intertek
Total Quality. Assured.

CENDEK RAILINGS LTD.
PRODUCT EVALUATION

PRODUCT EVALUATED
8 FT. COMPONENT PICKET SYSTEM
6.25 FT. ALUMINUM 5MM GLASS RAILING SYSTEM

EVALUATION PROPERTY
2015 NATIONAL BUILDING CODE OF CANADA

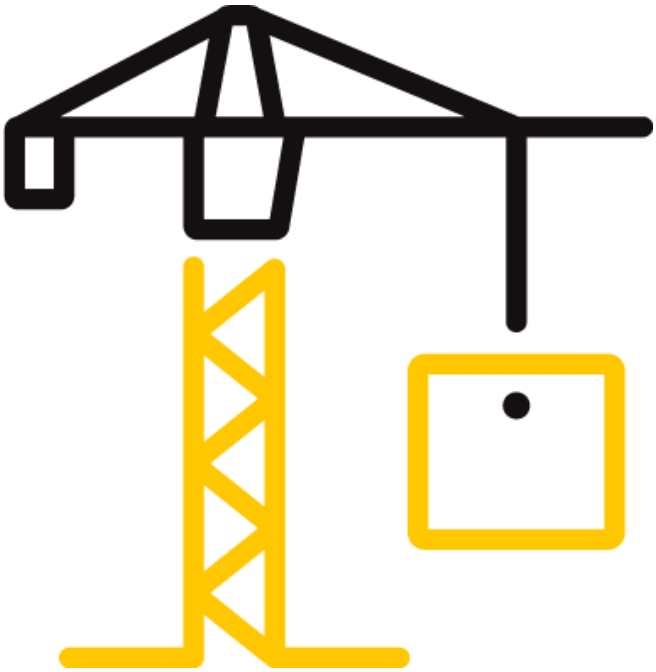
REPORT NUMBER
103535214COQ-001

ORIGINAL ISSUE DATE
05/30/18

LAST REVISED DATE
07/05/18

PAGES
10

DOCUMENT CONTROL NUMBER
SFT-BC-OP-19H



1500 Brigantine Drive
Coquitlam, BC, Canada V3K 7C1

Telephone: 604-520-3321
Facsimile: 604-524-9186
www.intertek.com/building

PRODUCT EVALUATION FOR CENDEK RAILINGS LTD.
Report No.: 103535214COQ-001
Revised Date: 07/05/18

PRODUCT EVALUATION RENDERED TO:	
Company Name:	Cendek Railings Ltd.
Address:	9685 Agur Street
	Summerland, British Columbia
	Canada V0H 1Z2
Contact Person:	Chat Chislett
Tel:	778-516-6000
Email:	cchislett@cendekrailings.com

Table of Contents

1500 Brigantine Drive
Coquitlam, BC, Canada V3K 7C1

Telephone: 604-520-3321
Facsimile: 604-524-9186
www.intertek.com/building

PRODUCT EVALUATION FOR CENDEK RAILINGS LTD.
Report No.: 103535214COQ-001
Revised Date: 07/05/18

1 Introduction

Intertek Testing Services NA Ltd. (Intertek) is conducting a product evaluation for Cendek Railings Ltd. (Cendek) on various Century Aluminum railing systems and components, to evaluate code compliance per the 2015 National Building Code of Canada (NBC). The evaluation is being conducted to determine if the evaluated Century Aluminum systems will meet the load requirements per the 2015 NBC. Other applicable sections of the 2015 NBC have not been reviewed in this evaluation.

2 Product and Assembly Description

2.1. Product and/or Assembly Description:

Intertek has conducted testing on the following Century Aluminum railing systems and/or components. Details of the systems and/or components, tests and requirements are summarized in tabular format below.

System Description[1]	Intertek Test Report No.	2010 NBC Code Articles[2]
System 1: 8 ft. Component Picket System	102024155COQ-001, dated February 25, 2015	2010 National Building Code of Canada, Division B, Articles 9.8.8.2., 9.8.8.3., 9.8.8.5., and 9.8.8.6.
System 2: 6.25 ft. Aluminum 5mm Glass Railing System	102429832COQ-003, dated February 1, 2016	2010 National Building Code of Canada, Division B, Articles 4.1.5.14., 9.8.8.2.

1. Refer to each respective test report for details of the systems.
2. Only articles from the 2010 NBC are referenced in this table; test report may contain references to other Codes.

2.2. Product and/or Assembly Traceability:

Intertek did not select the specimens and has not verified the composition, manufacturing techniques or quality assurance procedures. The specimens were submitted to Intertek directly by the client and Intertek accepts no responsibility for any inaccuracies therein.

2.3. Product and/or Assembly Certification:

Intertek does not currently certify the Century Aluminum systems and/or components evaluated within this report.

Authorities Having Jurisdiction (AHJ) should be consulted in all cases as to the particular requirements covering the installation and use of Intertek certified products, equipment, systems, devices and materials. The AHJ should be consulted before construction. Fire resistance assemblies and products are developed by the design submitter and have been investigated by Intertek for compliance with specific requirements. The published information (product and design listings) cannot always address every construction nuance encountered in the field. When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the test standard referenced for each Intertek certified product. The test standard includes specifics concerning alternate materials and alternate methods of construction. Only products which bear Intertek's Mark are considered as certified. The appearance of a company's name or product in Intertek Directory of Listed Building Products does not in itself assure that products so identified have been manufactured under Intertek's Follow-Up Service. Only those products bearing the Intertek Mark should be considered to be Listed and covered under Intertek's Follow-Up Service. Always verify the Mark on the product before using it.

1500 Brigantine Drive
Coquitlam, BC, Canada V3K 7C1

Telephone: 604-520-3321
Facsimile: 604-524-9186
www.intertek.com/building

PRODUCT EVALUATION FOR CENDEK RAILINGS LTD.
Report No.: 103535214COQ-001
Revised Date: 07/05/18

3 Reference Documents

As part of this evaluation, Intertek has directly or indirectly used the following referenced documents:

- 2010 National Building Code of Canada (2010 NBC)
- 2015 National Building Code of Canada (2015 NBC)
- Intertek Test Report No. 102024155COQ-001, dated February 25, 2015
- Intertek Test Report No. 102429832COQ-003, dated February 1, 2016

4 Evaluation Method

The scope of this evaluation is to examine the test data contained within the test reports referenced above, and determine if they are applicable to the 2015 NBC. The scope is limited to the load performance sections only.

System 1, Intertek Test Report No. 102024155COQ-001, dated February 25, 2015

The Century Aluminum 8 ft. Component Picket System described in Section 2 of this evaluation as System 1 was tested to load requirements of Articles 9.8.8.2. in Division B, of the 2010 NBC. It was recorded in the test report that the system evaluated complied with the load requirements to these 2010 NBC Articles.

Intertek has reviewed the above-mentioned Articles of the 2010 NBC in juxtaposition to Articles 9.8.8.2. of the 2015 NBC. The review is summarized in tabular format below.

<table>
<tr><th rowspan="2">Referenced Code Articles and Sentences</th><th colspan="2">Applicable Requirements</th></tr>
<tr><th>2010 NBC</th><th>2015 NBC</th></tr>
<tr><td rowspan="8">Article 9.8.8.2. Loads on Guards, Sentence 1)

For guards within dwelling units and exterior guards serving not more than 2 dwelling units.</td><td colspan="2">Horizontal load applied inward or outward at any point at the minimum required height of the guard.</td></tr>
<tr><td>0.5 kN/m or concentrated load of 1.0 kN applied at any point</td><td>0.5 kN/m or concentrated load of 1.0 kN applied at any point</td></tr>
<tr><td colspan="2">Horizontal load applied inward or outward on elements within the guard, including solid panels and pickets.</td></tr>
<tr><td>0.5 kN applied over a maximum width of 300 mm and a height of 300 mm</td><td>0.5 kN applied over a maximum width of 300 mm and a height of 300 mm</td></tr>
<tr><td colspan="2">Evenly distributed vertical load applied at the top of the guard.</td></tr>
<tr><td>1.5 kN/m</td><td>1.5 kN/m</td></tr>
</table>

Based on the information contained within the table above, it can be concluded that the 2010 NBC has equal load requirements to the 2015 NBC under Article 9.8.8.2. Therefore, in the event of a load test on the same Century Aluminum 8 ft. Component Picket System tested under Intertek Test Report 102024155COQ-001, the specimen would meet the load requirements of Article 9.8.8.2. of the 2015 NBC.

1500 Brigantine Drive
Coquitlam, BC, Canada V3K 7C1

Telephone: 604-520-3321
Facsimile: 604-524-9186
www.intertek.com/building

PRODUCT EVALUATION FOR CENDEK RAILINGS LTD.
Report No.: 103535214COQ-001
Revised Date: 07/05/18

System 2, Intertek Test Report No. 102429832COQ-003, dated February 1, 2016

The Century Aluminum 6.25 ft. Aluminum 5mm Glass Railing System described in Section 2 of this evaluation as System 2 was tested to load requirements of Articles 4.1.5.14. and 9.8.8.2. in Division B, of the 2010 NBC. It was recorded in the test report that the system evaluated complied with the load requirements of the respective articles referenced in this paragraph.

Intertek has reviewed the above-mentioned Articles of the 2010 NBC in juxtaposition to Articles 4.1.5.14. and 9.8.8.2. in Division B, of the 2015 NBC. The review is summarized in tabular format below.

Referenced Code Articles and Sentences	**Applicable Requirements**	
	2010 NBC	**2015 NBC**
2010 - Article 4.1.5.14. Loads on Guards 2015 - Article 4.1.5.14. Loads on Guards and Handrails	Sentence 1) The minimum specified horizontal load applied inward or outward at the minimum required height of every required guard shall be Clause c) 0.75 kN/m or a concentrated load of 1.0 kN applied at any point	Sentence 1) The minimum specified horizontal load applied inward or outward at the minimum required height of every required guard shall be Clause c) 0.75 kN/m or a concentrated load of 1.0 kN applied at any point
	Sentence 2) Individual elemetns within the guard, including solid panels and pickets, shall be designed for a load of 0.5 kN applied over an area of 100 mm by 100 mm located at any point in the elements or elements so as to produce the most critical effect.	Sentence 2) The minimum specified horizontal load applied inward at the minimum required height of every required guard shall be half that specified in Sentence (1)
	Sentence 3) The loads required in Sentence (2) need not be considered to act simultaneously with the loads provided for in Sentences (1) and (4)	Sentence 3) Individual elements within the guard, including solid panels and pickets, shall be designed for a load of 0.5 kN applied outward over an area of 100 mm by 100 mm located at any point in the element or elements so as to produce the most critical effect.
	Sentence 4) The minimum specified load applied vertically at the top of every required guard shall be 1.5 kN/m and need not be considered to act simultaneously with the horizontal	Sentence 4) The size of the opening between any two adjacent vertical elements within a guard shall not exceed the limits required by Part 3 when each of these elements is subjected to a

1500 Brigantine Drive
Coquitlam, BC, Canada V3K 7C1

Telephone: 604-520-3321
Facsimile: 604-524-9186
www.intertek.com/building

PRODUCT EVALUATION FOR CENDEK RAILINGS LTD.
Report No.: 103535214COQ-001
Revised Date: 07/05/18

	load provided for in Sentence (1).	specified live load of 0.1 kN paplied in opposite directions in the in-plane direction of the guard so as to produce the most critical effect.
		Sentence 5) The loads required in Sentence (3) need not be considered to act simultaneously with the loads provided for in Sentences (1), (2) and (6).
		Sentence 6) The minimum specified load applied vertically at the top of every required guard shall be 1.5 kN/m and need not be considered to act simultaneously with the horizontal load provided for in Sentence (1).
Article 9.8.8.2. Loads on Guards, Sentence 1) For guards within dwelling units and exterior guards serving not more than 2 dwelling units.	*Horizontal load applied inward or outward at any point at the minimum required height of the guard.*	
	0.5 kN/m or concentrated load of 1.0 kN applied at any point	0.5 kN/m or concentrated load of 1.0 kN applied at any point
	Horizontal load applied inward or outward on elements within the guard, including solid panels and pickets.	
	0.5 kN applied over a maximum width of 300 mm and a height of 300 mm	0.5 kN applied over a maximum width of 300 mm and a height of 300 mm
	Evenly distributed vertical load applied at the top of the guard.	
	1.5 kN/m	1.5 kN/m

Based on the information contained within the table above, it can be concluded that the 2015 NBC contains requirements that are not found in the 2010 NBC, within Sentences (2) and (4), Article 4.1.5.14., Division B. Sentences (1), (3), (5) and (6) are concluded to have equal load requirements to the 2010 NBC under Article 4.1.5.14., Division B. Therefore, the same Century Aluminum system is required to be tested to demonstrate compliance with the requirements of Sentences (2) and (4), Article 4.1.5.14, Division B of the 2015 NBC.

It can also be concluded that the 2015 NBC has equal load requirements to the 2010 NBC under Article 9.8.8.2. Therefore, in the event of a load test on the same Century Aluminum 6.25 ft. Aluminum 5mm Glass Railing System tested under Intertek Test Report No. 102429832COQ-003, the specimen would meet the load requirement of Article 9.8.8.2., Division B, of the 2015 NBC.

1500 Brigantine Drive
Coquitlam, BC, Canada V3K 7C1

Telephone: 604-520-3321
Facsimile: 604-524-9186
www.intertek.com/building

5 Conclusion

Intertek has conducted this product evaluation for Cendek Railings Ltd., on various Century Aluminum railing systems and components, to evaluate code compliance per the 2015 National Building Code. The evaluation was conducted to determine if the evaluated Century Aluminum systems will meet the load requirements per the 2015 NBC. Other applicable sections of the 2015 NBC have not been reviewed in this evaluation.

Based on the information contained and referenced herein, it is Intertek's professional judgment based on sound engineering principles that the following is true:

- The load requirements of the 2010 National Building Code of Canada, Division B, Part 9, Article 9.8.8.2., Sentence (1) are equal to those of the 2015 National Building Code of Canada, Division B, Part 9, Article 9.8.8.2., Sentence (1)
- The load requirements of the 2010 National Building Code of Canada, Division B, Part 4, Article 4.1.5.14., Sentences (1) to (4) are equal to those of the 2015 National Building Code of Canada, Division B, Part 4, Article 4.1.5.14., Sentences (1), (3), (5) and (6).
- The load requirements and test conditions of the 2015 National Building Code of Canada, Division B, Part 4, Article 4.1.5.14., Sentences (2) and (4) are not present in the 2010 National Building Code of Canada, Division B, Part 4, Article 4.1.5.14. The Century Aluminum 6.25 ft. Aluminum 5mm Glass Railing System will need to be tested in accordance to the requirements of these Sentences accordingly.

INTERTEK TESTING SERVICES NA LTD.

Reported by: _____
Luke Kong, EIT
Engineer, Evaluation Services

Reviewed by: _____
Kal Kooner, P.Eng.
Director, B&C Canada

1500 Brigantine Drive
Coquitlam, BC, Canada V3K 7C1

Telephone: 604-520-3321
Facsimile: 604-524-9186
www.intertek.com/building

6 APPENDIX

1500 Brigantine Drive
Coquitlam, BC, Canada V3K 7C1

Telephone: 604-520-3321
Facsimile: 604-524-9186
www.intertek.com/building

PRODUCT EVALUATION FOR CENDEK RAILINGS LTD.
Report No.: 103535214COQ-001
Revised Date: 07/05/18

(Intertek has left this section blank intentionally.)

1500 Brigantine Drive
Coquitlam, BC, Canada V3K 7C1

Telephone: 604-520-3321
Facsimile: 604-524-9186
www.intertek.com/building

PRODUCT EVALUATION FOR CENDEK RAILINGS LTD.
Report No.: 103535214COQ-001
Revised Date: 07/05/18

7 LAST PAGE & REVISION SUMMARY

DATE	SUMMARY	REPORTER	REVIEWER
May 30, 2018	Original	L. Kong	K. Kooner
July 5, 2018	Changed product name from Cendek to Century Aluminum	L. Kong	K. Kooner