

Qualified Glulam and CLT Products With Low Formaldehyde Emissions

PR-E740

Revised September 29, 2017

Product: Glulam and CLT Products Qualified for Low Formaldehyde Emissions

1. Basis of the product report:
 - APA Custom Product Specification E-740
 - Test method follows the principles of ISO 12460-4, Wood-Based Panels -- Determination of Formaldehyde Release, Part 4: Desiccator Method, and AS/NZS 4357.4:2005, Structural Laminated Veneer Lumber, Part 4: Determination of Formaldehyde Emissions
 - 2015, 2012 and 2009 International Building Code (IBC): Section 2303.1.3 Structural glued laminated timber
 - 2015 IBC: Section 2303.1.4 Structural Glued Cross-Laminated Timber
 - 2012 and 2009 IBC: Section 104.11 Alternative materials
 - 2015 International Residential Code (IRC): Sections R502.1.3, R602.1.3, and R802.1.2 Structural glued laminated timber, and Sections R502.1.6, R602.1.6 and R802.6 Cross-Laminated Timber
 - 2012 and 2009 IRC: Sections R502.1.5, R602.1.2, and R802.1.4 Structural glued laminated timber, and Section R104.11 Alternative materials, respectively
 - ASTM D3737-12, D3737-08, and D3737-07 recognized by the 2015 IBC and IRC, 2012 IBC and IRC, and 2009 IBC and IRC, respectively
 - ANSI A190.1-2012 and ANSI/AITC A190.1-2007 recognized by the 2015 IBC and IRC, and 2012 IBC and IRC and 2009 IBC and IRC, respectively
 - ANSI/APA PRG 320-2012 and PRG 320-2011 Performance Rated Cross-Laminated Timber
 - APA Report (see Table 2) and other qualification data

2. Product description:

Glulam products are manufactured with layup combinations documented in ANSI 117, or the in-plant manufacturing standard and approved by APA. Glulam products are available in a variety of sizes. CLT products are manufactured with grade characteristics specified in ANSI/APA PRG-320 and are available in a variety of sizes.

3. Formaldehyde emission level:

The G-5 rating is a formaldehyde emission level as defined in Table 1. Glulam products have been qualified for low formaldehyde emissions following the principles of ISO 12460-4 and AS/NZS 4357.4:2005, and the performance requirements of ANSI A190.1 or CSA O122. Glulam products meeting the formaldehyde emission level specified in Table 1 in accordance with the APA Custom Product Specification E-740 are listed in Table 2.

Table 1. Upper formaldehyde emission level for G-5 rating following the principles of ISO 12460-4 and AS/NZS 4357.4:2005^(a)

Average	0.20 mg/ℓ
Individual specimen	0.30 mg/ℓ

^(a) Glulam products meeting ANSI A190.1 and CLT meeting ANSI/APA PRG 320 are not within the scope of the CARB and HUD regulations. The tabulated formaldehyde emission level in the G-5 standard is more stringent than the E₀ of AS/NZS 4357.4:2005 and F☆☆☆☆ of JAS Standard for Glulam, MAFF Notification 1152.

4. Limitations:
 - a) Glulam and CLT products shall be designed and installed in accordance with the applicable provisions of the code and the recommendations provided by the manufacturer.
 - b) Glulam and CLT products are limited to dry service conditions that result in the average equilibrium moisture content of sawn lumber of less than 16 percent.
 - c) Glulam and CLT products are produced by the manufacturing facility shown in Table 2 under a quality assurance program audited by APA in accordance with the APA Custom Product Specification E-740.
 - d) This report is subject to re-examination in one year.

5. Identification:

Glulam and CLT products are identified by a label bearing the manufacturer's name and/or trademark, the APA assigned plant number, the product standard (ANSI A190.1 or CSA O122 for glulam, and ANSI/APA PRG 320 for CLT), the combination symbol for glulam or grade designation for CLT, the APA logo, the product report number PR-E740, and the formaldehyde emission rating G-5.

Table 2. Qualified Manufacturing Facility for Low Formaldehyde Emission

Manufacturer	Location	Mill Number	APA Test Report
Boise Cascade Company	Homedale, ID	1107	T2015Q-31
Nordic Structures (Glulam)	Chibougamau, QC	1057	T2016P-7
Nordic Structures (CLT)	Chibougamau, QC	1112	T2016P-7

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