



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: Intertek (Middleton)

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

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| | |
|-----------------------------|---|
| Testing Standard(s): | ASTM E84 (2016), ASTM E119 (2016), ANSI/APA PRG 320 (2012) Ed. 2017, ANSI/APA PRG 320:2018, ASTM E119 (2019), ICC-ES AC455 (2021) |
| Product: | KLH Massivholz GmbH – Massivholzplatten (solid wood slabs) CLT |

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

ATM Issue Date: 1/31/2022

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 2019 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) | 82% of Max Load Condition | 120 min w/hose | CCRR-0434 |
| 175 5s TL (Wall) | 95% of Max Load Condition | 120 min w/hose | CCRR-0434 |
| 180 5s TL (Floor) | 91% 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