese Industrial Standard, Floorcovering — PVC*

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