PRODUCT REPORT®

Element5 Structural Glued Laminated Timber — PR-L354(C)
Element5 Limited Parnership — Issued February 12, 2026

Products: Element5 Structural Glued Laminated Timber
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1. Basis of the product report:
   - 2020 National Building Code of Canada (NBC): Clause 1.2.1.1 of Division A and Clauses 4.1, 4.3.1, and 9.23 of Division B
   - CSA O86-19 Engineering Design in Wood
   - CSA O122-16 Structural Glued Laminated Timber recognized in CSA O86-19
   - CSA O177-06 (R2015) Qualification Code for Manufacturers of Structural Glued-Laminated Timber recognized in CSA O86-19
   - Qualification test data

2. Product description:
   Element5 glulam products are manufactured with Douglas Fir-Larch and Spruce-Lodgepole Pine-Jack Pine lumber in accordance with CSA O122. These layup combinations are recognized in CSA O86. Element5 glulam products are used as beams, headers, rafters, purlins, and columns, and are manufactured in nominal widths up to 297 mm (11.7 inches), depths up to 1,288 mm (50.7 inches), and lengths up to 13.5 m (44.3 feet).

3. Design properties:
   Limit states design properties for Element5 glulam products are listed in Table 1. The maximum design loads for Element5 glulam products shall be in accordance with the recommendations provided by the manufacturer or shall be determined based on the design properties listed in Table 1, as appropriate.

4. Product installation:
   Element5 glulam products shall be installed in accordance with the recommendations provided by the manufacturer and APA Construction Guide: *Glulam Connection Details*, Form T300 (www.apawood.org/resource-library). Permissible field notching and drilling of Element5 glulam beams shall be in accordance with the recommendations provided by the manufacturer and APA Technical Notes: *Field Notching and Drilling of Glued Laminated Timber Beams*, Form S560, and *Effect of Large Diameter Horizontal Holes on the Bending and Shear Properties of Structural Glued Laminated Timber*, Form V700 (see link above). Permissible field notching and drilling of Element5 columns shall be in accordance with the recommendations provided by the manufacturer.

5. Fire-rated assemblies:
   Fire-rated assemblies shall be constructed in accordance with the recommendations provided by the manufacturer. Procedures specified in Annex B of the 2019 CSA O86 may be considered in designing glulams exposed to fire up to 2 hours when permitted by the authority having jurisdiction. The fire-resistance rating shall be evaluated in accordance with Appendix D-2.11 of the 2020 NBC.

6. Limitations:
   a) Element5 glulam products shall be designed in accordance with the code using the engineering properties specified in this report.

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b) Element5 glulam products shall meet the dimensions specified in CSA O122 and CSA O86.
c) Element5 glulam products shall be manufactured in accordance with layup combinations specified in CSA O122, *Structural Glued-Laminated Timber*.
d) Element5 glulam products listed in this report are produced at Element5 Limited Partnership, St. Thomas, Ontario facility under a quality assurance program audited by APA.
e) This report is subject to re-examination in one year.

7. Identification:
Element5 glulam products described in this report are identified by a label bearing the manufacturer's name (Element5) and/or trademark, the APA assigned plant number (1146), the APA logo, the layup combination symbol, the report number PR-L354 or PR-L354C, and a means of identifying the date of manufacture.

Table 1. Specified Strengths and modulus of elasticity (MPa) and Relative Density for Element5 Glulam[1,2,3]

Stress grade	24f-EX	20f-EX	16c-E	20f-EX	12c-E	Wet-Use Factor
Species	Douglas Fir-Larch			Spruce-Lodgepole Pine-Jack Pine		
Bending moment (pos.), f_b[4]	30.6	25.6	14.0	25.6	9.8	0.80
Bending moment (neg.), f_b[4]	30.6	25.6	14.0	25.6	9.8	0.80
Longitudinal shear, f_v[5]	2.0	2.0	2.0	1.75	1.75	0.87
Compression parallel, f_c	30.2	30.2	30.2	25.2	25.2	0.75
Compression parallel combined with bending, f_{cb}	30.2	30.2	30.2	25.2	25.2	0.75
Compression perpendicular, f_{cp}[6]						
Compression face bearing	7.0	7.0	7.0	5.8	5.8	0.67
Tension face bearing	7.0	7.0	7.0	5.8	5.8	0.67
Tension net section, f_{tn}	20.4	20.4	20.4	17.0	17.0	0.75
Tension gross section, f_{tg}	15.3	15.3	15.3	12.7	12.7	0.75
Tension perpendicular to grain, f_{tp}	0.83	0.83	0.83	0.51	0.51	0.85
Modulus of elasticity, E	12,800	12,400	12,400	10,300	9,700	0.90
Mean oven-dry relative density (G)	0.49	0.49	0.49	0.42	0.42	-

(1) The tabulated design values for bending properties are intended for members stressed in bending due to loads applied perpendicular to the wide faces of the laminations. Members stressed in bending due to loads applied parallel to the wide faces of the laminations shall be designed in accordance with Clause 7.5.3 of CSA O86.
(2) Design of glulam members shall be in accordance with CSA O86, Engineering Design in Wood (Limit States Design).
(3) The tabulated design values are for standard-term load duration and dry conditions of use. For other load durations, see applicable design code. For wet conditions of use, multiply the tabulated values by the wet-use factors shown in the rightmost column of the table.
(4) In calculating the size factor for bending, K_{Zbg}, the beam width, b, must be taken as the full member width (mm).
(5) In calculating the factored fracture shear resistance at a notch on the tension side at a support, F_r, the effective lamination width, b_{eff}, must be taken as the beam width (mm).
(6) In calculating the size factor for bearing, K_{Zcp}, the beam width, b, must be taken as the full member width (mm).

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