

# Directors' report

## Facts about Norsk Treteknisk Institutt

Norwegian Institute of Wood Technology (Treteknisk) is a private research association for the sawmills and the timber industry in Norway. Our 125 member companies represent sawmilling, woodworking, glulam, roof truss and timber frame industry, as well as related industry.

The institute has 32 employees. Our main tasks are research and development projects, quality control, quality documentation, laboratory tests and diffusion of knowledge from R&D work for the Norwegian timber industry.

## Vision statement

Treteknisk shall be the preferred R&D and knowledge partner for production and use of wood in Norway.

## Business idea

The Institute shall contribute to profitability of the member companies by using updated knowledge about wood, its properties, processing methods and usage. The means to succeed in this, are R&D by objectives, distribution of knowledge, consulting and quality documentation.

## Financing

The total turnover for 2017 was 45.4 MNOK. The membership fee amounted to 10 % of the turnover. Foreign sales accounted for 22 % of all assignments and projects.

## Quality documentation and certification

### Testing laboratory and inspection body

Treteknisk plays an important role as testing laboratory, certification and inspection body. The demand for these kinds of services are increasing, due to authorities' requirements for documentation, and the market demand for documented product properties. The Institute has invested in competence, laboratory equipment, well working quality system and formal status to be an internationally recognized testing and inspection body for the timber industry.

Since 1994, the laboratories have been accredited for mechanical testing after EN ISO/IEC 17025, and from 2015 accredited after EN ISO/IEC 17065 as well. The Institute is appointed by the Ministry of Trade and Industry as notified body for attestation of conformity with the Construction Products Regulation (CPR). This applies to structural timber products and wood-based panels. This means that the Institute can perform testing, inspection and certification as basis for CE-marking of building products.

### Certification

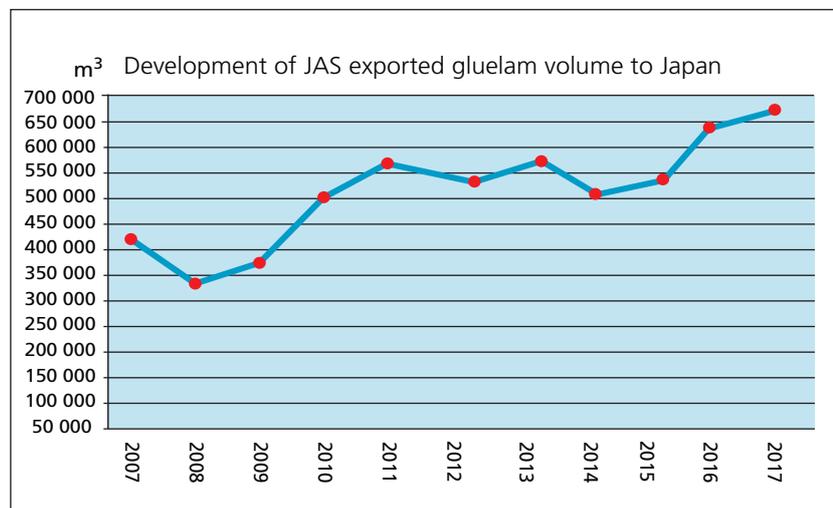
Treteknisk has for several years worked with product certification, for JAS (Japanese Agricultural Standardisation) and CE-marking. Treteknisk is also appointed as a notified body for PEFC certification. In addition, the Institute do FSC revisions in cooperation with Orbicon for certifications through Soil Associations.

### PEFC

PEFC documents that a product originates from certified wood, verified by a third body. Both EUTR (EU's timber regulation) and BREEAM-NOR requires such certifications.

### Japan – JAS-certification

The Institute has gained a leading position in Europe concerning JAS-certification of glulam. 18 glulam companies, 2 sawmills and 1 CLT company have now their JAS-certification through Treteknisk. The volume of glulam



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exported to Japan from companies certified through Tretelnisk amounted to 672 000 m<sup>3</sup> in 2017.

### Quality control schemes

Tretelnisk is for the time being inspection body and/or testing laboratory for the following quality control schemes, certification and approval bodies:

- Norwegian Strength Grading Inspection Scheme.
- Norwegian Control Scheme for Preservative Treated Wood.
- Norwegian Glulam Control for end jointed materials for load bearing constructions.
- Fire Control Scheme for the Wood Working Industry.
- Control Scheme for Norwegian log houses.
- Technical Approval of Building Elements (SINTEF Byggforsk).
- Inspection of painted wood cladding.
- JAS (Japanese Agricultural Standards).
- CE-marking of glulam.
- CE-marking of structural timber.
- CE-marking of fingerjointed structural timber.
- CE-marking of particleboards.
- CE-marking of roof trusses.
- CE-marking of fire protected claddings, panels and boards.

## International R&D and cooperation

### InnovaWood

InnovaWood is a European association of organisations working as R&D and education providers. The organisation represents the research and education society cooperating with industry, e.g. in connection with the technology platform.

### COST

Tretelnisk is participating in several COST-actions.

### CEN

Tretelnisk is involved in several CEN committees. The European standards from CEN are of great importance for the competitiveness of the industry.

### WoodWisdom - Net CreoSub

Creosote oil is one of the oldest and most effective wood preservatives, mainly used in heavy-duty applications outdoors such as railway sleepers, utility poles, and timber bridges. Due to its toxicity, creosote is highly controversial within the European Commission and its approval for future use is questionable. The overall objective of the project CreoSub was to develop alternative protection technology that shows a better health and safety profile than creosote. During the project, the efficacies of the new protection systems against wood destroying fungi was investigated, impregnation processes was optimized, and physical and chemical properties of wood treated with the systems was examined. The project also included an environmental assessment (LCA-methodology) of railway sleepers, utility poles, and timber bridge elements made of wood treated with the new protection systems. CreoSub was funded under the 4th Call for joint European research projects within the WoodWisdom-Net Research Programme. The consortium coordinated by Tretelnisk comprises partners from Norway, Germany, UK and Finland. The project duration was from 2014 to 2017.

### Abracadabra H2020

There is a big investment gap in the deep renovation sector for buildings due to the fact that high investments are required up front and that they are generally characterized by an excessively high degree of risk and long payback periods. The project focus on creating substantial increase of real estate value through architectural transformation by add-ons to existing buildings and energy upgrades. By reducing the payback period of the energy upgrades, key investors' confidence will be strengthened and a market acceleration towards nZEB buildings can be achieved. The project received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 696126.

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## Tall wood buildings

Treteknisk is involved in Nordic network research on tall buildings in wood. Focus areas are statics, sound acoustics and fire resistance. There is also cluster to cluster cooperation on the same topics.

## Nordic Network Indoor Air and Health

There is established a research network on indoor air and health regarding use of wood as interior.

## Selected National R&D

### Use of wood in buildings to reduce CO<sub>2</sub>-footprint

Treteknisk has several projects for documentation of the reduced CO<sub>2</sub>-footprint by use of wood in buildings. Wood used indoor has a cooling effect during the day and a heating effect during the night due to uptake and release of humidity. Wood thereby regulates both the temperature and the humidity in the indoor air. This is especially effective in food stores with a lot of aggregates and coolants. These effects must be balanced with the ventilation system, which seldom is constructed or dimensioned from a wood perspective.

### Process control of surface treated cladding – KonTre

Products from the wood industry are increasingly industrialized. Surface treated cladding is such a solution. Treteknisk has lately been involved in several projects in this area. The Institute is now running a project funded by the national research council to develop a top modern surface treatment plant using new and advanced process technology to ensure quality and production efficiency.

### AutoMoistData

Regional Research Funds (RFF) in Norway is a funding mechanism for regional research. The RFF of the Innlandet Region has funded a project for smart measurements for process control at sawmills using x-rays. The goal is to develop new automatic methods for measuring wood moisture and smart utilisation of the data for a



Wood used in food stores.

more efficient biomass combustion and wood drying process.

### Glulam with higher capacity

To be able to have wood buildings with better exploitation of the area, it is necessary to develop beams with higher e-modulus. In that way it is possible to have large light openings and lower heights of the joists.

### “Arena Skog” wood cluster

Treteknisk is project manager of the Building part of the cluster. The goal is to have efficient and sound solutions for wood buildings up to 6 stories.

### Prospects

There is an increasing interest for using wood as a building material, and Treteknisk is optimistic regarding the project portfolio for 2018.