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BACKGROUNDER
VaproShield Leads the Way in Environmentally Conscious Product Design, Participates with Global Leaders in Sustainability

VaproShield has a proven track record for sustainable product design. The company's WrapShield SA Self-Adhered qualified for a Declare label by meeting all of the International Living Future Institute's product criteria. However, VaproShield products have had a long and positive history with the International Living Future Institute through the organization's Living Building Challenge (LBC). Since VaproShield's formation, sustainability and environmental soundness has been the cornerstone of product design.

VaproShield's Sustainable Design and Biomimicry

All VaproShield products are built using the concept of biomimicry. Biomimicry is a design and production principle that creates materials using nature as a model. Rather than fighting against nature to protect the building envelope, VaproShield looked to the natural world to discover how to work with the elements. Inspired by a frog's breathable, vapor permeable skin, VaproShield created the first generation of their air barrier membrane product line. VaproShield continues to look to nature for ideas and place sustainability at the core of its mission. The VaproShield frog is placed on all air barrier membrane products to remind us of our commitment. Biomimicry has gained recent attention after *Bloomberg Businessweek* published an article titled "Janine Benyus Looks to Nature for Design Inspiration" on April 7, 2016. The article follows Janine

Benyus, co-founder of Biomimicry 3.8 and author of *Biomimicry: Innovation Inspired by Nature*, as she discusses the evolution of biomimicry, its importance in design, and the role it can play to help reduce global climate change.

The International Living Future Institute

The International Living Future Institute was formed in 2009 as an umbrella organization to support The Living Building Challenge and its auxiliary programs. The organization's founder and chairman, Jason F McLennan was *Engineering News Record* 2016 Award of Excellence winner. The International Living Future Institute plays an important role in the sustainability and building product transparency movement.

VaproShield and The Living Building Challenge

The LBC Version 1.0 was formally launched in 2005, though the concept has been in existence since the mid-1990s. The mission of the LBC is to produce some of the most advanced sustainable design projects in the world. To qualify for LBC certification, the building project must meet numerous standards, called Petals, and be built of products that are free from all Red List Chemicals.

Five different VaproShield products have been used to complete a total of 4 LBC certified buildings over the past several years. These buildings include: the Omega Institute of Holistic Studies, the Potomac Watershed Study Center, Treetop Hideaways and, most recently, the Brock Environmental Center. Featured in the *Engineering News Record* March 14, 2016 issue, the Brock Environmental Center became the first LBC certified center in the state of Virginia. VaproShield's SlopeShield SA Self-Adhered Water Resistive Vapor Permeable Air Barrier Roof Underlayment was applied to the Brock Environmental Center and aided in its eventual qualification for LBC certification.

Declare Label Backgrounder

As awareness of the health impacts of building product ingredients has increased within the design and construction industry, materials transparency and toxic chemical avoidance have emerged as crucial factors in product selection. The Declare program allows manufacturers of ecologically sound products to demonstrate market leadership in the growing movement towards product transparency and toxic chemical avoidance.

Declare also offers manufacturers an expanded point-of-entry into projects pursuing the Living Building Challenge (LBC), the most advanced measure of sustainability in the built environment possible today. Over 200 teams pursuing the Living Building Challenge are using the Declare database to select products that meet the requirements of the program's Materials requirements. The Declaration on the label aligns with the Materials and Health & Happiness Petals, simplifying the process of both materials specification and project certification.

DECLARE AND THE LIVING BUILDING CHALLENGE

Declare offers a transparency platform to help project teams select materials that comply with the Health & Happiness and Materials Petals, ensuring not only that the projects are free of worst-in-class toxins, but that they support a materials industry that safeguards the health of the environment and workers throughout the supply chain.

RED LIST

The Red List represents the "worst-in-class" materials, chemicals, and elements known to pose serious risks to human health and the greater ecosystem. We believe these materials should be phased out of production due to health and toxicity concerns. The Living Building Challenge

worked with the Healthy Building Network and the Pharos Project to develop the Red List; new items will be added as new research becomes available.

The original Red List, launched in 2006, has been significantly updated with the release of LBC 3.0 in May 2014. The update ensures that the program aligns with other authoritative hazard lists including the EPA Action Plan Published Lists; the REACH Substances of Very High Concern (SVHC) List; and the Cradle to Cradle Banned List, and was done in collaboration with the Pharos Project.

While any material can be listed in the Declare database, a Living Building Project cannot contain any of the following materials or compounds:

- Alkylphenols
- Asbestos
- Bisphenol A (BPA)
- Cadmium
- Chlorinated Polyethylene and Chlorosulfonated Polyethlene
- Chlorobenzenes
- Chlorofluorocarbons (CFCs) and Hydrochlorofluorocarbons (HCFCs)
- Chloroprene (Neoprene)
- Chromium VI
- Chlorinated Polyvinyl Chloride (CPVC)
- Formaldehyde (added)
- Halogenated Flame Retardants (HFRs)
- Lead (added)
- Mercury

- Polychlorinated Biphenyls (PCBs)
- Perfluorinated Compounds (PFCs)
- Phthalates
- Polyvinyl Chloride (PVC)
- Polyvinylidene Chloride (PVDC)
- Short Chain Chlorinated Paraffins
- Wood treatments containing Creosote, Arsenic or Pentachlorophenol
- Volatile Organic Compounds (VOCs) in wet applied products*

* *Wet applied products (coating, adhesives and sealants) must have VOC levels below the South Coast Air Quality Management District (SCAQMD) RULE 1168 for Adhesives and Sealants or the Carbon 2007 Suggested Control Measure (SCM) for Architectural Coatings as applicable. Containers of sealants and adhesives with capacity of 16 ounces or less must comply with applicable limits in the California Air Resources Board (CARB) Regulation for Reducing Emissions from Consumer products.*

For a full list of CAS Registry numbers that correspond with each Red List item review the Declare label website. http://www.declareproducts.com/.

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