







# NH&RA Asset Management Conference Affordable Healthy Housing - Living in a Material World

William Weber









Images: CCH/Mithun, Liberty Bank Building: HBN: MSR, Rose



A national initiative supporting affordable housing leaders who are improving human health by using less toxic building materials.

homefree.healthybuilding.net

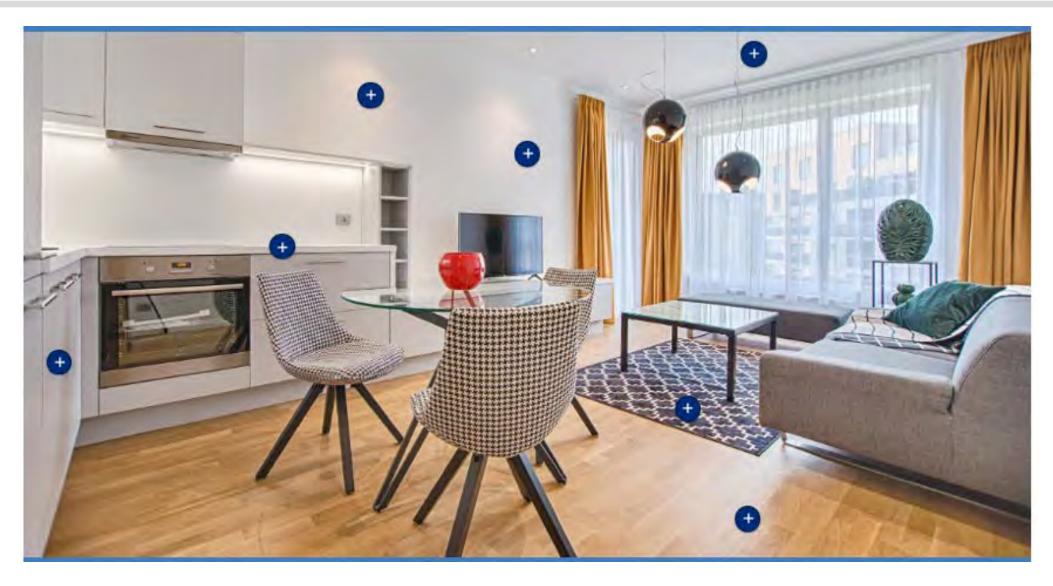








## **Hidden Toxins in the Home**



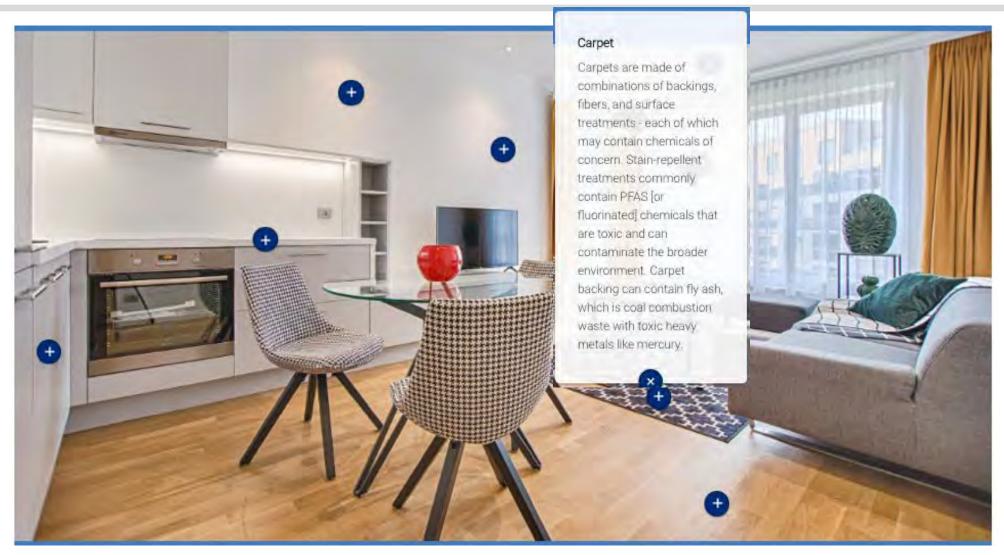


## **Hidden Toxins in the Home**

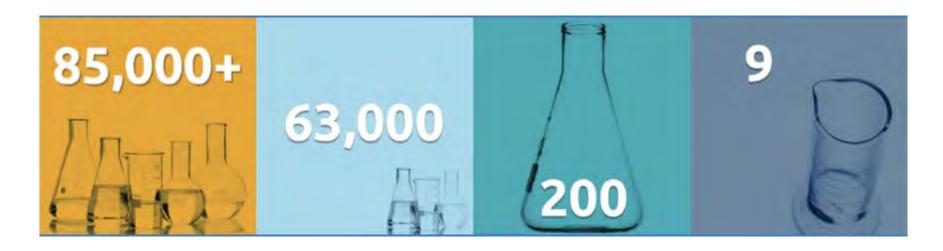




## **Hidden Toxins in the Home**









# **Toxic Substance Control Act**











# **INGESTION | INHALATION | DERMAL**



# **Chemical Hazards & Health Endpoints**



Persistent and Bioaccumulative Toxicants (PBT)

**Carcinogens and Mutagens** 

**Developmental & Reproductive Toxicants and Endocrine Disruption** 

**Asthmagens** 

**Ozone Depletion Potential (ODP)** 

**Global Warming Potential (GWP)** 







# The Importance of Transparency!

- 1. Right to know
- 2. Need to identify priorities
- 3. Innovation
- 4. Accelerates change







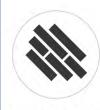
# **Action:**

Prefer products with HPD and include HPDs as a requirement in specifications





## **PRODUCTS CATEGORIES**



## Flooring Products Hazard Spectrum

Individual products can vary significantly in their chemical content, however there are some types of flooring that generally contain less hazardous materials than others. HBN ranks types of flooring materials on a simplified spectrum below.[1] Products in the green categories are typically better options than those in the orange or red, and products in the yellow categories are generally less preferable than those at the top, but are better choices than those at the bottom.

#### Related Product News

#### A Cheat Sheet for Decoding Vinyl Product Literature

HBN created a "cheat sheet" to help connect the dots between our guidance on vinyl flooring and the technical literature produced by manufacturers. Have this sheet at the ready when a vinyl floor is necessary on your next project, and you're looking to make it as healthy as possible.

#### Spectrum of Flooring Options Now Includes Ceramic Tiles

At your request, we've expanded the chart once again to include two variations of ceramic tiles on

# Read more...

## Solid Wood Floors (pre-finished)

Engineered Wood Floors (pre-finished)

Ceramic Tiles (made in the USA/lead-free with no CRT cor

Solid Wood Floors (finished on site)

Polyester Floors

#### Related Product News

#### It's Not Just About VOCs: Select APE-free Paint, Too

Earlier this year, the Bealthy Building Network (HBN) recommended specifying 8/PE-free paints in addition to low- or very low VOC paints to help protect human health and the environment. HBN is expanding this recommendation to include the broader category of chemical compounds Known as APOs...

#### A Brush With Research: A HomeFree Member Searches for Healthy Paint

Courst blogger: Sunstine Mathon, Foundation Communities to Austin, TX Spoller Alert: Sherwin-Williams, Pro Mar 400 Zero VOC paints was identified as

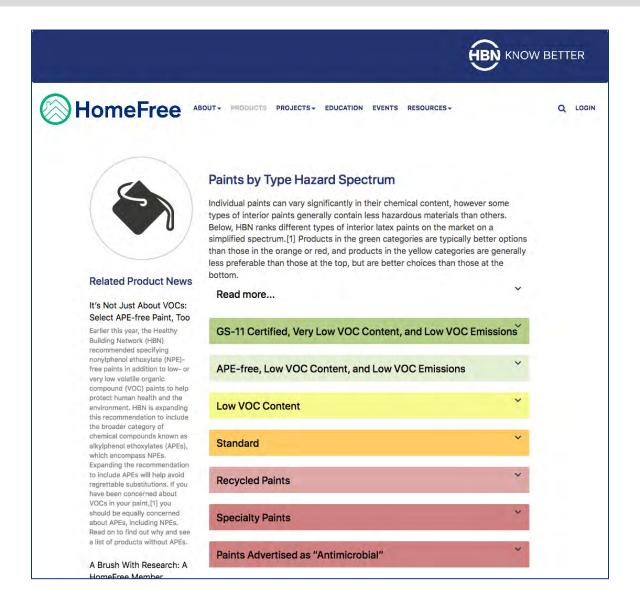
### Paints by Type Hazard Spectrum

Individual paints can vary significantly in their health profiles, however some categories of interior paints are better than others when it comes to the health of building occupants and installers. Below, HBN ranks different types of interior latex paints on the market on a simplified spectrum.[1] Products in the green categories are better options than those in the orange or red, and products in the yellow categories are generally less preferable than those at the top, but are better choices than those at the bottom.

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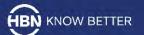


## **Products - Paint**





# **Vetting Products**





Q LOGIN



#### Related Product News

#### It's Not Just About VOCs: Select APE-free Paint, Too

Earlier this year, the Healthy Building Network (HBN) recommended specifying nonylphenol ethoxylate (NPE)free paints in addition to low- or very low volatile organic compound (VOC) paints to help protect human health and the environment, HBN is expanding this recommendation to include the broader category of chemical compounds known as alkylphenol ethoxylates (APEs), which encompass NPEs. Expanding the recommendation to include APEs will help avoid regrettable substitutions. If you have been concerned about VOCs in your paint,[1] you should be equally concerned about APEs, including NPEs. Read on to find out why and see a list of products without APEs.

### Paints by Type Hazard Spectrum

Individual paints can vary significantly in their chemical content, however some types of interior paints generally contain less hazardous materials than others. Below, HBN ranks different types of interior latex paints on the market on a simplified spectrum.[1] Products in the green categories are typically better options than those in the orange or red, and products in the yellow categories are generally less preferable than those at the top, but are better choices than those at the bottom.

Read more...

GS-11 Certified, Very Low VOC Content, and Low VOC Emissions

#### APE-free, Low VOC Content, and Low VOC Emissions

Alkylphenol ethoxylates (APEs) are commonly used surfactants in acrylic paints. The APE chemical group includes nonylphenol ethoxylates (NPEs) and octylphenol ethoxylates (OPEs). NPEs and OPEs break down into nonylphenols and octylphenols. NPEs, OPEs, and these break down products have all been shown to have endocrine disrupting properties.[2] Alternate chemicals are available, and a transition is underway in the market. Most of these alternate chemicals have gaps in data, so additional information is needed from manufacturers to ensure these are safer chemicals. Ask manufacturers to disclose and fully assess the alternatives. For more information, read It's Not Just About VOCs: Select APE-free Paint, Too.

Paints in this light green category are free of APEs. They also have low VOC content and emissions. Low VOC paints per South Coast Air Quality Management District (SCAQMD) Rule 1113 (Feb. 2016) contain ≤ 50 g/L in



# **Step by Step 4 - VOC Emissions**

### Step 4



The top two tiers in the hazard spectrum, the green and light green, include a low VOC emission requirement.

Look for evidence that the product has low VOC emissions per the CDPH standard by checking for one of these certifications:

- · UL GreenGuard Gold
- SCS Indoor Advantage Gold
- Berkeley Analytical ClearChem.
- · Master Painters Institute (MPI) X-Green
- · GreenWise Gold

Some Sherwin Williams products, like ProMar Ceiling paint, shows the GreenGuard Gold logo on the product data sheet (right), which indicates that this product is certified to meet these requirements.











You can refer to the VOC content and emissions program summary noted in the previous step here to check for emissions certification options.



















# **Step by Step 4 - VOC Emissions**

### Step 4

The data sheet for SuperPaint does not list any of these certifications. Since it isn't listed on the product literature, it is likely that the paint doesn't have an emission certification, but we can verify this by checking the certification websites directly. By reviewing the certification websites, HBN verified that SuperPaint does not have a VOC emission certification.

Since there is no emission testing for the SuperPaint product, the highest category it can be part of is the yellow, for low VOC paints.

Attribute Tracking					
Paint Name	GS- 11	APE- free	VOC Content	VOC Emissions	Antimicrobial Health Claim
Sherwin Williams SuperPaint	No	Yes	≤50 g/L	No certification	



# **Step by Step 4 - Summary**

Navigate the lesson using the circled numbers, 1 though 10, at the bottom of the screen. Advance to the next section using the next module buttom after you have reviewed all the material.

## Review and Summary

The final review reveals that the SuperPaint overall falls into the yellow category, since it doesn't meet all the requirements for the light green category due to the lack of VOC emission certification. Given the fact that it is APE-free however, it is a preferable option to others in the yellow category with similar VOC content.

Attribute Tracking					
Paint Name	GS-11	APE- free	VOC Content	VOC Emissions	Antimicrobial Health Claim
Sherwin Williams SuperPaint	No	Yes	≤ 50 g/L	No certification	No antimicrobial health claims

That brings us to the end of the process.

If you are considering a wide array of paints, it may be a good idea to work directly with the manufacturer or with your local product representative. While it is relatively easy to vet a single paint, checking the information for 10 or 15 can be time-consuming. A template email is included in the Resources section of this course.







#### PRODUCT CATEGORIES

SHERWIN-WILLIAMS PROMAR ZEROVOC

#### COUNTERTOPS

SUBSTRATE ARE NAUF

#### CABINETRY & MILLWORK

SMART CABINETS, NAUF

#### INSULATION

GIASS BATT INSULATION / FORMALDEHYDE FREE

#### DRYWALL

SELECTED PRODUCT WITH LESS SYNTHETIC GYPSUM

homefree.healthybuilding.net

Homes on Johnsons Pond, located in Salisbury, MD, is an affordable housing community comprised of two three-story buildings with a total of 63 units. The buildings are a mix of one-, two-, and three-bedroom apartments and resident amenities, including fitness room, playground,

and library. Sustainability elements were based on project's pursuit of the National Green Building Standard (NGBS) certification.

When the partnership between Homes for America and Healthy Building Networks (HBN) HomeFree program began, the specifications for the Homes on Johnsons Pond were already writ-

Seeking to make the most of the opportunity, the Homes on Johnsons Poind project team of Harkins Builders and Architecture by Design choose to focus their exploration of healthier materials on paint and flooring. The intent was to be ready with options should

contingency funds become available during construction allow upgrades to healthier materials.

Working in tandem with the HBN research team, the development team assessed paint options utilizing the HomeFree hazard spectrum while considering cost and performance, the project's National Green Building Standard NGBS certification. The National Green Building Standard (NGBS) is a third-party certification ANSI standard.



Homes for America (non-profit) New Construction, 3 Story, 63 Unit

Sustainability Requirements National Green Building Standard

Used -Sherwin-Williams ProMar Zero VOC

Additional cost – \$2,600

Changing Practice – Now standard for all 5,600 units.





#### PAINT

## **Specification Recommendations**

Prefer paints that meet the Green Seal-11 (GS-11) standard from 2010 or later whenever possible or specify paints known to be free of alkylphenol ethoxylates (APEs).

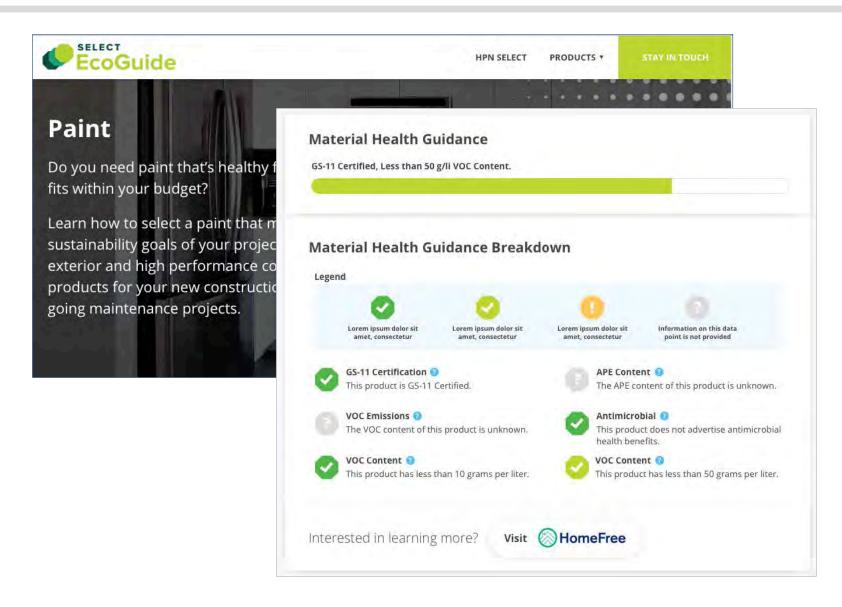
Specify bases with 10 g/L of VOCs or less and colorants that do not increase the overall VOC content.

At a minimum, specify paint bases and colorants with a VOC content of 50g/L or less.

Look for paints that have VOC emission testing and meet the requirements of the CDPH (California Department of Public Health) Standard Method for Testing VOC Emissions (01350).



# **HPN Partnership - EcoGuide**





# **Products - Flooring**





BOUT - PRODUCTS PROJECTS - EDUCATION EVENTS RESOURCES

Q LOGIN



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#### Read more...

Linoleum	~
Solid Wood Floors (pre-finished)	~
Engineered Wood Floors (pre-finished)	*
Ceramic Tiles (made in the USA/lead-free with no CRT content	· ·



## **Products - Flooring**

#### Related Product News Linoleum A Cheat Sheet for Decoding Vinyl Product Literature Healthy Building Network recently Solid Wood Floors (pre-finished) demo'd our approach to product. research for the Community of Practice team in Seattle. In preparation for the call, we reviewed product literature for a Engineered Wood Floors (pre-finished) vinyl sheet floor that had been specified for their demonstration project, and matched that agains... Ceramic Tiles (made in the USA/lead-free with no CRT content) Spectrum of Flooring Options Now Includes Ceramic Tiles Healthy Building Network and the HomeFree team have now had a chance Solid Wood Floors (finished on site) to talk with several communities of practice, working hard to incorporate healthy materials guidance into their varied - but all amazing - affordable **Biobased Floors** housing projects. As part of these conversations, we have highlighted ... Brief: Post-Consumer Flexible Rubber or Rubber/Cork Floors (made without crumb rubber) Polyurethane Foam Scrap Used In Building Products Carpet cushion (that soft layer installed Laminate between a sub-floor and a carpet) is made from flexible polyurethane foam (FPF). Generally that foam is recycled scrap from the manufacture of furniture, such as couch cushions, or old carpet Carpet (with no fly ash, no vinyl or polyurethane backing, and no PFAS) cushion itself. Healthy Building Network's research (nto ... **How Common Product Profiles** Engineered Wood Floors (finished on site) Help Inform Product Decisions On the Products section of HomeFree, in addition to individual products, visitors New Formulations of Vinyl Floors (phthalate-free) will now see Common Product Profiles (CPs for short). These Common Product Profiles describe the composition found to be most typical to products of that Ceramic Tiles (not made in the USA/presence of lead is unknown/CRT tiles) type. For example, a CP for "Fiberglass Batt In. Carpet Padding and Flame New Formulations of Vinyl Floors (with post-consumer recycled content) Retardants Flexible polyurethane foam (FPF) is found in nearly all uphoistered furniture and mattresses, in car seats, and in carpet Traditional Vinyl Floors cushion. At the end of life, some of these mattresses, carnet cushions, and articles of furniture are recycled and reused in new products, mainly carpet pads. While Rubber or Rubber/Cork Floors (made with crumb rubber) in many ca\_ Rapid Change Sweeps Flooring Industry -- by Jim Vallette Carpet (containing fly ash, vinvl or polyurethane backing, and PFAS) Resilient floors and carpets made today are quite different than those made just a few years ago. On Monday morning, I will join flooring experts from Traditional Vinyl Floors (with post-consumer recycled content) manufacturing firms, architecture and design firms, and hospitals, to discuss



# Flooring Products Hazard Spectrum

## **Carpet**

- → No vinyl or polyurethane backing
- → No fly ash
- → No PFAS

## Carpet

- → With vinyl or polyurethane backing
- → With fly ash
- → With PFAS







## **New Formulations of Vinyl Floors**

→ Phthalate-free

# **New Formulations of Vinyl Floors**

- → No intentionally added phthalates
- → With post-consumer recycled content

# **Traditional Vinyl Floors**

→ Intentionally added phthalates

# **Traditional Vinyl Floors**

- → Intentionally added phthalates
- → With post-consumer recycled content





## Linoleum

Solid Wood Floors (pre-finished)

Engineered Wood Floors (pre-finished)

Ceramic Tiles (made in the USA/lead-free)

Solid Wood Floors (finished on-site)

**Biobased Floors** 

Rubber (without crumb rubber)

Laminate

Carpet (no fly ash, no vinyl or PU, no PFAS)







DUBLIN CROSSING, NON-PROFIT SENIOR HOUSING, MANKATO, MININESOTA

#### PRODUCT CATEGORIES

#### FLOORING

J&J ENVISION CARPET TILE -INCOGNITO MODULAR, INDEX MODULAR, AND KINETEK UMBRA

FORBO MARMOLEUM MODULAR AND ALLURA LYT

#### CABINETRY & MILLWORK

SMART CABINETRY HCMA AND ESPICERTIFIED NAUF

#### DOORS

LYNDEN GREENDOR, NAUF,

#### PAINT

LOW VOC SHERWIN WILLIAMS PRO-MAR 200

homefree.healthybuilding.net

Dublin Crossing is a 50-unit, 3-story affordable workforce housing development in Mankato, Minnesota, Developed by Common Bond Communities, the project includes 100% affordable units to house families and formerly homeless with one-, two-, and three-bedroom apartments. Amenities include a play ground, community room with serving kitchen, patio with grilling station, and computer lab. The development meets Enterprise's Green Communities Criteria with the Minnesota Overlay.

The timing of HomeFree's partnership serendipitous. At the time Common-Bond-the developer, owner and operatorof over 6,000 affordable housing units—was undertaking a review and construction and maintenance of their composite wood products. buildings.

The existing standard specification, Communities Criteria, was a strong

foundation on which to build. Benchwith CommonBond Communities was marking their current practice against the HomeFree hazard spectrums, they realized that many of the recommendations were already included in their current practice. This includes low-VOC update of the standard material specifi- paint, and doors and mill work using cation for their whole portfolio for new NAUF (No Added Urea Formaldehyde)

FOOTISON FLOORING Employing the Dublin Crossing project which meets the Enterprise 2015 Green as an opportunity to explore alternative flooring options, the project archi-



CommonBond (non-profit) New Construction, 3 Story, 63 Unit

Sustainability Requirements Green Communities w/MN Overlay

Used -J&J Envision Carpet Tile – Incognito Modular, Index Modular, And Kinetex Umbra

Forbo Marmoleum

Modular And LVT



## **Tools and Resources**









## **Products**

Flooring
Paint
Drywall
Countertops
Cabinetry & Millwork
Insulation
Flooring Adhesives
Sealants

# **Baseline Specifications**

California
Louisiana
Minnesota
Pacific Northwest
Washington, DC
Metro

## **Case Study**

Demonstration Projects

## **Courses**

Why Materials Matter

Product Level
Paint
Insulation (June)





## **WEBSITES FROM HBN**

**Healthy Building Network** 

**HomeFree** 

**HomeFree Campus** 

## **INSULATION REPORT AND SPEC GUIDANCE**

Making Affordable Multifamily Housing More Energy Efficient: A Guide

to Healthier Upgrade Materials

Guidance for Specifying Healthier Insulation and Air-Sealing Materials

# KNOW BETTER

William Weber wweber@healthybuilding.net

HEALTHYBUILDING.NET