

Glossary of Green Standards, Codes, Regulations and References

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STANDARDS, CODES, REGULATIONS

ANSI/ASA S12.60-2010/Part 1 (R2015) Current Standard: American National Standard – Acoustical Performance Criteria, Design Requirements and Guidelines for Schools: This standard provides acoustical performance criteria, design requirements and design guidelines for new school classrooms and other learning spaces. The ANSI standard is commonly referred to in high-performance school criteria and on projects registered as LEED for Schools.

ASHRAE 189.1-2014 Current Standard: Standard for the Design of High-Performance Green Buildings: ASHRAE 189.1 is an ANSI standard. Unlike other sustainable building documents, it is not a design guide or a rating system; it is a standard. It provides minimum requirements for high-performance green buildings and applies to all buildings with the exception of low-rise residential. The standard is an optional compliance path to the International Green Construction Code.

ASTM E2129-10 Current Standard: Standard Practice for Data Collection for Sustainability Assessment of Building Products: The E2129 standard covers a set of instructions for collecting data to be used in assessing the sustainability of building products for use in both commercial and residential buildings. This reference may appear in specifications that are following the Federal Green Specifications or the Whole Building Design Guide.

Building Research Establishment Environmental Assessment Method (BREEAM): BREEAM is an environmental assessment method used to determine the environmental performance of a building. Use of the BREEAM rating system is common to projects in the UK and Europe, but now used internationally.

CALGreen 2013-Current Standard: The California Green Building Standards Code, referred to as CALGreen, went into effect on Jan. December 1, 2011. This California code requires that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and install low-pollutant-emitting finish materials. CALGreen's mandatory measures establish a minimum for green construction practices. A new CALgreen code was published in 2013 and became effective Jan. 1, 2014.

California 93120: A regulation that limits the amount of formaldehyde that can be emitted from composite wood products sold or used in the State of California.

California Air Resources Board (CARB): The California Air Resources Board (CARB) approved an Airborne Toxic Control Measure (ATCM) in April 2007. The goal of this ATCM is to reduce formaldehyde emissions from composite wood products, including hardwood plywood, medium density fiberboard, and particleboard. Manufacturers, distributors, importers, fabricators, retailers and third-party certifiers of composite wood products, as well as finished goods that contain composite wood products destined for the California market, are affected.

The ATCM establishes two tiers of formaldehyde emission standards. Phase 1 became effective on Jan. 1, 2009, and a more stringent Phase 2 became effective Jan. 1, 2013. Manufacturers of such products will label them as meeting; CARB PH1 Compliant, CARB PH2 Compliant, Ultra Low-Emitting Formaldehyde (ULEF) or No Added Formaldehyde (NAF). Composite products affected by this regulation include:

- Particleboard
- Medium density fiberboard (MDF)
- Thin MDF (< 8 mm in thickness)
- Hardwood plywood made with a veneer core
- Hardwood plywood made with a composite core (particleboard or MDF)

California Specification 01350 (CDPH Standard) 2010 Current Standard: STANDARD PRACTICE FOR THE TESTING OF VOLATILE ORGANIC EMISSIONS FROM VARIOUS SOURCES USING SMALL-SCALE ENVIRONMENTAL CHAMBERS. The CDPH Standard Method V1.1, is also referred to as CA Section 01350, and provides the basis for manufacturers' self-declared and third-party certified claims for low-emitting building products. This reference is often noted in specifications as it is widely specified in various sustainable building standards and codes.

Collaborative for High-Performance Schools (CHPS): The CHPS criterion is a benchmarking system that outlines the fundamentals of a high-performance school. Similar to other green building standards, it addresses site and materials selection, energy and water efficiency, indoor environmental quality, innovation, performance, and integrated delivery. The purpose of the CHPS criteria is to provide high-performance school strategies that can be used by school districts and their design teams for new campus facilities, new buildings, and major modernizations. CHPS criteria will vary by state and by version of the standard. CHPS criteria are already being followed in many states such as California, Colorado, Hawaii, Massachusetts, New York, Texas, Virginia and Washington. There is also a Northeast CHPS criteria, which includes New Hampshire, Rhode Island, Connecticut, Maine and Vermont.

When bidding a CHPS project, be aware of the version of the CHPS standard to ensure that you are quoting the correct product, especially as it pertains to low-emitting materials or EQ credits. Specifications for projects to be built to the CHPS criteria may also require that all products be listed on the CHPS High-Performance Product Database. The CHPS database for sustainable products includes a listing of validated environmental attributes for those products, including recycled content, rapidly renewable material, organically grown material, FSC-certified wood, and life cycle assessment.

Earth Advantage: Residential (Homes) and small commercial buildings certification offered as an alternate to LEED certification. The certification program's focus is to improve health, comfort, durability, and energy and water efficiency while reducing operating expenses.

Enterprise Green Communities Criteria: This standard promotes healthy design and sustainable building best practices for affordable homes and the communities they are built in.

Federal Green Specifications: See Whole Building Design Guide

Green Globes: Green Globes is an environmental assessment rating system and guide. It is suitable for either large or small buildings, including offices, multi-family structures, or institutional buildings such as schools, universities and libraries. Green Globes is different from other green building standards, as it uses

a streamlined approach with data submitted online through a questionnaire. A report is automatically generated once the data has been completed.

Green Guide for Healthcare (GGHC): The GGHC provides the healthcare sector with a set of best practices that designers, owners and operators can use to guide and evaluate their progress toward high-performance healing environments. Some of the principals of the LEED rating systems have been incorporated into this guide. It is voluntary self-certifying.

Guiding Principles for Sustainable New Construction and Major Renovations: Federal agencies are now required to incorporate the Guiding Principles for New Construction and Major Renovations into all new construction, major renovation, or repair and alternation of federal buildings. The Guiding Principles standard focuses on integrated design, optimizing energy performance, protecting and conserving water, enhancing indoor environmental quality and reducing the environmental impact of materials.

Guiding Principles for Sustainable Existing Buildings: Guidelines established for greening existing federal buildings.

Health Product Declaration (HPD) Open Standard: A voluntary standard that specifies how ingredients in a product should be listed. The standard includes various reference lists that help determine if there is any health hazards associated with any of the ingredients in a given product. Various individuals such as building designers, specifiers, owners and end-users may request a supplier to complete a HPD as a resource in choosing products that have full disclosures of chemical ingredients. Version 2 of the standard was published in late 2015.

ICC/ASHRAE 700-2015 National Green Building Standard: The ICC/ASHRAE 700 National Green Building Standard is a Residential Green Building Standard. It was developed through a joint effort of the International Code Council and the National Association of Home Builders. The standard applies to all residential construction work in the United States, including single-family residences, condos, and apartments. The standard includes guidelines for residential designers and builders and focuses on water conservation, energy and material use, indoor air quality, and education. Multiple forest certification schemes are also accepted in this standard.

International Green Construction Code (IGCC) 2015 Current Edition: The IGCC is a new green building code that addresses energy use, water use, material and resource use, indoor environment quality and building impacts on the environment. The IGCC focuses on greenhouse gas emissions, site design, existing buildings and education as it pertains to sustainability. The code is designed to provide a regulatory framework regarding sustainability in commercial buildings. The IGCC was created by the International Code Council (ICC) board of directors. The American Institute of Architects and ASTM International served as sponsors. The IGCC will be updated every three years, similar to other ICC codes.

ISO 14021, Environmental Labels and Declarations — Self-Declared Environmental Claims (Type II Environmental Labeling): The ISO 14021 international standard describes a general evaluation and verification system for self-declared environmental claims and includes requirements for the labeling of those claims.

Lacey Act: A conservation law in the United States that prohibits all trading of plants and plant products, including timber and wood products that are illegally sourced.

Leadership in Energy and Environmental Design (LEED): LEED is an internationally recognized green building certification system developed by the U.S. Green Building Council. Numerous LEED rating systems exist, such as LEED for Building Design and Construction, LEED for Schools, LEED for Existing Buildings O&M, and LEED for Neighborhood Development, etc. LEED offers building owners a framework for identifying and applying practical and measurable green building design, construction, operations and maintenance solutions.

LEED v4: Initially referred to as LEED 2012, LEED v4 is the newest approved version of the LEED Rating System. According to the USGBC, you will see changes from the current LEED 2009 version mainly in three categories: new market sectors, increased technical rigor and streamlined services. You will also see changes in the point distribution and credit weightings, as well as some new credit categories and new prerequisites. On Oct. 29, 2014, THE U.S. GREEN BUILDING COUNCIL (USGBC) announced that it has extended the project registration date for LEED 2009 projects until Oct. 31, 2016. The last version was set to expire June 15, 2015, when LEED Version 4 would take over. At the present time, projects can choose to register under LEED v3 or LEED v4. Watch for either reference in specifications.

Living Building Challenge Certification (LBC) Version 3.1 Current Standard: The Living Building Challenge is a certification program that is based on seven performance areas: site, water, energy, health, materials, equity and beauty. The LBC Standard includes a “Red List” of chemicals that are to be avoided on projects. Unlike other green building standards that require composite wood or agrifiber products to be manufactured with no added urea-formaldehyde, the Living Building Challenge Red List restricts the use of all added formaldehyde. This includes both phenol- formaldehyde and urea-formaldehyde. Unfortunately, both phenol- and urea- formaldehyde resins are still commonly used in the fabrication of composite products such as particleboard and MDF.

Living Product Challenge Certification Version 1.0 Current Standard: A product certification offered through the International Living Future Institute. Products achieve certification by meeting certain imperatives one of which includes a Red List of chemicals to avoid.

NAHB Model Green Building Guidelines: The National Association of Home Builders Green Building Guidelines is a voluntary standard designed for homebuilders. The guidelines of this standard recognize multiple forest certification schemes, including FSC and SFI, and include innovative design credits for using life cycle assessments in determining the most environmentally preferable product for that building.

NYC Green Schools Rating System: Similar to LEED®, this New York City standard is intended to guide the sustainable design, construction and operation of new and renovated schools in the City of New York. The rating system incorporates best practices from both the LEED Rating Systems and the CHPS standards.

SFI 2015-2019 Standards and Rules: The SFI Forest Management Standard is based on principles that promote sustainable forest management, which includes protecting water quality, biodiversity, wildlife habitat, species at risk, and forests with exceptional conservation value. SFI may be referenced in green building standards as it pertains to the use of sustainable wood products.

South Coast Air Quality Management District (SCAQMD) Rule 1113: The purpose of this rule is to limit the volatile organic compound (VOC) content of architectural coatings applied on site. Some examples of the materials covered under this rule are clear wood finishes, floor coatings, and below-ground wood preservatives.

South Coast Air Quality Management District (SCAQMD) Rule 1168: The purpose of this rule is to reduce emissions of volatile organic compounds (VOCs) and to eliminate emissions from site-applied adhesives, primers, sealants, etc.

Well Building Standard: Version 1 of the standard was published October 2014 and is overseen by the International WELL Building Institute. The Well Building Standard is intended to be used for commercial and institutional buildings and focuses on the health and wellness of building occupants. It addresses the elements of our built environment focusing on seven key areas; air, water, nourishment, light, fitness, comfort and mind. Pilot Programs now launched for Multifamily, Retail, Restaurant, Commercial Kitchen, and Education.

Whole Building Design Guide (WBDG): The Whole Building Design Guide offers strategies to achieve a true high-performance building: one that is cost-effective over its entire life cycle, safe, secure, accessible, flexible, aesthetic, productive, and sustainable. The WBDG is specified on many government projects.

GENERAL REFERENCES

Agrifiber Products: Agrifiber products are made from agricultural products. Wheat board, rice board, and strawboard are some examples of agrifiber.

American National Standards Institute, Inc. (ANSI): ANSI is the national coordinator of voluntary standards development in the U.S. for information on national and international standards.

Biomass: Biomass is material derived from trees, grasses, or agricultural crops that can be converted to heat energy to produce electricity.

Building Information Modeling (BIM): BIM is a computer-aided design tool used by the architecture, engineering, and construction industries. BIM modeling is the process of generating and managing building data during its life cycle.

Carbon Footprint: Carbon footprint refers to the amount of greenhouse gases that are emitted from organizations such as manufacturing facilities and other businesses.

Certified Wood: Certified wood is timber that meets a standard of responsible forestry and has been certified by an entity (certification body) that has been accredited by the standard setting organization. FSC, SFI, and PEFC are organizations that set standards for certified wood.

Chain of Custody (CoC): CoC is a procedure that tracks a product from extraction or harvesting to its end use, including all stages of the process.

Chain-of-Custody Certification (FSC): FSC Chain-of-Custody Certification is awarded to companies that produce, sell, promote, or trade wood products. Companies certified to sell FSC goods undergo a rigorous chain-of-custody certification process with an accredited third party organization. All certified companies are required to have systems in place to allow the tracking of all purchases and invoiced sales of products with an FSC claim.

Closed-Loop Recycling: This is a system in which the waste or byproduct of one process or product is used in the making of another product.

Corporate Sustainability Report (CSR): A document that lists the environmental, social and economic impacts of a company.

Cradle to Cradle Assessment: A “full circle” assessment that takes into account the life cycle of a product that has fulfilled its useful purpose, including back to the beginning of the process where it can be re-introduced into the same process to manufacture a new, similar product.

Cradle to Gate Assessment: Assessment that is based on data from raw material extraction and harvesting to shipment from the manufacturer’s facility.

Cradle to Grave Assessment: Assessment that tracks the life of a product from the point of creation until the disposal of the product.

Declare: An ingredients label that lists the various chemicals in a given building product. The Declare label was established by the International Living Future Institute and aids specifiers in their selections of products for sustainable projects.

Environmental Product Declaration (EPD): Environmental Product Declarations include quantified environmental data for products or systems based on information from a life cycle analysis. The purpose of an EPD is to provide quality-assured information regarding environmental performance of products.

Extended Producer Responsibility: A term used to describe when a manufacturer is responsible for the proper disposal of the products they sell. Referenced in various sustainable building standards, the Extended Producer Responsibility shifts the responsibility of disposal of the product back to the manufacturer.

Forest Stewardship Council (FSC): The Forest Stewardship Council is a nonprofit organization devoted to encouraging the responsible management of the world’s forests. The mission of the FSC is to promote environmentally appropriate, socially beneficial, and economically viable management of the world’s forests. Independent certification organizations (certification bodies) are accredited by the FSC to carry out assessments of forest management to determine if the FSC standards have been met. FSC may be referenced in green building standards as it pertains to the use of certified wood.

FSC Online Claims Platform (OCP): The Online Claims Platform digitally connects certified FSC® suppliers and customers so that claims for FSC-certified products can be quickly confirmed as accurate, minimizing any errors. The goal of the FSC Online Claims Platform is to get away from current paper records and move towards an internet based software that will provide assurance of the validity of all FSC claims made on a given product. At the present time, use of the FSC Online Claims Platform is voluntary.

Formaldehyde: Formaldehyde is a chemical used widely in the manufacturing of wood-based products. Phenol-formaldehyde- and urea-formaldehyde-based resins are commonly used adhesives for making particleboard (PB) and medium-density fiberboard (MDF). Formaldehyde is also naturally produced in plants and animals.

Global Harmonized System of Classification and Labeling of Chemicals (GHS): An occupational health and safety standard that focuses on classifying potential hazards of chemicals, communicating the hazards along with the appropriate protective measures to employees that handle these items.

Global Warming: Global warming is the perception that the Earth’s atmosphere has an increased level of carbon dioxide. It is believed that the increase in carbon dioxide is being caused by deforestation and the burning of fossil fuels, resulting in the warming of the planet.

Green Circle: Third-party certifier of environmental and sustainability claims on products, buildings and manufacturing operations.

GREENGUARD: This is a product certification program for low-emitting building materials, furniture, furnishings, finishes, cleaning products, electronics, and consumer products.

GREENGUARD Gold Certification: Emissions based certification that ensures that a product is acceptable for use in environments such as schools and healthcare facilities. (Formerly known as Children's & Schools)

Greenscreen®: A screening method that allows users to evaluate chemicals for any hazards that could potentially affect human health and the environment.

Green Seal: Green Seal is a nonprofit, third-party certifier and standards development body. It certifies products based on life cycle sustainability standards. A Green Seal certification mark on a product means that it has gone through a rigorous process to show that it has a reduced amount of impact on the environment and on human health.

GreenWizard: A green product directory that connected the Design & Construction professionals to Building Product Manufacturers products. Listings included technical information such as Product Data Sheets, environmental certifications, and environmental attribute claims. The posted information assisted the architectural community in their selection of products for sustainable building projects. The GreenWizard directory is no longer active.

Health Product Declaration Collaborative: A customer-led non-profit organization that developed and continues to maintain the Health Product Declaration (HPD) Open Standard. Refer to Health Product Declaration (HPD) Open Standard Version 2 under Standards and Codes section of this document for additional information.

LEED-Accredited Professional (LEED AP): LEED-accredited professionals demonstrate current knowledge of green building technologies and best practices. They have the designation of LEED Green Associate, LEED AP with Specialty, or LEED AP Fellow.

Life Cycle Assessment (LCA): LCA is a method for assessing the effect that a particular product has on the environment. Both positive and negative impacts are evaluated. A life cycle assessment begins with the evaluation of the raw materials that are used to produce the product; including the origin of those materials and the impact those materials may have had on the environment. It also accounts for the process used to manufacture the final product, along with the product packaging, transportation, distribution, consumer usage, and disposal of any waste material. LCA is sometimes referred to as a life cycle analysis or a cradle-to-grave analysis.

Material Safety Data Sheet (MSDS): A document that contains information on the potential health risks of exposure to chemicals or other potentially dangerous substances in a product. Guidance on the safe handling, storage and disposal of the product is also included in this document. Material Safety Data Sheets are now referred to as Safety Data Sheets. (SDS)

Net Zero Building: A net zero building can be defined in many ways; however, the basis of a net zero building is that it produces at least as much energy as it uses in a year.

No Added Formaldehyde (NAF): NAF-based resins are resins formulated with no added formaldehyde. Resins may be made from soy, PVA or MDI.

No Added Urea-Formaldehyde (NAUF): Urea-formaldehyde (UF) resins are used in the production of composite panel products such as medium-density fiberboard (MDF) and particleboard (PB). Urea-formaldehyde is typically added to improve the bonding of composite materials. Several of the LEED rating systems, along with other green building standards, include a credit that requires all composite wood and agrifiber products to be manufactured with no added urea-formaldehyde. It is important to note that natural-occurring formaldehyde commonly found in wood is not an issue. Composite products manufactured with phenol-formaldehyde are considered compliant with the EQ 4.4 credit.

No Formaldehyde (including natural-occurring): No formaldehyde restricts the use of both phenol- and urea-formaldehyde, commonly used in the fabrication of composite products. In some cases, the reference may also include natural-occurring formaldehyde. Since wood has natural-occurring formaldehyde, products manufactured with wood components would not meet this requirement.

Off-Gassing: This is the emission of gaseous pollutants. Off-gassing has negative effects on indoor air quality. All chemically processed or petroleum-based materials produce off-gassing. Fortunately, many products are now available that have reduced toxicity and therefore off-gas much less.

Pharos: The Pharos Project (Managed by the Healthy Building Network) is a database for identifying health hazards associated with building products. The Pharos database encourages manufacturers to disclose all ingredients in building products, assisting the design community in choosing environmentally friendly products.

Phenol-formaldehyde: Phenol-formaldehyde is a synthetic resin made by mixing phenol with formaldehyde. Phenol-formaldehyde resins are commonly used today as adhesives in the bonding of composite woods such as particleboard and MDF.

Polyvinyl Acetates (PVA): Polyvinyl acetates are probably the most common adhesive on the market. They are designed to work on porous materials. They are water-based and clean up with warm soapy water. PVAs do not emit any harmful fumes and are not hazardous to touch.

Post-Consumer (Recycled Content): Post-consumer waste material is an end product that has completed its life cycle as a consumer item and would otherwise have been disposed of as solid waste. Post-consumer materials include recyclables collected in commercial and residential recycling programs, such as office paper, cardboard, aluminum cans, plastics and metals. Milk containers, pop bottles, newspapers and construction and demolition debris are additional examples of post-consumer waste. Post-consumer recycled content is the percentage of material in a product that was consumer waste.

Pre-Consumer (Recycled Content): Also referred to as post-industrial, pre-consumer waste refers to materials generated in manufacturing and converting processes. Pre-consumer materials may consist of scrap, trimmings and other by-products that were never used in the consumer market. Pre-consumer recycled content is the percentage of material in a product that is recycled from manufacturing waste.

Proposition 65: Proposition 65 requires businesses to notify Californians about significant amounts of chemicals in the products they purchase, in their homes or workplaces, or that are released into the environment. Wood dust is one of the chemicals found on the Proposition 65 chemical list. Manufacturers should be able to provide you with a supporting letter as it relates to wood dust if needed.

Rainforest Alliance: The Rainforest Alliance is an independent, nonprofit organization that is accredited for FSC auditing and certification as a Certification Body.

Rapidly Renewable Materials: These are agricultural products that are harvested in a 10-year cycle or less.

Reclaimed Wood: Reclaimed wood is wood salvaged from old structures that has been cleaned and milled for use on new projects. Note: FSC chain-of-custody certification requires that companies using reclaimed material in their FSC products meet FSC's definitions of post-consumer and/or pre-consumer reclaimed material as verified by an accredited certification body. FSC-STD-40-007 V2-0 must be added to the scope of the certificate before such products can be invoiced.

Regional Materials: These are identified in standards as products that are extracted, harvested and manufactured within a prescribed distance of a given project. LEED currently defines this distance as within 500 miles.

Renewable Resource: Renewable resource refers to any natural resource that can be replaced or replenished in the same amount of time or less than it takes to draw the supply down. Solar radiation, geothermal and wind, as well as biomass, which include wood, are just some examples of renewable resources.

Safety Data Sheet (SDS): Previously referred to as Material Safety Data Sheet (MSDS). New Safety Data Sheets have a more structured format and require information that MSDS did not.

SCS Global Services: SCS is an industry independent, third-party certification body specializing in assessments of environmental impacts and social equity. SCS is organized as three unique divisions: Natural Resources, Food and Agriculture, and Environmental Certification Services. These divisions oversee programs such as Forest Stewardship Council (FSC) Forest Management and Chain-of-Custody certification, Recycled Content certification and Indoor Air Quality certification for low VOC-emitting products. SCS Global Services was formerly known as Scientific Certification Systems.)

SCS Indoor Advantage™ Gold: Indoor Advantage Gold is a product certification offered by SCS that is based on the multi-stakeholder developed CDPH Standard Method v1.1 – 2010 (aka CA 01350). This certification is often used by manufacturers to certify that VOC emission levels of finished products, such as wood doors, meet stringent emissions parameters for a target list of carcinogens, reproductive toxins, mutagens and endocrine disruptors. Manufacturing facilities are routinely audited and certified products are annually tested. Certified products and downloadable certificates are publicly available on SCS Global Services' website.

Self-Declared Environmental Claims: These are environmental claims made on products without independent third-party certification.

Sustainable Forestry Initiative, Inc. (SFI): SFI is an independent organization dedicated to promoting sustainable forest management. The organization publishes a forest management standard referred to as SFI 2015-2019 Standards and Rules.

Ultra Low-Emitting Formaldehyde (ULEF): ULEF resins are formaldehyde-containing resins formulated such that the formaldehyde emissions from composite wood products are consistently below applicable Phase 2 emission standards.

Urea-Formaldehyde (UF): Urea-formaldehyde is a combination of urea and formaldehyde that is used in some glues. Urea-formaldehyde resins are used in the production of composite panel products such as particleboard and MDF. Urea-formaldehyde is currently used in combination with other resin systems and scavengers to meet reduced formaldehyde emission requirements.

U.S. Green Building Council (USGBC): The U.S. Green Building Council is a nonprofit organization that promotes buildings that are environmentally responsible, profitable, and healthy places to live and work. The LEED rating systems were developed by the USGBC.

Volatile Organic Compounds (VOC): VOCs are chemicals that are emitted as gases from solids or liquids and easily evaporate into the air at room temperature.