



BSI Standards Publication

**Textile floor coverings —
Requirements for tolerances
on (linear) dimensions of
rugs, runners, carpet tiles and
wall-to-wall carpet and for
tolerances on pattern repeat**

National foreword

This British Standard is the UK implementation of EN 14159:2014. It supersedes DD CEN/TS 14159:2007 which is withdrawn.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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English Version

Textile floor coverings - Requirements for tolerances on (linear) dimensions of rugs, runners, carpet tiles and wall-to-wall carpet and for tolerances on pattern repeat

Revêtements de sol textiles - Exigences relatives aux tolérances sur les dimensions (linéaires) des tapis, passages, dalles de moquette et moquettes et aux tolérances sur le raccord de dessin

Textile Bodenbeläge - Anforderungen an Toleranzen der (linearen) Maße von abgepassten Bodenbelägen, Läufern, Fliesen und Bahnenware und des Musterrapports

This European Standard was approved by CEN on 16 November 2014.

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Foreword

This document (EN 14159:2014) has been prepared by Technical Committee CEN/TC 134 “Resilient, textile and laminate floor coverings”, the secretariat of which is held by NBN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2015 and conflicting national standards shall be withdrawn at the latest by June 2015.

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Introduction

Owing to influences of the production process on the structure, textile floor coverings may show variations in size and distortion. However, in many cases, certain discrepancies can be eliminated by professional and careful installation. By open communication between manufacturer and installer, an agreement can be found between what is technically possible in manufacturing, and at the same time technically workable during installation.

The maximum distortions in pattern repeat specified in this European Standard are applicable only to carpets with certain design styles ex-factory.

1 Scope

This European Standard specifies the maximum accepted tolerances on the dimensions and distortions in pattern, of rugs, runners, carpet tiles and wall-to-wall carpet.

NOTE These tolerances do not affect the functional characteristics of the textile floor covering.

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.

ISO 2424:2007, *Textile floor coverings — Vocabulary*

ISO 3018, *Textile floor coverings — Rectangular textile floor coverings — Determination of dimensions*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 2424:2007 and the following apply.

3.1

arcing

arcing of the carpet roll itself in the production direction when unrolled

Note 1 to entry: See Figure 5.

3.2

linear pattern distortion

displacements of the pattern widthways so that alignment of repeated design features in the production direction are not parallel with the edge of the carpet

Note 1 to entry: See Figure 3.

3.3

bowing

displacement of the pattern alignment across the width of the carpet so that repeated design features are displaced from a line at right angles to the direction of production

Note 1 to entry: This displacement is usually at its greatest extent in the centre of the carpet width.

Note 2 to entry: See Figure 2.

3.4

length

<rugs> linear dimension of the longest side

3.5

length

<carpet roll> linear dimension parallel to the direction of production

3.6

pattern repeat

smallest part of the pattern that contains all its characteristics

3.7
skewing
situation in which lines drawn through repeated design features both parallel to and perpendicular to the production direction are not at right angles to each other

Note 1 to entry: See Figure 4.

3.8
width
<rugs> linear dimension of the shortest side

3.9
width
<carpet rolls> linear dimension at right angles to the production direction

4 Apparatus

4.1 Length measuring device

The device shall be capable of measuring to an accuracy of

- for dimensions $\leq 1,0$ m: 1 mm.
- for dimensions $> 1,0$ m and $< 5,0$ m: 5 mm.
- for dimensions $\geq 5,0$ m: 10 mm.

4.2 Dividers

4.3 Drawing device

The device shall be capable of describing a datum line across the width of the carpet at 90° to the edge of the carpet.

5 Procedure

5.1 Measurement of dimensions

Lay the rug or carpet roll out flat, use surface uppermost. Use the length measuring device (4.1) and the dividers (4.2), if appropriate, to measure the length (l_x) and the width, (l_y), in accordance with ISO 3018.

5.2 Measurement of pattern distortion

5.2.1 General

Each of the following measurements can be made either on the face (tufted carpet) or back (woven carpet) of the unrolled carpet.

5.2.2 Distortion in pattern repeat

Measure the distortion in pattern repeat length as the distance between a line drawn across the carpet at the maximum extent of the pattern (l_1), and an equivalent line drawn across the carpet at the minimum extent of the corresponding pattern (l_2). Figure 1 shows an example of measurement of the distortion in pattern repeat length.

Measure the maximum deviation to the appropriate accuracy (see 4.1) over n pattern repeats and over a length of at least 1 m.

The distortion (mm) is given by $(l_2 - l_1)$.

The measurements should be repeated in a number of positions throughout the carpet and all results quoted.

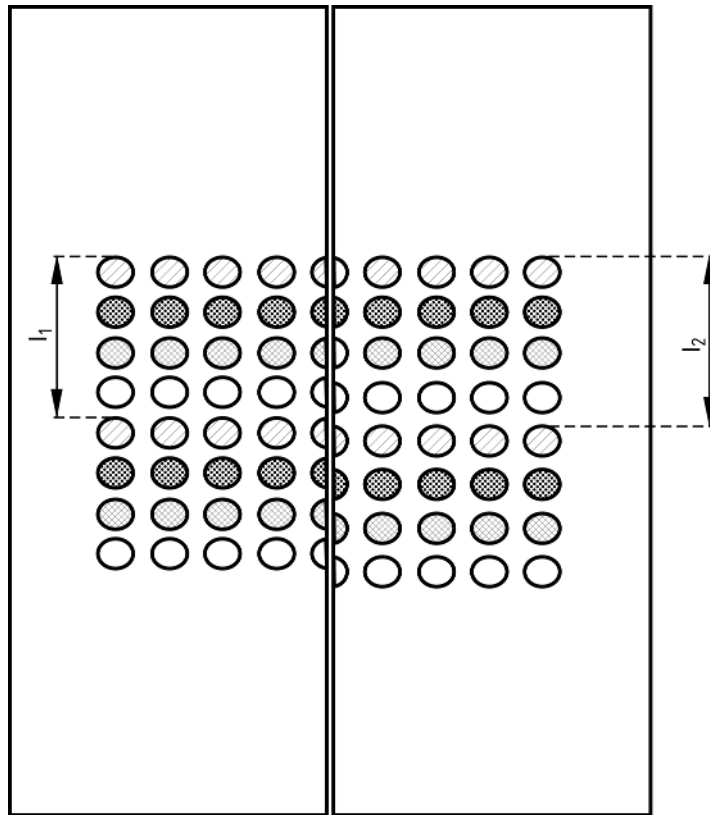


Figure 1 — Pattern repeat

5.2.3 Bowing

Use the device described in 4.3 to draw a line perpendicular to the machine direction edge of the carpet. The line should be drawn perpendicular to the edge at a convenient reference point, i.e. one particular part of the pattern repeat that can be traced across the width of the carpet.

Use the length measuring device (4.1) and dividers (4.2) to measure the maximum deflection (a_q) to the appropriate accuracy (see 4.1), as shown in Figure 2.

The measurements should be repeated in a number of positions throughout the carpet and all results quoted.

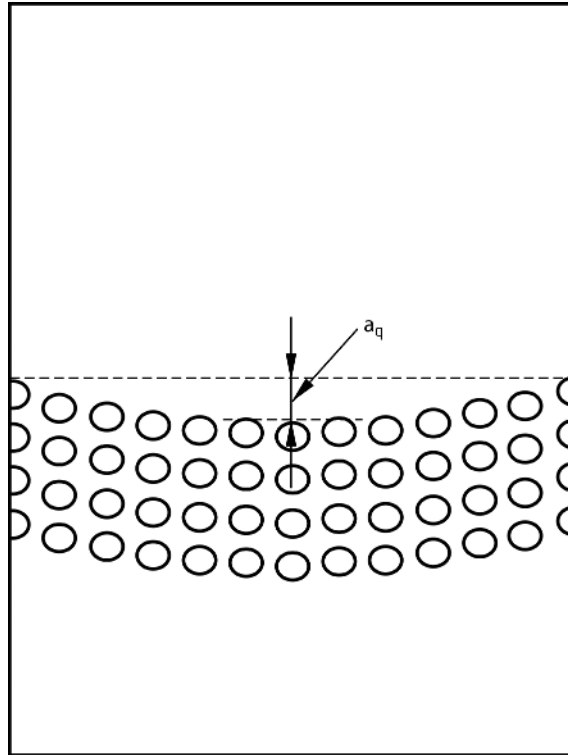


Figure 2 — Bowing

5.2.4 Linear pattern distortion

Repeat the method given in 5.2.3 across the width of the carpet, i.e. measure the deflection from a line drawn parallel to the machine direction edge of the carpet.

Measure the maximum deflection (a) of the pattern to the appropriate accuracy (see 4.1), as shown in Figure 3.

The measurements should be repeated in a number of positions throughout the carpet and all results quoted.

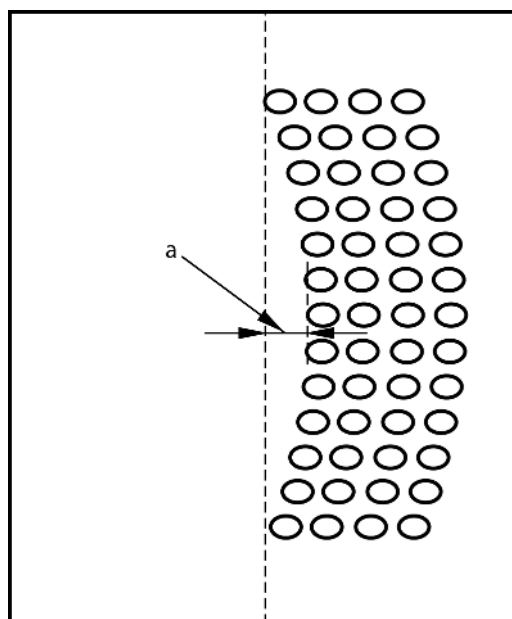


Figure 3 — Linear pattern distortion

5.2.5 Skewing of pattern

Use the device described in 4.3 to draw a line perpendicular to the production direction from a specific point on the pattern at one machine edge of the carpet to the opposite machine edge of the carpet.

Use the length measuring device to measure the pattern deviation (a_d) to the appropriate accuracy (see 4.1), as shown in Figure 4.

The measurements should be repeated in a number of positions throughout the carpet and all results quoted.

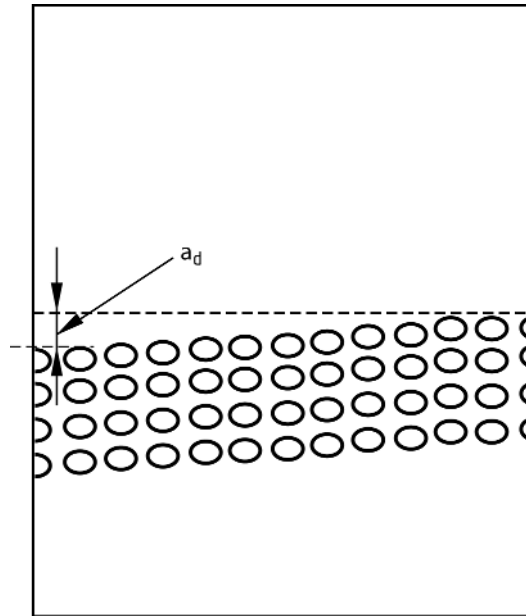


Figure 4 — Skewing

5.2.6 Arcing

Draw a perpendicular to one of the cross machine directions of the carpet and continue for the full length of the carpet. Draw a line to continue to the opposite cross machine width until it dissects the perpendicular. Measure the maximum deviation (a_{w0}) as shown in Figure 5, to the nearest 1,0 mm.

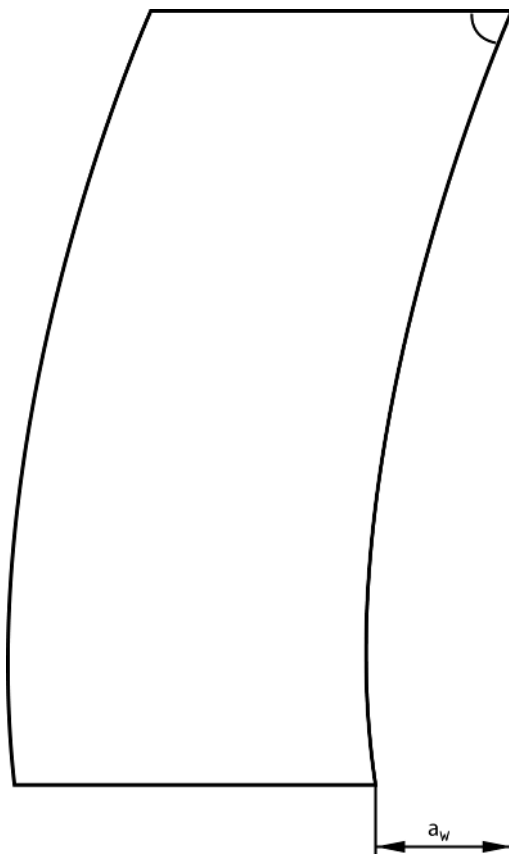


Figure 5 — Maximum deviations of the arcing of the carpet roll

6 Required tolerances and deviations

6.1 Dimensions

Tolerances on the dimensions of textile floor coverings (rugs, runners, tiles and carpet roll) shall conform to those specified in Table 1.

Table 1 — Tolerances on dimensions

Textile floor covering type	Width	Length
a) Rugs and runners	nominal width $\pm 2,0$ %	nominal length $\pm 2,0$ %
b) Wall-to-wall carpets		
1) stock products		
i) woven carpets	nominal width $\pm 1,25$ %	nominal length $\pm 1,0$ %
ii) other carpets	nominal width $\pm 1,0$ %	nominal length $\pm 1,0$ %
2) special order	By mutual agreement between producer and customer	By mutual agreement between producer and customer
c) Tiles	$\pm 0,3$ % on nominal dimensions $\pm 0,2$ % within the same batch	$\pm 0,3$ % on nominal dimensions $\pm 0,2$ % within the same batch

6.2 Pattern repeat and distortion

Table 2 — Tolerances for deviations in pattern repeat and distortion

Type	Deviations on individual measurement
Pattern repeat (Figure 1) Pattern shift between pieces from the same production lot ^a <ul style="list-style-type: none"> - pattern repeat length between ≥ 0 cm and $< 10,0$ cm - pattern repeat length between $\geq 10,0$ cm and $< 100,0$ cm - pattern repeat length $\geq 100,0$ cm - accumulated pattern shift 	max. 2,0 % of the pattern repeat max. 1,0 % of the pattern repeat as quoted by manufacturer max. 0,5 %
Bowing (Figure 2) <ul style="list-style-type: none"> - woven carpet < 100 cm - woven carpet ≥ 100 cm and < 200 cm - woven carpet ≥ 200 cm - tufted carpet 	max. 10 mm max. 20 mm max. 30 mm $\pm 1,0$ % of roll width with a maximum of 10 mm per m of roll width
Linear pattern distortion (Figure 3) <ul style="list-style-type: none"> - woven or tufted carpet 	maximum 10 mm for 2 m nominal length
Skewing (Figure 4) <ul style="list-style-type: none"> - woven or tufted carpet 	maximum 1,0 % of width with a maximum of 10 mm per m of roll width
^a Rolls from different lots with the same pattern should not be installed next to each other.	

6.3 Arcing of the carpet roll

Maximum deviations of the arcing of the carpet roll (Figure 5) shall conform to those specified in Table 3.

Table 3 — Deviation of arcing

Carpet type	Deviation
Woven	maximum 0,5 % of the piece length
Tufted	maximum 0,3 % of the piece length

Bibliography

- [1] EN 994, *Textile floor coverings - Determination of the side length, squareness and straightness of tiles*
- [2] EN 1307, *Textile floor coverings - Classification*
- [3] EN 14215, *Textile floor coverings - Classification of machine-made pile rugs and runners*

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