HOLZ FORSCHUNG AUSTRIA

CLASSIFICATION REPORT

Contract No.	1386/2011/2 – BB	12/1/2012 MAI/STS
Customer	KLH Massivholz GmbH AT-8842 Katsch/Mur 202	
Subject	Classification report about the fire resistance of a load-bearing cross-laminated timber element "KLH 95 / 5 s DL" clad with a layer of plasterboard fire protection	
Date of contract	25/7/2011 (letter)	
Date of sample delivery	--	
Date/Period of testing	September 2011 to January 2012	
Period of validity	January 2012 to January 2017	
Pages	5	
Enclosures	--	

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1. Contract

With the letter of 25/7/2011, the company KLH Massivholz GmbH, AT-8842 Katsch/ Mur, Austria, assigned Holzforschung Austria with the classification of the fire resistance of a load-bearing cross-laminated timber wall according to ÖNORM EN 13501-2.

2. Details on the structural elements classified

2.1. General

The load-bearing cross-laminated timber wall is defined as a type-classified structural element. Its function consists in resisting fire in respect of load-bearing function, thermal insulation, separating function, and resistance against mechanical load. Fasteners and distances of fasteners according to approval or respective standard.

2.2. Wall structure

Fire compartment

Plasterboard fire protection (according to ÖNORM B 3410, DIN 18180; Type DF according to ÖNORM EN 520) 15 mm

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

Unexposed side

On the exposed side, a wall socket with ducts was installed.

The cladding of the KLH plates with 15 mm plasterboard fire protection must be attached according to the processing guidelines of the company KLH Massivholz GmbH (deviating from the common specifications of the plasterboard manufacturers).

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

The following test and classification report is taken as the basis for the classification of the structures described in Section 2.2.:

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

3.1. Test report MA 39 – VFA 2011-1748.01

The test report this classification report is based on was generated by the Test Authority MA 39, Magistrate of the City of Vienna, Magistrate Division 39 - VFA Laboratories for Structural Engineering, Test, Monitoring and Certification Authority of the City of Vienna accredited for that, with report number MA 39 – VFA 2011-1748.01 "Test report about the fire resistance of a load-bearing multi-layer wall element made of cross-laminated timber with the designation "KLH 5s 95 DL", unilaterally planked with a layer of plasterboard fire protection" according to ÖNORM EN 1365-1 and ÖNORM EN 1363-1.

3.1.1. Structure:

Fire compartment

Plasterboard fire protection (according to ÖNORM B 3410, DIN 18180; Type DF according to ÖNORM EN 520) 15 mm
Cross-laminated timber element KLH 95 / 5 s DL 95 mm (19 19 19 19 19)

Cross-laminated timber wall consisting of 2 elements
Overall dimensions: 3000 mm x 3000 mm x 110 mm (W x H x D)
Unexposed side

3.1.2. Test result

Table 1: Load conditions

Fire scenario:	Standard temperature-time curve
Load applied: Two-point load on steel girder	35 kN/running metres

Table 2: Results

Test duration [min]	90
Load-bearing function	90
Time until collapse [min]	--
Deformation criteria exceeded after [min]	--
Compression or speed of compression, resp. – limit value exceeded after [min]	--
Separating function	90
Time until ignition of the cotton-wool pad [min]	--
Time until occurrence of permanent flames [min]	--
Time until failure of the gap criterion [min]	--
Thermal insulation	90
Time, mean temperature increase on the unexposed side exceeds 140 °C [min]	--
Time, maximum temperature increase on the unexposed side exceeds 180 °C [min]	--

Table 3: Total result

Test method	Parameter	Test result
		(min)
ÖNORM EN 1365 - 1	R	90
	E	90
	I	90

The employees of Holzforschung Austria were present during the tests, and are thus authorised according to accreditation to use the test reports as the basis for the classification reports.

Due to the tests within the scope of the research project "Fundamental investigations on the fire resistance of timber frame elements", in coordination with the Austrian Fire Test Authorities MA 39 Test, Monitoring and Certification Authority of the City of Vienna VFA – Laboratories for Structural Engineering and the IBS Institute for Fire Protection Engineering and Safety Research, the following can be determined:

- at least equal fire resistance upon using a fibrous plaster panel according to ÖNORM EN 15283-2 and ETZ based on CUAP 05.04/04, instead of a plasterboard (plasterboard fire protection) according to ÖNORM B 3410, DIN 18180; Type DF according to ÖNORM EN 520
- at least equal fire resistance for additional facade structures on the unexposed side

4. Classification and scope of application

The classification was undertaken in accordance with Section 7.3.2. of ÖNORM EN 13501-2.

4.1. Classification

The structural element as described under Point 2.2. is classified as follows in respect of its fire resistance behaviour:

Table 4: Classification of the structural elements

Cladding	Construction [mm]	Load [kN/r.m.]	Report number	Classification
15 mm plasterboard fire protection	95 (19 19 19 19 19)	35	VFA 2011-1748.01	REI 90

4.2. Direct scope of application

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

5. Validity

The validity of this classification report is determined to five years from January 2012 to January 2017.

This document does not represent any type approval or certification of the product.

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HOLZFORSCHUNG AUSTRIA Akkreditierte Prüf- u. Überwachungsstelle A PI der Ö. G. H.

Dipl.-HTL-Ing. I. Matzinger
Authorised signatory and technical consultant

DI Dr. M. Teibinger
Head of unit

In case of dispute the original German version prevails. This translation is for information purposes only.

Accredited as test and monitoring authority by BMWFJ (Federal Ministry of Economics, Family and Youth) and by OIB (Austrian Institute of Construction Engineering) with notification OIB-190-004/98-008.

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. Publication in excerpts is only permitted with the written approval of Holzforschung Austria.