

Bonding quality of multi-layer parquet

Topic

Multi-layer parquet represent a high quality completion of floor construction inside the room. Elements of parquet floorings are layered on timber materials, mineral-bound panels or floor screed as well as on wood-based underlayer.

Changes in humidity and temperature result swelling and shrinking of parquet elements. Therefore the bonding is accumulating stresses. In case of floor heating the bonding is loaded by high stresses. Loaded by these stresses inappropriate systems show delamination and/or distortions at the interface between top layer and the substrate.

In the framework of a research project, a test method for the characterization of bonding quality of multi-layer parquet was carved out by IHD and HFA. The test method is specified in the standard IHD-W 482. The length of delaminated glue-line will be measured after climatic pre-conditioning. The bonding quality can be evaluated by comparison to suggested limit values.

Delamination tests acc. to IHD-W 482

The EPH offers delamination test for evaluation of bonding quality.

Verification of minimum product quality for use on floor-heating systems and for identification of bonding failure	100 hours storage at drying oven, afterwards measurement of the length of delaminated glue-line on the cross-section
Comparative studies for evaluation of different quality levels of bonding	6 hours immersion in cold water, 18 hours storage at drying oven, afterwards measurement of the length of delaminated glue-line on the cross-section



Delaminated specimen, after storage in drying oven



Detected glue-failure, after alternating conditioning

Further test methods of bonding quality of multi-layer parquet

The EPH offers further tests for evaluation of bonding quality:

- Delamination tests acc. to American (ANSI) und Japanese Standards (JAS)
- Splitting test after pre-conditioning and immersion in water
- Pull-off test in accordance with DIN EN 311
- Microscopic analysis of the glue-line

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