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Glossary of Terms

Aluminum Oxide: A chemical compound also known as alumina. Particles of aluminum oxide are added to the urethane finish on hardwoods for increased abrasion resistance.

ASTM International: Organized in 1898, ASTM International is one of the largest voluntary standards developing organizations in the world. ASTM is a not-for-profit organization that provides a forum for the development and publication of voluntary consensus standards for materials, products, systems and services. ASTM's members, representing producers, users, consumers, government and academia from over 100 countries, develop technical documents that are a basis for manufacturing, management, procurement, codes and regulations. These members belong to one or more committees, each of which covers a subject area such as steel, petroleum, medical devices, property management, consumer products and many more. It is these committees that develop the more than 12,000 ASTM standards that can be found in the 77-volume Annual Book of ASTM Standards.

Blank: Bamboo slats laminated into a large block or beam from which many Hawa bamboo products are cut and constructed.

Construction Specifications Institute (CSI): A nonprofit technical organization serving construction specifiers and related building professionals. CSI publishes the Spec-Data Manual, which includes product information for use in product selection, preliminary specifications, working drawings and final bid specifications. CSI aims to enhance communication among all the nonresidential building design and construction industry's disciplines and meet the industry's need for a common system of organizing and presenting construction documents.

Cross-fillet, Cross-ply: A type of bamboo flooring construction in which a bamboo core is placed perpendicular to a solid bamboo top and bottom layers for extra stability. Other types of bamboo construction are solid strip, engineered and strand woven bamboo.

Culm: The main stem or stalk of the bamboo plant that is above ground. It is also referred to as a "cane" or "pole." The main stem that grows below ground is the "rhizome."

Forest Stewardship Council (FSC): The Forest Stewardship Council is a non-profit organization devoted to encouraging the responsible management of the world's forests. The FSC has identified bamboo products as "Non-Timber Forest Products" and considers these products outside its scope of interest.

Formaldehyde: The chemical formaldehyde is a volatile organic compound (VOC) that is naturally present at low levels indoors and out, usually at less than 0.03 ppm (parts per million). Used in many common household products and building materials, it helps make manufacturing adhesives durable. Formaldehyde can cause some irritation to humans and at very high levels of exposure has been shown to cause cancer in laboratory animals. See also phenol formaldehyde and urea formaldehyde.

ISO, ISO-certified: The International Organization for Standardization (ISO) is a global network that identifies international standards required by business, government and society, and develops them in partnership with the sectors

that will put them to use. ISO is a non-governmental federation of the national standards bodies of 150 countries from all regions of the world, including developed, developing and transitional economies. The organization distills standards from an international consensus from the broadest possible base of stakeholder groups. Expert input comes from those closest to the needs for the standards and also to the results of implementing them. In this way, although voluntary, ISO standards are widely respected and accepted by public and private sectors internationally.

ISO 9001:2000 and ISO 14001: International Organization for Standardization (ISO) regulations that ensure product quality and business practices. The ISO 9000 and ISO 14000 families are among ISO's most widely known standards, implemented by more than a million organizations in 161 countries. ISO 9000 has become an international reference for quality management requirements in business-to-business dealings, and ISO 14000 is primarily concerned with environmental management. The vast majority of ISO standards are highly specific to a particular product, material or process. However, the standards that have earned the ISO 9000 and ISO 14000 families a worldwide reputation are known as generic management system standards.

Joints: The knuckles of the bamboo plant between the hollow sections of the stalk. See node.

Laminate, Lamination: Bonding together with adhesives. In HAWA products, it means to bond together several layers of bamboo slats under extreme pressure with a durable, environmentally safe adhesive to form hardwood "blanks" from which flooring, stair parts and trim are constructed and/or milled to bond together layers of "blank" material with cores or substrates.

Low-emitting, Low off-gassing: Describes materials like volatile organic compounds that emit, give off or off-gas chemicals at lower-than-standard levels.

Node: The joint between hollow sections of a bamboo culm. Comprised of a rigid membrane that spans the culm where branches and buds are found, the nodes reinforce the stalk without adding weight so the culm remains flexible and strong.

Off-gas, Off-gassing: The process by which chemical compounds such as VOCs including formaldehyde vaporize and enter the atmosphere.

Rapidly Renewable: Describes a natural resource that replenishes itself by natural processes very quickly, at least as quickly as it is used by human enterprise. The bamboo plant is considered rapidly renewable because when harvested sustainably, the plant re-grows from the same root stalk, maturing in just a few years. By comparison, oak and maple trees take decades to grow, are incapable of re-growing from the same plant, and can be harvested only once.

Strand Woven Bamboo: A patented construction method in which fibers of semi-shredded bamboo are intertwined in a pressure-treated adhesive base to form a high-density, homogenous bamboo plank without internal voids. The fibers may be either all natural color or all carbonized color

Sustainability, Sustainable: A process is sustainable if it can be repeated again and again without negative environmental impact or high costs to anyone. For plants like bamboo, it means harvesting crops or materials so as to ensure the health and vitality of the plant for future harvests. For bamboo farmers, it means being paid fair prices that sustain their families. Issues of sustainability impact every aspect of a business from raw materials to manufacturing and shipping to proximity of labor force to factories. For a business, it means a complex of things from profitability to fair worker wages to carbon-neutral operations.

Urea Formaldehyde: Urea formaldehyde is a clear, thermosetting resin or plastic made from urea and formaldehyde and heated in the presence of a mild base such as ammonia. Used in adhesives, urea formaldehyde has high tensile strength and flexibility, low water absorption and higher surface hardness. Urea formaldehyde is used in interior plywood and MDF and breaks down more easily than phenol-based adhesives, thereby releasing more formaldehyde. Urea-formaldehyde manufacturing adhesives, even those that off-gas, are at levels far below national and international standards.

VOC, VOCs: Volatile organic compounds (VOCs) are organic chemical compounds that under normal conditions significantly vaporize and enter the atmosphere. Organic chemicals are widely used as ingredients in household products. Paints, varnishes and wax all contain organic solvents, as do many cleaning, disinfecting, cosmetic, de-greasing and hobby products. Fuels are made up of organic chemicals. All of these products can release organic compounds when in use and, to some degree, when stored. Some of these chemicals have short- and long-term adverse health effects. Concentrations of many VOCs are consistently up to ten times higher indoors than outdoors. Learn more about VOCs from the [EPA](#).