

Exova
2395 Speakman Dr.
Mississauga
Ontario
Canada
L5K 1B3

T: +1 (905) 822-4111
F: +1 (905) 823-1446
E: sales@exova.com
W: www.exova.com



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**PERFORMANCE EVALUATION OF THE CONSOLAID INC. FLEX-FENCE® LOUVERED
HARDWARE IN ACCORDANCE WITH THE 2006 ONTARIO BUILDING CODE, SECTION
4.1.5.15 (2)**

Report to:	Consolaid Inc. 112 Basaltic Road, Unit 4 Concord, ON. L4K 1G6
Attention:	Mr. Joel Meyers
Telephone:	(905) 669-0861
Fax:	(905) 669-0860
Report No.:	11-06-M0255 4 Pages, Appendix A
Proposal No.:	11-006-02349, Revision 1
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1.0 INTRODUCTION

At the request of Consolaid Inc., Exova was retained to conduct a performance evaluation of a guard infill system identified as the “Flex-Fence® Louvered Hardware” system in accordance with the Ontario Building Code (OBC) 2006, Section 4.1.5.15 (2) as outlined in Proposal No. 11-006-02349, Revision 1.

Consolaid Inc. provided two baluster (picket) specimens installed within a wood perimeter “buck” that measured 965 mm (38.00 in.) long x 740 mm (29.13 in.) high and was designed to simulate the top/bottom rails sections and posts of an assembled guard. The infill section of the “buck” contained the FLEX-Fence® louvered fencing hardware system. Details of the specimens tested can be found below:

Upon receipt, the specimens were assigned the following Exova specimen numbers:

Exova Specimen No.	11-06-M0255-1
Type	Cedar Wood Louvers with PVC Hardware
Model	FLEX-Fence® Louvered Hardware
Baluster (Picket) Dimensions	17 mm x 138 mm x 889 mm (opening)

Exova Specimen No.	11-06-M0255-2
Type	Pressure Treated Wood Louvers with PVC Hardware
Model	FLEX-Fence® Louvered Hardware
Baluster (Picket) Dimensions	17 mm x 138 mm x 889 mm (opening)

Note: Detail drawings for the above guard system which include the installation method were submitted by the client and can be located in Appendix A.

2.0 PROCEDURE

Testing Outline:

The Building Performance Centre at Exova was contracted to evaluate the FLEX-Fence® louvered fencing hardware system to the performance requirements outlined in the 2006 Ontario Building Code (OBC); Article 4.1.5.15 (2) which states:

“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 x 100 mm located at any point in the elements or elements so as to produce the most critical effect.”

The Building Performance Centre at Exova evaluated the two specimens identified as the FLEX-Fence® louvered hardware system which consisted of six (6) operable pickets in both cedar and pressure treated wood respectively.

All design loads conform to the Ontario Building Code, Section 4.1 Structural Loads and Procedures and combination of loads in Article 4.1.10.1, Loads on Guards. In this report, “design loads” refers to the unfactored loads.

The design load was applied over a 100 mm x 100 mm area at the midpoint and the top of the picket with the louvers positioned in both the open and closed orientation for three tests.

3.0 RESULTS

Results from the FLEX-Fence® Louvered Hardware test program are summarized below in Tables 1 & 2.

Table 1 – Loading Summary in Accordance with Ontario Building Code (OBC) 2006, Section 4.1.5.15 (2) Exova Specimen No.: 11-06-M0225-1					
Load	Test Condition 1	Test Condition 2	Test Condition 3	Test Condition 4	Comment
0.5 kN	Open Louver at Top picket No.1	Closed Louver at Top picket No.1	Open Louver at Centre of picket No.1	Closed Louver at Centre of picket No.1	Pass
0.5 kN	Open Louver at Top picket No.2	Closed Louver at Top picket No.2	Open Louver at Centre of picket No.2	Closed Louver at Centre of picket No.2	Pass
0.5 kN	Open Louver at Top picket No.3	Closed Louver at Top picket No.3	Open Louver at Centre of picket No.3	Closed Louver at Centre of picket No.3	Pass

Pass: No pull-out, fracture or excessive slippage of any component.

Table 2 – Loading Summary in Accordance with Ontario Building Code (OBC) 2006, Section 4.1.5.15 (2) Exova Specimen No.: 11-06-M0225-2					
Load	Test Condition 1	Test Condition 2	Test Condition 3	Test Condition 4	Comment
0.5 kN	Open Louver at Top picket No.1	Closed Louver at Top picket No.1	Open Louver at Centre of picket No.1	Closed Louver at Centre of picket No.1	Pass
0.5 kN	Open Louver at Top picket No.2	Closed Louver at Top picket No.2	Open Louver at Centre of picket No.2	Closed Louver at Centre of picket No.2	Pass
0.5 kN	Open Louver at Top picket No.3	Closed Louver at Top picket No.3	Open Louver at Centre of picket No.3	Closed Louver at Centre of picket No.3	Pass

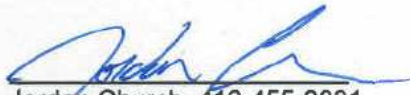
Pass: No pull-out, fracture or excessive slippage of any component.

4.0 CONCLUSION:


Based on the results of the testing of the baluster (picket) infill specimens, the Consolaid Inc. FLEX-Fence® Louvered Hardware fencing infill system meets the requirements of the OBC 2006, Section 4.1.5.15 (2).

Exova Specimen Numbers: 11-06-M0255-1 & 2 successfully transferred the required unfactored loads as required to the wood perimeter structure “buck” as the load was applied over an area 100 mm x 100 mm and applied at the mid-point of the louver as to produce the greatest moment and top edge of the baluster (pickets).

Reported by:


Jordan Church, 416-455-2831
Supervisor, Systems Laboratory
Product Testing Group

Reviewed by:


David W. Bailey, P.Eng, Ext. 307
Technical Director
Product Testing Group



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