1/3



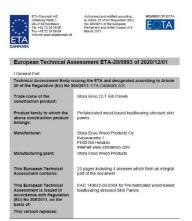


New features and updates in Calculatis 2022

The new release of Calculatis by Stora Enso

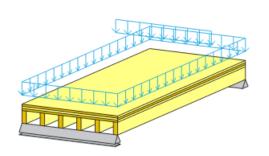
Since the last update of Calculatis by Stora Enso, some new features were added. Additionally, some adaptations and improvements were made.

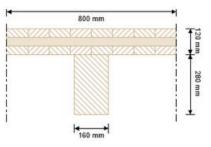
CLT Rib panel module with new ETA



In 2020, a new ETA for *CLT rib panel by Stora Enso* was published. Compared to the first edition from 2017, this new technical assessment contains many changes that make *CLT rib panel by Stora Enso* more efficient. Some of these changes relate to features, that are not reflected in Calculatis, as they are not relevant to the structural design itself. All other changes that are essential to the structural design have been picked up in the new release of Calculatis. Therefore a new module was created, that relates to <u>ETA-20/0893</u>. One of the most important changes relates to fire design. As the designer can apply sections that were tested in large scale fire tests, the efficiency in fire design will be top notch. The design module that relates to the superseded ETA-17/0911 is to be found in the section of superseded modules in Calculatis. Calculations that have been made, applying the old ETA are to be found here. All new *CLT rib panel by Stora Enso* calculations from now on should be done in the new module.

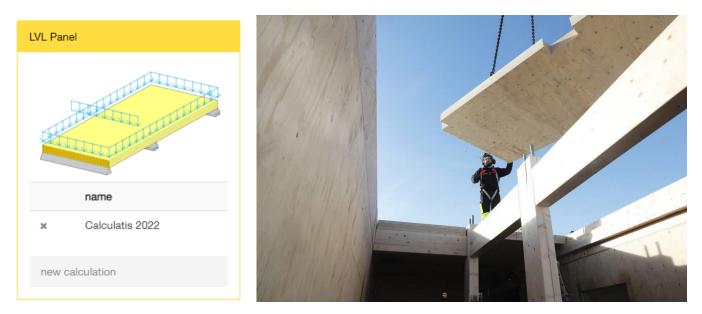






THE RENEWABLE MATERIALS COMPANY

LVL module and LVL G material addition



The new update includes a totally new module for LVL panels for out of plane loading (e.g. a simple roof or floor panel). If a floor/roof shall be designed using either one LVL panel or a reglued LVL panel, the design can be done using this new module. The design of such panels is very similar to the one for CLT panels, looking at the input and workflow. However, the design is customized for LVL panels and LVL G, making the design more efficient and intuitive to engineers.

The materials LVL and LVL G are now also available in the modules of Timber Column and Wooden Beam.

| system data | | |
|-----------------|---|-----|
| *name | LVL G | |
| *inclination | 0 | [°] |
| material | LVL G-S flatwise | ~ |
| *section height | LVL LVL G-S flatwise LVL G-X flatwise | |
| panel | LVL S flatwise LVL X flatwise | |

| system data | | |
|---------------------|--|-----|
| *name | - | |
| material | C24 spruce | ~ |
| *section width | solid timber & glulam C16 softwood C18 softwood | * |
| *section height | C20 softwood C22 softwood | |
| *column height | C24 spruce C27 softwood C30 softwood GL 20h | - 1 |
| *support top Y | GL 22h GL 22h GL 24h GL 26h | - 1 |
| *support bottom Y | GL 28h GL 30h GL 32h LVL | |
| Note for PDF output | LVL G-S edgewise LVL G-S flatwise LVL G-X edgewise LVL G-X flatwise | |

Floor and Roof module for the United States

| ES intern | | |
|---|---|--|
| CC-ES Evaluation Report | ESR-4381 Issued October 2020 Revised October 20, 2020 | |
| | This report is subject to renewal October 2021. | |
| www.icc-es.org (800) 423-6587 (562) 689-0543 | A Subsidiary of the International Code Council® | |
| INTSION: 06 00 00—WOOD, PLASTICS AND COMPOSITES lector: 06 17 19—Cross-laminated Timber | length of up to 52.5 feet (15 melens). The CLT by Silos Enco panels are assurbationed by face-bending each sites of animation upon a formaticelystic-tee, popureture laserst doubtent allowine, company with Berlins 32.2 in this evolution export. The stypes are ablored in a prost based by an encore. The stypes are ablored in a prost bending within a low of UCI panels may be up bended by attern P(q) upon an instance of forest and OF response on gains. Elsere to Table 1 for the layope of UCI to State. Engine 1 and State. Types 1 double panel layope | |
| REPORT HOLDER: | | |
| STORA ENSO WOOD PRODUCTS OY LTD. | | |
| VALUATION SUBJECT: | | |
| OLT BY STORA ENSO | section structure of the CLT by Stora Enso panels. | |
| # EVALUATION SCOPE | 3.2 Material 3.2.1 Wood Laminations. Wood laminations used it | |
| Compliance with the following codes and standard: 2018, 2015, 2012 and 2009 International Building Code [®] (IDC) | manufacturing GLT by Stora Error panels must be saw lambers having the melerence design values for 2P1 Salard Structural sawn lambar provided in Table 4.6 o AWG Natassal Design Specifications? (NDS) for Wass Construction; and complying with the report holder, are must waith discussification in minimum careful | |
| 2018, 2015, 2012 and 2009 International Residential Code[®] (IRC) | | |
| AN314PA PRG 520-2519 Standard for Performance Rated Cross-Laminated Timber | gravity is 0.42. | |
| For compliance with codes adopted by Los Angeles Department of Building and Safety (LADBS), see ESR-4391 LABC and LARC Supplement | 3.2.2 Adhesives: Adhesive used to face-bond layers o CLT by Stora Enos panels and adhesive used for finge parts of used lawrandom are on-ecorepanel polyurethan based, exterior type structural adhesives, conforming t AMMANA 1965 323-2018 and the conduct seedbackness i | |
| Property evaluated: | the approved quality documentation | |
| Smithurel Fire Resistance | 4.0 DESIGN AND INSTALLATION 4.1 General | |
| e uses | 4.1 General: Design and installation of CLT by Stora Errss panels mur | |
| CT by Blow Erics 5 a cross-terminate inher (CT p and for iso as accordent in form a ratio for just and it. To be a set of the set o | In it executance with this work does reput, the applicable only provides and the manufacture's published outg and installation instructions. The manufacture's despine installation instructions must be available at the published at times during installation. The requirements specified in allowable arrays design in according and the 2016 UB allowable arrays design in according and 2016 UB allowable arrays design in according and 2016 UB allowable arrays design in according and allowable arrays and the source and the 2016 NDS, as applicable to CLT by 2016 Date parels. | |
| 3.1 General: | 4.2 Reference Design Values: | |
| The GLT by Store Ence panels described in this evaluation report complying with requirements noted in Section 2003.14 of the 2018 and 2016 BC. for allowable stress design (ASD) in accentance with 2018 IBC Section 2021.111 (2015.2012 and 2008 IBC Section 2028.1211), The GLT by Store Ence panels are plane timber building comparents which are made of all least free interinations of the interination. | Tables 2 and 3 provide reference design values for bendle capacities and in-plane share capacities of CET by Silos Enco panels, respectively. The reference design values in Tables 2 and 3 are intended for adouable stress desig (ASD) and must be adjusted in accordance with Section 4 of this evaluation report. | |
| component when are made or a water true compared on Sam and glaned softwood lamber bounds. Adjacent isminations are glued at an angle of 50°. The panels can be produced with a width up to 9.00 feet (2.95 meters) and a | 4.3 Adjustment Factors: The reference design values in Tables 2 through 2 must be adjusted using the adjustment factors specified in Table | |

Since October 2020 Stora Enso holds two technical certifications for its CLT through the International Code Council ICC, based on PRG 320: <u>ESR-4381</u> and <u>ESL-1170</u>. As the design procedure according to regulations in the USA are fundamentally different compared to Europe, a new design module was created for CLT floor and roof design in the USA. The module uses imperial dimensions and applies US standards, such as the National Design Specifications NDS from the American Wood Council AWC and the International Building Code IBC.

Connection design



Calculatis 2022 is now supporting material from SPAX International and angles from Simpson Strong-Tie. These were newly added. All connector brands that were available so far are still available.

THE RENEWABLE MATERIALS COMPANY