# Technical Information

## Residual indentation of elastic floor coverings

Wineo floor coverings are subject to rigorous quality testing, thereby guaranteeing a high standard of quality. The residual indentation behaviour of resilient floor coverings is tested in accordance with DIN EN ISO 24343-1 'Resilient and laminate floor coverings – Determination of indentation and residual indentation.'

In this context, it should be noted that the residual indentation behaviour of the floor covering is demonstrated and tested on uninstalled/unglued flooring.

## Laboratory testing

In the laboratory test, the floor covering is loaded with a total load of 500 N (approx. 50 kg) via a cylindrical steel pressure stamp with a diameter of 11.30 mm +/- 0.05 mm after a preload of 3.0 N +/- 0.3 N. After 150 minutes of loading the flooring, it is unloaded for 150 minutes. The residual indentation is calculated from the original measurement of the total thickness of the flooring and the thickness of the flooring after 150 minutes of unloading.

## Residual indentation behaviour with floating installation

Residual indentation behaviour depends on many different factors. If a floor covering is installed on an impact sound insulation underlay, it can be assumed that the underlay also has a potential for deformation. For this reason, the same requirements regarding the residual indentation procedure cannot be applied to an elastic floor covering on impact sound insulation underlay as to a floor covering glued down directly to the levelled substrate.

## Residual indentation behaviour for glued elastic floor coverings

When install elastic floor coverings glued down, the formulation, the resulting properties, the application method and quantity, and the drying time of the adhesive influence the deformation potential of the floor covering.

As a rule, elastic floor coverings are bonded with relatively permanently elastic dispersion adhesives using the wet adhesive method.

If the pressure-sensitive adhesive method is used and the drying time of a pressure-sensitive adhesive is maximised, greater deformation is to be expected than with the wet bonding method due to the low compression of the adhesive bead under point, static or dynamic loads.

In the wet bonding method, the floor covering is laid into the still very fresh adhesive bed after the adhesive has been applied and pressed down. This creates an evenly thin adhesive film that deforms only slightly under point loads.

The choice of adhesive also influences its deformation behaviour and that of the floor covering. If the floor covering is expected to be subjected to dynamic or static loads, hard-setting adhesives should be preferred to soft adhesives wherever possible.

Dispersion adhesives usually require a setting/curing time of approx. 48-72 hours. Subjecting the floor to stress too early can also lead to increased residual indentations.

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### Dynamic loads

Deformation of the surface can occur, especially in public areas such as hospitals. For example, heavy transport equipment and hospital beds/carts, taking into account the additional weight of materials and patients, place a considerable static and dynamic load on the resilient floor covering. In this case, particular attention should be paid to suitable castors.

### Static loads

Loads that remain on the surface for long periods of time, e.g. furniture or stoves, can also cause irreversible indentations. It should be noted that many solids begin to flow when subjected to sufficiently high mechanical stress, without the need for external heating. This phenomenon is called 'cold flow'. Increasing the contact area by using load distribution plates can prevent increased residual indentations and 'cold flow'.

Kind regards,

Your team at Windmöller GmbH