

CLASSIFICATION REPORT

<i>Contract No.</i>	126/2012 - BB	06/02/2012 MAI/STS
<i>Customer</i>	KLH Massivholz GmbH AT-8842 Katsch/Mur 202	
<i>Subject</i>	Extension of validity of the classification report 2005/2008/2 dated 08/06/2009 for the fire resistance of a load-bearing cross-laminated timber ceiling	
<i>Date of contract</i>	27/01/2012 (e-mail)	
<i>Date of sample delivery</i>	--	
<i>Date/Period of handling</i>	February 2012	
<i>Period of validity</i>	February 2012 to February 2017	
<i>Pages</i>	5	
<i>Enclosures</i>	1	

1. Contract

The company KLH Massivholz GmbH, AT-8842 Katsch/Mur, Austria, assigned Holz-forschung Austria with the classification of the fire resistance of load-bearing structural members (ceiling) according to ÖNORM EN 13501-2.

2. Description of the structural element to be 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. Structure of the load-bearing cross-laminated timber ceiling

The structure of the cross-laminated timber ceiling consists of five layers, wherein the height of the three longitudinal layers is 34 mm and that of the two transverse layers 22 mm, see technical drawing in Enclosure 1. The test specimen is comprised of two elements, which are connected at the joints (M6 x 140 mm) by means of a rebate and a screw connection at a distance of 200 mm. The dimensions of the elements are:

- 5000 mm in length and 1750 mm in width
- 5000 mm in length and 1250 mm in width

The transverse edges of the individual boards and the transverse layers were glued together with Purbond HB 360. According to self-assessment of the company KLH, the amount of glue applied is 160 g/m².

3. Test report and test result the classification is based on

The function of the structural member consists in resisting fire in respect of load-bearing function, thermal insulation, and separating function.
During the test, the employees of Holzforschung Austria were present.

3.1. Test report of the load-bearing multi-layer wood ceiling

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 the report number MA 39 – VFA 2009-0078.01 "Test report about the fire resistance of a load-bearing multi-layer wood ceiling (test of 24/11/2008)" according to ÖNORM EN 1365-2, report date 26/1/2009.

The structure of the cross-laminated timber ceiling tested is described in Section 3.1.

3.1.1. Wall-structure

Fire compartment

Cross-laminated timber element KLH 146 mm / 5s (34 22 34 22 34)

Cross-laminated timber ceiling consisting of two elements
Overall dimensions: 3000 mm x 3000 mm x 146 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:	5 kN/m ²

Table 2 Results for the multi-layer wood ceiling

Test duration [min]	90
Load-bearing function	90
Time until collapse [min]	--
Deformation criteria 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 - 2	R	90
	E	90
	I	90

4. Classification and scope of application

The classification was undertaken in accordance with Section 7.3.2. of ÖNORM EN 13501-2 and according to the internal Work Instruction B 212 of Holzforchung Austria.

4.1. Classification

The structural element as described under Point 3.1 is classified as follows in respect of its fire resistance behaviour:

REI 90

Max. load: 5 kN/m²

Max. span: 4200 mm

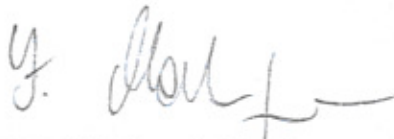
4.2. Direct scope of application

This classification is valid for the product described under Point 3. The respective dimensions as well as the specification of the load-bearing cross-laminated timber ceiling are described in this test report.

The direct scope of application of the test results can be retrieved from Point 8 of the Test Report MA 39 – VFA 2009-0078.01.

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

HOLZFORSCHUNG AUSTRIA



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



DI Dr. M. Teibinger
Head of Unit

1 enclosure

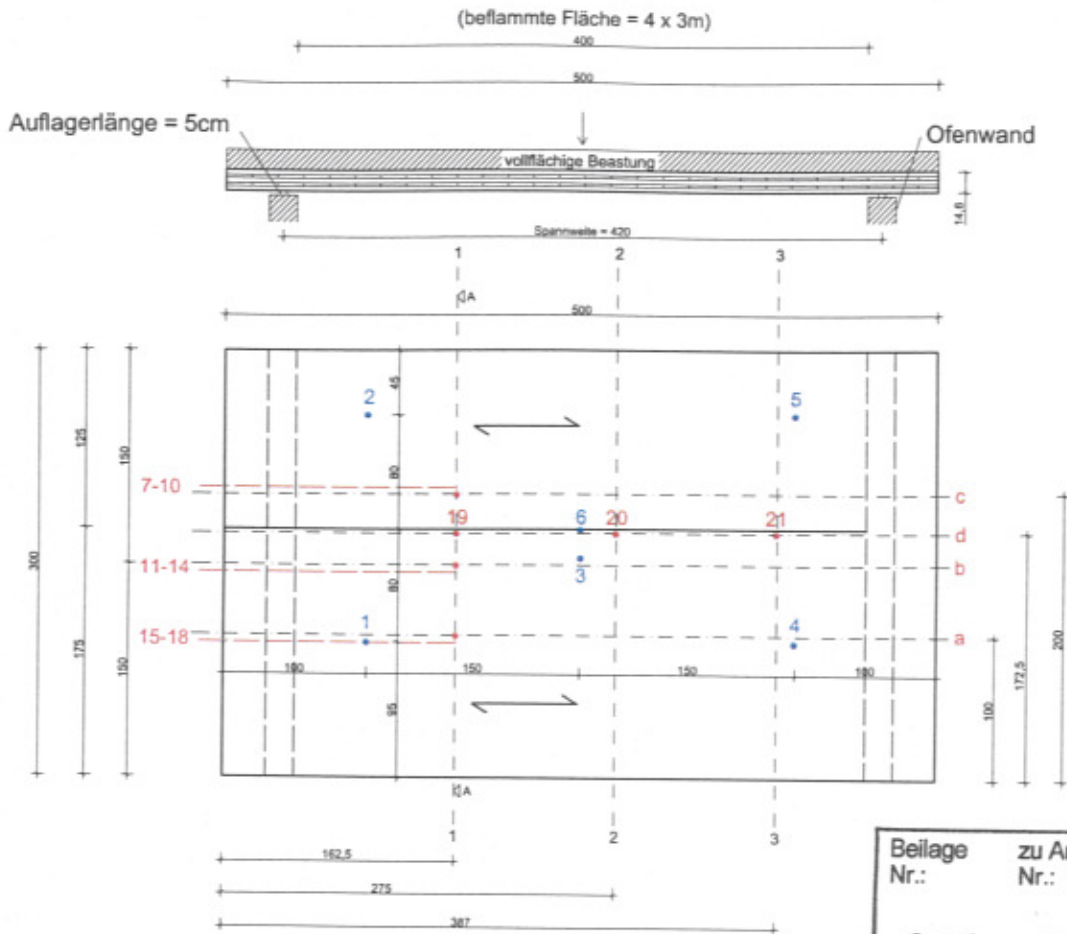
In case of dispute the original German version prevails. This translation is for information purposes only.

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.

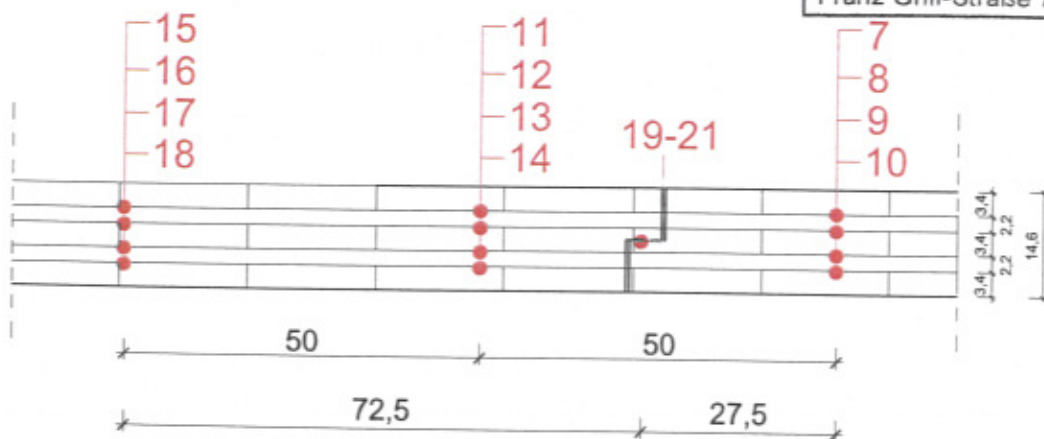
Ansicht / Draufsicht

M = 1:50



Schnitt A - A

M = 1:10



Beilage zu Auftrag
Nr.: Nr.:

001 - 126 / 2012

HOLZFORSCHUNG AUSTRIA
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Versuchsdaten:

- Belastung ~500kg/m²
- Verschraubung / Plattenstoß / verschraubt 6x140 mm, a ~ 200mm
- Verformung in Feldmitte zufolge Eigengewicht+Belastung ~ 10mm
- Temperaturelemente 1-6 => MA39 abgekehrte Seite
- Temperaturelemente 7-21 => HFA lt. Plan

Projekt	Auftrag KLH	Plannummer/Planinhalt	001/Versuchsaufbau-Decke	HOLZ FORSCHUNG AUSTRIA
Planverfasser/Datum	SK/03.06.2009	Maßstab	1:10, 1:50	
		Pfad Fertigprodukte/Khan/Arbeitl. 2008/BG...		