

Evaluation of Various Physical Properties of Baleboard® Polyethylene Lumber

Test	Test Method	Results
Leachate	Regulation 558, Schedule 4	Below Regulation Guidelines for: - Organophosphorus (OP) Pesticides - Phenoxy Acid Herbicides - Carbamates - Semi Volatile Organic Compounds
<i>The above test performed by Agat Laboratories</i>		
Surface Burning Characteristics	CAN/ULC-S102-03	Flame Spread = 145
<i>The above test performed by Underwriters' Laboratories of Canada</i>		
Fungal Resistance Test	ASTM C1338-96	No Fungal Growth was observed after 28 days of incubation. Exposed to: - Aspergillus Niger - Aspergillus Flavus - Aspergillus Versicolor - Penicillium Funiculosum - Chaetomium Globosum
Flexure – 16" Span	ASTM D198-02, Section 4	Maximum Load (lbf) = 1880.5 Load at 5% Strain (lbf) = 1782.0
Flexure – 24" Span	ASTM D198-05, Section 4	Maximum Load (lbf) = 909.3 Load at 2.5% Strain (lbf) = 745.9
Nail Withdrawal	ASTM D6117-97, Section 10.1	Maximum Load (lbf) = 147.4 (Conducted with 3 1/2" 16d galvanized spiral driven 1 1/4" deep)
Screw Withdrawal	ASTM D6117-97, Section 10.2	Maximum Load (lbf) = 348.6 (Conducted using 8 x 2 1/2" flat-head decking screws driven 1/2" deep)
Creep and Recovery – 16" Span	CCMC Masterformat 06522 (Issue Date: 2005-05-07)	Meets CCMC Standard (76% Recovery)
Creep and Recovery – 24" Span	CCMC Masterformat 06522 (Issue Date: 2005-05-07)	Meets CCMC Standard (82% Recovery)
Izod Impact	CCMC Masterformat 06522 (Issue Date: 2005-05-07); ASTM D256-05a, Method A	Meets CCMC Standard 2" x 6" Plank Construction = 137 J/m 4" x 4" Plank Construction = 253 J/m (Requirement >53.4 J/m)
UV	ASTM G155-04 (2000 Hours = approx 2 Years)	No observed cracking, chipping or change in nominal dimensions; light discoloration.

The above tests performed by Bodycote Materials Testing Canada, Mississauga, Ontario

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Static Coefficient of Friction WET	ASTM C 1028-06	.64U _s
Static Coefficient of Friction DRY	ASTM C 1028-06	.79U _k

The above tests performed by St. Louis Testing Laboratories Inc., St. Louis, MO

Freeze-Thaw	C672/C672M-03 (25 Cycles)	No scaling was observed
Chemical Resistance	ASTM D1308-02, Section 7.2	No Visual Effect at 10 hours with: <ul style="list-style-type: none"> - Household Ammonia - Unleaded Gasoline (Regular) - Transmission Fluid (Valvoline Max Life) - Engine Oil (10W30) - Diesel Fuel - Hydraulic Fluid

The above tests performed by Bodycote Materials Testing Canada, Mississauga, Ontario

Thermal Expansion Results		
<i>ASTM D696-03</i>		<i>Result: 1.27 x 10⁻⁴</i>
COLD	23° C to -30° C	Shrinks approximately .08" per foot = .972" per 12'
HEAT	23° C to +30° C	Expands approximately .01" per foot = .132" per 12'
<i>ASTM D696-03</i>		<i>Modified</i>
HEAT	23° C to +60° C	Expands approximately .06" per foot = .720" per 12'

The above tests performed by Bodycote Materials Testing Canada, Mississauga, Ontario

Note that shrinkage and expansion occurs to some degree with all plastic lumber products.

With Baleboard®:

The test "looks only at two extremes of temperature, and not intermediate temperature steps. It is uncertain whether the board material expands or contracts in a linear fashion for the full range between -30° C and +30° C." (Bodycote Testing Group)

The test was done by immersing individual pieces of Baleboard® into temperature baths. The boards were not fastened to any base.

Shrinkage can be reduced by using more fasteners throughout the length of the board.

There is greater shrinkage in cold temperatures, than expansion in heat.

Shrinkage and expansion occurs lengthwise.

The boards resume original size with original temperature.