

LEED CERTIFICATIONS REFERENCE SHEET

CERTIFICATIONS:

EPP CPA Certification: Particleboard, Hardwood, Fiber

Greenguard Certification: Laminate, Adhesives

FSC certification: Laminate

Freight/Logistics: ISO 9001, ISO9002 Certification

ENVIRONMENTAL FACTS:

UNFINISHED PARTICLEBOARD.

Formaldehyde emissions from unfinished particleboard must be less than or equal to 0.18 ppm using the Large Chamber Test Method (ASTM E1333). Particleboard products will be evaluated at the typical loading rate for particleboard of 0.13 ft²/ft³. Particleboard that uses a bonding system other than Urea Formaldehyde, may qualify for "Exempted" status under section 6.3 of the EPP Grade-mark Manual. One exception to this requirement is for Grade LD of ANSI A208.1-1999 (Door Core) products. Grade LD is allowed a loading ratio of 0.04 ft²/ft³ as per section 3.4 of ANSI A208.1-1999.

USGBC LEED Credits may be obtained in these areas:

- IEQ 4.4 Indoor Air Quality
- IEQ 4.5 Indoor Air Quality
- MR 4 Recycled Content
- MR 6 Rapidly Renewable Resources

HARDBOARD.

Formaldehyde emissions from unfinished hardboard must be less than or equal to 0.20 ppm using the Large Chamber Test Method (ASTM E1333). There are no specifications in the three relevant hardboard standards (ANSI A135.4, ANSI A135.5, ANSI A135.6) that require or recommend a loading ratio for hardboard products. Hardboard is most similar to MDF and will be tested with the loading ratio of MDF at 0.08 ft²/ft³. Hardboard that uses a bonding system other than Urea Formaldehyde, may qualify for "Exempted" status under section 6.3 of the EPP Grademark Manual.

USGBC LEED Credits may be obtained in these areas:

- IEQ 4.4 Indoor Air Quality
- IEQ 4.5 Indoor Air Quality
- MR 4 Recycled Content
- MR 6 Rapidly Renewable Resources

FIBER.

100% of the fiber used in products certified, as conforming to this EPPS, must be either recycled fiber, recovered fiber or a combination of both, as described in this EPPS.

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- IEQ 4.4 Indoor Air Quality
- IEQ 4.5 Indoor Air Quality
- MR 4 Recycled Content
- MR 6 Rapidly Renewable Resources

LAMINATE.

Contains a minimum of 20% post-consumer recycled content – the highest percentage of post-consumer content in the industry. (SCS-MC-002028)

Wilsonart Laminate backers contain a minimum of 30% recycled content (pre- and post-consumer). (SCS-MC-002027)

Wilsonart can provide FSC solutions to our customers – we are the first laminate company to obtain FSC certification in the industry. (SCS-COC-002415)

Low Emitting Materials: Wilsonart Laminate exceeds the industry's highest standards for Indoor Air Quality, with GREENGUARD® Certification on all laminate types.

USGBC LEED Credits may be obtained through use of Wilsonart Laminate in these areas:

- IEQ 4.4 Indoor Air Quality
- IEQ 4.5 Indoor Air Quality
- MR 4 Recycled Content
- MR 5 Regional Materials (manufactured at Temple, TX and Asheville, NC)
- MR 6 Rapidly Renewable Resources
- MR 7 Responsible Forest Management

Other important facts about Wilsonart Laminate:

- No added urea-formaldehyde.
- Recycled Content = /> 20% Industry

Certifications

- SCS FSC NSF UL
- GREENGUARD Indoor Air Quality Certification
- GREENGUARD Children and Schools Certification

ADHESIVES:

USGBC LEED Credits may be obtained through use of Wilsonart Adhesives in these areas:

EQ Credit 4.1: The VOC content of adhesive and sealants used must be less than the current VOC content limits of SCAQMD. All Wilsonart GREENGUARD® Certified adhesives meet or exceed this VOC requirement.

EQ Credit 4.4: Laminating adhesives used to fabricate on-site and shop-applied composite wood and agrifiber assemblies shall contain no added urea-formaldehyde resins. Wilsonart Adhesives contain no urea-formaldehyde resins.

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ADHESIVES (CONT.)

EQ Credit 3.2:

Develop an Indoor Air Quality management plan for the pre-occupancy phase.

Wilsonart Adhesives' GREENGUARD® Certified products are tested and certified according to the stringent GREENGUARD® standards for Low Emitting products and reduce air pollution and irritating contaminants.

Other important facts about Wilsonart Adhesives:

No products contain added urea-formaldehyde
No products contain methylene chloride
GREENGUARD Indoor Air Quality certifications
GREENGUARD Children and Schools certified (WA 730/731)



VENEER

Manufacturing process: A veneer profile wrapping process employs a water-base polyvinylacetate glue system which is activated before application with an acid catalyst. The glue is applied to the veneer by a

roller applicator. The veneer is transported on a vacuum belt which prevents the veneer from warping while the glue is dried with fans and infrared radiation. The process employs a porous substrate, such as particle board, which is heated by infrared radiation on all sides. Polyvinylacetate glue is applied to the surface of the substrate, which will be wrapped with veneer and the heat of the substrate plus additional infrared radiation and fans evaporates and dries the glue. The glue on the substrate is dried for approximately 60–90 seconds and on the veneer for approximately 10–15 seconds on cross feed drying lines. The veneer is inverted on a side belt changer and forced into intimate contact with the substrate by heated metal rollers. Rubber rollers apply pressure and heat guns and infrared lamps apply process heat which rapidly bonds the veneer to the substrate, producing a bond with high green strength which may be almost immediately sanded or milled. This process produces a veneer-wrapped molding with a glue line impervious to moisture



PARTICLE BOARD CORE

Specification	ANSI M-S
Density (pcf)	42-45
MOR (psi)	1,850
MOE (psi)	350,000
Internal Bond (psi)	60
Face Screw Hold (lb)	200
Edge Screw Hold (lb)	175
Linear Expansion (%)	0.35
Thickness Tolerance (in)	P/M .005
Length and Width (in)	P/M 1/16

LAMINATE

Decorative surface papers impregnated with melamine resins are pressed over kraft paper core sheets impregnated with phenolic resin. These sheets are then bonded at pressures greater than 1000 pounds per square inch at temperatures approaching 300°F. The backing is sanded to facilitate maximum bond holding. This surface material is Greenguard certified. These meet or exceed ISO 4586 "High Pressure Laminate" specifications. Finished sheets are trimmed, and the backs are sanded to facilitate bonding.

Do not subject laminate to extremes in humidity, temperatures higher than 275°F (135°C) for substantial periods of time, or intense, continuous, direct sunlight.

NEMA TEST DESCRIPTION	RESULTS
Thickness	0.039" ± 0.005"
	(0.99mm ± 0.13mm)
Appearance	No ABC def.
Light Resistance	Slight effect
Cleanability (cycles)	10
Stain Resistance	
Reagents 1-10	No effect
Reagents 11-15	Slight effect
Boiling Water Resistance	No effect
High Temperature Resistance	Slight effect
Impact Resistance	55" (1397mm)
Radiant Heat Resistance	140 seconds
Dimensional Stability	
Machine Direction	0.5%
Cross Direction	0.8%
Surface Wear Resistance (cycles)	400
Formability*	*9/16" face (14.28mm)
	*3/16" back (4.76mm)
Blistering	70 seconds

LAMINATE ADHESIVES

Polyvinyl Acetate (PVA) adhesives or Water-based Contact Adhesives are used to bond laminate to core. Polyvinyl Acetate (PVA) adhesives or "white glues" are water-based and emit low VOCs and are urea-formaldehyde free.

SOLID WOOD EDGE

Solid wood edge is a high design, sustainable option for multiple applications from library tables to veneer conference applications. Standard flat wood edge is 3mm thickness with bull nose application available on library tables. Standard finishes match standard veneers: Maple, Oak, Mahogany, Cherry, and Walnut.

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BALTIC BIRCH PLYWOOD

Plywood work surface and table top substrates use Baltic birch laminated with a phenolic resin-based adhesive to eliminate harmful formaldehyde or VOC emissions. The beauty of the birch plywood is revealed by eliminating the edge band. Sustainable forestry practices in Eastern Europe continue to grow, with over half of the Baltic States' forest area meeting FSC standards. This material core can be surfaced with a veneer, linoleum, or laminate. Birch plywood can contribute to LEED® Certification Credits.

USGBC LEED Credits may be obtained in these areas:

- IEQ Credit 4.1: Low-emission Materials: Adhesives & Sealants
- IEQ Credit 4.2: Low-emission Materials: Paints & Coatings
- IEQ 4.4: Indoor Air Quality
- MR 6: Rapidly Renewable Resources



LINOLEUM

Forbo's Marmoleum® Linoleum emits no harmful VOC's or carcinogens, and has properties that inhibit bacteria growth. It is made up of linseed oil, rosins, and wood flour. Because Marmoleum® is a natural organic product, its performance is enhanced by time, as exposure to air serves to harden and increase its durability. Its natural jute backing and water-based polyurethane finish ensure performance and ease of maintenance, while still allowing high recyclability. Forbo Marmoleum® can contribute to LEED® Certification Credits.

USGBC LEED Credits may be obtained in these areas:

- IEQ Credit 4.1: Low-emission Materials: Adhesives & Sealants
- IEQ Credit 4.2: Low-emission Materials: Paints & Coatings
- IEQ 4.4: Indoor Air Quality



POWDER COAT

Powder coating is a completely green manufacturing process. The powder is 100% solids, with no VOCs, that uses heat to melt, flow and cure the powder into a coating. The overspray powder is recycled back through our equipment to be sprayed again. Powder coating is done on MDF. The MDF itself contains recycled wood fibers, and when routed, creates dust and shavings. This material can be sent off for a "third generation" use such as fresh cow bedding in farm feed lots. Colors can be custom matched with various levels of texture, and the material is extremely durable and stain resistant. Powder on wood can contribute to LEED® Certification Credits.

USGBC LEED Credits may be obtained in these areas:

- IEQ 4.4 Indoor Air Quality
- IEQ 4.5 Indoor Air Quality
- MR 4 Recycled Content

AIRLEY, FLOW AND SOLIWOOD SEATING.

Up to 100% of these seating products can be recycled.

SOLIWOOD

USGBC LEED Credits may be obtained in these areas:

- IEQ 4.4 Indoor Air Quality
- IEQ 4.5 Indoor Air Quality
- MR 4 Recycled Content
- MR 6 Rapidly Renewable Materials

AIRLEY

USGBC LEED Credits may be obtained in these areas:

- IEQ 4.4 Indoor Air Quality
- IEQ 4.5 Indoor Air Quality
- MR 4 Recycled Content

FLOW

USGBC LEED Credits may be obtained in these areas:

- IEQ 4.4 Indoor Air Quality
- IEQ 4.5 Indoor Air Quality
- MR 4 Recycled Content

TABLE BASES.

The recycled content of the product can vary between 30% and 100% Cardboard used in packaging designs on average includes 30% recycled material. In addition we also recycle 100% of steel, stainless steel, and aluminum scrap and 90% of shipping materials.