



AUTHORIZATION TO MARK

This authorizes the application of the Certification Mark(s) shown below to the models described in the Product(s) Covered section when made in accordance with the conditions set forth in the Certification Agreement and Listing Report(s). This authorization also applies to the Multiple Listee model(s) identified on the correlation page of the Listing Report.

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Party Authorized to Apply Mark: See following page(s)

Evaluation Center: Evaluation Services (ES)

Client Number: 277568

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This document supersedes all previous Authorizations to Mark for the noted Report Number.

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Testing Standard(s):	ANSI / APA PRG 320 (2018), ASTM E119 (2019), ASTM E84 (2018b), ICC-ES AC455 (2021), ANSI / APA PRG 320 (2019)
Product:	KLH Massivholz GmbH – Massivholzplatten (solid wood slabs) CLT

ATM for Report: G102232156, G103136174, G103855227,
 G104162725, G104769676

ATM Issue Date: 10/6/2023

Listing Section(s): BUILDING PANELS

CSI Code(s): 06 17 19 Cross-Laminated Timber

Description:

KLH-Massivholzplatten (solid wood slabs) cross laminated timber (CLT) is a wood structural building element for walls, floors (ceilings) and roofs. The CLT panels consist of 3 to 8 layers of Austrian Spruce lumber boards stacked crosswise (layers at 90°) and glued on their wide faces. Some panel layups include two adjacent surface layers and/or two adjacent central layers that are arranged parallel to each other. The CLT panels are offered in a maximum length of 54 ft 2 in. (16.5 m); widths of 7 ft 10 in. (2.40m), 8 ft 2 in. (2.50m), 8 ft 11 in. (2.73m) and 9 ft 8 in. (2.95 m); maximum thickness of 1 ft 1/2 in. (0.32 m).

CODE COMPLIANCE RESEARCH REPORT

Evaluation Method	Building Code	CCRR Number
ICC-ES AC455	2021 and 2018 IBC 2021 and 2018 IRC 2022 California Building Code	CCRR-0434

FLAME SPREAD RATINGS

Test Standard	Flame Spread Index	Smoke Developed Index
ASTM E84	75 or less	450 or less

ASTM E119 FIRE RATINGS

Panel Layup	Restricted Load Condition	Duration Rating	CCRR Number
130 5s TL (Roof) ¹	27% of Max Load Condition	60 min w/ hose	CCRR-0434
160 5s TL (Floor)	71% of Max Load Condition	60 min w/ hose	CCRR-0434
175 5s TL (Floor)	36% of Max Load Condition	120 min w/hose	CCRR-0434
175 5s TL (Wall)	12% of Max Load Condition	120 min w/hose	CCRR-0434
180 5s TL (Floor)	53% of Max Load Condition	120 min w/hose	CCRR-0434

¹See CCRR-0434 for details of roof assembly.

MATERIAL RATINGS

Test Standard	Test Type	Rating
ANSI/APA PRG 320	Performance Rated CLT	Custom Layup CV3M1

For Use in the U.S.

Grade	Laminations in Major Strength Direction (psi)						Laminations in Minor Strength Direction (psi)					
	F _{b,0}	E ₀ (10 ⁶)	F _{t,0}	F _{c,0}	F _{v,0}	F _{s,0}	F _{b,90}	E ₉₀ (10 ⁶)	F _{t,90}	F _{c,90}	F _{v,90}	F _{s,90}
CV3M1	975	1.6	550	1,450	175	55	975	1.6	550	1,450	175	55

Tabulated values are allowable design values and not permitted to be increased for the lumber size adjustment factor in accordance with the NDS. The design values shall be used in conjunction with the section properties provided by KLH based on the actual layup used in manufacturing the CLT panel.

For Use in Canada

Grade	Laminations in Major Strength Direction (MPa)						Laminations in Minor Strength Direction (MPa)					
	F _{b,0}	E ₀	F _{t,0}	F _{c,0}	F _{v,0}	F _{s,0}	F _{b,90}	E ₉₀	F _{t,90}	F _{c,90}	F _{v,90}	F _{s,90}
CV3M1	10.8	11,000	5.5	15.0	1.8	0.60	10.8	11,000	5.5	15.0	1.8	0.60

Tabulated values are Limit States design values and not permitted to be increased for the lumber size adjustment factor in accordance with the CSA O86. The design values shall be used in conjunction with the section properties provided by KLH based on the actual layup used in manufacturing the CLT panel.

Party(s) Authorized by Manufacturer To Apply Mark:

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Party(s) Authorized by Other Parties To Apply Mark:

None