

EUROPEAN TECHNICAL APPROVAL OF TIMBER FRAME AND LOG BUILDING KITS

Provisions for CE-marking of timber frame and log building kits are European Technical Approval ETA and assessment of conformity according to Method 1. Basis for issuing ETAs are given in ETA Guidelines ETAG 007 "Timber frame building kits" and ETAG 012 "Log building kits". VTT has been notified by Finnish Ministry of Environment to be an Approval body and member of EOTA. Methods for conformity assessment are described in the ETAGs and they are assessed, applied and agreed on as a part of the ETA issuing process.

PREPARING AND HANDLING OF THE ETA

INTRODUCTORY TASKS

VTT prepares the ETA on assignment. The customer may be a company or a group of companies. Manufacturer's co-operation is needed during the process.

The assignment is given by an ETA request form, that can be required from VTT.

The assignment comprises two phases. The first phase is advisory. VTT makes an industry visit and inspects according to this guidance the product, design, manufacturing and factory production control documents. The inspection is reported and the need of completing the material (written as well as drawings) is pointed out and advice is given regarding the documentation needed for the ETA evaluation.

The manufacturer shall document the following issues:

1. Product
2. Materials and components
3. Verification of the properties
4. Design
5. Instructions
6. Factory production control

The documentation is confidential. It is however recommended that the documentation has from beginning such a part prepared that can be transferred to the public ETA (drawings, list of materials). The manufacturer is responsible for the correctness of the material.

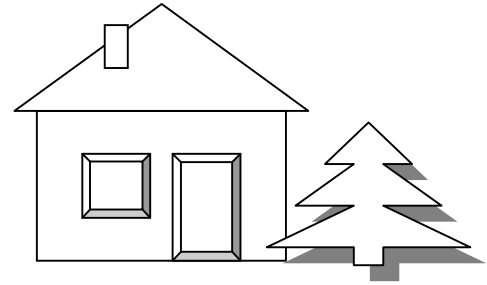
1. Product

ETA refers to a building kit that has the minimum content as stated in chapter 2 in the ETAG. The manufacturer makes the choice for the scope of the ETA.

The product is presented by a series of drawings showing all the features essential for the assessment (building physics, load bearing construction principle etc.). Different options shall be presented sufficiently separated. E.g. timber cladding and external masonry shall be presented separately, but all roofing materials may not need to be presented separately.

2. Materials and components

The materials and components are presented according to the intended scope of ETA. Those technical properties of the materials are listed that have influence on the performance of the product. If the material is covered by an approval or harmonized specification the information thereof is given in this part of documentation.



Such materials and components are included that are delivered or that are necessary for the evaluation of the ETA even if not delivered. Such materials that can be chosen deliberately shall be omitted (e.g. finishing).

The list shall include information about how the materials and components are defined and identified to be such that they correspond to the basis of the ETA.

3. Verification of the performance

This part presents the methods how the performances of the product and the parts, components and materials of it have been stated and the resulting performances. The main rule is that the values given in the ETA shall be based on EN standards.

VTT may help the manufacturer doing the testing or calculations regarding the technical performance of the product. Some performances can only be proven by testing, as acoustical performances.

All essential performances shall not necessary be verified. The no performance determined option (NPD) is possible if there is no requirement on the place of the use for that characteristics. A detailed list is found in the ETAGs.

ER 1 Eurocodes Guidance Paper L is followed. All the three methods are possible to be used. If resistance values will be given in the ETA, they shall be based on the Eurocodes system.

ER 2 Resistance to fire class is given for the constructions presented. Reaction to fire class is given for the materials. External performance for roofing is given. (Test results and classification.)

ER 3 Assessment of water vapor permeability and watertightness provides for that the manufacturer tells in which climatic conditions the kit is intended to be used. For windows and doors, air permeability and watertightness as well as resistance to wind load is proven by testing.

For the purposes of ETA, dangerous substances shall be covered by a written declaration of the manufacturer.

ER 4 Slipperiness of the flooring may be considered as NPD (no performance determined) until a test method has been settled. Impact resistance is needed for walls, floors and roof.

ER 5 Test results are presented (airborne sound insulation, impact sound insulation, sound absorption.)

ER 6 Calculations of U or R-values are presented. Air permeability may be assessed on the basis of the drawings in part 1 or test results regarding completed works. Thermal inertia is not needed for all countries.

Durability is assessed on the basis of the drawings in part 1 and the materials list. Deflections are considered in the context of ER1. Settling of log buildings shall be considered.

4. Design

The design of a complete building kit is presented by an example house plan. The example is chosen so that it contains many special features and has been built in reality. The building permit drawings and possible element or log drawings are presented; performances and construction calculations are presented.

In case of several construction options, (e.g. nail plate construction or roof rafters) all shall be covered.

5. Instructions

Manufacturers instructions for packaging, transport and storage, as well as erection and service manuals are presented.

EVALUATION OF THE DOCUMENTATION AND DRAFTING OF THE ETA.

VTT reviews the documentation sent by the manufacturer to state if it is sufficient.

Then the performance of the product is assessed according to ETAG 007 or 012. The applicant completes the documentation, when needed, according to the instructions of VTT (additional tests needed, drawings clarified etc.). On the basis of the assessment and the factory inspection an evaluation report and ETA-draft are drafted. These are confidential but they are sent to all approval bodies (members of EOTA) for comments. The commenting period is 2 months. After this, the comments are handled and the ETA is finalised.

In general the process may take some months-half a year to be finished.

An ETA is valid 5 years at time, if there are no changes regarding the product or the production methods. For the renewal of the ETA for an additionally period of 5 years, VTT makes an inspection at the factory and a reassessment of the product, when necessary.

ATTESTATION OF CONFORMITY

The attestation of conformity class of the product is AC1. Thus, the manufacturer needs the services of a notified body after the ETA has been issued, before he can start CE-marking the product. The notified body prepares the certificate of conformity (a product certificate) on the basis of an initial inspection of the product and the factory production control.

The basis for CE-marking is the factory production control that shall be presented in writing already as a part of ETA documentation.

CONTACT PERSONS AT VTT

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VTT confirms yearly the rates and the prices of services. The tasks of an approval assignment are debited at a fixed rate of 125 €/h. The estimated costs are for manufacturing places in Finland:

1. Industrial visit (with a report), 1600 €+ travel expenses.
2. Advising in the preparation of the documentation, 1700 €
3. Testing, e.g. windows or acoustical, will be offered separately.
4. Preparing of the ETA until the first draft will be sent, 10 000-16 000 €
5. Finalising the ETA, 2500 €
6. Translations will be offered separately

The prices are rough estimates and the final invoicing strongly depends on the product (building kit) to be assessed. For some standard services as testing, fixed prices may be given on request. VAT is added when applicable.

For manufacturing places other than Finland, the travel expenses and additional time needed for traveling are taken into account.

If the ETA cannot be issued for reasons not depending on VTT, the costs caused for VTT will be debited in any case.