

Material Ingredients: Option 2, Material Ingredient Optimization

This section summarizes the product documentation parameters to be reviewed to determine compliance with this credit in the BD+C and ID+C rating systems.

Credit Overview

To view detailed LEED v4.1 credit requirements, visit:

[BD+C v4.1 Material Ingredients](#)

[ID+C v4.1 Material Ingredients](#)

Option 2

BD+C & ID+C: Use products that have a compliant material ingredient report or action plan. Use at least 5 permanently installed products sources from at least 3 different manufacturers. Products are valued according to the table below.

Exemplary Performance

BD+C & ID+C: Use at least 10 qualifying products from 5 different manufacturers of permanently installed building products that meet the credit criteria.

Compliance Requirements At-A-Glance

All of the applicable requirements in the table below must be visible in the product document to be eligible for LEED v4.1.

ASSESSMENT	REQUIREMENTS	VALUATION
Required for all	<ul style="list-style-type: none"> Inventory assessment completed to ppm required noted below Validity period displayed on the document Unique Document with Document ID Product type or description. Names, product lines, or SKUs of products covered by the report. 	N/A
Material Ingredient Screening and Optimization Action Plan (Sample Action Plan here)	<ul style="list-style-type: none"> Action Plan based on Publicly Available Inventory @ 1000 ppm Detailed Action plan to mitigate or reduce hazards using green chemistry (product-specific) Prepared by the manufacturer and signed by company executive Description of screening or assessment platform used to complete material ingredient screening & analysis. Identification of specific green chemistry principles targeted for implementation in the action plan. Description of specific steps, including proposed changes in formulation or manufacturing processes 	0.5 products

	<ul style="list-style-type: none"> Proposed full timeline for completion of all steps described in action plan. 	
Cradle to Cradle Certified product, v3 or higher	Product has Material Health Certificate or is Cradle to Cradle Certified (v3 or later) with Material Health achievement at the Bronze level or higher.	1 product
	Product has Material Health Certificate or is Cradle to Cradle Certified (v3 or later) with Material Health achievement at the Silver level or higher.	1.5 products
Declare	Third party verified “Red List Free” Declare label OR Third party verified “LBC Red List Free” Declare label	1 product
Living Product Challenge Certified	Third party verified “Red List Free” Declare label OR Third party verified “LBC Red List Free” Declare label	1 product
	Achieve Imperative 09: Transparent Material Health	1.5 products
Health Product Declaration	<ul style="list-style-type: none"> Chemical Inventory assessed at 0.01% by weight or 100 ppm Third-party verified HPD is available in the HPDC public Repository Either Advanced Inventory OR Advanced Assessment below: <ul style="list-style-type: none"> <u>Advanced Inventory:</u> No GreenScreen LT-1 hazards are present OR No GHS Category 1 hazards are present <u>Advanced Assessment:</u> At least 75% by weight of product is assessed using GreenScreen & remaining 25% is inventoried. GreenScreen assessment is available publicly. 	1 product
	<p><u>Material Ingredient Optimization:</u></p> <ul style="list-style-type: none"> Chemical Inventory assessed at 0.01% by weight or 100 ppm Third-party verified HPD is available in the HPDC public Repository At least 95% by weight of product is assessed using GreenScreen. No BM-1 hazards are present. Remaining 5% is inventoried, screened using GreenScreen List Translator AND No GreenScreen LT-1 hazards are present. 	1.5 products

Manufacturer Inventory	<ul style="list-style-type: none"> • Chemical Inventory assessed at 0.01% by weight or 100 ppm • All reports must be third-party verified which includes content inventory verification • Either Advanced Inventory OR Advanced Assessment below: 	1 product
	<ul style="list-style-type: none"> ○ <u>Advanced Inventory:</u> No GreenScreen LT-1 hazards are present OR No GHS Category 1 hazards are present 	
	<ul style="list-style-type: none"> ○ <u>Advanced Assessment:</u> At least 75% by weight of product is assessed using GreenScreen & remaining 25% is inventoried. GreenScreen assessment is available publicly. 	
	<p><u>Material Ingredient Optimization:</u></p> <ul style="list-style-type: none"> • Chemical Inventory assessed at 0.01% by weight or 100 ppm • Third-party verified • At least 95% by weight of product is assessed using GreenScreen. No BM-1 hazards are present. • Remaining 5% is inventoried, screened using GreenScreen List Translator and no GreenScreen LT-1 hazards are present. 	1.5 products
International ACP:	<ul style="list-style-type: none"> • REACH report from the manufacturer with chemical Inventory assessed at 0.01% by weight or 100 ppm • No substances in the inventory are found on the Authorization List – Annex XIV, the Restriction list – Annex XVII, and the SVHC candidate list 	1 product
REACH Optimization	<i>(only applicable for products used on projects located outside the US)</i>	
International ACP:	PHD Report verified by Global Green TAG (any non-expired report is acceptable)	1 product
Global Green TAG	<i>(only applicable for products used on projects located outside the US)</i>	

Additional Guidance

The following guidance is made available in addition to guidance provided under 'Further Explanation' section of the LEED v4.1 BD+C or LEED v4.1 ID+C beta Reference Guide.

- REACH pathway for projects located outside the USA:
 - Acceptable REACH documentation would be manufacturer signed letter on letterhead stating that the manufacturer has researched the supply chain and confirms that the end use products and materials have been fully inventoried for chemical ingredients. The letter further states that each substance has been assessed against the Authorization list – Annex XIV, the Restriction list – Annex XVII, and the SVHC candidate list, (the version in effect in June 2013 or newer).
 - Note that LEED projects registered after the April 14, 2017 Addenda must document that chemical ingredients have been inventoried to 100 ppm.
- Credit requirements for v4.1 are aligned with the latest version of the Cradle to Cradle standard v3 and v3.1. C2C v2.1.1 is no longer applicable.
- Qualifying HPDs developed under the Open Standard version 2.0, 2.1, 2.2 or subsequent versions of the standard are eligible for documenting credit achievement if the HPD is still valid at the time that the product is purchased and used on a project. Version 1.0 HPDs are currently expired in the marketplace and will not contribute to this LEED v4.1 credit unless compliant products were purchased during the time the HPD was valid.
- Compliant manufacturer inventories must follow the most recent version of the HPDC Open Standard for reporting, ingredient categorization, disclosure thresholds, displaying content ranges, hazards, and other special conditions.
- In Option 2, the HPD or Manufacturer Inventory must be third party verified by an approved third-party verifier/assessor via either HPDC, GreenCircle, or Clean Production Action.
- For HPDs and Manufacturer Inventories, if there is no endpoint for a chemical, the manufacturer will need to display “no hazard endpoint” in their manufacturer inventory disclosure document. This reporting must be different from reporting of a data gap. If there is insufficient data available for a particular endpoint, the manufacturer will need to report “Insufficient data” for the particular endpoint of that ingredient/chemical.
- In general, GreenScreen Benchmarks are defined for single chemicals and well-defined mixtures of ingredients, such as metal alloys. However, complex materials and those with unknown or variable composition are less suitable for being assigned a single GreenScreen Benchmark. Examples of such materials include wood, stone, sand, aggregate, and mixed recycled content materials. Building products using significant amounts of these materials may face challenges in screening against GreenScreen Benchmarks for these ingredients while seeking to satisfy the LEED credit requirements. The product certifications and declaration programs recognized in LEED for this credit have requirements for accommodating complex or variable composition materials. Where no such guidance exists, such as for the Manufacturer Inventory pathway, manufacturers shall use the HPDC Open Standard guidelines for Special Conditions when inventorying, screening and assessing these materials and substances in product reports and declarations.
- All product reports must be valid at the time the product was purchased for the project.

Manufacturers and Program Operators:

Third-Party Verification Program Requirements for Material Ingredient Reporting and Optimization

- Qualifying third-party verification and certification programs should conduct their operations in compliance with ISO 17065 or have been certified to ISO 17065.
- The verifier will confirm that the output document was conducted in compliance with the requirements of the LEED credit.
- The verification process must cover an additional step of verifying the reliability of content inventory of the product as well as verifying product compliance to required thresholds in LEED.
- The third-party verifier of the material ingredient documents must be independent from the individual that created the documents.
- The verifier must be qualified to conduct verification of material ingredient documents.
- The material ingredient reporting program must provide training for the verifier on the verification process and updates to the program regularly to ensure consistency of verification.
- The program must have a database of publicly available third-party verified products that meet the applicable LEED credit requirements.
- The program must have a written third-party verification process and procedure that is updated regularly with a process to implement updates and changes to verifiers of the program that is publicly available.

Submittal Tips

- Unless the documentation describes different functional/declared units or includes different impacts from different product lines, the HPD analysis is conducted for that functional unit and cannot be considered as more than 1 product.
- Materials defined as trade secret or intellectual property in a manufacturer's inventory may withhold the name and/or Chemical Abstract Service Registry Number (CASRN) but must disclose the role, amount and GreenScreen benchmark, as defined in GreenScreen v1.2. GreenScreen doesn't screen products, it screens chemical ingredients. So, along with a GreenScreen assessment, the bill of materials for the product down to 100 part per million must be provided for Option 2 of this credit.
- Remember that the HPDs, Declare labels, and Manufacturer Inventories that meet optimization and verification criteria must be Third Party certified. This is an additional notation beyond the regular label or list.
- Visit the HPD website for more information for how HPDs meet the LEED requirements and find graphic presentations for various HPD versions: <https://www.hpd-collaborative.org/leed-v4-credit-achievement/>
- The Declare product directory has a filter for LEED v4.1 compliance: <https://declare.living-future.org/>