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EVALUATION CENTER

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RENDERED TO

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CANADA

PRODUCT EVALUATED: Century Aluminum Railings 8 ft. Aluminum
Component Picket Railing System
EVALUATION PROPERTY: Load Requirements

**Report of 8 ft. Aluminum Component Picket Railing System for
compliance with the applicable requirements of the following:**

- **2015 International Residential Code (IRC), Section R301.5
Live Load**

TEST REPORT

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1 Table of Contents

1	Table Of Contents	2
2	Introduction	3
3	Test Samples	3
3.1.	Sample Selection.....	3
3.2.	Sample And Assembly Description	3
4	Testing And Evaluation Methods	3
4.1.	2015 IRC: Section R301.5 Live Load.....	3
4.2.	In-Fill Load Test.....	4
4.3.	Concentrated Load Test	4
5	Testing And Evaluation Results.....	5
5.1.	Results And Observations	5
6	Conclusion	5
Appendix A	Test Data	2 Pages
Appendix B	Drawings.....	6 Pages

2 Introduction

Intertek Testing Services NA Ltd. (Intertek) has conducted a test program for Cendek Railings Ltd. on Century Aluminum Railings aluminum railing system. The evaluation was carried out to determine whether the railing system would resist the loads specified in the following:

- 2015 International Residential Code (IRC), Section R301.5 *Live Load*

This evaluation was conducted in the month of May 2016.

3 Test Samples

3.1. SAMPLE SELECTION

The client submitted one (1) aluminum railing system to the Evaluation Center on May 9, 2016 (Coquitlam ID# VAN1605241528-001). Samples were not independently selected for testing.

3.2. SAMPLE AND ASSEMBLY DESCRIPTION

The sample was identified as the following:

Railing	Post	Post Spacing	Mounting Plate	Rails	Picket/Panel Insert
Aluminum Component Picket – Deck Mount	2-1/2" x 2-1/2"	99"	4" x 4" x 1/4"	42" high	5/8" x 5/8"

For detailed drawings of the test sample and components, refer to Appendix B.

Note: The installation of the guardrail to the deck was not within the scope of this report, and is subject to evaluation and approval by the building official. Four 3/8 in. grade 5 bolts and washers on each post were used to install the specimen for testing.

4 Testing and Evaluation Methods

The test specimens were loaded at a rate to achieve the specified loads between 10 seconds and 5 minutes. The specified test loads were held for one minute before the load was released. The following tests were conducted:

4.1. 2015 IRC: SECTION R301.5 LIVE LOAD

- 1) Handrails and guards shall be designed to resist a concentrated load of 200 pounds (0.89 kN), applied in any direction at any point on the handrail or top rail and to transfer the load through the supports to the structure to produce the maximum load effect on the element being considered.
- 2) Intermediate rails (all those except the handrail), balusters and panel fillers shall be designed to withstand a horizontally applied normal load of 50 pounds (0.22 kN) on an area not to exceed 12 in. by 12 in. (305 mm by 305 mm) including openings and space between rails and located so as to produce the maximum load effect.

Notes:

1. A live load factor of 2.5 was applied to the above loads.

4.2. IN-FILL LOAD TEST

A load of 125 lbs was applied using a 1 square foot block normal to the in-fill. After release of the load, the system was evaluated for failure, any evidence of disengagements of any component and/or visible cracking from any component.

4.3. CONCENTRATED LOAD TEST

The top rail of the guardrail system was subjected to three separate tests where a concentrated load of 500 lbs was applied:

- horizontally at the mid-span of the top rail,
- horizontally at the top rail adjacent to the post connection to verify the connection capacity, and
- horizontally at the top of post.

5 Testing and Evaluation Results

5.1. RESULTS AND OBSERVATIONS

The product test results are shown in Table 2 below and a full set of test data is located in Appendix A.

Table 2. Test Results		
System Description	Test	Compliance
Century Aluminum Railings 8 ft. Aluminum Component Picket Railing System – Deck Mount	In-fill Load	Pass
	Mid-span Concentrated Load	Pass
	Adjacent to Post Connection Concentrated Load	Pass
	Top of Post Concentrated Load	Pass


6 Conclusion

The Cendek Railings Ltd. aluminum railing system identified in this test report has complied with the requirements of the following:

- 2015 International Residential Code (IRC), Section R301.5 *Live Load*

The product test results are presented in Section 5 of this report.

INTERTEK TESTING SERVICES NA LTD.

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