

Quality Mark TMT



Certification Programme

1 Principles

Objective of product certification is to create confidence at consumers and users that

- certified products are manufactured under regularly conditions and
- certified products fulfil defined requirements.

This is confirmed by EPH as an independent and competent third party. The certification body of EPH is accredited according to EN ISO/IEC 17065; its test laboratory is accredited according to EN ISO/IEC 17025. The certification programme "Quality Mark TMT" is not included in the scope of accreditation, but the rules are oriented towards the principles of EN ISO/IEC 17067.

The certification programme "Quality Mark TMT" is a specific certification system for thermally modified timber (TMT) according to definition given in chapter 2. The owner of the programme is Entwicklungs- und Prüflabor Holztechnologie GmbH, Zellescher Weg 24, 01217 Dresden, Germany (hereinafter EPH). This certification programme refers to applicants within the certification procedure, for certified enterprises (producers) as well as for all persons which perform tasks within this certification programme.

For the procedures of inspection, testing, certification and surveillance, the General Terms and Conditions of EPH as well as the Regulations on using marks of EPH in their valid versions apply.

2 Object

Object of the certification is thermally modified timber, which is manufactured by exposing the timber to elevated temperatures between 160 °C und 230 °C and a reduced oxygen availability. Objective of modification is to improve specific wood properties permanently and throughout (see definition of CEN/TS 15679). These are e.g. increased biological durability (resistance against wood-decay fungi), increased dimensional stability, reduced swelling and shrinkage, and darker colour shades. The technical abbreviation TMT, derived from thermally modified timber, is internationally accepted and used. TMT is no protected trademark.

The "Quality Mark TMT" refers to a specific TMT, determined by process type, production facility, wood species, grading (if applicable), and treatment intensity or treatment level.

The applicant is usually a manufacturer of thermally modified timber. In a single case, this can be an enterprise without an own production plant, which appears on the market as a producer and works with a sub-contracting producer. The certification body will decide whether a certification is possible. Between applicant and sub-contractor, provisions on treatment and quality must be agreed.

The certification is carried out for products which are manufactured within a regular production.

3 Scope

The "Quality Mark TMT" is issued for products, which are intended for application in exterior use (for definitions of use classes, see EN 335).

4 Procedure

The certification includes three general elements:

1. Inspection of production facilities and of factory production control (remote audit possible)
2. Initial type testing on important product/material properties
3. Surveillance testing within the 3rd year after issue of certificate

The certification procedure is performed by the certification body of EPH and includes following steps:

- Compiling of quotation, basing on application of producer and currently valid certification programme
- Placing of order (confirmed quotation as contractual basis for certification and surveillance)
- Initial inspection of production site and sampling for initial type test (ITT)
- Initial type tests (ITT) according to valid standards in the accredited test laboratory of EPH
- Compiling of report on inspection, recommendation for certification decision
- Decision by the certification body on certification granting of, based on results of inspection and ITT
- Provision of surveillance report, test certificate and – with positive results – of certification deed.

The certification is valid for a period of 5 years. Within the 3rd year after issuing, a mid-term surveillance must be carried out, including a reduced scope of tests. Considering the surveillance report, the certification body will decide on perpetuation of certification. To continue with a further certification period, the initial type testing must be done again. If all requirements are fulfilled, the certificate will be issued for another 5 years.

5 Initial inspection

By initial inspection of the production facilities is to be verified, whether the producer fulfils the basic requirements on a factory production control (FPC), which are specified in a checklist (provided in advance). FPC shall include rules to all important process steps, preferably in kind of a quality manual. In principle, the inspection is performed either by a staff member or a representative of EPH. In justified exceptional cases, it is possible to carry out the inspection via a remote audit and a document check. The reason for this must be stated in the report.

6 Initial type testing (ITT)

6.1 General

ITT is performed with samples from 3 production (kiln) batches. Accordingly, the results are documented separately. If requirements were not fulfilled, a repeat test (to be charged) can be made. Information about test methods and results is provided in the surveillance report and the test certificate (deed). This contains summarised information about test methods and results on one page.

6.2 Sampling and material need

Sampling is performed usually in frame of the initial inspection. The material (usually board sections) must be provided by the producer free of charge in a sufficient amount. Following requirements apply:

- random sampling of boards from 3 production (kiln) batches from original stack,
- marking of each single board to allocate it to the kiln batch
- specification of the batches (batch control number, production date, treatment parameters etc.),
- documentation of sampling (blank form to be used optionally is provided by EPH),

From each production (kiln) batch, **10 boards** are required (total 30 boards) with

- minimum thickness of 25 mm for planed and 30 mm for rough-sawn boards,
- minimum length of 1200 mm. Additionally, 4 boards from untreated material of the same wood species must be provided as reference material for ASE test

6.3 Wood quality

Procedure: Wood quality is assessed at the boards before cutting of specimens.

- Requirements:
- at least 90 % of samples (boards) are free from pith
 - at least 80 % of samples are free from inner cracks

6.4 Physical properties

- Procedure:
- Raw density in climate 20 °C / 65 % RH (DIN 52182)
 - Equilibrium moisture content in climate 20 °C / 65 % RH (EN 13183-1)
 - Moisture exclusion efficiency, MEE¹
 - Maximum swelling ratio α_{max} radial and tangential (DIN 52184)
 - Anti-swelling efficiency, ASE² (IHD working instruction AA-20-38)
 - Modulus of elasticity (MOE) and modulus of rupture (MOR) by 4-point bending test (EN 408); testing preferably flatwise, with the original profile
 - Impact bending strength (DIN 52189-1)

Results: Results are given by arithmetic mean \bar{x} , coefficient of variation, and 5 % quantile

Notes: Physical properties are determined from at least 3 specimens per batch, whereby each specimen originates from a separate board.
The results of the bending tests refer to the gross section, i.e. including grooves or chamfers; thus, the values reflect product and not material properties.

6.5 Biological durability

The durability against wood-decay fungi is an important property in outdoor application. TMT products are usually used up to use class 3.2 (EN 335), i.e. out of ground, but exposed to prolonged wetting. According to EN 350, the biological durability is to be tested against wood-decaying basidiomycete fungi.

Procedure: EN 113-2 with three test fungi; leaching exposure prior to biological test acc. to EN 84.

Requirements: For exterior application, the biological durability must generally be at least of durability class DC 3 "moderately durable". Required DC for the use classes are:

use class (UC) acc. to EN 335	minimum biological durability class (DC)
UC 3.1	DC 3 "moderately durable"
UC 3.2	DC 2 "durable"

6.6 Further properties to be tested optionally

Depending on possible requirements and conditions of use, several properties could be of interest and could be determined additionally (see table below).

¹ expresses the relative reduction of EMC due to modification; calculated as percentage ratio of the EMC of the modified wood compared to the untreated wood in standard climate 20/65

² expresses the relative reduction of swelling due to modification; calculated as percentage ration of the maximum swelling ratio α_{max} of the modified wood compared to the untreated wood after 14 d water storage.

The additional tests are included in the report and the test certificate (deed).

Additional property, test method	Possible reason for testing
durability against soft rotting micro-fungi CEN/TS 15083-2 (in future EN 807-2)	estimate performance under longer exposure to wetness, dust accumulation
surface (Brinell) hardness, EN 1534	use in public areas
reaction to fire EN 13501-1, EN ISO 11925-2, EN ISO 9239-1	as comparison to untreated wood; use in public areas, balcony decking, façades
anti-slip properties CEN/TS 15676, DIN 51130, DIN 51131	use in public areas or due to requirements on slipperiness (slippery fastness)
screw withdrawal resistance, EN 320	use as substructure, in window scantlings

7 Surveillance testing

7.1 General

The initial certification is valid for six years, after which recertification is required. In the third year of the certification period, a surveillance procedure with a reduced testing program must be conducted.

The producer receives a surveillance report with the results and the decision about confirmation of certification. If requirements were not fulfilled, a repeat test (to be charged) can be made. If requirements are not fulfilled again, the certification will be cancelled and the external surveillance stopped, until new test results are available.

7.2 Sampling and material need

Sampling and shipping of samples to EPH is to be done by the client. The sampling of a representative selection of pieces is performed analogously to the ITT sampling, but from 2 production (kiln) batches. From each production (kiln) batch, **10 boards** are required (total 20 boards) with

- minimum thickness of 25 mm for planed and 30 mm for rough-sawn boards,
- minimum length of 1200 mm.

7.3 Wood quality

Procedure: Wood quality is assessed at the boards before cutting of specimens.

Requirements: analogue to initial type test

7.4 Physical properties

Procedure:

- Raw density in climate 20/65
- Equilibrium moisture content in climate 20 °C / 65 % RH (EN 13183-1)
- Moisture exclusion efficiency, MEE
- Maximum swelling ratio α_{max} radial and tangential (DIN 52184); ASE

Requirements: The mean values (based on single values from all batches) of density and maximum swelling shall not be lower than 20 % of the corresponding ITT values.

8 Trademarks and use of trademarks

The trademarks are to be used according to the provisions of EPH (related document). The trademarks include a word/figurative mark and a seal.

The word-figurative mark "TMT" (annex 1 fig. 1) is registered as EU community trademark per 30.01.2006 under no. 004879433; owned by EPH. The seal (annex 1 fig. 2) contains a word/figurative mark and the web address of the certification body.

9 Obligations of the producer

On demand of third parties (customers, legal authorities), the producer must provide basic information (wood species incl. code acc. to EN 13556, treatment level) and test results (e.g. surveillance report, test certificate, data sheet, technical leaflet).

The certification body shall be informed immediately by the certificate user, if

- process or plant of production are changed substantially,
- complaints are associated with certification,
- the producer has information about violations of third parties against use of trademarks or misuse of trademarks, seals, certificates, or other certification documents.

10 Validation of certification

The certification and the permission to use the trademarks are valid over a period of 5 years, under the condition of a successful surveillance tests within the 3rd year after issue of certificate. If the requirements were not fulfilled, the certification is cancelled. The producer is no further permitted to use trademarks or certificates or to advertise with it.

After 5 years or in case of substantial modifications of process or plant, the initial type testing must be performed again.

11 Impartiality, confidentiality, access to information

The certification body is working neutral and impartial. Dealing with confidential information is regulated in the General Terms and Conditions of EPH. According to EN ISO/IEC 17065, the certification body must provide information on request, which concern the certification programme, including procedures of evaluation, rules and procedures of granting and maintenance of certification, extension or limitation of the scope of certification, suspension, withdrawal or refusal of certification.

12 Supplementary provisions

The certification body decides in the individual case, whether test reports from third laboratories are accepted. The laboratories must be accredited for the relevant test method, and must provide documents, which contain information about competence of test laboratory and about test procedure. The additional costs are at the expense of the applicant.

Complaints and objections against certification procedure or certification decision must be submitted in written form to the certification body or headquarter of EPH. Complaints and objections are dealt according to the procedures of the quality management system of EPH.

It is not possible for the applicant to take legal action to get the certification.

13 Implementation

Dresden, 12.06.2025

Compiled:


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Dr. Wolfram Scheiding
Surveillance Body

Dresden, 17.06.2025

Reviewed:


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Dresden, 17/06.2025

Approved:


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Annexes

Annex 1 Word/figurative mark and seal

Annex 2 Relevant standards

Related documents

Check list for factory inspection

Sampling form

General terms and conditions of EPH for services in the currently valid version

Regulations on using marks of EPH in the currently valid version

Annex 1 Word/figurative mark and seal

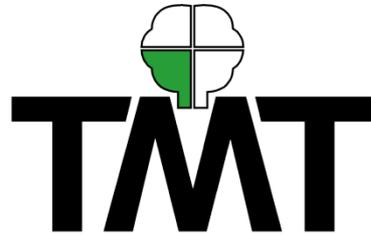


Abb. 1: Word/figurative mark "TMT"



Abb. 2: Seal "Quality Mark TMT" category "exterior"

Annex 2: Relevant standards

AA-20-38:2021 Determination of linear swelling ratio and anti-swelling efficiency (ASE). Working instruction, Institute of Wood Technology Dresden

EN 84:2020, Wood preservatives. Accelerated ageing of treated wood prior to biological testing. Leaching procedure

EN 113-2:2021, Durability of wood and wood-based products - Test method against wood destroying basidiomycetes - Part 2: Assessment of inherent or enhanced durability

EN 320:2011, Particleboards and fibreboards - Determination of resistance to axial withdrawal of screws

EN 335:2013, Durability of wood and wood-based products – Use classes: definitions, application to solid wood and wood-based products

EN 350:2016, Durability of wood and wood-based products – Testing and classification of the durability to biological agents of wood and wood-based materials

EN 408:2012 Timber structures - Structural timber and glued laminated timber – Determination of some physical and mechanical properties

EN 1534:2020, Wood flooring and parquet - Determination of resistance to indentation - Test method

EN ISO 9239-1:2021, Reaction to fire tests for floorings - Part 1: Determination of the burning behaviour using a radiant heat source (ISO 9239-1:2010)

EN ISO 11925-2:2020, Reaction to fire tests - Ignitability of products subjected to direct impingement of flame - Part 2: Single-flame source test (ISO 11925-2:2020)

EN 13183-1:2002 Moisture content of a piece of sawn timber – Part 1: Determination by oven dry method

EN 13501-1:2019, Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests; German version EN 13501-1:2018

EN 13556:2003, Round and sawn timber – Nomenclature of timbers used in Europe

CEN/TS 15083-2:2005, Determination of the natural durability of solid wood against wood-destroying fungi, test methods. Part 2: Soft rotting micro-fungi (in future EN 807-2)

CEN/TS 15676:2008, Wood flooring - Slip resistance - Pendulum test

CEN/TS 15679:2008, Thermal Modified Timber - Definitions and characteristics

EN ISO/IEC 17025:2018, Conformity assessment. General requirements for the competence of testing and calibration laboratories

EN ISO/IEC 17065:2013, Conformity assessment - Requirements for bodies certifying products, processes and services

EN ISO/IEC 17067:2013, Conformity assessment - Fundamentals of product certification and guidelines for product certification schemes (ISO/IEC 17067:2013); German and English version

DIN 51130:2014, Testing of floor coverings – Determination of the anti-slip property – Workrooms and fields of activities with slip danger – Walking method - Ramp test

DIN 51131:2014, Testing of floor coverings – Determination of the anti-slip property – Method for measurement of the sliding friction coefficient

DIN 52184:1979, Testing of wood. Determination of swelling and shrinkage

DIN 52189-1:1981, Testing of wood. Determination of impact bending strength