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# IMPORTANCE OF INDENTATION

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**Indentation requirements of the various PVC flooring standards**

**Indentation report**

When tested to ISO 24343-1 LVT 1.6 had an average residual indentation result of 0.18mm. The test was completed with Karndean Opus which is a 2.5mm gauge product with a 0.55mm wear layer.

In summary this result means that LVT 1.6 would pass the residual indentation requirement of the main standards for supported PVC floors in both residential and commercial applications.

Details of the various standards are listed below.

**Indentation requirements of the various PVC flooring standards**

Standard	Indent test	Requirement	Comments
BS EN ISO 10581:2013 Resilient Floor Coverings – Homogeneous PVC floor covering	ISO 24343-1 Resilient and laminate floor coverings – Determination of indentation and residual indentation – Part 1: Residual indentation	<math>\leq 0.1\text{mm}</math>	
BS EN ISO 10582:2012 Resilient Floor Coverings – Heterogeneous PVC floor covering	ISO 24343-1 Resilient and laminate floor coverings – Determination of indentation and residual indentation – Part 1: Residual indentation	<math>\leq 0.1\text{mm}</math>	
BS EN ISO 651:2011 Resilient Floor Coverings – PVC floor coverings with foam layer	EN 433 Resilient floor coverings. Determination of residual indentation after static loading.	23 & 31 Classes <math>\leq 0.35\text{mm}</math> 34 & 42 classes <math>\leq 0.20\text{mm}</math>	
BS EN ISO 26986:2012 Resilient Floor Coverings – Expanded (Cushioned) PVC floor covering.	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	23 Class <math>\leq 0.35\text{mm}</math> 33 Class <math>\leq 0.20\text{mm}</math> 42 Class <math>\leq 0.20\text{mm}</math>	



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Typical PVC flooring products and their categories

Brand	Standard	General Type
Polyflor Camaro, Colonia	BS EN ISO 10582:2012 Resilient Floor Coverings – Heterogeneous PVC floor covering	LVT
Expona Beveline, Simplay	BS EN ISO 10582:2012 Resilient Floor Coverings – Heterogeneous PVC floor covering	LVT
Polyflor Bloc, Flow	BS EN ISO 10582:2012 Resilient Floor Coverings – Heterogeneous PVC floor covering	Heterogeneous sheet/LVS
Polyflor Forest FX, Gallery FX	BS EN ISO 651:2011 Resilient Floor Coverings – PVC floor coverings with foam layer	Heterogeneous acoustic sheet
Amtico	BS EN ISO 10582:2012 Resilient Floor Coverings – Heterogeneous PVC floor covering	LVT
Karndean Art Select, Da Vinci, Michelangelo, Van Gogh, Opus, Knight Tile, Looselay	BS EN ISO 10582:2012 Resilient Floor Coverings – Heterogeneous PVC floor covering	LVT



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Flooring types and their indent requirements from the various standards

General Type	Standard	Requirement
A "solid" vinyl (homogeneous sheet or tile)	ISO 24343-1 Resilient and laminate floor coverings – Determination of indentation and residual indentation – Part 1: Residual indentation	$\leq 0.1\text{mm}$
LVT	ISO 24343-1 Resilient and laminate floor coverings – Determination of indentation and residual indentation – Part 1: Residual indentation	$\leq 0.1\text{mm}$
Vinyl plus foam	EN 433 Resilient floor coverings. Determination of residual indentation after static loading.	$\leq 0.35\text{mm}$ in domestic $\leq 0.20\text{mm}$ in commercial
Cushion Vinyl	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	$\leq 0.35\text{mm}$ in domestic $\leq 0.20\text{mm}$ in commercial

**Summary**

3 levels of indentation requirements:

$\leq 0.10\text{mm}$

$\leq 0.20\text{mm}$

$\leq 0.35\text{mm}$



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