



MATERIALS & RESOURCES - GREEN BUILDING TECHNOLOGY TRAINING PROGRAM

FOR GREEN BUILDING AND SUSTAINABILITY SPECIALISTS

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GREEN BUILDING SPECIALIST CURRICULUM





BUILDING PRODUCT DISCLOSURE AND OPTIMIZATION – MATERIAL INGREDIENTS - CREDIT FOR GREEN BUILDING AND SUSTAINABILITY SPECIALIST

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LEARNING OBJECTIVES





- Intent of Building Product Disclosure and Optimization – Material Ingredients - Credit
- Behind the Intent
- Step by Step Guidance
- Requirements
- Required Documentation
- Connection to Ongoing Performance
- Terms and Definitions



INTENT

To encourage the use of products and materials for which life-cycle information is available and that have environmentally, economically, and socially preferable life-cycle impacts. To reward project teams for selecting products for which the chemical ingredients in the product are inventoried using an accepted methodology and for selecting products verified to minimize the use and generation of harmful substances. To reward raw material manufacturers who produce products verified to have improved life-cycle impacts.

This credit aims to support manufacturers that disclose information about the ingredients in their products, allowing project teams to make better-informed decisions. The programs described below use hazard assessment approaches that evaluate multiple human and environmental health endpoints at a level of detail that goes beyond the scope of most life-cycle assessments. Project teams may demonstrate responsible product selection by providing manufacturers' reports or by ensuring the absence of materials of concern, using specified programs.

MATERIAL INGREDIENTS

REQUIREMENTS

Use at least 20 different permanently installed products from at least five different manufacturers that use any of the following programs to demonstrate the chemical inventory of the product to at least 0.1% (1,000 ppm). (10 different permanently installed products from at least three different manufacturers for CS and Warehouses & Distribution Centers) 186 U.S. Green Building Council

IMPLEMENTATION

REQUIRED DOCUMENTATION

Documentation	Option 1	Option 2	Option 3
MR building product disclosure and optimization calculator or an equivalent tool(s) (a)	X	X	
Documentation of chemical inventory through Health-Product Declaration, CapEx to Create or Buy-in tools, manufacturer's list of ingredients and GreenScreen assessment reports for confirmed ingredients, or USCB-approved programs (F) (a)(i)(ii)	X		
Verification of ingredient optimization through CapEx to Create or Buy-in tools, manufacturer's list of ingredients with GreenScreen Backdrops or U' scores (b) for all ingredients, or manufacturer declaration (or EACI), or USCB-approved programs (F) (a)(i)(ii)		X	
Documentation of supply chain optimization			X

BEHIND THE INTENT

The occupants of an average office building, school, or warehouse have little knowledge of the components of the building that surrounds them every day. Often, not even project planners have enough information about construction materials on which to base their own selection criteria, given that disclosure data are hard to acquire. Despite the regulatory safeguards for some toxic chemicals, 96% of the roughly 85,000 chemicals on the U.S. market have never been screened for possible health effects.¹

Persistent bioaccumulative and toxic chemicals (PBTs) and persistent organic pollutants (POPs) are often found in building products and materials. PBTs linger in the environment, accumulate in organisms high on the food chain (including humans), and can cause harm even in very small doses. PBTs released during the manufacture, use, or disposal of a product can threaten the health of plants and animals many miles away. Even less is known about which chemicals are potential carcinogens, mutagens, neurotoxins, or developmental toxins.

By adhering to the precautionary principle and supporting green chemistry, this credit encourages project teams to avoid products containing potentially harmful chemicals, which will ultimately spur innovation in materials from manufacturers. The precautionary principle states, "Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation." Green Chemistry is the design of chemical products and processes that reduce or eliminate the use and generation of hazardous substances. Green chemistry research is developing safer alternatives to priority chemicals so that one day there will be "green lists" instead of "red lists." Such companies are also developing corporate policies that include the precautionary principle, establish credible monitoring and assurance programs, and strengthen relationships with suppliers.⁴

This credit aims to support manufacturers that disclose information about the ingredients in their products, allowing project teams to make better-informed decisions. The programs described below use hazard assessment approaches that evaluate multiple human and environmental health endpoints at a level of detail that goes beyond the scope of most life-cycle assessments. Project teams may demonstrate responsible product selection by providing manufacturers' reports or by ensuring the absence of materials of concern, using specified programs.

STEP-BY-STEP GUIDANCE

Select which option(s) to pursue. Projects can earn a maximum of 2 points by achieving the requirements for two options, and products may contribute to Options 1 and 2. A project that cannot achieve Option 1 is not precluded from achieving Option 2 and vice versa. For Option 3 Product Manufacturer Supply Chain Optimization, check USGBC's website for updates on how to achieve compliance.

- Option 1 Material Ingredient Reporting is for projects that have at least 20 permanently installed products consisting of materials from manufacturers that have disclosed their ingredient inventory in one of the listed formats, as indicated in the credit requirements. Products must be sourced from at least five manufacturers.
- Option 2 Material Ingredient Optimization is for projects with 25% permanently installed products, by cost, that meet at least one of the material ingredient optimization paths listed in the credit requirements.

STEP 1. ASSIGN OFFICE FEASIBILITY

Each project manager should have clearly defined the products that contribute to multiple markets and/or segments. Review the assigned products and assess the feasibility of finding enough supply to meet demand. The products should be able to be produced in the United States.

Some of these products may not have been documented or certified only a few products in a way that would allow them to be sold in multiple markets.

The Grade to Grade program innovation includes obtaining a sustainable regulatory of certified products.

Products can comply under different programs, it is not necessary to find 20 products that fit all company objectives and functions.

STEP 2. SUCCEED AND ELICIT COMPLAINT PRODUCTS

Specify at least 20 products, from at least the different manufacturers (as USGBC approved). Qualifying products are not required.

All ingredients in the products must be characterized through a GHG Emissions approved program. The products must be characterized through a GHG Emissions approved program. They have distinct functions from others, but if they are just aesthetic variations to reconfigure.

STEP 3. TRACK PURCHASES THROUGHOUT CONSTRUCTION

Track the products through the construction process. The products should be tracked to ensure the selected products meet requirements. The program requires lowest carbon footprint, regularly enter the program and track the products through the construction process. The products should be tracked to ensure the selected products meet requirements.

Track the products through the construction process and change orders to ensure that replacement products that meet requirements. Any product substitutions should be carefully reviewed by the design team and the program.

Because these requirements are not typical for all construction teams and suppliers, conduct a training session for the design team and suppliers. The program requires lowest carbon footprint, regularly enter the program and track the products through the construction process.

Check the products through the construction process and change orders to ensure that replacement products that meet requirements. Any product substitutions should be carefully reviewed by the design team and the program.

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- Documentation availability varies by reporting program.
- Retain product data for all materials that contribute to credit achievement and be prepared to provide the information on request.
- The best source of documentation is the manufacturer or the organization that manages the reporting program. Reports are typically available online, but in some cases it might be necessary to contact a company representative.
- Documentation may also be available from third-party websites that collect the information of many companies.

STEP 1. SPECIFY AND SELECT COMPLIANT PRODUCTS

Specify products meeting one or more of the criteria listed in the credit requirements. Note that this option evaluates complete products; therefore, the criteria for assemblies found in other MR credits do not apply to this option.

- During construction, coordinate a review of the construction submittals to ensure selected products meet credit requirements. To review progress toward credit achievement, regularly enter information into the MR Building product disclosure and optimization calculator provided by USGBC or an equivalent custom tool.
- Continually track substitutions and change orders to ensure that replacement products meet the credit requirements. Any product substitutions should be carefully reviewed by the design team and contractor for compliance.
- Because these requirements are not typical for all construction teams and suppliers, conduct a LEED-specific preconstruction meeting to review the credit requirements in detail and stress their importance.
- Conduct periodically with team members (particularly owners, architects, interior designers, contractors, subcontractors, and suppliers) to verify progress toward credit achievement and address any gaps in credit compliance.

Using Equation 1, determine the total value of compliant products (see *Further Explanation, Calculations*). This option calculates compliance based on product cost.

Collect relevant documentation:

- For regional and local claims, provide a representative sample of documentation.
- For certification programs, provide documentation for all products.

Use at least 20 different permanently installed products from at least five different manufacturers that use any of the following programs to demonstrate the chemical inventory of the product to at least 0.1% (1,000 ppm). (10 different permanently installed products from at least three different manufacturers for CS and Warehouses & Distribution Centers)

- [illegible]

Note: All product reports must be valid at the time the product was purchased for the project.

REFERENCED STANDARDS

- ❑ Chemical Abstracts Service: cas.org/
- ❑ Health Product Declaration: hpdcollaborative.org/
- ❑ Cradle-to-Cradle Certified CM Product Standard: c2ccertified.org/product-certification
- ❑ Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): echa.europa.eu/support/guidance-on-reach-and-clp-implementation



EXEMPLARY PERFORMANCE

- ❑ Option 1: Purchase at least 40 qualifying permanently installed building products from ten different manufacturers that meet the credit criteria (Source at least 20 products from five different manufacturers for GS and Warehouse & Distribution Centers).
- ❑ Option 2: Purchase at least 10 qualifying products from five different manufacturers of permanently installed building products that meet the credit criteria.



TERMS AND DEFINITIONS

Product (permanently installed building product): an item that arrives on the project site either as a finished element ready for installation or as a component to another item assembled on-site. The product unit is determined by the functional requirement for use in the project; this includes the physical components and services needed to serve the intended function of the permanently installed building product. In addition, similar products within a category can each contribute as separate products.




