



## Case Study: Commercial

# University of Waterloo

**Industry:**  
Education

**Location:**  
Waterloo, Ontario, Canada

**Architect:**  
Kuwabara Payne McKenna  
Blumberg Architects

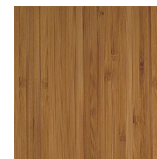
University of Waterloo used Plyboo plywood veneer and flooring extensively throughout the school. Applications included Havana strand and edge grain amber plywood for wall systems. A first on this project was the use of Havana strand veneers in the construction of over 300 doors in this contemporary space. Havana strand flooring and custom stair treads featured prominently in the design.

**Possible LEED Credits:**

Low emitting materials and certified wood  
Floorscore Certified



**Materials Used:**



Amber Edge Grain  
Plywood  
BP-V4896A-NAUF /FSC



Havana Strand Plywood  
and Flooring  
FL-P5872PD-NAUF /FSC



Havana Strand Veneer  
BP-24898PD-NAUF /FSC

### Physical / Mechanical Properties - Strand Bamboo Veneer

Dimensions:	3/4" x 48" x 96" 19mm x 1219mm x 2438mm (*mm tolerance +/- .5mm thickness)
Construction:	Three-ply, cross core construction.
Working with Plyboo:	A worksheet is provided with each panel containing useful tips and information and is also available on our website at <a href="http://plyboo.com/downloads">plyboo.com/downloads</a> .
ASTM E84: Surface Burning	Class C
ASTM D1037: Dimensional Stability	<ul style="list-style-type: none"> <li>•Linear Expansion (3-ply): Parallel -0.09% / Perpendicular -0.07%</li> <li>•Thickness Swell (3-ply): -0.3%</li> </ul> Screw Hold (3-ply) (face/back/edge) <ul style="list-style-type: none"> <li>• 1009lbs/ 681 lbs/ 516 lbs average</li> </ul>
ASTM D4442: Moisture Content	6-9% average
ASTM D 6007-02: Formaldehyde Concentration in Air from Wood Products, small chamber test	Plyboo = 0.004 ppm (surpasses CARB II standards, 0.05ppm & ULEF standards of 0.04ppm)

### Physical / Mechanical Properties - Edge Grain Bamboo Plywood

Dimensions:	3/4" x 48" x 96" 19mm x 1219mm x 2438mm (*mm tolerance +/- .5mm thickness)
Construction:	Three-ply, cross core construction.
Working with Plyboo:	A worksheet is provided with each panel containing useful tips and information and is also available on our website at <a href="http://plyboo.com/downloads">plyboo.com/downloads</a> .
ASTM E84: Surface Burning	Class C
ASTM D1037: Dimensional Stability	<ul style="list-style-type: none"> <li>•Linear Expansion (3-ply): Parallel -0.04% / Perpendicular -0.07%</li> <li>•Thickness Swell (3-ply): -0.13%</li> </ul> Screw Hold (3-ply) (face/back/edge) <ul style="list-style-type: none"> <li>• 742 lbs/ 831 lbs/ 860 lbs average</li> </ul>
ASTM D4442: Moisture Content	6-9% average
ASTM D 6007-02: Formaldehyde Concentration in Air from Wood Products, small chamber test	Plyboo = 0.004 ppm (surpasses CARB II standards, 0.05ppm & ULEF standards of 0.04ppm)

### Physical / Mechanical Properties - Strand Bamboo Flooring

Dimensions:	9/16" x 3 3/4" x 72" - 14mm x 96mm x 1830mm
Installation:	Tongue and Groove, glue down
ASTM E648:Critical Radiant Flux:	Class 1
ASTM D1037: Dimensional Stability	Linear Expansion: Parallel -0.02%, Perpendicular -0.23%, Thickness Swell -0.25%, Hardness (Janka Ball Test): 3,500 lbf average
ASTM D2394: Coefficient of Friction	Static Coefficient/Dynamic (Sliding) Coefficient: 0.562/ 0.497
ASTM 4442: Moisture Content	6-9% average
ASTM D5116: Organic Emission (CA Section 01350)	Classroom scenario/Office scenario: Pass/Pass