LETT-TAK

LETT-TAK SYSTEMER
PRESENTATION
01 / 2015

THE WORLD'S STRONGEST STRUCTURE OF ITS KIND

Macro-roof for all kinds of buildings; Arenas, Commercial Buildings, Schools and Housing. Prosjects: Telenor Arena, Oslo Lufthavn Gardermoen, Friends Arena, Partille Arena, Vikinghallen and more.

EUROPE`S MOST TESTED ROOF ELEMENT

REDUCED OVERALL PRODUCTIONS COST

30 YEARS EXPERIENCE

LETT-TAK - THE WORLD'S STRONGEST STRUCTURE OF ITS KIND

IN RELATION TO ITS OWN WEIGHT, INSTALLED HEIGHT AND SIMPLY-SUPPORTED SPAN, LETT-TAK HAS A GREATER LOADING CAPACITY THAN ANY OTHER KNOWN PRE-ENGINEERED LIGHT STRUCTURE.

Standard Lett-Tak sections are designed for snow loading to the Norwegian building standards and for normal roofing loads from light fittings, services etc. For larger supplementary loads, the sections are dimensioned to suit.

Lett-Tak is a Norwegian and Swedish innovation. The designer Jen-Fredrik Larssen Dr. Eng., explains the idea behind it as follows: «In contrast to traditional roofing, Lett-Tak is built up of a number of interactive materials, each chosen for its ability to meet specific functional and strength requirements.

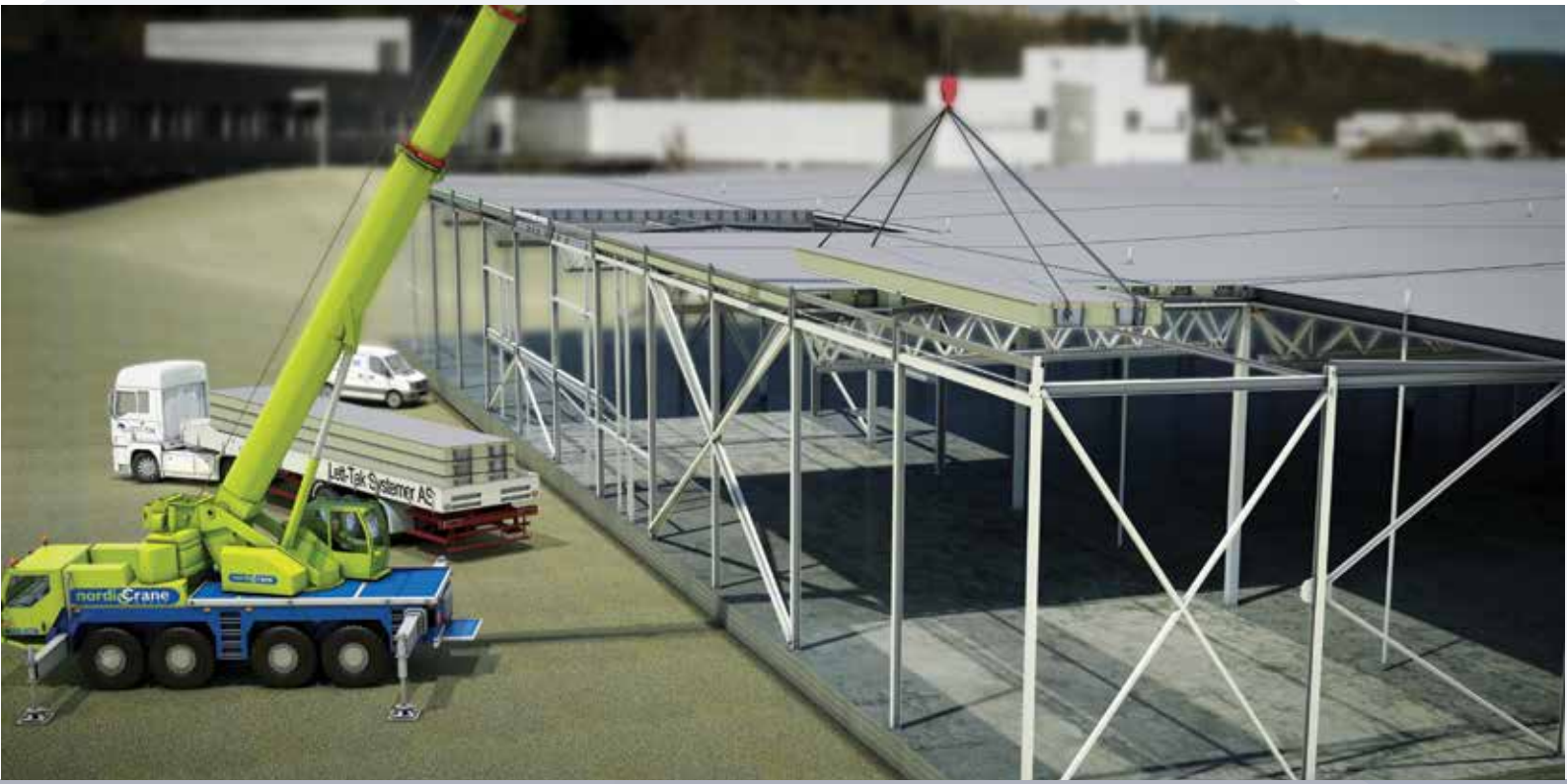
The profiled steel is there chiefly to take up tensile stress, because that is what it is «good at». In compression, however, the slender steel section is less effective.

The more rigid plywood upper panel has far better compressive resistance. It also act as a thermal barrier, which means that the space between the members can be filled with insulation, so making full use of the installed height of the section. In addition, the plywood makes an ideal fixing surface for roofing felt. Thanks to the all-directional rigidly of the structure, it functions in the same way as a solid, rigid panel.

No additional wind anchorage is necessary.»

The result is a roof section that is lightweight, strong, heat conserving and inexpensive. The long clear span (up to 18 m span x 2,4 m width) leads to considerable savings in frame costs; the low weight, to cheaper foundations; and the size of the section, to low constructional costs. What's more, the low U-value (0,08 W/m^{2}K) means a minimum of maintenance expenditure.

All in all, the Lett-Tak system affords significant savings in overall costs.



REDUCED OVERALL CONSTRUCTION COSTS

LOW PRODUCTION COSTS

The Lett-Tak roof section is a relatively cost effective product. By full utilization of the interactive nature of materials used in combination, the cost of the actual materials has been significantly reduced. For instance, both the plywood and steel members have dual purpose.

LOW FRAMING AND FOUNDATION COSTS

By virtue of the system`s favorable strength to weight ratio, the clear span can be much as 18 meters, thereby materially reducing building frame costs. With a lightweight roof and a lightened building frame, the cost of foundation will also be lower. This can lead to significant overall savings, compared with other roof constructions. Lett-Tak is just as easy to lay on a steel or concrete frame as wooden one.

LOW INSTALLATION COSTS

Being pre-engineered, the sections can be laid quickly and economically- up to 1 200m2 per day. You avoid having piles of roofing materials cluttering up the site, mountains of insulations filler that must be protected from the weather and so on. The Lett-Tak roof sections arrive by lorry and will be installed directly from the transportation too the roof. Therefore there are no storage problems whatsoever. The sections are fastened with cartridge screws/steel nails directly in to the flanges of steel framing/mounting plate concrete frame/ wooden frame. Length-wise, the sections are then secured with nails to the length going beam directly under the plywood.

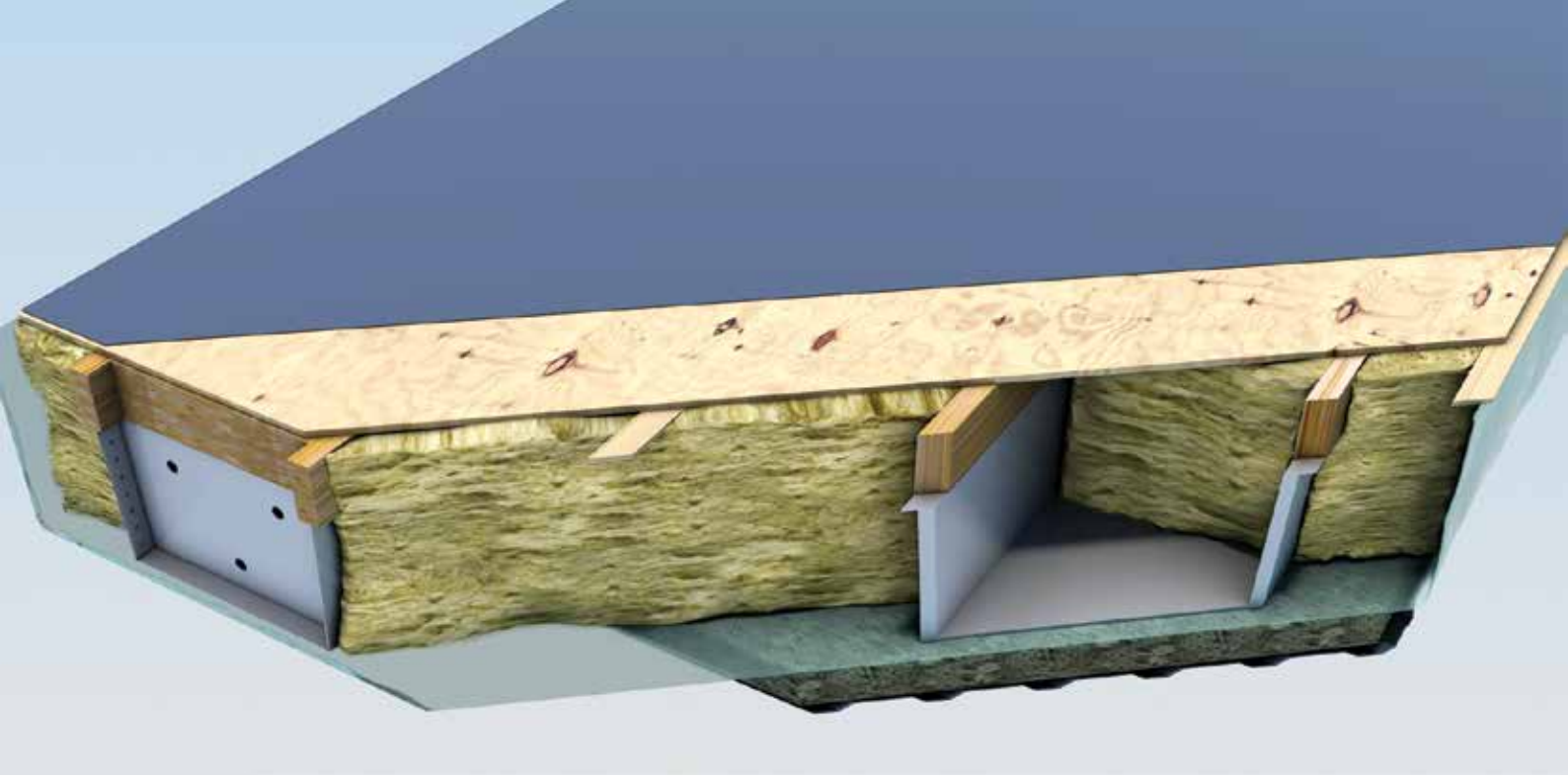
There are no packing materials to be got rid of afterword's. The main function of the roof elements in a diaphragm is normally the transfer of shear forces, in Lett-Tak, this function is held by the plywood plate. The surrounding structure (i.e. support beams and edge beams) acts as compression and tensions flanges in the diaphragm.

ARENAS

COMMERCIAL BUILDINGS

SCHOOLS

HOUSING



LETT-TAK: THE WORLD'S STRONGEST STRUCTURE OF ITS KIND

THE COMPLETE SYSTEM LIGHTWEIGHT, LONG-SPAN, PREFABRICATED ROOFING SYSTEM FOR ALL KINDS OF BUILDINGS; ARENAS, COMMERCIAL BUILDINGS, SCHOOLS AND HOUSING.

PLYWOOD

The plywood serves to take up compressive stresses. It is 15-19 mm thick and of P30 grade. It is scarf jointed, nailed and boned with the long-life guaranteed adhesive, Recorcinol.

STEEL PROFILES

The U-profile are galvanized and mainly serve to take up tensile forces in the structure. They are high tensile steel. The galvanized sheeting between the profiles serves only to contain the insulation and may be perforated to improve sound absorption.

INSULATION

The insulation is inserted in and between the profiles. To meet the energy-conservation regulations, Lett-Tak sections have a computer-calculated transmittance coefficient (U) of 0,09 W/m2K. Sections with higher U-value can be supplied at a lower price.

BONDED JOINTS

Modern bonding technology as used extensively in aircraft manufacture lies behind the polyurethane-based bonding of the joints. It ensures a total interaction between the materials. A far greater bond strength is achieved than will ever be needed to meet roof loadings.

ROOF COVERING

Lett-Tak Systemer AS works in close co-operation with a technical organization, which is responsible for compiling recommendations on roof construction integrity. Standard covering are either of double-layer felt with pitches down to 1 in 100 or PVC-sheeting for all pitches down to a flat roof. The plywood decking makes an ideal underlay for fixing covering material.

WHY CHOOSE LETT-TAK?

MORE THAN 30 YEARS EXPERIENCE, AND EUROPE`S MOST TESTED ROOF ELEMENT.

WHY CHOOSE LETT-TAK?

- Long clear span, 18,0 m with load 4,0 Kn/m^2
- High insulation value, down to 0,08W/m^2C.
- Mounting op to 1200 m^2/day, complete roof.
- Low weight. 50kg/m^2
- Saving frame costs up to 50 %.
- Fire resistance class REI 90.
- We always assemble the element with our own employed and certificated mounting specialists.
- More than 30 years experience, and Europe`s most tested roof element.

Spenn: maks 18m spenn
Termisk: u-verdi fra 0,08W/m^2 K
Brannkrav: REI 90
Byggetid: opp til 1200 m^2 ferdig tak/dag
Produksjonskapasitet: 300 000 m^2/år

ABOUT LETT-TAK AS

Lett-Tak development in Larvik, Norway 1981.
The market is based in Scandinavia with a total of about 300 000 m^2 /Year. We employ 160 people, and all production sight is in Larvik, Norway with about 22 000 m^2. We have a solid economy, and have not a year with loss since we started the company over 30 years ago.

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