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Resilient floor coverings — Heterogeneous poly(vinyl chloride) flooring on foam — Specification

Revêtements de sol résilients — Revêtements de sol hétérogènes sur mousse à base de poly(chlorure de vinyle) — Spécification

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Foreword

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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 11638 was prepared by Technical Committee ISO/TC 219, *Floor coverings*.

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Resilient floor coverings — Heterogeneous poly(vinyl chloride) flooring on foam — Specification

1 Scope

This International Standard specifies the characteristics of heterogeneous poly(vinyl chloride) flooring on foam, based on poly(vinyl chloride), and supplied in roll form or tile. Such products can contain a transparent, non-PVC factory finish.

To encourage the consumer to make an informed choice, this International Standard includes a classification system, based on intensity of use, which shows where these floor coverings can be expected to 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:—[1)], *Textiles — Tests for colour fastness — Part B02: Colour fastness to artificial light: Xenon arc fading lamp test*

ISO 4918, *Resilient, textile and laminate floor coverings — Castor chair test*

ISO 10874, *Resilient, textile-and laminate floor covering — Classification.*

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 24343-2, *Resilient and laminate floor coverings — Determination of indentation and residual indentation — Part 2: Short-term residual indentation of resilient floor covering*

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

ISO 24345, *Resilient floor coverings — Determination of peel resistance*

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

EN 424, *Resilient floor coverings — Determination of the effect of simulated movement of a furniture leg*

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

EN 1372, *Adhesives — Test method for adhesives for floor and wall coverings — Peel test*

1) To be published. (Revision of ISO 105-B02:1994)

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

3 Terms and definitions

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

3.1
heterogeneous floor covering on foam
floor covering consisting of a wear layer and other solid layers on a foam backing

3.2
poly(vinyl chloride) floor coverings on foam
floor covering with surface layers 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 0,05 mm

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

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

3.6
seam strength
maximum tensile force recorded, for a defined width, when a floor covering is tested under a constant rate of separation

3.7
plank
planks satisfy both less than 250 mm in width and a width-to-length ratio of more than 1:3

4 Requirements

4.1 Identification requirements

Products described in this International Standard are identified by wear-layer binder content and shall be in accordance with Table 1.

Table 1 — Identification requirements

Type	Wear-layer binder content
I	≥ 80
II	≥ 30

4.2 General requirements

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

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Table 2 — General requirements

Characteristic	Requirement	Test method
Roll form: Length: m Width: mm	Not less than nominal values	ISO 24341
Tiles: side length mm	Deviation ≤ 0,13 % of nominal length up to 0,5 mm maximum except plank shape	ISO 24342
Squareness and straightness for side length: mm	Deviation allowed at any point	
side length:		
≤ 400 mm	≤ 0,25	
> 400 mm	≤ 0,35	
> 400 mm (intended for welding)	≤ 0,50	
Overall thickness: mm		ISO 24346
Average	Nominal value +0,18/−0,15	
Individual results	Average value ±0,20	
Thickness of wear layer: %	Nominal value +13 %/–10 %	ISO 24340
Thickness of foam layer: mm	Thickness shall be determined	ISO 24340
Total mass per unit area (average): g/m^2	Nominal value +13 %/–10 %	ISO 23997
Dimensional stability after exposure to heat: % (not applicable to tension flex products)		ISO 23999
Sheets intended for welding	(≤ 1,0)[a] ≤ 0,4	
Tiles (intended for dry-joint laying)	≤ 0,25	
Curling after exposure to heat: mm		ISO 23999
Sheets intended for welding	≤ 10	
Tiles (intended for dry-joint laying)	≤ 2	
Flexibility Type 1: 15 mm diameter mandrel Type 2: 40 mm diameter mandrel	No cracking	ISO 24344:2008, Method A
Peel resistance strength: N/mm		ISO 24345
Average	≥ 50 N/50 mm	
Individual results	≥ 40 N/50 mm	
Colour fastness to artificial light	≥ 6 or ΔE ≤ 8 after 300 h	ISO 105-B02:—, Method 3[b] or ASTM F1515

[a] The maximum of 1 % is permitted for sheet flooring intended for welding only, provided that manufacturer-specified installation procedures are strictly followed to ensure both a seam strength of more than 240 N/50 mm complying with EN 684, and an adhesive strength of more than 50 N/50 mm at 90°, when pulled and measured at a speed of 100 mm/min complying with EN 1372.

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

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4.3 Thickness of wear-layer requirements

Thicknesses of wear layers shall be in accordance with Table 3.

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5 Classification requirements

The classification scheme for resilient floor coverings is given in ISO 10874. The requirements for heterogeneous poly(vinyl chloride) flooring on foam according to this scheme are specified in Table 3.

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Table 3 — Classification minimal requirement for level of use

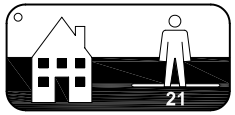
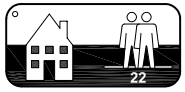
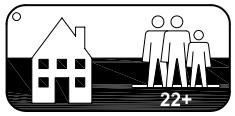
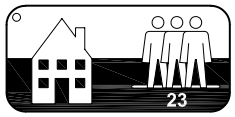
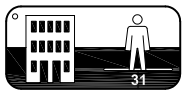
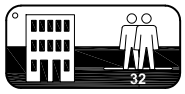
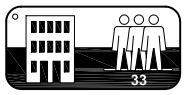
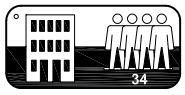
Class	Symbol	Level of use	Thickness of wear-layer nominal value mm		Effect of castor chair	Simulated movement of a furniture leg		Residual indentation after static loading (Method 1)	Residual indentation after static loading (Method 2)
			Type I	Type II		Surface	Joint	mm	mm
Test method			ISO 24340		ISO 4918	EN 424		ISO 24343-1	ISO 24343-2
Domestic									
21		Moderate/ Light	0,15	0,30	No requirement	No requirement	No requirement	No requirement	≤ 0,35
22		General/ Medium	0,20	0,40	No requirement	No damage shall be visible with foot 3	No requirement	No requirement	≤ 0,35
22+		General	0,20	0,40	No requirement		No requirement	No requirement	≤ 0,35
23		Heavy	0,25	0,50	No requirement		No requirement	No requirement	≤ 0,35
Commercial									
31		Moderate	0,25	0,50	No requirement	No damage shall be visible with foot 3	No requirement	≤ 0,35	No requirement
32		General	0,35	0,70	No delamination and no disturbance to the surface other than slight change in appearance caused by 25 000 cycles or more	No damage shall be visible with foot 2	When welded in accordance with manufacturer's instructions: no damage shall be visible with foot 0	≤ 0,20	No requirement
33		Heavy	0,50	1,00				≤ 0,20	No requirement
34		Very heavy	0,65	1,50				≤ 0,20	No requirement

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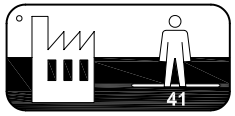
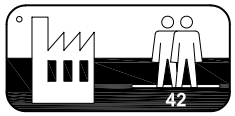
Table 3 *(continued)*

Class	Symbol	Level of use	Thickness of wear-layer nominal value mm		Effect of castor chair	Simulated movement of a furniture leg		Residual indentation after static loading (Method 1)	Residual indentation after static loading (Method 2)
			Type I	Type II		Surface	Joint	mm	mm
Light industrial									
41		Moderate	0,35	0,70	No delamination and no disturbance to the surface other than slight change in appearance caused by 25 000 cycles or more	No damage shall be visible with foot 2	When welded in accordance with manufacturer's instructions: no damage shall be visible with foot 0	≤ 0,20	No requirement
42		General	0,50	1,00				≤ 0,20	No requirement

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6 Marking

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 11638:2012;

b) manufacturer or supplier 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.

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