The Living Building Challenge (LBC) Red List

2022 Updates: A Guide for Manufacturers

Highlights

- Effective April 1, 2022, ILFI is updating the Red List to include 4,844 PFAS (Per- and Polyfluoroalkyl Substances) Chemical Abstract Numbers, which were previously on the Priority Watch List, and is adding 5,947 new PFAS chemicals to the Priority Watch List to better represent the class.
- Manufacturers may need to review product design and performance and assess how these updates may impact their product's status in Declare, or compliance with the LBC Red List Imperative.
- If you have concerns about PFAS, catch up on the industry discourse and engage your engineers, designers, and suppliers.

Background

The Living Building Challenge (LBC) Red List is a tool for building product transformation. It documents the "worst in class" materials, chemicals, and elements known to pose serious risks to human health and the environment.

ILFI is adding 4,844 members of the PFAS class from the Priority Watch List to the Red List (in addition to the 17 already there), and adding 5,947 new CASRNs to the Priority Watch List. The published Red List reflects best available science, at a moment in time, and is the backbone of materials requirements in the Living Building Challenge, Core Green Building Certification, and Living Product Challenge, as well as for the Declare label.

Within ILFI's scope, per- and polyfluoroalkyl substances (PFASs) refer to perfluorinated compounds (PFCs) and related fluorinated substances that contain at least one fully fluorinated carbon. The strong C-F bond provides chemical stability and improved performance attributes, but also means that PFAS tend to be persistent and bioaccumulative in the environment.

In the United States, the Centers for Disease Control and Prevention's website indicates the agency has found PFAS (Per- and Polyfluoroalkyl Substances) in the blood of nearly all tested individuals, "...indicating widespread exposure to these PFAS in the U.S. population." A growing body of research has found links between exposures to PFAS and weakened immune systems, cancer, increased cholesterol levels, pregnancy-induced hypertension, liver damage, reduced fertility, and increased risk of thyroid disease. In addition, research and data indicate that many "newer" PFAS substitutions such as short-chain PFAS and fluoropolymer PFAS, can result in similar human and environmental health impacts as the legacy substances they are replacing. PFAS use and subsequent contamination has been documented worldwide.

Guidance and how to incorporate Red List updates

Products with a Declare label
Products that have active Declare labels will be subject to the updated Red List at the time of the labels' renewal. Based on the chemicals represented in their ingredient disclosures, the Declaration status of the label may change. If the manufacturer chooses to renew its Declare label, they should provide this documentation to project teams from that time onward.

Products not in the Declare program
Project teams that registered for the Living Building Challenge prior to the publication of this update do not need to follow this current list, but if they wish to avoid PFAS, they may choose to do so. Project teams registering for Living Building Challenge certification at the time of the list's publication will be required to use the updated Red List to screen for PFAS.

Because of the pervasiveness of PFAS chemicals, ILFI is issuing a temporary exception in the Living Building Challenge for certain applications of PFAS in building products. The goal of the exception is to further our understanding of where PFAS chemicals are used and where these chemicals are currently unavoidable. During this time of transition,

The Exception will be reviewed and updated periodically as part of ILFI's standards development and maintenance policies.

During this time of transition, the focus is on rewarding manufacturers that participate in public ingredient transparency programs—such as Declare—as they tend to be leaders in finding solutions to create products that are better for human health. Additional materials will be excluded from this exception as soon as materials emerge that are free of Red List chemicals.

RL-022 PFAS Chemicals in Building Materials

A project team may use a product that contains PFAS chemicals, if all of the following product characteristics are true, and the project team complies with requirements for use of the exception below:

Required Product Characteristics

- The product is currently unable to meet performance requirements or perform its essential function without PFAS chemicals,
- There are no other Red List chemicals present, and
- The product has a published transparency label or publicly available ingredient list at 100 ppm (0.01%).

(continued on the next page)

Requirements for Use of the Exception
To use this exception, project teams must:

- Provide a statement clearly articulating why the product was essential to meeting project performance requirements and couldn't be avoided,
- list the function of the PFAS chemical (e.g. stain repellant) if disclosed, and
- advocate to the manufacturer to design the PFAS chemical out of the current and future product formulations.

This exception does not apply to the following product categories, because ILFI is aware that compliant products exist, or that alternate product types provide a functional equivalency.

- Carpets, including broadloom and carpet tile
- Flooring, including Resilient and Hard Flooring
- Interior Ceiling Products
- Sealants, whether applied onsite or during fabrication.
- Upholstery
- Fabrics used for window or wall coverings
- Systems furniture
- Interior Paints

Additional information and resources

To help navigate PFAS in building materials, manufacturers can consult the following:

- Building a Better World: Eliminating Unnecessary PFAS in Building Products, Green Science Policy Institute
- Technical Resources for Addressing Environmental Releases of Per- And Polyfluoroalkyl Substances (PFAS), Interstate Technology and Regulatory Council (ITRC).
- PFAS Action: Governments, Retailers, and Brands are Stepping Up, *updated November 2021.*
- Kwiatkowski, C., Andrews, D., Birnbaum, L.., Bruton, T.., DeWitt, J., Knappe, D.., Maffini, M., Miller, M., Pelch, K., Reade, A., et al. 2020. Scientific Basis for Managing PFAS as a Chemical Class. *Environ. Sci. Technol. Lett.* 7, 8: 532–543. https://doi.org/10.1021/acs.estlett.0c00255
- Products without intentionally added PFAS or PFCs, Environmental Working Group *updated December 2021.*

Feedback and questions

- If you have feedback or questions, please contact declare.support@living-future.org.
- For additional details about the Living Building Challenge Red List 2022 update, please visit https://living-future.org/declare/declare-about/red-list/.

INTERNATIONAL LIVING FUTURE INSTITUTE™

2022 RED LIST CHEMICAL CLASS CHANGES (SINCE JANUARY 2021)			
CHEMICAL CLASS	RED LIST	PRIORITY FOR RED LIST INCLUSION	WATCH LIST
Alkylphenols and related compounds	No changes.	No changes.	No changes.
Antimicrobials (marketed with a health claim)	No changes.	No changes.	No changes.
Asbestos compounds	No changes.	No changes.	No changes.
Bisphenol A (BPA) and structural analogues	2 CASRNs added from Priority List, 1 moved to Chlorinated Polymers.	25 CASRNs added from Watch List.	25 CASRNs added to Priority List.
California-banned solvents	No changes.	No changes.	No changes.
Chlorinated Polymers	No changes.	No changes.	No changes.
Chlorobenzenes	1 moved from Bisphenol A (BPA) and structural analogues.	No changes.	No changes.
Chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs)	No changes.	No changes.	No changes.
Formaldehyde (added)	No changes.	No changes.	No changes.
Monomeric, polymeric, and organophosphate halogenated flame retardants (HFRs)	No changes.	No changes.	No changes.
Organotin Compounds	No changes.	No changes.	No changes.
Perfluorinated and Polyfluorinated Alkyl Substances (PFAS) / Perfluorinated compounds (PFCs)	4,844 CASRNs added from Priority List.	5,947 CASRNs added directly.	No changes.
Phthalates (orthophthalates)	No changes.	No changes.	No changes.
Polychlorinated biphenyls (PCBs)	No changes.	No changes.	No changes.
Polycyclic aromatic hydrocarbons (PAHs)	No changes.	No changes.	No changes.
Short-chain and medium-chain chlorinated paraffins	No changes.	No changes.	No changes.
Toxic heavy metals	No changes.	No changes.	5 CASRNs added directly.
Volatile organic compounds (VOCs) in wet-applied products*	No changes.	No changes.	No changes.
Wood Treatments containing creosote or pentachlorophenol	No changes.	No changes.	No changes.

*Volatile organic compounds (VOCs) in on-site wet-applied products are not banned, but must have VOC levels below the South Coast Air Quality Management District (SCAQMD) Rule 1168 for Adhesives and Sealants or the CARB 2007 Suggested Control Measure (SCM) for Architectural Coatings, as applicable.