# REPORT

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|---|---|---|
| Contract no: | 509/2017/02 – BB | 03/03/2017<br>MAI/PIK |
| *Customer:* | KLH Massivholz GmbH<br>Katsch an der Mur 202<br>8842 Teufenbach-Katsch | |
| *Subject:* | Extension of the classification report (contract no. 1386/2011/01) on the fire resistance of a non-load carrying cross-laminated timber element "KLH 95 / 5 s DL NSI" | |
| *Date of contract:* | 13/02/2017 (letter) | |
| *Date of sample delivery:* | -- | |
| *Date/Period of service:* | February 2017 | |
| *Period of validity:* | March 2017 to March 2022 | |
| *Pages:* | 5 | |
| *Enclosures:* | -- | |

# 1. Contract

By way of the letter dated 13/02/2017, the company KLH Massivholz GmbH, AT-8842 8842 Teufenbach-Katsch, charged Holzforschung Austria with the extension of the classification report (contract no. 1386/2011/01) on the fire resistance according to ÖNORM EN 13501-2 of a non-load carrying cross-laminated timber wall. The structures were not altered as compared to the classified structures.

# 2. Details of the classified components

## 2.1. General information

The cross-laminated timber wall is defined as type-classified component. Its function is to resist the fire with a view to thermal insulation and room closure. Fasteners and gaps between fasteners according to approval or respective standard.

## 2.2. Wall structure

Fire zone

Cross-laminated timber element KLH 95 / 5 s DL NSI 95 mm (19 19 19 19 19)

Side turned away from the fire

An outlet with empty conduit was installed on the side exposed to the fire.

# 3. Test reports/Reports on the extended area of application and test result for verification of the classification

The following test and classification report is used as a basis for the classification of the structure described in section 2.2.:

**ÖNORM EN 13501-2** Fire classification of construction products and building elements

### 3.1. Test report MA 39 – VFA 2011-1749.01

The test report on which this classification report is based was prepared by the test centre MA 39 accredited for that purpose, Magistrate of the City of Vienna, magistrate department 39 - VFA laboratory for structural engineering, test, monitoring and certification centre of the City of Vienna, with report number MA 39 – VFA 2011-1749.01 "Test report on the fire resistance of a multi-layer wall element made of cross-laminated timber referred to as "KLH 5s 95 DL" according to ÖNORM EN 1364-1 and ÖNORM EN 1363-1.

3.1.1. Set-up:

Fire zone

Cross-laminated timber element KLH 95 / 5 s DL NSI 95 mm (19 19 19 19 19)
Cross-laminated timber wall consisting of 2 elements

Overall dimensions: 3000 mm x 3000 mm x 95 mm (w x h x h)
Side turned away from the fire

3.1.2. Test result

**Table 1: Results**

| | |
|---|---|
| **Test duration [min]** | 76 |
| **Room closure** | 76 |
| Time until ignition of the cotton ball [min] | -- |
| Time until development of constant flames [min] | -- |
| Time until failure of the column criterion [min] | -- |
| **Thermal insulation** | 76 |
| Time, mean temperature increase on the side not exposed to flames exceeds 140 °C [min] | -- |
| Time, maximum temperature increase on the side not exposed t flames exceeds 180 °C [min] | -- |

**Table 2: Total result**

| Test method | Parameter | Test result |
|---|---|---|
| | | (min) |
| ÖNORM EN 1365 - 1 | E<br>I | 76<br>76 |

Based on the tests in the scope of the research project "Fundamental studies on the fire resistance of timber frame components", the following can be stated in coordination with the Austrian fire test centres MA 39 test, monitoring and certification centre of the City of Vienna VFA – laboratory for structural engineering and the IBS Institute for Fire Protection and Safety Research:

- Minimum equal fire resistance with additional façade structures on the side facing away from the fire

# 4. Classification and area of application

The classification was carried out in compliance with section 7.3.2. of ÖNORM EN 13501-2.

## 4.1. Classification

The component as described in section 2.2. is classified as follows with reference to its fire resistance characteristics:

**Table 3: Classification of the component**

| Cladding | structure [mm] | Report number | Classification |
|---|---|---|---|
| --- | 95 (19 19 19 19 19) | VFA 2011-1749.01 | EI 60 |

## 4.2. Direct area of application

The results of the fire test can be applied directly to similar structures on which one or several of the changes described below are carried out and on which the design continues to fulfil the requirements of the respective design standard with a view to their stiffness and strength:

- Reduction of the height of the wall
- Increase in wall thickness
- Increase in thickness of the associated materials
- Reduction of the measures of length of boards and panels, but not of the thickness
- Reduction of the gaps between fasteners
- Reduction of the gaps between the fastening points

This classification is valid for the structure described in section 2.2.

# 5. Validity

The validity of this classification report is fixed to five years from March 2017 to March 2022.

**This document is no type approval or certification of the product.**

HOLZFORSCHUNG AUSTRIA

Dipl.-HTL-Ing.in Irmgard Matzinger
*Authorised signatory*

Dr. Bernd Nusser
*Head of Unit*

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It is not allowed to use included accreditation marks for own purposes.

| Accreditation mark | Type of accreditation | Method |
|---|---|---|
| Akkreditierung Austria 0055 ISO/IEC 17020 | Inspection | • ÖNORM EN 13501-2 |

The results and statements given in this document relate only to the tested materials, the present information and the state of the art at the time of investigation.
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