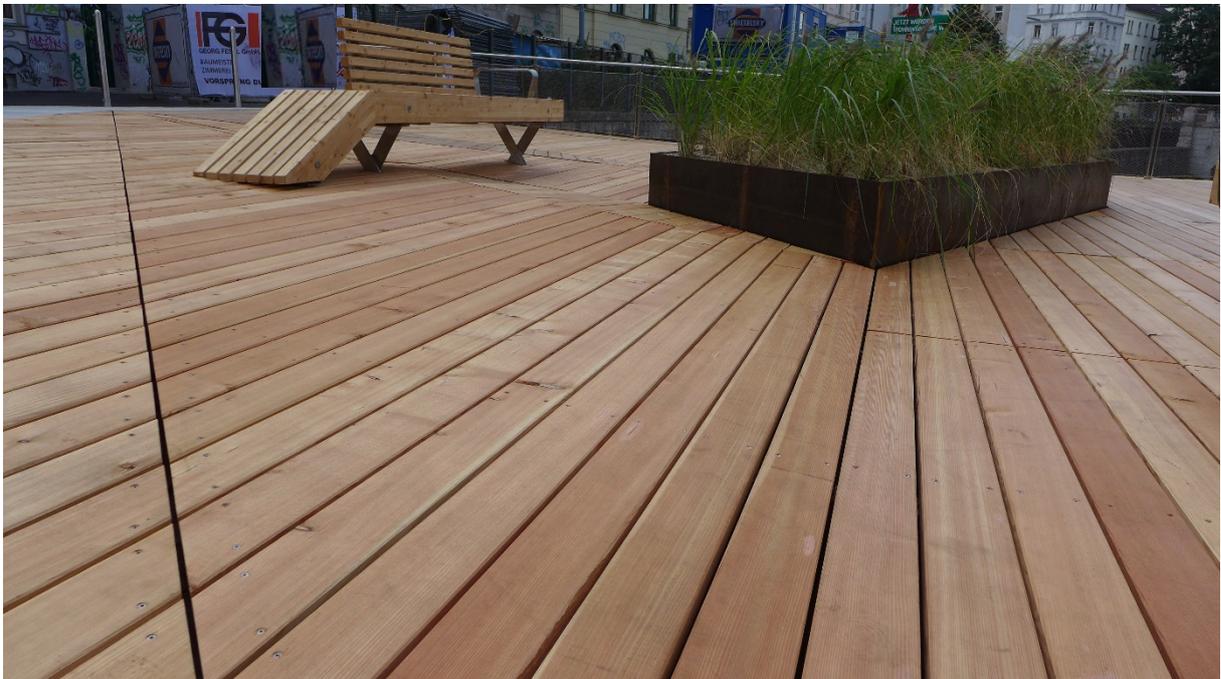


Brief description of research project

EURODECK

Quality and assessment programme for wooden decking



1 Background, objectives, benefit

Background

Wooden decking for terrace, balcony, platforms, bridges, footbridges etc. is one of the most important outdoor applications of solid wood, but at the same time, as well one of the most challenging, since the products are heavily exposed.

Despite of increasing sales of decking materials, the percentage of decking from solid wood is decreasing, particularly because of discolourations, cracks, distortions and rot, effected by the exposure to weather and wetness. In result, the demand on "inert" materials, like WPC/SPC, is increasing, although these materials have specific problems as well.

With wood decking, various properties and quality criteria are to be considered, but in many cases, appropriate methods for testing an assessment are missing. Although producers and wood trade provide (partially) good information, but this doesn't allow an objective approach.

For quite some time now, the need was expressed repeatedly for a normative basis or generally valid technical rules for solid wood decking. An equivalent as for the standard for wood flooring and parquet EN 14342 is not existing for decking. On the other hand, e.g. for WPC decking profiles, a European standard (EN 15534-4), a European assessment document (EAD-190005-00-0402), and a national quality mark (*Gütesiegel der deutschen Qualitätsgemeinschaft Holzwerkstoffe e.V.*), are available.

Objectives

- Compilation of relevant quality criteria and of application related requirements
- Compilation of available testing and assessment methods, filling of gaps
- Comparison with existing technical regulations
- Compilation of user guidelines and requirement catalogue for users
- Development of bases for standardisation work

Benefit

- Support for producers, architects, woodworkers, trade and customers
- Increase of product quality and safety
- Increase of consumer confidence
- Increase of demand and sales
- Reduction of rate of complaints and claims and its costs
- Strengthen the market position of enterprises
- Basis for a possible European product standard "wood decking"

2 Working programme

The working programme includes the following topics:

- Compilation and evaluation of available test and assessment methods (literature research with consideration of available standards),
- Conception of missing methods → "filling the gaps",
- Compilation of a comprehensive catalogue on quality criteria, including requirements, test methods, classifications, and further useful information.

The project will be dealing with the following thematic areas:

Thematic area A: wood quality, wood moisture

Property	Content, explanations
Wood quality *	focussed on hardwoods and tropical, impregnated, and modified timber
Wood moisture*	installation moisture as element of quality; focussed on modified timber
Literature research without explicit topic processing, but elaboration of advice for users on further topics, like anti-slip properties, splinter formation, corrosiveness, thermal sensation effects	

Thematic area B: Strength – mounting & fixing

Property	Content, explanations
Bearing capacity, strength**	Investigation of missing data for calculations
impact resistance**	Definition of test method, considering available technical rules
holding strength of fasteners **	Further development of force model "board-substructure", assessment of fasteners (screw withdrawal resistance, grooves/tongues, mounting and fixing systems)
Literature research without explicit topic processing, but elaboration of advice for users on further topics, like gluing quality, surface hardness	

Thematic area C: Durability

Property	Content, explanations
Susceptibility wood-disfiguring fungi *	check of available requirements, assessment schemes, and classifications if necessary, adapting of existing or suggesting of new methods
Susceptibility against algae, lichen, moss*	Development of method, considering of existing technical rules
Leaching of extractives **	Development of method, considering of existing technical rules assessment of tendency to discolour
Ability to drain precipitation water*	draining of precipitation water (gaps, inclination); conception of test method, considering of existing technical rules
Literature research without explicit topic processing, but elaboration of advice for users on further topics, like durability against wood-decay fungi, cleanability	

Thematic area D: Reaction to fire

Property	Content, explanations
Reaction to fire**	Definition of method to be used, assessment of reaction to fire classes, classifications without proof

*) responsibly operated by Institut für Holztechnologie Dresden (IHD)

***) responsibly operated by Holzforschung Austria (HFA)

3 Expected results

Main result will be a catalogue with quality criteria for terrace and balcony decking from solid wood, comprising all important and relevant properties, inclusive existing requirements, test methods, and classifications. Herewith, the first time a comprehensive quality and assessment programme is available, particularly for the German speaking region of Europe (DACH).

The results will be disseminated during the project directly with the enterprises which are member of the user committee (UC), as well as by publications in technical journals and lectures.

4 Project partners

Scientific partners are the Institut für Holztechnologie Dresden (IHD) and Holzforschung Austria (HFA). Both institutions are possessing a long-term expertise with testing and assessment of decking.

Industry partners are manufacturers and suppliers, woodworking companies, timber trade and relevant associations. In accordance with the CORNET programme, small and medium-sized enterprises (SMEs) are sufficiently represented for both regions (Germany and Austria). Companies and associations participate in the project through their specific know-how, through the provision of material, samples and sample areas as required as well as financial contributions. To ensure a sufficient exchange of information and a discussion platform for UC members, at least 3 project meetings will be organised.

Within the project, concepts and a product selection of the economic partners (meaningful variant matrix) can be examined. Through the active participation, the orientation and focal points will be agreed upon together with the project partners in the user committee. The results are available to the participating companies right from the start, giving them a valuable information advantage.

The participation or support of interested companies and associations in the user committee is welcome and will be expressed in the form of a letter of intent (LoI). A template for this will be provided by e-mail.

5 Duration, funding

The research project, which was applied for in 2019 and has since been approved, runs from May 2020 to April 2022 and is funded by the EU research programme CORNET (www.cornet.online). The necessary co-financing is provided by financial contributions from the economic partners.

Contact

Institut für Holztechnologie Dresden (IHD)
Dr. Wolfram Scheiding
wolfram.scheiding@ihd-dresden.de
phone: +49 351 4662-280

Holzforschung Austria (HFA)
DI Claudia Koch
c.koch@holzforschung.at
phone: +43 1798 2623-64