

TMT Colour Shading Stability

Long-term exposure to light or sun radiation and weathering has an impact on all wood species, including TMT, resulting in changes in their colour and their surface structure. In other words: untreated natural timber and also thermally modified timber is not resistant to light without any further protection.

TMT in Outdoor Applications

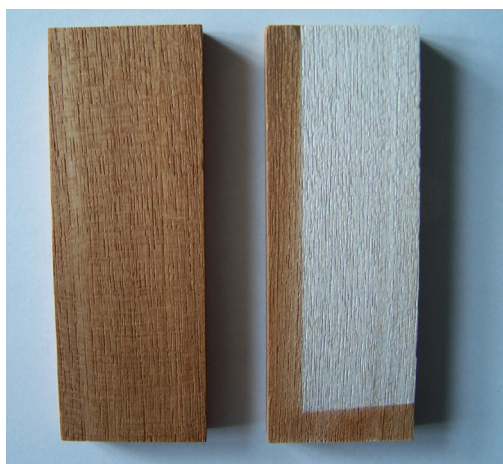
The greying of wood is due to the degradation and washout of lignin close to the surface. The white cellulose remains and causes silvery-grey appearance. The course and extent of greying are mainly dependent on exposure (directly or indirectly weathered or exposed to solar radiation). Greying does not deteriorated the technical function of weathered timber products. Thermal modification does increase durability towards wood-discolouring fungi (mould, blue stain), nonetheless wood-discolouring fungi (mould or blue-stain fungi) or algae may deposit on surfaces in unfavourable conditions (at high moisture levels, shading) and due to the fact that TMT does not contain any biocidal substances. But the timber is not attacked thereby.

Remedial measures: If greying is to be reduced or at least delayed, appropriate surface protection has to be applied and maintained at regular intervals. For that purpose, several products recommendable for TMT can be purchased, e.g., lacquers, varnishes, oils and waxes. Coating systems consisting of priming, intermediate and final coating offer the best protection against greying, whereas opaque coats or dark-pigmented varnishes are to be given preference. But also simple, unpigmented oils or waxes provide a certain degree of protection. Blue-stain, mould or algae infestation can effectively be prevented by applying biocides only.

TMT in Indoor Applications

Also when used in interior applications, TMT changes its colour under the impact of light. While light-coloured timber darkens due to light-induced oxidation reactions, daylight results in the bleaching of dark timber or TMT. The darker the TMT, the stronger the TMT will brighten and the more apparent it will be.

Remedial measures: The surface of TMT flooring can be protected from bleaching with appropriate means. However, light stabilisers that have been developed for native, especially light-coloured timbers are only of limited benefit to TMT. Special agents that provide for long-term stability of the original colour of TMT are still undergoing testing. In combination with suitable coating, those additives can also be applied to outdoor uses.



Native teak before and after 500 h of exposure in the xenon test device



TMT ash 200 before and after 500 h of exposure in the xenon test device

Bibliography

- Außenwandbekleidungen aus Holz und Holzwerkstoffen. Fachregeln des Zimmererhandwerks 01, Issue of August 2006, amended June 2011, Bund Deutscher Zimmermeister BDZ [eds.] <http://www.holzbau-deutschland.de>
- Schimmelbefall an Holz und Holzwerkstoffen. IHD Fact Sheet, issued 2005

Institut fuer Holztechnologie
gemeinnuetzige GmbH

Zellescher Weg 24
01217 Dresden · Germany

+49 351 4662 0
+49 351 4662 211
info@ihd-dresden.de
www.ihd-dresden.com

Contact persons



Timber Modification
Dr. rer. silv.
Wolfram Scheiding
+49 351 4662 280
wolfram.scheiding@ihd-dresden.de



Surfaces, Testing
Dr.-Ing.
Rico Emmler
+49 351 4662 268
rico.emmler@eph-dresden.de



Light Protection
Prof. Dr. rer. nat. habil.
Mario Beyer
+49 351 4662 347
mario.beyer@ihd-dresden.de