Pilot Credit 54: Avoidance of Chemicals of Concern

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Applicable Rating Systems

This credit is available for pilot testing by the following LEED project types:

BD&C

- New Construction
- Core & Shell
- Schools
- Retail
- Data Centers
- Warehouses & Distribution Centers
- Hospitality
- Healthcare

ID&C

- Commercial Interiors
- Retail
- Hospitality

Intent

To increase the use of products and materials that disclose chemical ingredient data and reduce the concentrations of chemical contaminants that can damage air quality, human health, productivity, and the environment.

Requirements

Use a minimum of 20%, by cost, of at least 3 building product and material types meeting one of the options below.

Chemical Avoidance

Option 1: Avoidance

Use third party certified building products and materials that do not contain intentionally added substances present in the end product over the reporting thresholds below. Calculate compliant building products and materials at cost.

Substance	Allowed Concentration
Lead and lead compounds	0.01% by mass (100 ppm)

Mercury	0.01% by mass (100 ppm)
Cadmium	0.01% by mass (100 ppm)
Anitmony	0.01% by mass (100 ppm)
Hexavalent Chromium	0.01% by mass (100 ppm)
Perfluorinated Compounds (PFCs)	0.01% by mass (100 ppm)
Carcinogens listed in California's Proposition 65	0.01% by mass (100 ppm)
For projects outside the U.S. additionally avoid carcinogens listed on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) substances of very high concern (SVHC) Candidate List	Under levels that would trigger notification

AND/OR

Option 2: Additional Avoidance

Meet the requirements of Option 1.

AND

Use third party certified building products and materials that do not contain intentionally added substances present in the end product over the reporting thresholds below. Calculate compliant building products and materials at twice the cost.

Substance	Allowed Concentration
Halogenated organic compounds including: • Chlorinated polyethylene (CPE) • Chlorinated polyvinyl chloride (CPVC) • Chlorosulfonated polyethylene (CSPE) • Polychloroprene (CR or chloroprene rubber, also brand name Neoprene) • Polyvinyl chloride (PVC) • Fluorinated ethylene propylene (FEP)	0.01% by mass (100 ppm)
Brominated or halogenated flame retardants (BFRs and HFRs) containing	0.01% by mass (100 ppm)

bromine, chlorine, or fluorine including: • PBDEs (polybrominated diphenyl ether), including Deca-BDE (Decabromodiphenyl ether) • Tetrabromobisphenol-A (TBBPA) • Hexabromocyclododecane (HBCD) [1] • Tris(2-chloroisopropyl) phosphate (TCPP) • Tris(2-chloroethyl)phosphate (TCEP) • Dechlorane Plus 0.01% by mass (100 ppm)	
Phthalates including: • - Butyl Benzyl Phthalate (BBP) • -Di(2-Ethylhexyl)Phthalate (DEHP) • - Di-N-Octyl Phthalate (DNOP) • - Di-N-Pentyl Phthalate (DNPP) • - Dibutyl Phthalate (DBP) • - Diisobutyl Phthalate (DIBP) • - Diisodecyl Phthalate (DIDP) • - Diisononyl Phthalate (DINP) • - Di-N-Hexylphthalate (DNHP) [2]	0.01% by mass (100 ppm)
Benzidine Dyes	0.01% by mass (100 ppm)
Bisphenol A	0.01% by mass (100 ppm)
Short-chain chlorinated paraffins	0.01% by mass (100 ppm)
Toluene Diisocyanate (TDI)	0.01% by mass (100 ppm)
Chemicals known to cause reproductive toxicity listed in California's Proposition 65	0.01% by mass (100 ppm)

[1] From the EPA's Chemical Action Plans (US Environmental Protection Agency, Pollution Prevention and Toxics, Existing Chemicals Program (US EPA PPT) http://www.epa.gov/oppt/existingchemicals/)
2 Specific listing from California Prop 65 (California Office of Environmental Health Hazard Assessment (OEHHA) list of Chemicals Known to the State to Cause Cancer or Reproductive Toxicity, Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) http://www.oehha.ca.gov/prop65/prop65_list/Newlist.html)

For projects outside the U.S.: Additionally avoid chemicals listed as toxic for reproduction on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) substances of very high concern (SVHC) Candidate List	Under levels that would trigger notification.

CI, Retail CI, Hospitality CI

Meet the requirements of the credit above; however, furniture and furnishings that are within project's scope of work must be included in credit calculations.

Credit Submittals

General:

1. Register for Pilot Credit(s) here.
2. Register a username at LEEDuser.com, and participate in online forum
3. Submit feedback survey; supply PDF of your survey/confirmation of completion with credit documentation

Credit Specific:

Submit a list of products purchased contributing toward credit. List the cost and number of items purchased per contributing products and calculate the weighted value according to total weight of materials purchased.

Additional Questions

- Were you able to determine targeted chemical content for all of the products selected? If not what were the challenges in obtaining desired data?
- Was the comprehensive evaluation of chemical ingredients, combinations and alternatives assessment useful to your product selection? How did you use it?
- Were targeted chemical-free alternatives available? What were those materials/products?
- Are there safety concerns regarding chemical alternatives in products chosen for this credit? If so what are they and how are they identified?

Background Information

This credit encourages LEED project teams to specify materials that do not contain chemicals that are known to negatively impact human health (specifically in regards to cancer and reproductive toxicity). While LCA is a powerful analytical tool, the information driving LCA based decisions often fails to adequately address material impacts associated with human health. To address LCAs short comings, the MR section proposes requirements for avoidance of harmful chemicals in building products. This credit not only

builds on the shortcomings of LCA, but also addresses USGBC's larger mission of advancing product manufacturing and alternative assessment across the spectrum of industrial chemicals to support systematic redesign of building products for progressively better human health ecological health.

Changes

Changes as a result of 3rd Public Comment (3/1/2012):

- Chemical Avoidance option expanded to two compliance paths.
- List of required avoidance expanded, with added allowable levels.
- Third party certification required.