CLASSIFICATION REPORT OF FIRE RESISTANCE
IN ACCORDANCE WITH ÖNORM EN 13501-2:2016

24.08.2021
POS/FÜI

Customer:	Stora Enso Wood Products GmbH Brand 44 AT-3531 Brand
Prepared by:	Holzforschung Austria Franz Grill-Straße 7 AT-1030 Wien
Subject:	Load-bearing wall components of cross laminated timber „Stora Enso CLT 100 mm“ planked and unplanked Fire resistance REI 60
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1. Introduction

This classification report on fire resistance defines the classification of load-bearing wall components of cross laminated timber "Stora Enso CLT 100 mm" planked and unplanked, in compliance with the process according to the standard ÖNORM EN 13501-2:2016.

2. Details on the classified product

2.1. General

The load-bearing wall components of cross laminated timber "Stora Enso CLT 100 mm" planked and unplanked belong to the product type of load-bearing, insulating solid timber constructions.

2.2. Description

Table 1: components to be classified

planking mm room side	installation level/ dry lining	cross laminated timber dimensions (layers) mm
---	---	CLT 100 C3s 100 mm (3s - 30 40 30) according to ETA-14/0349 AbZ: Z-9.1-559
---	---	CLT 100 C3s 100 mm (3s - 40 20 40) according to ETA-14/0349 AbZ: Z-9.1-559
---	---	CLT 100 C5s 100 mm (5s - 20 20 20 20 20) according to ETA-14/0349 AbZ: Z-9.1-559
≥ 12,5 GKF*)	---	CLT 100 C5s 100 mm (5s - 20 20 20 20 20) according to ETA-14/0349 AbZ: Z-9.1-559

*) according to ÖNORM B 3410; DIN 18180; type DF according to ÖNORM EN 520; density ≥ 800 kg/m³ or gypsum fibre board according to ÖNORM EN 15283-2; density ≥ 1000 kg/m³

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

3.1. Description of the underlying tested components

Table 2: tested cross laminated timber components

short name	planking mm exposed side to fire	cross laminated timber dimensions mm (layers)	planking mm non exposed side to fire
MW 1.2.1	---	CLT 97 (35 27 35)	---
MW 1.4	---	CLT 95 (19 19 19 19 19)	---
---	---	CLT 100 (40 20 40)	---
---	12,5 GKF*)	CLT 100 (20 20 20 20 20)	---

*) according to ÖNORM B 3410; DIN 18180; type DF according to ÖNORM EN 520; density ≥ 800 kg/m³

3.2. Test reports

Table 3: underlying test reports

test laboratory	name of the costumer	test report n°	standard and issue date	type of product/ test specimen
MA 39[1)]	Holzforschung Austria	MA 39 – VFA 2010-1858.01	ÖNORM EN 1365-1: 2000-04 ÖNORM EN 1363-1: 2000-01	test report on the fire resistance of a load-bearing wall of cross laminated timber "Stora Enso CLT 5s" with a total thickness of 95 mm and with a central, vertical joint with a stepped form and with a sealing tape

test labo-ratory	name of the costumer	test report n°	standard and issue date	Type of product/ test specimen
MA 39[1)]	Holzforschung Austria	MA 39 – VFA 2010-1377.02	ÖNORM EN 1365-1: 2000-04 ÖNORM EN 1363-1: 2000-01	test report on the fire resistance of a load-bearing wall of cross laminated timber "Stora Enso CLT 3s"
MA 39[1)]	Stora Enso Wood Products OY 00160 Helsinki	MA 39 – 21-04434	ÖNORM EN 1365-1: 2013-07 ÖNORM EN 1363-1: 2020-04	test report on the fire resistance of a load-bearing wall of cross laminated timber "Stora Enso CLT 3s" (tested on 26.02. 2021)
MA 39[1)]	Stora Enso Wood Products OY 00160 Helsinki	MA 39 – 21-04435	ÖNORM EN 1365-1: 2013-07 ÖNORM EN 1363-1: 2020-04	test report on the fire resistance of a load-bearing wall of cross laminated timber „CLT 5s with GK-planking“ (tested on 10.03.2021)

1) MA 39 – Magistrat der Stadt Wien, Magistratsabteilung 39, Prüf-, Überwachungs- und Zertifizierungsstelle der Stadt Wien

The test reports listed under point 3.2. according to ÖNORM EN 1365-1 and 1363-1 were partly carried out according to older standards (see table 3).
The current standards, ÖNORM EN 1365-1: 2013 and ÖNORM EN 1363-1:2020, essentially contain changes in terminology, new definitions and concretisations compared to the older versions.
According to information from the testing body, these changes have no effect on the results in the test reports listed and can therefore still be used for the classification of fire resistance.

3.3. Results

Table 4: results

testing process: **ÖNORM EN 1365-1: 2000-04** **ÖNORM EN 1363-1: 2000-01**	**parameters**	**results**
test report n° MA 39 – VFA 2010-1858.01	*load applied supporting structure*	105 kN total load 35 kN/m
	load-bearing capacity	63 min
	integrity	63 min
	thermal insulation	63 min
test report n° MA 39 – VFA 2010-1377.02	*load applied supporting structure*	105 kN total load 35 kN/m
	load-bearing capacity	79 min
	integrity	79 min
	thermal insulation	79 min
testing process: **ÖNORM EN 1365-1: 2013-07** **ÖNORM EN 1363-1: 2020-04**	**parameters**	**results**
test report n° MA 39 – 21-04434	*load applied supporting structure*	165 kN total load 55 kN/m
	load-bearing capacity	63 min
	integrity	63 min
	thermal insulation	63 min
test report n° MA 39 – 21-04435	*load applied supporting structure*	480 kN total load 160 kN/m
	load-bearing capacity	82 min
	integrity	82 min
	thermal insulation	82 min

4. Classification and area of application

4.1. Classification reference

This classification was carried out in compliance with ÖNORM EN 13501-2:2016-11, clause 7.3.2..

4.2. Classification

The load-bearing walls of cross laminated timber are classified according to the following combinations of performance parameters and classes.

Wall height ≤ 3 m

fire resistance of the constructions listed in 2.2. fire exposed side	test report n°	R	E	I	applied load $E_{d,fi}$ kN/m
CLT 100 C3s (3s - 30 40 30)	MA 39 – VFA 2010-1377.02	**60**	**60**	**60**	**35**
CLT 100 C5s (5s - 20 20 20 20 20)	MA 39 – VFA 2010-1858.01	**60**	**60**	**60**	**35**
CLT 100 C3s (3s - 40 20 40)	MA 39 – 21-04434	**60**	**60**	**60**	**55**
CLT 100 C5s (5s - 20 20 20 20 20) 12,5 GKF*)	MA 39 – 21-04435	**60**	**60**	**60**	**160**

*) according to ÖNORM B 3410; DIN 18180; type DF according to ÖNORM EN 520; density ≥ 800 kg/m³ or gypsum fibre board according to ÖNORM EN 15283-2; density ≥ 1000 kg/m³

4.3. Area of application

This classification is valid for the following practical applications:

The classification result may be transferred directly to similar cross laminated timber walls in which one or several of the following changes are made and in which the design continues to meet the requirements of the relevant design standard with regard to stiffness and strength:

- Reducing the height of the wall
- Increasing the width of the wall
- Increasing the structure's thickness
- Increasing the thickness of the corresponding materials
- Reducing the length of boards or panels but not the thickness
- Reducing the load applied
- Installation of additional non-flammable materials in the construction

5. Limitations

5.1. General

If one of the fundamental test and evaluation criteria changes or the customer makes prohibited technical changes to the product, this classification report shall cease to be valid.

5.2. Warning notice

This classification document does not constitute a type approval or certification of the product.

HOLZFORSCHUNG AUSTRIA

DI Sylvia Polleres
Authorised signatory and technical consultant

DI Simon Winter

This report was approved electronically in accordance with an internal HFA process by the designated authorized signatory, traceable and documented.

Accreditation is given for the following procedures.
It is not allowed to use included accreditation marks for own purposes.

accreditation mark	type of accreditation	process
Akkreditierung Austria A 0055 ISO/IEC 17020	inspection	• ÖNORM EN 13501-2

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