Future Proofing Human Health Impacts in the Built Environment



4/29/21
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Evelyn Ritter, Toxnot
Wendy Vittori, HPDC
Diana Hart, Rockfon
Tori Wickard, Perkins & Will





MISSION

To bring about a healthier relationship between human society and the natural world by helping building professionals create and nurture high-performance, resilient, and inspiring buildings and communities.



NEWS KNOWLEDGE BASE -

CONSULTING PRODUCT GUIDANCE CONTINUING EDUCATION

PEER NETWORKS

BuildingGreen Premium

Thank you for supporting BuildingGreen with your Premium

SEARCH Q



News Analysis

How Climate Commitments Are Transforming Design

Many are struggling to hit 2030 Commitment targets and embodied carbon goals. We picked the brains of three architecture firms that are in the thick of it-and progressing.

Read more »

Net-zero-energy projects like NeoCity high school are helping Little Dive Architectural Consulting progress toward climate goals. (Photo: Mark H Photography)

Product Review

The Future of Home Energy Connectivity





BuildingGreen's expertise has been featured in:

ARCHITECTURAL



The Washington Post

















Annie Bevan

















SUSTAINABILITY MANAGEMENT & STRATEGY COLLABORATIVE





















MICRO



INTERNATIONAL LIVING FUTURE







Hightower



Rockfon°

eppendorf

Thermo Fisher SCIENTIFIC



REGENERATIVE BUILT **ENVIRONMENT** INSTITUTE







LIVING PRODUCT 50



We are a team that provides exceptional value to our clients by leveraging sustainability to drive business growth, brand positioning and profitability, while reducing impact.

Three Pillars of Success



NAVIGATE – We guide you in the development of a strategic roadmap using market intelligence, experience, and expertise.



IMPLEMENT – We work with you to implement sustainability strategies and execute program initiatives that are unique to your business.



LEVERAGE – We leverage your sustainability achievements through proven sales and marketing strategies to drive return on investment.

We create and implement client-tailored strategies for manufacturers using our proven three pillars of success program.



The BIG FACTS

90% of disease risk being a result of every-day exposures



Human Health in Buildings

Exposure to residential dampness and mold contributed to 21% of 21.8 million cases of asthma each year.

"Health effects from indoor air pollutants may be experienced soon after exposure or, possibly, years later."²

Outdoor pollutants can penetrate indoors. Because people spend so much time indoors (90% or more for many people), most of a person's exposure to outdoor air pollution actually occurs indoors.

Concentration of indoor pollutants are often 2 of 5 times higher than typical outdoor concentrations

An adult ingests up to 100 mg of house dust per day and a child ingests up to 200 mg per day. In the U.S. alone the savings and productivity gains from improved indoor environments are estimated at \$25 to \$150 billion per year.

The impacts of thermal conditions extend beyond comfort. Temperature and humidity can also have a drastic effect on health, as evidenced by the heat wave in France in 2003, which claimed nearly 15,000 lives.... As such, we propose the use of the term "thermal health" to highlight all the health effects of thermal conditions.

Of the 82,000 chemicals that we find in commercial use, 85% do not have any available health data.



COVID-19

The pandemic will change how our cities and buildings are designed

WE HAVE LONG KNOWN THAT BUILDINGS PLAY A CRITICAL ROLE IN INFECTIOUS DISEASE TRANSMISSION. WE'RE MAKING SURE THEY'RE PART OF THE CORONAVIRUS CONVERSATION, TOO.

We have established that healthy building environments play an important role in combatting the spread of infectious disease, including coronavirus (SARS-CoV-2). Read about the latest news, research, reports, and tools we've developed to fight COVID-19 transmission and ensure that healthy buildings can be used to control the spread both now and as we move forward

NEW: COVID-19 RISK CALCULATOR

We created a tool to help you better understand how to reduce the risk of COVID-19 transmission in indoor environments using affordable control strategies. Learn how mask wearing, social distancing, personal hygiene, portable air cleaners, ventilation, and activity can contribute to the likelihood of COVID-19 exposure. Creation of this tool was based off of modeling of multiple super-spreader events in some of our latest research (Azimi et al., 2021).









The inextricable connection between human health and the health of the planet





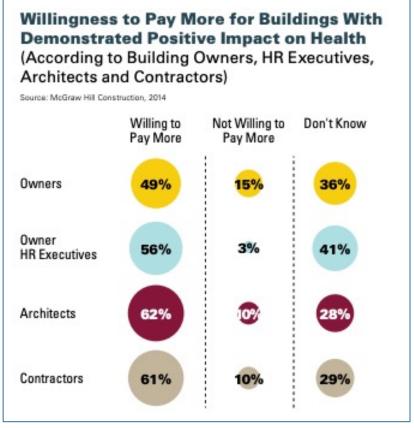
The Business Case

Enhanced physical and mental health

Healthy buildings and workplaces can help businesses attract and retain top employees

Increased productivity

People work more efficiently in environments with good air quality



Source: World GBC Drive Toward Healthier Buildings

Reduced rates of asthma; allergies, and other ailments

Student, tenant, and employee retention

Lowers health care costs

Decreased absenteeism in school and work



The Business Case

There are two primary ways that architects determine if products are sustainable. Both stem from information provided by the manufacturer itself, usually via its website:

2 in 3

check product certifications.

Architects are familiar with many different ones and frequently use them to assess sustainability credentials.

95%

of architects consider it important that these are independently/ third-party tested.

over 50%

check product disclose docs.

HPDs and EPDs are reviewed by 58% of architects to determine the sustainability credentials of a product. It is vital that these are easy to access and contain the right level of detail to ensure specification.







Market Drivers

A&D MATERIALS PLEDGE

EACH OF US PLEDGE TO

- · Continue asking for transparency and better products.
- Continuously improve and update our specifications and procurement processes to require transparent and optimized products.
- · Collaborate and share best practices, tools, and education.
- Support Human Health by preferring products which support and foster life throughout their lifecycles and seek to eliminate the use of substances that are hazardous.
- Support Climate Health by preferring products which reduce carbon emissions and ultimately sequester more carbon than emitted.
- Support Ecosystem Health by preferring products which support and regenerate the natural air, water, and biological cycles of life through thoughtful supply chain management and restorative company practices.
- Support Social Health and Equity by preferring products from manufacturers who secure human rights in their own operations and in their supply chains, and which provide positive impacts for their workers and the communities where they operate.
- Support a Circular Economy by reusing buildings and materials; and by designing for material
 efficiency, long life, and perpetual cycling.

We understand that **none of us can do this alone**. We welcome your engagement and commit to an ongoing dialogue with the Living Product 50, as well as other manufacturers, building owners, contractors, researchers, and others who are interested in working towards building product industry transformation. To move forward more quickly, we suggest convening face-to-face forums at Greenbuild, Living Product Expo, Living Future, and other similar conferences. We value our relationship with each of you and understand that the change we seek will not be accomplished overnight. Please join us in continued dialogue and collaboration as we learn from each other and improve our industry together.

Sincerely,

MATERIALS PLEDGE SIGNATORIES

(Listed on the following page)

Human Health

Climate Health

Ecosystem Health

Social Health and Equity

Circular Economy





Market Drivers















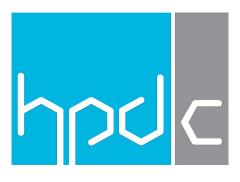






Market Initiatives







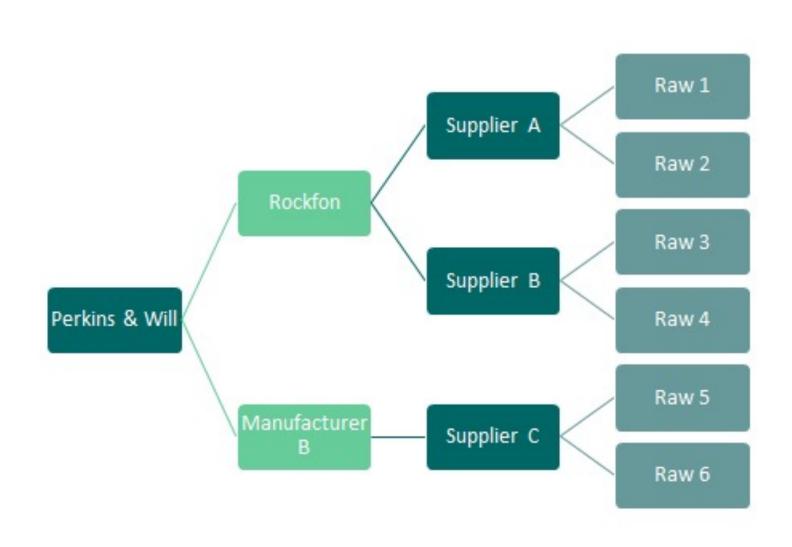






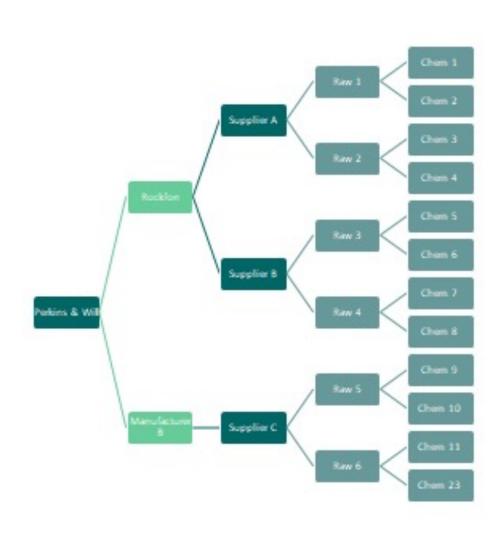


It all starts with the supply chain





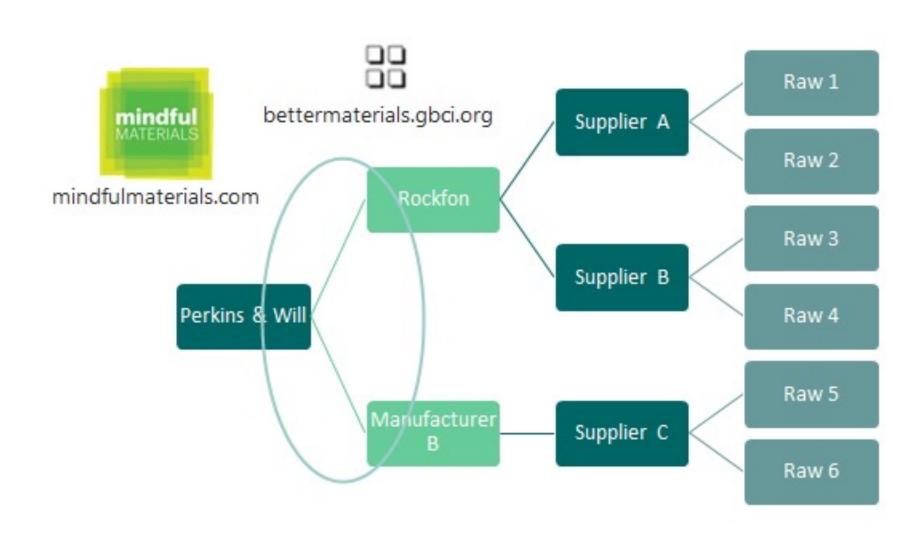
Never break the chain...





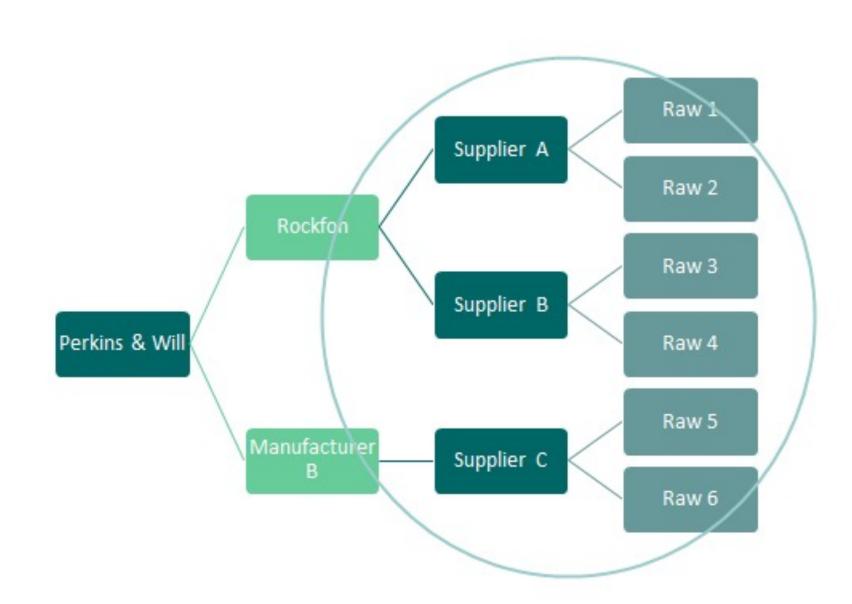


Tools for A&D



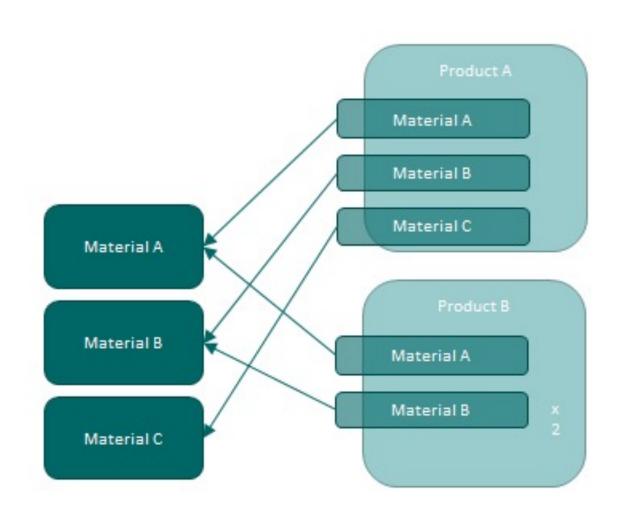


Strategies for manufacturers





Materials that are used in multiple products





Variety of data collection methods

Direct Outreach

Suppliers must answer separately for each request

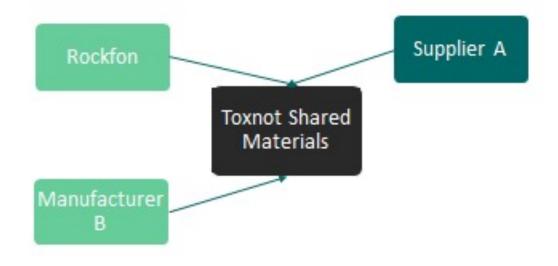
Different questions asking the same thing

Toxnot Shared Materials

Suppliers can answer once for many requests Standardized data fields and

information







toxnot

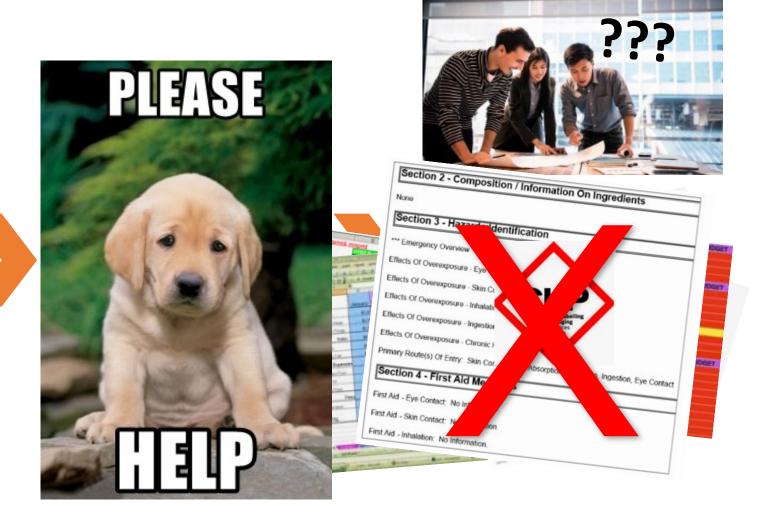
Evelyn Ritter evelyn.ritter@toxnot.com



Why do we need a standard for data reporting?







HPD Open Standard - A standard for data reporting













What is the HPD Open Standard?

Three Component Parts

- Standardized reporting format
- Step-by-step reporting instructions
- Best Practices on hazard screening, residuals & impurities, etc.



HPD Open Standard Simplifies



Reporting

What is the Data?

How do I report it?

- Accurate
- Reliable
- Consistent

Disclosure

How Precise is the Reporting?

Who Receives the Data?

- Completeness?
- Threshold levels?
- Handling CBI data?

Flexible Disclosure and
Transparency levels can
be determined by the
Manufacturer and what is
needed to meet Specific
Program Requirements

Transparency

Make the Data Public

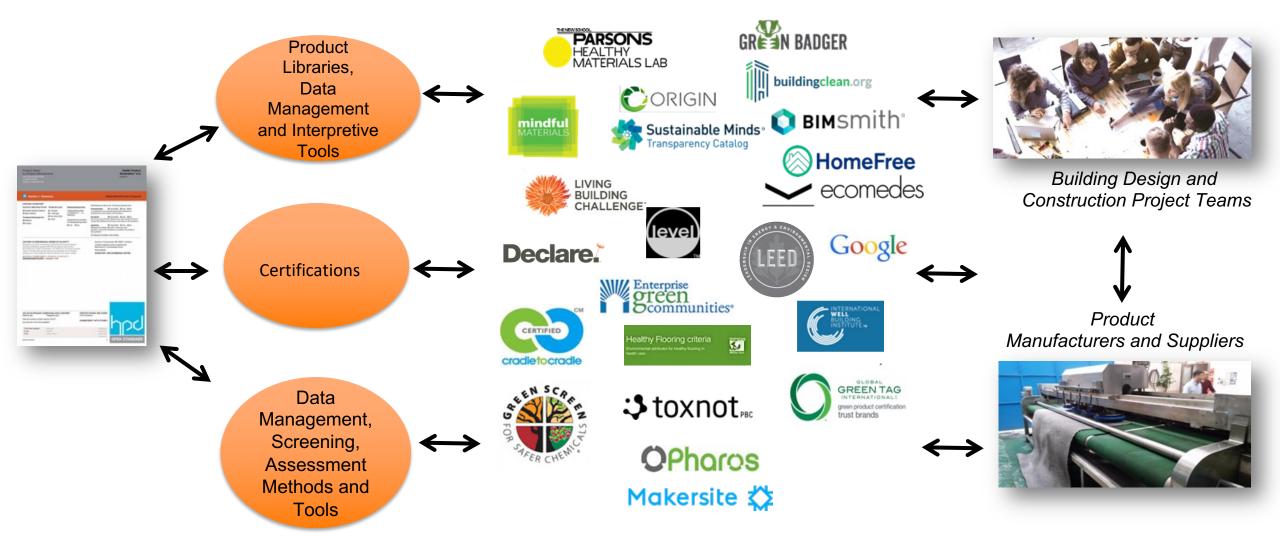
- Open Innovation
- Collaboration

Provides plug-and-play compatibility

- Eliminates barriers to connectivity
 - A standard for data reporting among key players, such as: International Living Future Institute (ILFI), Cradle to Cradle Products Innovation Institute (C2CPII), USGBC, WELL
 - Open to all others
- Reduced cost and improved quality
 - Report once reuse many times
 - Further analysis and assessment, such as for advanced product health certifications, can count on a standard for data completeness and quality



Creating a free-flowing universe of open material health information



Reporting is the first step

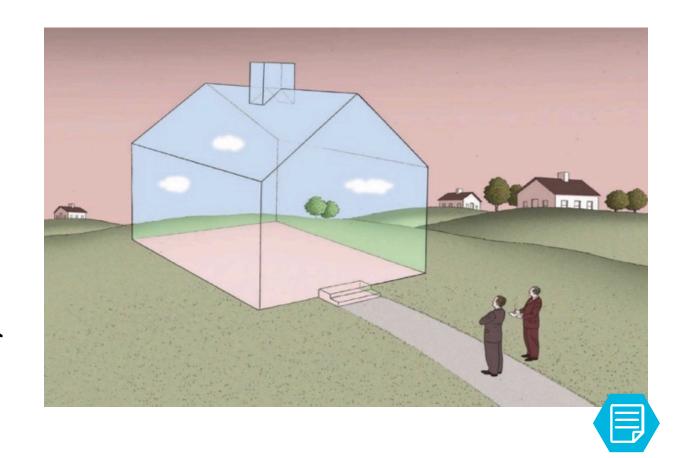
Reporting enables manufacturers and designers to know what is in a product and associated health information

It is the first step toward optimization for healthier and safer products and buildings



Circularity requires transparency

- How can we plan for recycling and reuse without knowing what is in products?
- Whether planning for a 1, 10, or 100-year lifespan, responsible endof-life management of buildings requires knowing "what's in there"
- Even if health information is not known today, knowing the chemical contents enables using new health information as it emerges



What is a published HPD report?

- A publicly-available archive of manufacturer-provided data, reported in compliance with the HPD Open Standard
 - Product Content
 - Associated Health Information
- Not a rating or certification
- Data can be provided using HPD Builder or other connected systems, such as Toxnot



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Product and manufacturer identification

Nordic X-Lam by Nordic Structures

Health Product Declaration v2.1.1

created via: HPDC Online Builder

CLASSIFICATION: 06 17 19 00 Cross-Laminated Timber

Nordic X-Lam cross-laminated timber (CLT) is composed of cross-wise Spruce-Pine-Fir (S-P-F) PRODUCT DESCRIPTION: and/or Black Spruce species boards, forming a slab/panel product up to 15 inches thick, 8 feet wide, and 64 feet long. The result is a building material high in resistance and stiffness, that can easily substitute steel or concrete.



Section 1: Summary

Nested Method / Product Threshold

CONTENT INVENTORY

Inventory Reporting Format

- Nested Materials Method
- C Basic Method

Threshold Disclosed Per

- C Material
- @ Product

Threshold level

- C 100 ppm
- 1,000 ppm
- C Per GHS SDS
- C Per OSHA MSDS
- C Other

Residuals/Impurities

Residuals/Impurities Considered in 1 of 4 Materials

Explanation(s) provided for Residuals/Impurities?

Yes ○ No.

All Substances Above the Threshold Indicated Are:

Characterized

C Yes Ex/SC € Yes € No.

% weight and role provided for all substances.

Screened

O Yes Ex/SC @ Yes O No.

All substances screened using Priority Hazard Lists with results disclosed.

Identified

O Yes Ex/SC O Yes @ No

One or more substances not disclosed by Name (Specific or Generic) and Identifier and/ or one or more Special Condition did not follow guidance.

Product description CSI classification

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Inventory options

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How transparent is it?

Characterized Yes/No

Screened Yes/No Identified Yes/No

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What's in it, and what are the hazards?

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Screened C Yes Ex/SC © Yes C No

All substances screened using Priority Hazard Lists with results disclosed.

Identified C Yes Ex/SC C Yes © No

One or more substances not disclosed by Name (Specific or Generic) and Identifier and/ or one or more Special Condition did not follow guidance.

CONTENT IN DESCENDING CADER OF QUANTITY

Summary of product entents and results from screening individual chemical substances agains APD Priority Hazard Lists and the GreenScreen for Safer Chemicals®. The HPD does not assess whether using or handling this product will pose individuals to its chemical substances or any health risk. Refer to Sgrition 2 for further details.

MATERIAL | SUBSTANCE | RESIDUAL OR IMPURITY

GREEN SCORE | HAZARD TYPE

WOO! BLACK SPRUCE (BLACK SPRUCE) NoGS] ADHESIVE #1 [
POLY JRETHANE (POLYVIRETHANE) LT-UNK POLYMERIC MDI (PMDI)
(POL MERIC MDI (PMDI)) LT-UNK | RES | MUL | CAN METHYLENE
BISH-HENYL DIISOCYANATE (PURE MDI) (METHYLENE BISPHENYL
DIISOCYANATE (PURE MDI) LT-UNK | MAM | EYE | SKI | CAN | RES | MUL
POL ISOCYANATE (COMPOUNDS (POLYISOCYANATE (2A'-MDI))
(DIPHENYLMETHANE-2,4'- DIISOCYANATE (2,4'-MDI))
(DIPHENYLMETHANE-2,4'- DIISOCYANATE (2,4'-MDI))
(DIPHENYLMETHANE-2,4'-DIISOCYANATE (2,4'-MDI))
(EYE | SI | CAN | RES | MUL BENTONITE, ACID-LEACHED (BENTONITE,
ACID-L'ALCHED)

LT-UNK | ADHESIVE #2 | STYRENE BUTADIENE RUBBER
(SBR) (S' YRENE BUTADIENE RUBBER (SBR))

LT-UNK LIMESTONE;
CALCIUM ARBONATE (LIMESTONE; CALCIUM CARBONATE) LT-UNK
WATER (WA) ER)

MATER (WA) ER)

POLY(VINYL ACOHOL) (POLY(VINYL ALCOHOL)) LT-UNK TOLUENE (TOLUENE) LT-1 MAM | SKI | DEL | REP | END | MUL | PHY umber of Greenscreen BM-4/BM3 contents ... 1

Con outs highest concern GreenScreen

Benchmark or List translator Score ... LT-1

Nanomateria ... No

INVENTORY AND SCREENING NOTES:

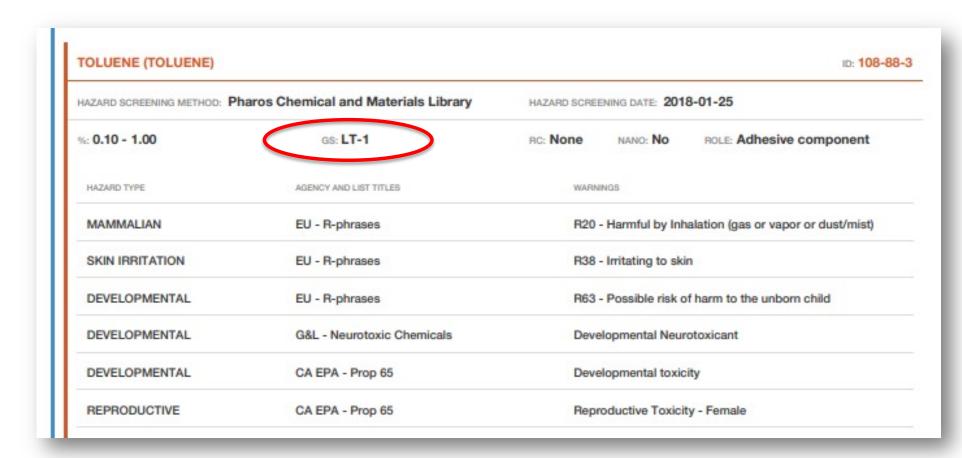
This HPD has been prepared considering a Nested Materials Inventory with a "Per Product" threinold of 1,000 ppm. Wood and all adhesives are Special Conditions Materials toiological material and reaction products) and are present in the product | Guidelines for reporting Special Conditions materials are still under development by HPDC, Nordic Structures will update the HPD accordingly once these guidelines get published.

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Chemical name and CAS RN

JAZADO GODENINO METUOD. PI	naros Chemical and Materials Library	11474DD 0000000000 DATE: 2018-01-25	
%: 0.10 - 1.00	GS: LT-1	RC: None NANO: No ROLE: Adhesive component	
HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS	
MAMMALIAN	EU - R-phrases	R20 - Harmful by Inhalation (gas or vapor or dust/mist)	
SKIN IRRITATION	EU - R-phrases	R38 - Irritating to skin	
DEVELOPMENTAL	EU - R-phrases	R63 - Possible risk of harm to the unborn child	
DEVELOPMENTAL	G&L - Neurotoxic Chemicals	Developmental Neurotoxicant	
DEVELOPMENTAL	CA EPA - Prop 65	Developmental toxicity	
REPRODUCTIVE	CA EPA - Prop 65 HPD Collaborative Overview	Reproductive Toxicity - Female	

GreenScreen® score



Hazard warnings based on authoritative hazard lists from around the world

AZARD SCREENING METHOD: Pharos Chemical and Materials Library		HAZARD SCREENING DATE: 2018-01-25	
: 0.10 - 1.00	GS: LT-1	RC: None NANO: No ROLE: Adhesive component	
HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS	
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SKIN IRRITATION	EU - R-phrases	R38 - Irritating to skin	
DEVELOPMENTAL	EU - R-phrases	R63 - Possible risk of harm to the unborn child	
DEVELOPMENTAL	G&L - Neurotoxic Chemicals	Developmental Neurotoxicant	
DEVELOPMENTAL	CA EPA - Prop 65	Developmental toxicity	
REPRODUCTIVE	CA EPA - Prop 65	Reproductive Toxicity - Female	

Find all Published HPDs - HPD Public Repository







carpet tiles

Find All Published HPDs: Enter search term and/or click GD

LEED Reporting Credit

Transparency Training

April 2021

Project Team User Guide



The building industry's open standard for transparent material health

The HPD Open Standard is a standard specification – composed of a format and instructions – for the accurate, reliable and consistent reporting of product contents and associated health information, for products used in the built environment. The HPD Open Standard specification is harmonized with programs of International Living Future Institute, Cradle-to-Cradle Product Innovation Institute, Clean Production Action, BIFMA, LEED, WELL and a growing number of rating and certification standards in the building industry.

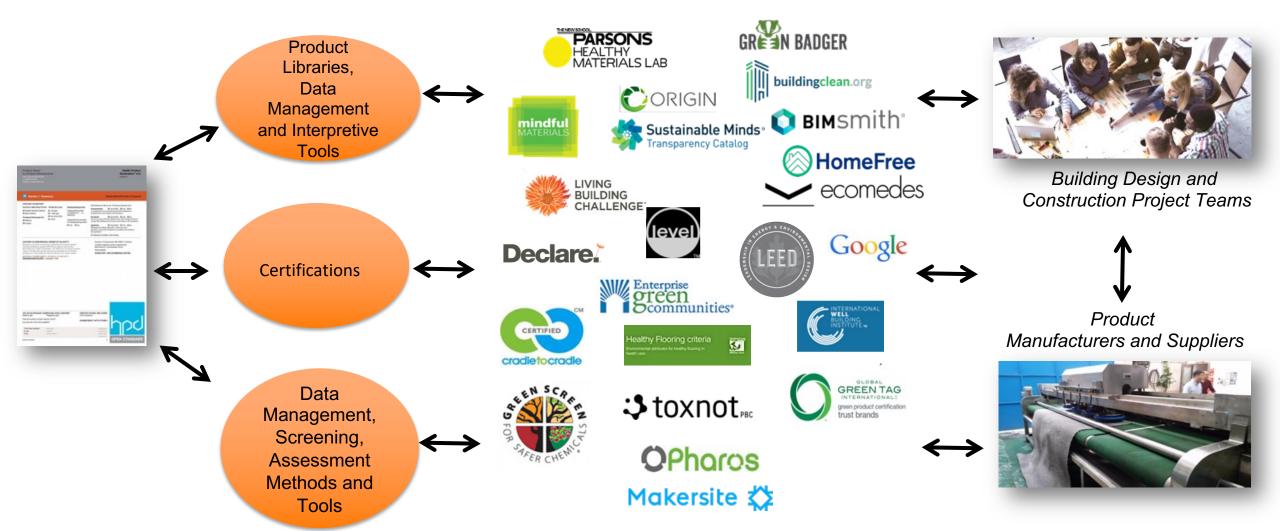
Health Product Declaration® (HPD) Collaborative is a not-for-profit, member association with over 300 organizational members, representing the full spectrum of the building industry: architects, designers, building owners, communities, manufacturers, consultants, tool developers, standards programs and others who all share a common purpose to improve the transparency of information and the material health of the built environment. Using a consensus-based, stakeholder process, HPDC members create, support and evolve the HPD Open Standard. We are dedicated to continuously improving the building industry's performance through transparency, openness and innovation in the practices of reporting, disclosure, specification and selection of building products.

Events

Transparent + Circular: A Transatlantic Material Health Update

Join USGBC's On-Demand Update On Transparent + Circular: A Transatlantic View Full Post

Published HPDs - Available in a growing number of product libraries and project team tools

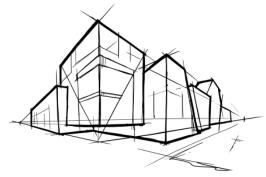






Rockfon's Sustainability Journey to Transparency

4.29.21





What we're seeing & hearing



Driving Transparency and Ingredient Reporting Human Health & Wellbeing



LEED (Leadership in Environmental and Energy Design)

Owner: USGBC (US Green Building Council)

Size: >83K certified projects, >152K registered projects, covering 182 counties

Current Version: LEED v4/4.1

One of the biggest green building rating systems in the US, LEED is for all building types and all building phases including new construction, interior fit outs, operations and maintenance, and core and shell. **EPDs, HPDs, Declare labels**, C2C, action plans, recycled content, and end-of-life take-back programs are some of the ways manufacturers can support LEED projects.



WELL

Owner: IWBI (International WELL Building Institute)

Size: >300 certified projects, >4K registered or pre-certified projects, covering 64 countries

Current Version: WELL v2.0

Launched in October 2014, the WELL Building Standard is the premier standard for buildings, interior spaces and communities seeking to implement, validate and measure features that support and advance human health and wellness (whereas LEED and the other building standards focus more on reducing environmental impacts associated with the built environment).



LBC (Living Building Challenge)

Owner: ILFI (International Living Future Institute)

Size: >600 registered projects **Current Version**: LBC v4.0

The most ambitious green building rating systems, LBC consists of seven performance categories, or "Petals": Place, Water, Energy, Health + Happiness, Materials, Equity and Beauty. Each Petal is subdivided into Imperatives, for a total of twenty Imperatives in the Challenge. **Declare labels** and the **ILFI's red list** are an integral part of the Materials Petal.



Market Initiatives

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EACH OF US PLEDGE TO

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Human Health

Climate Health
Ecosystem Health
Social Health and Equity
Circular Economy

Our Path to Transparency



Utilized Toxnot to consolidate bills of materials and information from the supply chain

Toxnot helped to streamline ask for suppliers significantly and automate material ingredient process

Many 'bumps in the road' with suppliers and proprietary ingredients, Tier 2 suppliers, and evolving standard requirements

We started publishing HPDs and Declare labels in Quarter 1 of 2021 and have a robust roll-out program going forward



So what is an HPD?



HPD (Health Product Declaration)

Owner: HPDC (Health Product Declaration Collaborative)

Standard/Version: HPD Open Standard, v2.2

Supports: LEED v4/v4.1, WELL v2, indirectly supports LBC 4.0

A reporting format to assist manufacturers in transparently disclosing the compositional chemistry of a product, down to 100ppm or 1,000ppm, and discloses the information in a standardized format (set by the HPD Collaborative). All chemicals undergo a hazard screening for their health effects, and the results (e.g. hazards and GreenScreen Score) are reported on the HPD.



Rockfon NA HPDs



Health Product Declarations

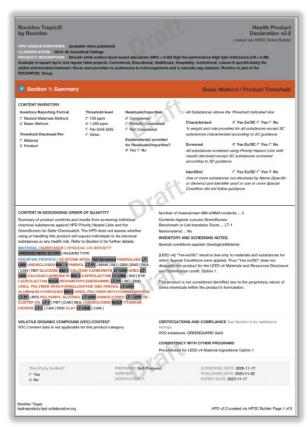


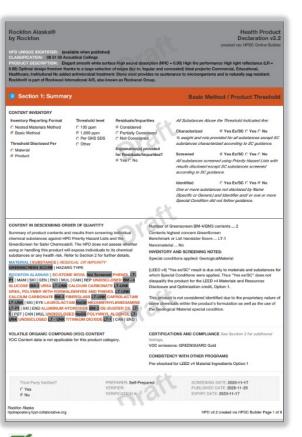
Tropic

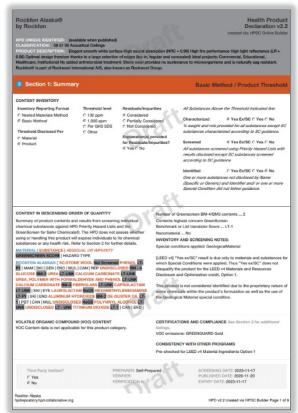
Koral

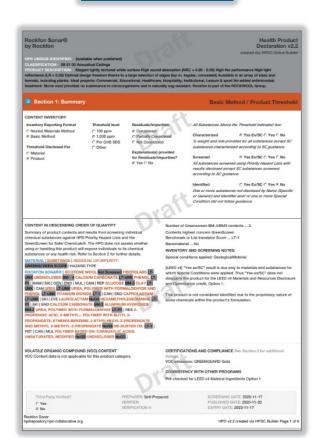
Alaska

Sonar











All ingredients reported Signed off – Self Declared





All ingredients reported Signed off – Self Declared



All ingredients reported
Signed off – Self Declared



All ingredients reported Signed off – Self Declared

International Living Futures Institutes Living Building Challenge – Declare Labels





There are 3 tiers of Declare labels...

- LBC Red List Free indicates 100% disclosure and the product does not contain any chemical on ILFI's red list.
 - Declare!
- LBC Red List Approved indicates >99% disclosure and the use of an exemption (product may contain a red list ingredient covered by an exemption).
- Rockfon's labels are LBC Red List Approved as they use both the Proprietary Ingredient Exemption & Formaldehyde Exemption

 Declared indicates 100% disclosure and presence of a red list ingredient not covered by an exemption.





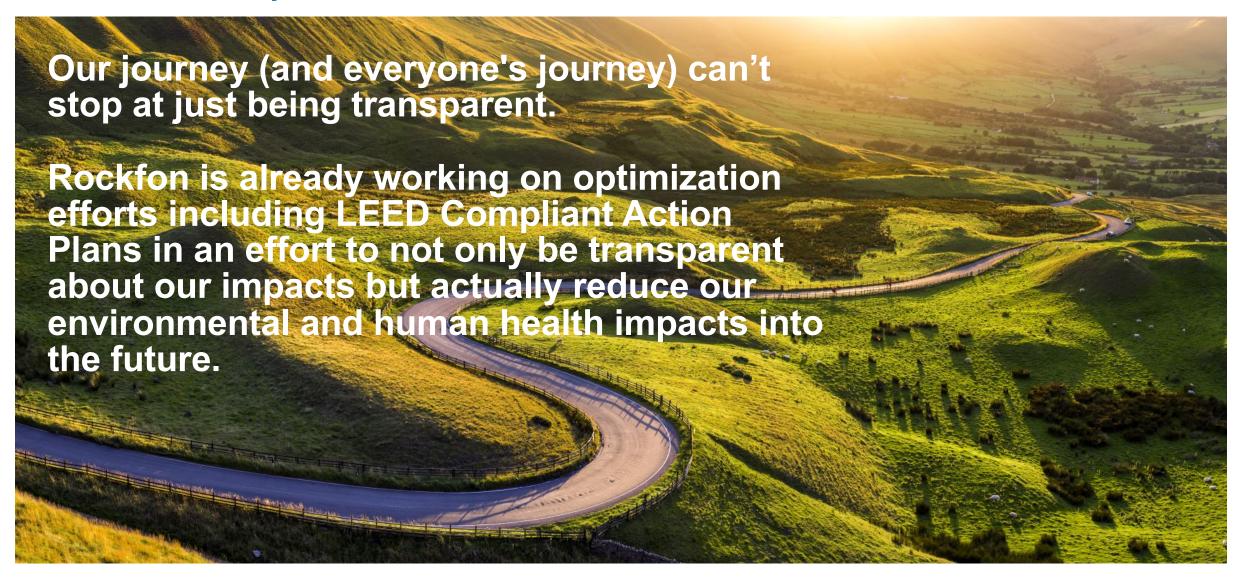
	LEED v4 / v4.1	WELL 2.0	Living Building Challenge – LBC 4.0
HEALTH PRODUCT DECLARATION S (HPD) Self-Prepared	Material Reporting CREDIT: Building Product Disclosure and Optimization - Material Ingredients Option 1. Material Ingredient Reporting Rockfon's HPDs count as 1 product. LEED project teams must use at least 20 different permanently installed products with a MIR from at least five different manufacturers.	CONCEPT: Materials FEATURE X14: Material Transparency Rockfon's HPDs directly contribute to the project team's calculations: 25% by cost of products have a MIR = 1 point 50% by cost of products have a MIR = 2 points	IMPERATIVE I-12: RESPONSIBLE MATERIALS & IMPERATIVE I-14: RESPONSIBLE SOURCING I-12: Rockfon's HPDs can be used as an alternative pathway to support project teams meet the requirement to use one Declare labeled product per 200 sq. meters of gross building area, or project area, whichever is smaller, up to 20 distinct products from five manufacturers. However, this would not be classified as a direct contribution. I-14: Rockfon's HPDs can be used as an alternative pathway to support project teams meet the requirement to use two Declare labeled products per 200 sq. meters of gross building area, or project area, whichever is smaller, up to 40 distinct products. However, this would not be classified as a direct contribution.



Rockfon NA Declare Labels Declare. Points and Credits

	LEED v4 / v4.1	WELL 2.0	LBC 4.0			
DECLARE LABELS Self-Prepared	Material Reporting CREDIT: Building Product Disclosure and Optimization - Material Ingredients	CONCEPT: MATERIALS FEAUTRE X13: ENHANCED MATERIAL PRECAUTION & FEATURE X14: MATERIAL	PETAL: MATERIALS IMPERATIVE I-12: RESPONSIBLE MATERIALS & IMPERATIVE 1-13: RED LIST & IMPERATIVE I-14: RESPONSIBLE SOURCING			
		TRANSPARENCY				
	Option 1. Material Ingredient Reporting	X14: same as HPDs (see above)	I-12: Rockfon's Declare labels support project teams meet the requirement to use one Declare labeled product per 200 sq. meters of gross building area, or			
	Rockfon's Declare labels count	X13: Rockfon's LBC Red List	project area, whichever is smaller, up to			
	as 1 product . LEED project teams must use at least 20	Approved Declare labels contribute to the project team's	20 distinct products from five manufacturers.			
	different permanently installed	calculations:	I-13: Rockfon's LBC Red List Approved			
D)@G[a	products with a MIR from at least five different manufacturers.	15% by cost of products have an optimized MIR = 1 point	Declare labels support project teams meet the requirement to avoid using products contain red list chemicals in 90%			
		25% by cost of products have an optimized MIR = 2 points	of the project's new materials by cost.			
			I-14: Rockfon's Declare labels support			
			project teams meet the requirement to use two Declare labeled products per 200 sq. meters of gross building area, or			
A Rockfon			project area, whichever is smaller, up to 40 distinct products.			

We Can't Stop Here



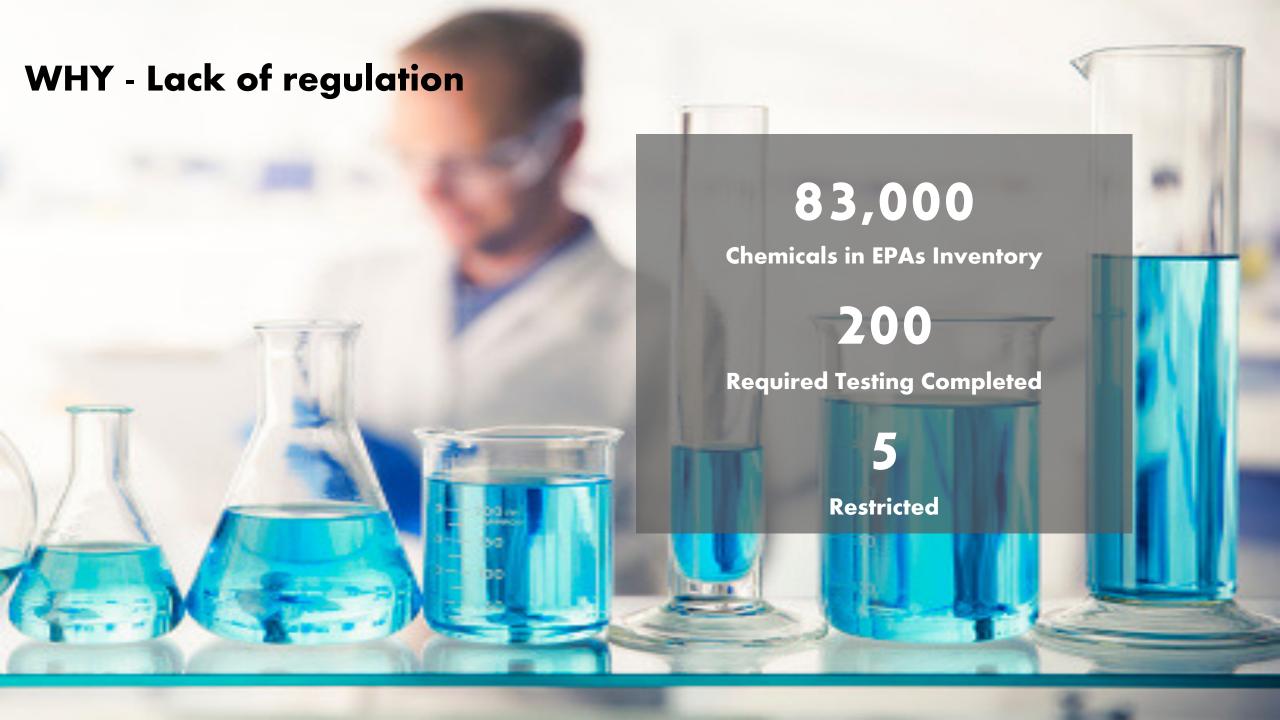






94% of consumers surveyed indicated that they were more likely to be loyal to a brand that offers transparency.

73% said they were willing to pay more for a product that offers complete transparency.









Proposed High-Priority Substance Designations Under the Toxic Substances Control Act (TSCA); Notice of Availability and Request for Comment

A Notice by the Environmental Protection Agency on 08/23/2019





AGENCY:

ACTION:

SUMMARY:

Printed version:

Publication Date:

Agency:

Dates:

Comments Close:

Document Type:

Page:

83,000

Chemicals in EPAs Inventory

High-Priority Substances Identified

Day Comment Period

WHY - Body Burden

SHAMPOO

......

.......

.....

AVERAGE NUMBER OF CHEMICALS: 15 **MOST WORRYING:** Sodium Lauryl Sulphate: Propylene Glycol, Methylisothiazoline. **POSSIBLE SIDE-EFFECTS: Neurological** damage in fetus, irritation, possible eye damage.

NAIL VARNISH

CHEMICALS: 31

MOST WORRYING: Phthalates. POSSIBLE SIDE-EFFECTS: Linked to hormone disruption, fertility issues, linked to cancer, and problems in developing babies.

DEODORANT

CHEMICALS: 32

MOST WORRYING: Aluminum Zirconium, Isopropyl Myristate, POSSIBLE SIDE-EFFECTS: Organ irritation, hormone disruption.

PERFUME

CHEMICALS: 250

POSSIBLE SIDE-EFFECTS: Sperm damage. linked to cancer, organ irritant, hormone disruption.

MOST WORRYING: Benzaldehyde,

LAUNDRY DETERGENT, STAIN REMOVER, DRYER SHEETS, BLEACH.

FAKE TAN

CHEMICALS: 22

MOST WORRYING: Ethylparaben, Methylparaben, Propylparaben. POSSIBLE SIDE-EFFECTS: Rashes, Irritation, hormonal disruption.

SHAVING CREAM AND GEL

OILS AND BATH SALTS

FOOT CREAM ·········

HAIRSPRAY

AVERAGE NUMBER OF CHEMICALS: 11

MOST WORRYING: Octinoxate, Isophthal

POSSIBLE SIDE-EFFECTS: Allergies, hormone disruption, irritation to eyes, nose

and throat, changes in cell structure.

..... BLUSH

CHEMICALS: 16

MOST WORRYING: Ethylparabens, Methylparaben, Propylparaben. POSSIBLE SIDE-EFFECTS: Rash, irritation. hormone disruption.

FOUNDATION

CHEMICALS: 24

MOST WORRYING: Polymethyl methacry-

POSSIBLE SIDE-EFFECTS: Disrupts immune system, allergies, links to cancer.

EYE SHADOW

CHEMICALS: 26

MOST WORRYING: Polythylene terephthal-

POSSIBLE SIDE-EFFECTS: Linked to cancer. infertility, hormonal disruptions, and damage to bodies organs.

..... LIPSTICK

CHEMICALS: 33

MOST WORRYING: Polymenthyl Methacry-

POSSIBLE SIDE-EFFECTS: Allergies, linked to cancer.

BODY LOTION

CHEMICALS: 32

MOST WORRYING: Methylparaben, Propylparaben, Polythylene Glycol, also found in cleaners.

POSSIBLE SIDE-EFFECTS: Rash, irritation. hormone disruption.

SHOWER GEL/SOAP

:----- BUBBLE BATH

WHY - Body Burden

Mercury
Tested for 1; found 1

Polyaromatic hydrocarbons
Tested for 18; found 9

Polybrominated dibenzodioxins/furans
Tested for 12; found 7

Perfluorinated chemicals
Tested for 12; found 9

Polychlorinated dibenzodioxins/furans Tested for 17; found 11

Source: Environmental Working Group. (2005). *Body Burden: The Pollution in Newborns*.

Organochlorine pesticides
Tested for 28; found 21

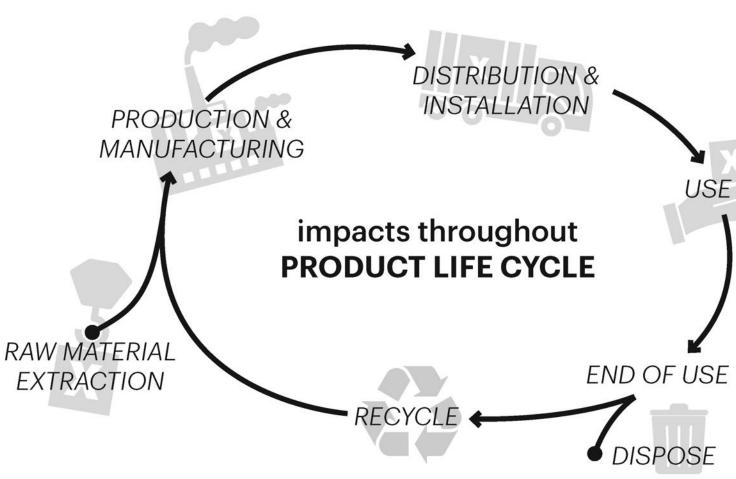
Polybrominated diphenyl ethers
Tested for 46; found 32

Polychlorinated naphthalenes
Tested for 70; found 50

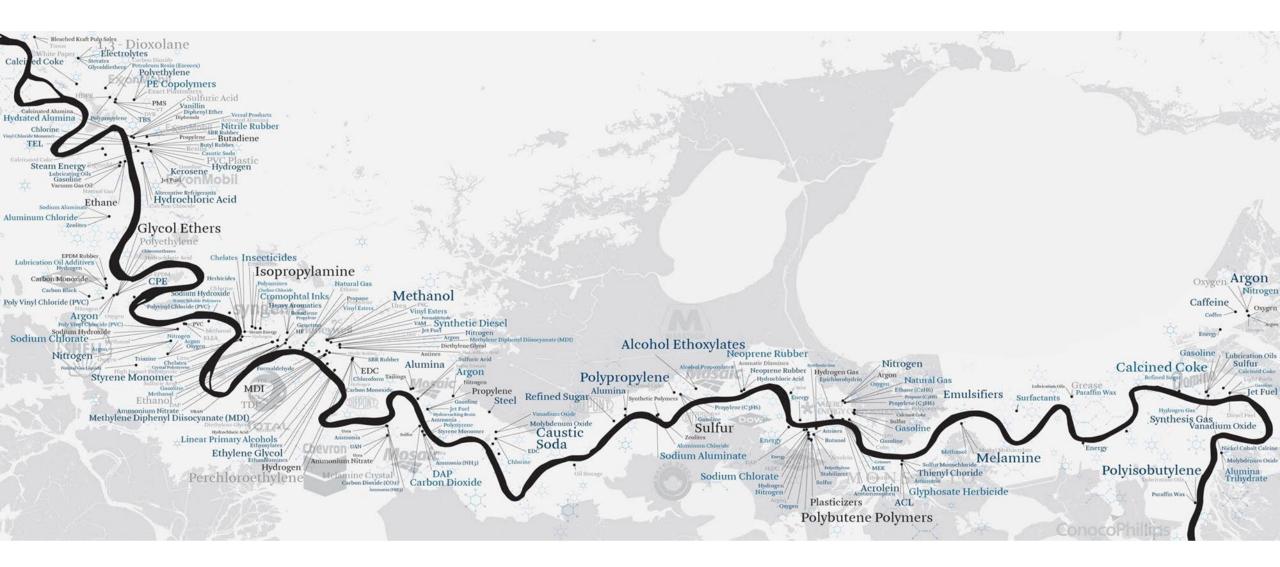
Perfluorinated chemicals
Tested for 209; found 147

WHY - Lifecycle Hazard





WHY - Fenceline Communities



AIA Code of Ethics +AIA Resolution 19-11



CANON VI

Obligations to the Environment

Members should recognize and acknowledge the professional responsibilities they have to promote sustainable design and development in the natural and built environments and to implement energy and resource conscious design.

Rule 6.501
Members shall consider with their clients the environmental effects of their project decisions. <u>link</u>

E.S. 6.3 Building Materials:

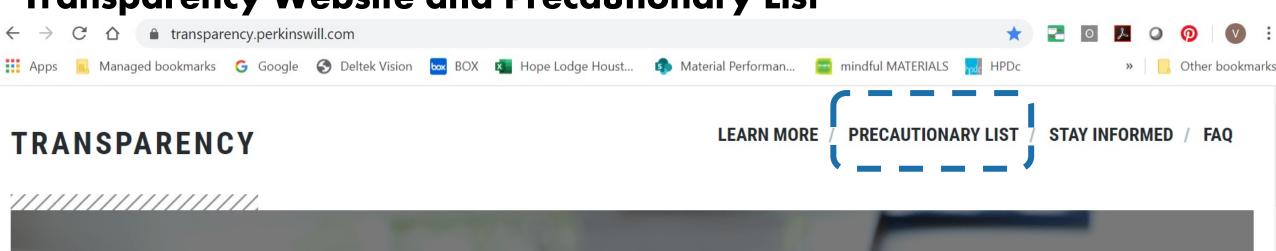
Members should select and use building materials to minimize exposure to toxins and pollutants in the environment to promote environmental and human health and to reduce waste and pollution.

Precautionary Principle

When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.

ONAJNI3

Transparency Website and Precautionary List



Let's put the Precautionary Principle into action.

Manufacturers use synthetic chemicals when creating products for the building industry. We now know that many of these chemicals can pose negative health effects on people and the planet. How can we lead the market to develop healthier products?

Process

















SCHEMATIC DESIGN

DESIGN DEVELOPMENT

CONSTRUCTION DOCUMENTS | CA



PROJECT GOALS

SYSTEMS COMMON PRODUCTS



INTERIOR:

CEILING TILE
GYPSUM BOARD
PAINTING
CERAMIC TILE
WOOD PANELS
WALL PROTECTION
WALLCOVERING
WALL BASE
RESILIENT
FLOORING



EXTERIOR:

CONCRETE STEEL FRAMING INSULATION WATERPROOFING ROOFING GLAZING METAL PANEL FLASHING TERRA COTTA BRICK MASONRY

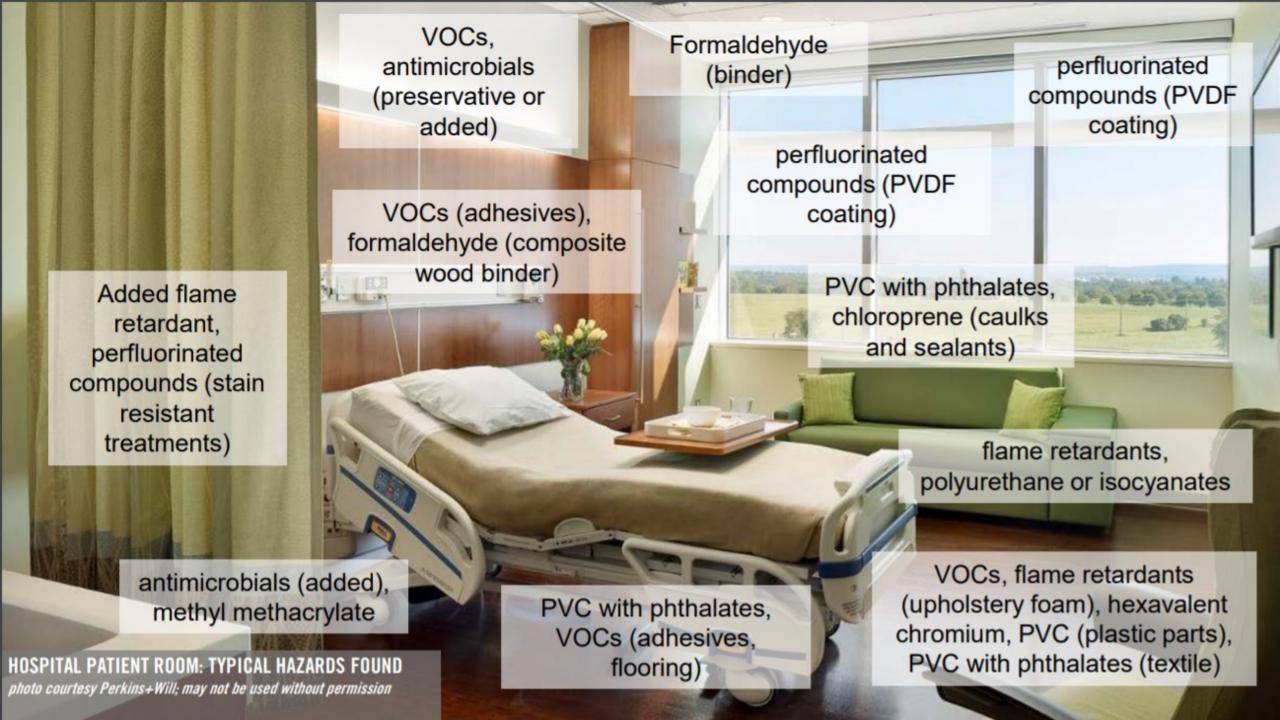


SPECIFICATION

MANUFACTURER - PRODUCT BASIS OF DESIGN ALTERNATES



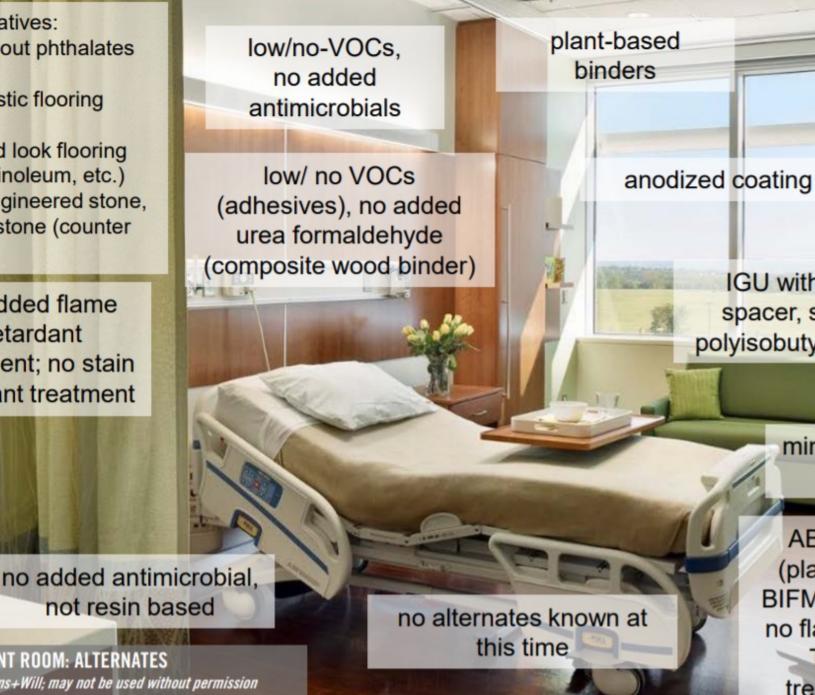




other alternatives:

- PVC without phthalates (flooring)
- other plastic flooring types
- non-wood look flooring (rubber, linoleum, etc.)
- stone, engineered stone, sintered stone (counter top)

no added flame retardant treatment; no stain resistant treatment



anodized coating IGU with aluminum spacer, silicone and polyisobutylene sealants

> mineral (rock) or natural wool insulation

ABS or other plastic types (plastic trim), certified ANSI/ BIFMA M7.1-2011 (emissions), no flame retardants added per TB-117-2013, no stain treatments, polished metal

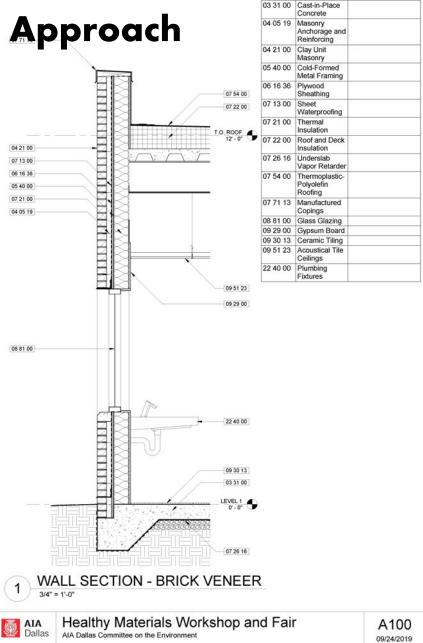
HOSPITAL PATIENT ROOM: ALTERNATES

photo courtesy Perkins+Will; may not be used without permission

Spec Changes vs. Material Changes



Top Ten Approach

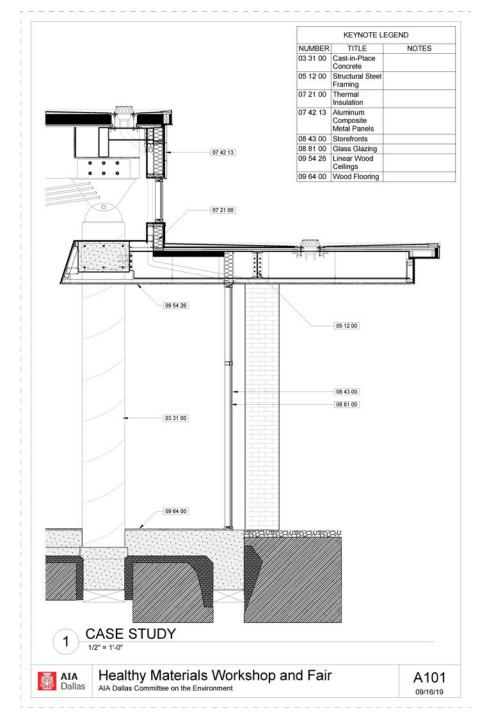


KEYNOTE LEGEND

NOTES

TITLE

NUMBER



Material Tracking Worksheet- SPR Reporting

Instruction						-		I .				La Contraction of the Contractio		-
		MATERIAL SPECIFICATION				IDENTIFY (Does this finish have one of the following forms of transparency?)						ASSESS (Does the product have a Precaudionary List substance?)	RESULTS	
item#	CSI Section	Building Material	Manufacturer	Product Name/ Style	Color/Finish	HPD	Declare	ac	EPD	Additional info from Manufacturer	YES N	O CONTAINS UNDISCLOSED SUBSTANCES NOT ENOUGH INFO AVAILABLE TO DETERMINE	Summary	Suggestion/Comments
1	03 05 10	Concrete Vapor Molisture Reduction (If needed)	ICE Logik Industries	MVTM 900		https://hodrepository.hod- collaborative.org/repository/HFDThu mbnalls/4ABS341DA2A7B2FG3B67F3					N	0		
2	03 30 00	Concrete Admistures	IASF	MasterAir AE 200, MasterPospolith, MasterSet R 961, MasterAir AE 200, MasterGenium 7500, MasterPospolith 80								NOT ENOUGH INFO AVAILABLE TO DETERMINE		
3	03 30 35	Un der-Slab Sheet Vapor Retarden	2: ago	Songo Wrap Vapor Barrier 15 mil		https://foodrepositions.html. collaborative.org/Reposition/HPRe/au blish_18_Step. Wrop. Vapor Barrier_ 1505248677.mdf						NOT ENOUGH REFO AVAILABLE TO DETERMINE	INPO contains proprietary information with all substances LT- UNK; PVC-tree and fixed List tree according to Matter website	look for alternative that has fully, disclosed HPD: emailed; tooms wis fitteeprindustries, com to obtain disclosed HPD.
4	03 31 00	Structural Concrete Stained Concrete					n/a	1/2	1/2	n/a				ensure no fly ash is specified
6	03 35 43	Polished Concrete Finishing	Curecrete Chemical Company	Retroplate		https://hadrepository.had- collaborative.org/Repository/HPDs/ou bilsh 400 RetroPlate 1505511623.pd f			i i			CONTAINS UNDISCLOSED SUBSTANCES	HPD contains undisclosed and proprietary ingrediants	ask manufacturer to sign letter stating it is free from p-list substances
7	03 54 16	Cement-Based Underlayment	Mapel	Ultraplan 1 Plus		https://hadrepository.had- collaborative.org/repository/HFDThu mbnalls/SE44AAIDSECT788EA73A97 F60008T357.jpg					N	0		
	03 62 13	Grout	Bucild Chemical	NS Grout		https://hadrepository.had- collaborative.org/repository/HFDs/bu					N	0	line and	
а	04 20 00	Unit Masonry	Cloud Ceramics	Cherokee Blend,	Norman, Velour	blich 123 NS GROUT.edf						NOT ENOUGH INFO AVAILABLE TO DETERMINE	No HPD available	plant is preparing transparency docs
9	04 73 00	Manufactured Stone Masonry	Arrisosit	Simulated Stone	Smooth Cak Ridge								No HPD available	
10	05 12 00	Structural Steel							http://www.adi.org/wp- content/uploads/2016/04/101.1 SDI IPD Sheel-Roof-and-Floor- Deck 20151215.adf		N		can reasonably assume it does not based on EPD	
11	05 21 00	Steel Joints							file:///C:/Users/trade/Downloads/SII_ Final_EPD.pdf	•	N	0	can reasonably assume it does not based on IPD	
12	05 40 00	Cold Form Metal Framing							https://www.ateelbustain.ab/lite.org/ /media/files/steelsatian.ab/lite/stee pod-05836 and chette/steek 011016 prior. service.asha?la-en&bash-0001294EC 94ABC5127278F174245706D8BASC2 SA		N	0	can reasonably assume it does not based on IPD	
13	05 51 13	Metal Pan Stains							https://www.alsc.org/slobalassets/wh y-steel/102.1 alsc.epdfab- sections_20160331.odf		N	0	can reasonably assume it does not based on IPD	
14	05 52 13 05 58 00	Steel Pipe and Tube Railings Corten Steel	Johnston Products of Dallas		Pre weathered and sealed									
16	06 05 1.91	Acetylated Wood	Acceys Technologies	Accoys	what is finish on this product? Can you stain?		https://bosnot.com/Api/PublicGeclare Image?declareiabelld=42482a4b- 34dc-4934-3bbifleid=89493550- c025-9936-90c0-declareb bal				N			
17	06 16 43	Gypsum Sheathing	Certainteed/Saint Gobaln	GlasRoc		http://design.center.nationalgrosum.c cm/storage/components/pdf/NSC- 2354-CB_e02_SHEATHING: PUBLISHED_HPD-09.07.2017.pdf							HPD expined	ask rep to update HPD
18	06 16 43 06 16 43	Gypsum Sheathing Gypsum Sheathing	Georgia Pacific United States Gypsum	DensGlas Secureock										
20	06 16 43	Gypsum Sheathing	National Gypsum	Gold Bond eXP Exterior Sheathing		http://design.center.nationalgrepsum.c om/storage/components/pdf/MGC- 2354-08_e02_SHEATHING: PUBLISHED_HPD-09.07.2017.pdf						CONTAINS UNDISCLOSED SUBSTANCES		
21	07 21 00	Thermal insulations Thermal insulations	Enauf Rockwool	ECORatt Formaldehyde Free AFB evo Formaldehyde Free			https://living-future.org/declare-				YES- ru Yes- fo	maldehyde	this product contains trace amounts	
23	07 21 00	Thermal insulations	Owers Coming	Formaldehyde Free							100			
24	07 21 00	Thermal insulations	Owens Coming	Thermafiber Rainbarrier 45 Formaldehyde Free										
25	07 24 43 07 27 26	Synthetic IIFS Soffit System Fluid-Applied Membrane Air Barriers	Momentive Performance Materials	GE Elemax 2600		https://hodreposition.hod. collaborative.org/Repositions/HPGs/bu blish_175_GE_Elemax_3600_1519151 924.pdf					N	0		
27	07 27 26	Fluid-Applied Membrane Air Barriers	Prosoco	R Guard CAT 5 Rainscreen			https://livine-future.org/declare- groducts/n-guard-cat-5-rain-screen/				Yes, Di	butytin Discrete		
28	07 27 26	Fluid-Applied Membrane Air Burriers	Henry	Airbioc 31MR		https://hodrepository.hod- collaborative.org/Repository/HPDs/ou bilet_109_Air_Bloc_31AM_34846735 98_reff					Yes-Ru	biter		
29	07 42 13	Numinum Composite Wall Panels	7								Ŧ			
31	07 42 93 07 52 16	Formed Metal Wall Panels Metal Soffit Panels	7 Armstrong	Metalworks Vector		https://hpdrepository.hpd- collaborative.org/Repositors/HPDs/ou- bilds.108. Armstrong. Metalworks. Ve- ctor; 1499457254.pdf						CONTAINS UNDISCLOSED SUBSTANCES		
32	07 52 23	Thermoplastic Polyciefin (TPO) Roofing	GAF	Everguard	white	https://hpdrepository.hpd- collaborative.org/Repositors/HPDs/bu hith_112_fiverGuard_TPO_50_80_mil 1520334530_w#					N	0		

Wellness and Sustainable Design Verification Form

☐ Platinum

PERKINS+WILL

WELLNESS AND SUSTAINABLE DESIGN VERIFICATION FORM WELL v2 and LEED v4

this form is available upon request. MATERIAL OR PRODUCT: Click here to enter text. MATERIAL COST: Click here to enter te MANUFACTURER: Click here to enter text. DATE:

Include one form for each product in the submittal. Include only one product per form. A digital copy of

CONTACT: Click here to enter text. SIGNED BY: Click here to enter text.

ATTACH REQUIRED DOCUMENTATION:

☐ Other USGBC approved program

- 1. Sustainable design documentation: product cut-sheet, certificate, manufacturer's letter, or other appropriate source.
- 2. Material disclosure information (disclosed to 1000 ppm). See Field J for Substances of Avoidance.

□ Environmental Product Declaration (E						
☐ Product Specific						
☐ ISO standard compliant						
☐ USGBC approved program						
☐ Cradle-to-Cradle (C2C) v3						
☐ Bronze						
☐ Silver						
☐ Gold						

FIELD J - SUBSTANCES OF AVOIDANCE PER PERKINS+WILL PRECAUTIONARY LIST AND WELL **BUILDING STANDARD**

1. Does the product or its components contain any of the following substances? Highlight substance(s) if yes.

-- Example Arsenic, Bisphenol A (BPA), Bromochlorodifluoromethane, Cadmium, Chlorinated Polyethylene (CPE), Chlorinated Polyvinyl Choloride (CPVC), Chlorofluorocarbons (CFC), Chloroprene (2-CHLOR-1,3-BUTADIENE), Chlorosulfonated Polyethylene (CSPE), Copper (for Exterior Material), Creosote,

Halogenated Flame Retardants (HFR) & Brominated

Flame Retardants.

Hydrochlorofluorocarbons (HCFC), Isocyanate-based Polyurethane (for Interior Finishes) Lead, Mercury, Organostannic Compounds (aka Tin Compound), Pentachlorophenol, Perfluorocarbons (PFC), Phthalates (including at least DEHP, DBP, BBP, DINP, DIDP or DNOP), Polystyrene, Polyurethane Foam,

Polyvinyl Chloride (PVC)

Hexavalent Chromium (VI),

END OF FORM

01 81 13 - WELLNESS AND SUSTAINABLE DESIGN VERIFICATION FORM WELL v2 and LEED v4 - APPENDIX - 3

Getting Buy-In from the Client and Manufacturers



PERKINS+WILL

HOPE LODGE DALLAS- LETTER OF COMMITMENT

December 6, 2018 Hope Lodge Dallas- Letter of Commitment

Perkins+Will has been retained by The American Cancer Society to provide design services for the construction of Hope Lodge Dallas. This project, with a construction budget of \$22 million, is an important project to the nope Longe values. This project, with a construction budget of \$22 million, is an important project to the surrounding communities as it serves as free lodging for cancer patients that must travel more than 40 miles away surrounding communities as it serves as tree lodging for cancer patients that must travel more than 40 miles a from home to receive life-saving cancer treatment. The project will be fully funded by donors and will receive

The American Cancer Society is the nationwide community-based voluntary health organization dedicated to The American Cancer Society is the nationwide continuous-based voluntary health organization dedicated to eliminating cancer as a major health problem by preventing cancer, saving lives, and diminishing suffering from cancer, through research, education, advocacy, and service. The American Cancer Society aims to help patients get cancer, through research, education, advocacy, and service. The American Cancer Society aims to help patient, well and stay well. A central tenet of this project is a commitment to reducing and eliminating substances of well and stay well. A central tenet of this project is a commitment to reducing and eliminating substances of concern in the built environment that have been linked to negative impact to human health. This project will showcase "best-in-class" products in regard to material health and transparency. Specifications for the Hope Lodge snowcase "pest-in-class" products in regard to material nearth and transparency. Specifications for the Hope Lodge project will prioritize products that do not contain substances we have collated as Perkins+Will's Precautionary List. project will prioritize products that do not contain substances we have collated as Perkins+Will's Precautionary List to the highest degree possible. The aforementioned Precautionary List (and a description of how the List has been

created) can be found at:

We are asking suppliers and manufacturers of building products to disclose material ingredients in full, to 100ppm, We are asking suppliers and manufacturers of building products to disclose material ingredients in full, to 100ppm and provide a written commitment to eliminate "Precautionary List" substances from their products. Through this and provide a written communient to eminimate "Frecautionary List" substances from their products. History in effort Perkins+Will and the American Cancer Society intends to support a non-toxic and transparent materials.

Additionally, Perkins+Will and the American Cancer Society continually seek healthy building products,

manufacturing processes, and transparent manufacturers for future work and hope to establish long-lasting manufacturing processes, and transparent manufacturers for future work and hope to establish iong-lasting partnerships. We encourage your company to consider the positive aspects of establishing a relationships with us as well as the environmental benefits of eliminating or avoiding the listed substances of concern. Thank you for your support in helping create healthier spaces for our clients, community and the world.

Sincerely,

Victoria Wickard, LEED AP, AIA Project Architect Perkins+Will

William M. Ethier Sr.

Senior Director Construction and Building Operations American Cancer Society



Perkins and Will Library Protocol

Prepare

Register product(s) in mindful MATERIALS. This informational website is free and open to all manufacturers and building product materials. http://www.origin.build

Provide one form of transparency through mindful MATERIALS or emailed to the local librarian. Acceptable forms of transparency, in order of preference, include:

- Health Product Declaration (HPD) As the preferred method of disclosure, those with HPDs will be given priority when our librarian schedules the Entry Visit.
- Declare Label
- 3. Environmental Product Declaration (EPD) with content disclosure
- 4. Cradle to Cradle Certification
- 5. A disclosure of all materials written on letterhead and signed by a company Executive or Director. Please note, proprietary information can be submitted as 'undisclosed' but the role of the substance, percentage of total material, and Greenscreen Benchmark must be provided.



mindful Materials Label



The mindful Materials label will be applied to products which have been registered in mindful Materials and have provided at least one form of transparency.

Optimization Label

Optimized products will be identified with color-coded labels. | https://transparency.perkinswill.com/

- Blue (In Progress)
 - The product vetting is **in progress**. Design professionals should exercise caution when specifying.
- Orange (Grandfathered)
 The product needs further industry development around transparency and optimization (e.g. architectural products).
- Yellow (Good)
 This product has been vetted and does not contain substances on GSPI's Six Classes of Chemicals. | http://www.sixclasses.org/
- Light Green (Better)
 The product has been vetted and does not contain substances on the Perkins and Will Precautionary List. | https://transparency.perkinswill.com/
- Dark Green (Best)
 This product has been vetted and does not contain Greenscreen BM-1, LT-1, LTp1 substances. | https://www.greenscreenchemicals.org/method

Perkins and Will Online Materials Library

DO NOT SORT THIS DOCUMENT

	OPTIMIZATION COLOR	MANUFACTURER		I PRODUCT LINE	MM	Form of Transparency					GOOD	BETTER	BEST		
L- FREE			SPEC SECTION			HPD'S	DECLARE LABEL	EPD'S	C2C	LETTER	RF 6 CLASSES FREE	PRECAUTIONARY LIST	BM1'S FREE	LT1'S FREE	LTp1's FREE
	NONE	Knauf Insulation	07 21 13	Earthwool Insulation Board w/ FSK or ASJ	Υ	Υ	Υ								
				Earthwool 1000 Degree Pipe Insulation w/ Escoe											
	BETTER	Knauf Insulation	07 21 13	Technology	Υ	Υ	Υ	Υ			Υ	Υ			
1	BEST	Knauf Insulation	07 21 29	Jetspray Insulation	Υ		Υ				Υ	Υ	Υ	Υ	Υ
	NONE	Knauf Insulation	23 07 16	Atmosphere Duct Wrap with Escoe Technology	Υ	Υ									
	NONE	Knauf Insulation	07 00 00	Ecobatt with Escoe Technology	Υ		Y	Υ							
1	BETTER	Knauf Insulation	07 20 00	Inner Safe Batt Insulation with Escoe Technology	Υ		Υ				Υ	Υ	Υ	Υ	
	BETTER	Knauf Insulation	07 21 00	Acoustical Board Smooth	Υ		Υ				Υ	Υ	Υ	Υ	
	GOOD	Knoll Textiles	12 64 16	Upholstery	Υ						Υ				
	GOOD	Knoll Textiles	12 22 00	Drapery	Υ						Υ				
	IN PROGRESS	Knoxtile	09 30 13	Amosaic-Huron Collection											
	IN PROGRESS	Knoxtile	09 30 13	Amosaic-Huron Collection						Υ					
	IN PROGRESS	Knoxtile	09 30 13	Interstyle		Υ									
	NONE	Knoxtile	09 30 13	Mosa Floor Tiles	Υ		Υ	Υ	Υ						
	NONE	Knoxtile	09 30 13	Mosa Wall Tiles	γ		Υ	Υ	Υ						

ADDITIONAL RESOURCES

Valuable Resources

- Declare website: https://living-future.org/declare/
- Cradle to Cradle (C2C): https://www.c2ccertified.org/
- Healthy Product Declaration (HPD): http://hpd-collaborative.org
- Pharos: http://pharosproject.net/
- Building Green: http://buildinggreen.com/
- Sample Materials Lists: https://living-future.org/lbc/resources/
- Home Free
- Healthy Building Network
- Building Green
- Sustainable Minds
- Mindful Materials
- Material Bank

