

**Performance Evaluation
on FLEX-Fence® Louvered Hardware Sample
O.B.C. – 2017, Section 9.8.8.2. (2)**

A Report to:

Consolaid Inc.
11-55 West Beaver Creek Road
Richmond Hill, Ontario
L4B 1K5

Attention:

Mr. Joel Meyers

Telephone:

905-669-0861

E-mail:

sales@flexfence.com

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1.0 INTRODUCTION

At the request of Consolaid Inc., Element performed Evaluation on FLEX-Fence® Louvered Hardware sample, in accordance with O.B.C. – 2017, Section 9.8.8.2. (2) Loads on Guards.

Consolaid Inc. submitted one (1) guard assembly sample for testing. The as received sample was allocated with Element Sample Number below.

<u>Element Sample #</u>	<u>Sample Identification</u>	<u>Material Description</u>
19-06-C0073-1	FLEX-Fence® Louvered Hardware	Wood Louvers with PVC Hardware

Note: Detail drawings for the above guard system, including installation method, provided by the client, are presented in Appendix A.

2.0 OBJECTIVES

The objective of the proposed work was to provide information needed to evaluate the strength capacity of the FLEX-Fence® Louvered Hardware assembly in accordance with O.B.C. – 2017, Section 9.8.8.2. Loads on Guards (2).

3.0 INSTRUMENTATION

The following instruments were used to apply and measure load values:

1 kip Load Cell	MII # B15739
Displacement Transducer	MII # B06084

4.0 TEST PROCEDURE

The test was performed in accordance with O.B.C. – 2017, Section 9.8.8.2. (c) for Item 1 “Guards within dwelling units and exterior guards serving not more than 2 dwelling units”.

The assembly submitted for testing consisted of eleven (11) operable pickets made from wood with PVC hardware (numbered 1 to 11 from left side of the frame in setup position).

The assembly was secured on the test platform and the required 1.25KN (0.5KN design load x 2.5 safety factor) force was applied using a servo-hydraulic actuator, a calibrated load cell and a 300 mm by 300 mm fixture adapter (fixture captures 3 louvers). The required force was applied at three locations (louvers 2, 3, 4, louvers 5, 6, 7 and louvers 9, 10, 11), at mid span between top and bottom attachments. The loading locations were selected as it would produce the most critical effect in the railing system.

The applied force was maintained for 1 minute while observing the sample for failures. The applied load was removed and the sample was inspected for failures and visible permanent deformations.

The photos of the test set-up are presented in Figures 1 to 3.

5.0 RESULTS

The results from FLEX-Fence® Louvered Hardware evaluation are summarized in Table 1 below.

Table 1: O.B.C. – 2017, Section 9.8.8.2. (2) Evaluation

Tested Louver	Test Location	Load Applied (KN)	Results
Louvers 2-4 from Left Side	Mid-span between top and bottom attachments	1.25	Guard system sustained 1.25KN load for 1 minute without failures; No visible deformation with load removed
Louvers 5-7 at Centre	Mid-span between top and bottom attachments	1.25	Guard system sustained 1.25KN load for 1 minute without failures; No visible deformation with load removed
Louvers 1-3 from Right Side	Mid-span between top and bottom attachments	1.25	Guard system sustained 1.25KN load for 1 minute without failures; No visible deformation with load removed

No pull-out fasteners, fracture or slippage of any component was observed.

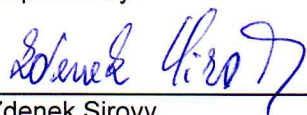
The test program was performed at Element Mississauga facility on May 29, 2019.

The tested sample was returned to the client for further assessment.

6.0 CONCLUSION

Based on the test results, the Consolaid Inc. FLEX-Fence® Louvered Hardware fencing meets the applicable "Loads on Guards" requirement of the O.B.C. – 2017, Section 9.8.8.2. (2) for guards within dwelling units and exterior guards serving not more than 2 dwelling units.

Reported by:



Zdenek Sirovy
Test Technologist, Component Testing
Products Testing Group

Reviewed by:



Daniel Chira, P.Eng.
Project Manager, Component Testing
Products Testing Group



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