

Hygrothermal Movement

Wood is a natural material which can be expected to behave according to its natural characteristics. Variations in temperature and environmental conditions can in certain applications cause 'Hygrothermal movement' in any solid timber core door blank. Hygrothermal movement can develop when the temperature varies from the internal face of the door set through to the external face. For example, the internal face of a door set installed in a property with high temperatures and a nearby heat source may contract and shrink whilst the external face of the same door set is subjected to a much lower temperature. This influence and the effect of the differences between internal and external environmental conditions can lead to differential movement, the result being Hygrothermal movement.

The extent and parameters will depend on the differences in the internal and external environmental conditions, the elevation, direction and exposure of the external door set and how the door has been stored, handled and fitted. Evidence of this movement can appear in any door leaf and is not restricted to any one particular product or brand. Hygrothermal movement is usually at its greatest or more likely to occur when new door sets have been installed in the autumn or winter months when the differences between internal and external conditions and temperatures are at their greatest. Please note that doors which show signs of such movement during these winter months commonly 'equalise' and return to their original state when the milder, warmer weather returns and when ambient temperatures and internal and external conditions are similar.

Hygrothermal movement is usually greatest during the first winter followed by a period of equalisation during the first summer season and that any evidence of any movement during the second winter is minimal.

I trust this provides some background into why any timber joinery product may be subject to movement when subject to differing temperature from face to face or at different times of the year, with most movement being experienced within the first 9 to 12 months as the timber product stabilises, seasons and conditions to its environment. An important point to remember is that most of these joinery products "equalise" and return to their original form as the ambient temperatures between the interior and exterior draw closer in the spring/summer months and the product "seasons".

Having said this, our tolerance is 5mm - this measurement as mentioned previously, is taken so that the straight edge is touching both top and bottom of the door slab and the central position i.e the gap at the widest point is measured. We ask that a period of 2 weeks is given for the slab to settle down to its original state (or equalise, as above).

One thing we would always recommend is that the hooks are always engaged into the frame when the door is closed, whether this be the pulling up of the handle (Avantis Multipoint Lock) or winding out the hooks (Winkhaus key only lock), as this helps the door stay as stable and rigid as possible.