

ENGINEERING EVALUATION

Intertek ETL SEMKO

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EVALUATION CENTER
Intertek Testing Services NA Ltd.
1500 Brigantine Drive
Coquitlam, BC V3K 7C1

RENDERED TO

B.W. Creative Wood Industries Ltd.
23282 River Road
Maple Ridge, BC V2W 1B6

IMPORTANT NOTE:

This engineering test report applies **ONLY** to product manufactured by **BW Creative Wood Industries Ltd.** This test report does **NOT** cover RONA "**Uberhaus Select**" branded product **manufactured by others and sold in Ontario, Quebec or Atlantic Canada.**

PRODUCT EVALUATED: Creative Rail Clearview Series Railing Systems
EVALUATION PROPERTY: 2006 OBC and 2005 NBC

Engineering Evaluation of Creative Rail Clearview Series Railing Systems for compliance with the applicable requirements of the following criteria: 2006 Ontario Building Code (OBC) and 2005 National Building Code (NBC)

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1 Introduction

Intertek Testing Services NA Ltd. (Intertek) has conducted an engineering evaluation for B.W. Creative Wood Industries Ltd., on Creative Rail Clearview Series Glass Railing Systems, to evaluate if they meet the requirements of the 2006 OBC and 2005 NBC. The evaluation was conducted to determine if the testing conducted on the Creative Rail Clearview Series Picket Railing System in accordance with the 1997 OBC would also qualify as meeting the load requirements of the latest editions of the OBC and NBC, as well as the applicable physical requirements of Section 9.8.8.3 *Height of Guards*, 9.8.8.5 *Opening in Guards*, and 9.8.8.6 *Design to Prevent Climbing*.

2 Sample and Assembly Description

The following B.W. Creative Wood Industries Ltd. product is being assessed in this evaluation report:

- 6 ft Creative Rail Clearview Series Glass Railing System

The Clearview Series come with 5/16" tempered glass infill in place of the pickets. Both the railings and posts are manufactured using Western Red Cedar.

3 Reference Documents

- 2006 Ontario Building Code
- 1997 Ontario Building Code
- 2005 National Building Code
- Intertek Test Report 3088853COQ-002B

4 Evaluation Method

Intertek conducted a test program on Creative Rail Clearview Series Glass Railing System in accordance with the 1997 OBC in November 2006. The following loads were applied in order to the system described in Section 2 of this report. Detailed results are reported in Intertek Test Report 3088853COQ-002B.

- An in-fill load of 1.0 kN applied using a 1-inch square block to an individual in-fill element.
- Two separate uniform load tests were performed where a 1.0 kN/m was applied horizontally and a 3.0 kN/m was applied vertically to the top rail.
- A concentrated load test of 2.0 kN was applied horizontally at the mid-span of the top rail, and adjacent to the post to evaluate the connection capability.

The 2005 NBC and 2006 OBC, Section 4.1.5.15, requires the following loads on Guard Rails:

- 1) The minimum specified horizontal load applied inward or outward at the top of every required *guard* shall be:
 - (c) 0.75 kN/m or a concentrated load of 1.0 kN applied at any point, whichever governs, for locations other than described in Clauses (a) and (b). (See Note below).
- 2) Individual elements 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 element or elements so as to produce the most critical effect.
- 3) The loads required in Sentence (2) need not be considered to act simultaneously with the loads provided for in Sentences (1) and (4).
- 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 load provided for in Sentence (1).

Notes:

1. Clauses (a) and (b) refer to means of egress and equipment access walkways and therefore are not applicable.
2. A live load factor of 2.0 is applicable to the above loads for wood based products.


Based on these requirements of the 2005 NBC and 2006 OBC, it can be concluded that the testing done in accordance with the 1997 OBC is equivalent to the new 2005 NBC and 2006 OBC. All of the testing that was performed in 2006 meets the loads stipulated in Section 4.1.5.15 of the 2005 NBC and 2006 OBC excluding the in-fill load test. The testing performed was done using a 1-inch square block, which is more of a worst-case scenario, than the 3.9-inch square block permitted under the 2005 NBC and 2006 OBC.


Evaluation of the base plate connection to the structure is not within the scope of this report.


5 Conclusion

Intertek has conducted an engineering evaluation for B.W. Creative Wood Industries Inc., on Creative Rail Clearview Series Railing System, to determine whether the railing system indicated in Section 2 meets the requirement of the 2005 NBC, Section 4.1.5.15 and the 2006 OBC, Section 4.1.5.15. The evaluation was based on Intertek Test Report 3088853COQ-002B dated November 30, 2006, and showed that the tested Creative Rail Clearview Railing System meets the load requirements of the 2005 NBC, Section 4.1.5.15 and 2006 OBC, Section 4.1.5.15, and the applicable physical requirements of Section 9.8.8.3 *Height of Guards*, 9.8.8.5 *Opening in Guards*, and 9.8.8.6 *Design to Prevent Climbing*.

INTERTEK TESTING SERVICES NA

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REVISION SUMMARY

DATE	SUMMARY
May 16, 2007	No Revisions
June 5, 2007	Added physical requirements of Sections 9.8.8.3, 9.8.8.5, and 9.8.8.6 from 2005 NBC / 2006 OBC.