Webinar Selecting Healthier Carpet, Flooring, & Furniture

Tips & Tools for Purchasers

May 4th at 12pm PT/3pm ET
75 minutes
27 years making our mark
committed to delivering a high level of service

landlord services
42%
53%
5%

50% of the leadership roles in our firm are held by women.

15 countries of origin represented among our team

san francisco
& los angeles
denver, chicago & austin
Kay Chesterfield, Inc.

Kay Chesterfield is a certified woman-owned-business located in Oakland, CA since 1921.

We focus on keeping office furniture from being tossed into the landfill.

We encourage furniture specifiers to choose well-made soft seating so that we can re-upholster the product when the fabric shows wear.
A non-profit organization dedicated to protecting public health and the environment from exposures to toxic chemicals

CEH works with large purchasers to utilize their buying power to incentivize the production of environmentally preferable products

www.ceh.org/procurement
CEH: Moving the market toward healthier products

www.ceh.org/procurement
Chemical Policy in the US

Most Chemicals in the U.S. are **Not** Regulated

The EPA must prove a chemical poses an “unreasonable risk” before it can be regulated.

- 82,000 registered in the United States
- 650 monitored through EPA’s Toxic Release Inventory
- 200 tested for threats to human health + safety
- 5 banned
Chemical “Whack-a-Mole”

It’s Not a Game….It’s our Health

- Kid’s PJs
  - Chlorinated Tris
  - Brominated Tris
  - MUTAGEN

- Furniture, baby products
  - Chlorinated Tris
  - TOXICITY

- Furniture, baby products
  - Phosphates
  - TOXICITY

- Furniture, baby products
  - PentaBDE
  - TOXICITY

- Furniture, baby products
  - Firemaster 550
  - OBESITY, ANXIETY
Evaluating tens of thousands of individual chemicals is unworkable.
BUT ADDRESSING SIX GROUPS OF CHEMICALS OF CONCERN IS MANAGEABLE
Indoor Air Quality

• In the USA, we spend up to 90% of our time indoors

• Indoor air can have higher levels of pollutants than outside levels

• Impacts health, comfort, wellbeing, and productivity

• Harvard study found cognitive scores significantly lower in conventional versus “Green” conditions.
Associated Health Effects

- Decreased memory and learning
  - Reduced IQ
  - Hyperactivity
- Respiratory disease
- Diabetes
- Metabolic disorders
- Altered thyroid hormone
- Elevated Total Cholesterol
- Decreased fertility
- Birth defects
- Cancer
- Immune System Problems
Endocrine (Hormone) Disrupting Chemicals

• Mimic, block, or change hormones, even at minute doses

• Linked to diabetes, weight gain, repro harm, cancer and other diseases

• Exposure during critical developmental stages can lead to life-long health impacts
A Healthy Immune System is Needed to Fight Off COVID-19

April 23, 2020

Endocrine-disrupting chemicals weaken us in our COVID-19 battle: Linda S. Birnbaum, Jerrold J. Heindel

“...many of our elevated disease rates are linked to environmental chemicals. COVID-19 is bringing into sharp focus the need to prevent this widespread exposure.”

How Are We Exposed?

- Inhalation
- Ingestion of contaminated dust particles, food, water, materials
- Dermal absorption
- Transport across the placenta
- Breast milk
- Children: frequent hand-to-mouth activity
Occupational Exposures

• Fire Fighters/First Responders
• Chemical Manufacturing Workers
• Workers in product manufacturing facilities
• Installers
• Maintenance workers
• Re-upholsterers and re-manufacturers
• Recycling and disposal workers
Furniture
The “Hazardous Handful”

- Flame Retardants
- Fluorinated Stain Treatments
- Antimicrobials
- VOC’s (including Formaldehyde)
- PVC
### “Hazardous Handful” Locations

<table>
<thead>
<tr>
<th>PVC</th>
<th>VOCs</th>
<th>Antimicrobials (not as preservative)</th>
<th>Fluorinated Chemicals</th>
<th>Flame Retardants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fabrics / moisture barriers</td>
<td>Fabrics</td>
<td>Fabrics</td>
<td>Fabrics</td>
<td>Foam</td>
</tr>
<tr>
<td>Furniture plastic parts</td>
<td>Paint</td>
<td>High touch surfaces such as handles, arm caps, etc.</td>
<td>Carpet</td>
<td>Barrier fabric</td>
</tr>
<tr>
<td>Table Edge banding</td>
<td>Cabinetry</td>
<td>Ceiling panels</td>
<td>Resilient flooring</td>
<td>Decking material</td>
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<tr>
<td>Acoustic ceiling tiles</td>
<td>Composite wood products</td>
<td>Tiles and grout</td>
<td>Grout</td>
<td>Fabrics</td>
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<tr>
<td>Carpet Tile</td>
<td>Adhesives</td>
<td>As a Preservative: Adhesives</td>
<td>Flooring</td>
<td>Plastic parts</td>
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<tr>
<td>Window coverings</td>
<td>Flooring</td>
<td>Paints</td>
<td>Grout</td>
<td>Paint/coatings</td>
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<tr>
<td>Wall base/flooring</td>
<td>Insulation</td>
<td>Finishes</td>
<td>Floor coatings</td>
<td>Clear finishes/sealants</td>
</tr>
<tr>
<td>Wall protection</td>
<td></td>
<td></td>
<td></td>
<td>Flooring/base</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Insulation</td>
</tr>
</tbody>
</table>
Chemical Flame Retardants

Health Concerns:

- Reproductive
- Neurodevelopmental—Reduced IQ in children
- Immune system impacts
- Cancer

- Flame retardants migrate out of products: found in humans, breast milk, dust, pets, wildlife, environment

- Do not reduce number or severity of fires in typical furniture

Recommendation:

- Specify products and fabrics that do not contain FRs
- Request products labeled in accordance with CA flame retardant disclosure and check: Contain NO Added FRs.
Furniture Flammability Regulations

**TB 117-2013**

**NOTICE**

THIS ARTICLE MEETS THE FLAMMABILITY REQUIREMENTS OF CALIFORNIA BUREAU OF ELECTRONIC AND APPLIANCE REPAIR, HOME FURNISHINGS AND THERMAL INSULATION TECHNICAL BULLETIN 117-2013. CARE SHOULD BE EXERCISED NEAR OPEN FLAME OR WITH BURNING CIGARETTES.

The upholstery materials in this product:

- [X] contain NO added flame retardant chemicals
- [ ] contain added flame retardant chemicals

The State of California has updated the flammability standard and determined that the fire safety requirements for this product can be met without adding flame retardant chemicals. The state has identified many flame retardant chemicals as being known to, or strongly suspected of, adversely impacting human health or development.

**TB 133**
## TB 117-2013 v TB 133

<table>
<thead>
<tr>
<th>TECHNICAL BULLETIN 117-2013</th>
<th>TECHNICAL BULLETIN 133</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-public occupancy or assembly OR all occupancy and assembly types, fully sprinklered</td>
<td>Addresses public buildings / public assembly areas; a voluntary measure IF the area is fully sprinklered</td>
</tr>
<tr>
<td>Smolder test</td>
<td>Large open flame test</td>
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<td>Can be met without the use of FRs</td>
<td>Typically met using FR-treated fabric, foam, and / or barrier cloth</td>
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<tr>
<td><strong>Less expensive</strong> to meet than TB 133</td>
<td><strong>20% - 30% more expensive</strong> to meet compared to TB 117-2013</td>
</tr>
</tbody>
</table>
Fluorinated Compounds (PFAS) “Forever Chemicals”

Health Impacts:

• Kidney and testicular cancer, thyroid disruption, elevated total cholesterol, obesity

Environmental Impacts:

• Extremely persistent in environment and may bioaccumulate in people and wildlife
• Migrates out of products
• Exposed via ingestion of contaminated materials, food, (including breast milk) and occupational

Recommendation:

• Avoid stain or water repellant treatments that contain PFAS
• Buyer Beware of Claims of “SAFER”
Volatile Organic Compounds (VOCs)

Health Effects:
• Respiratory, cancers, decreased fertility

Environmental Impacts:
• Negatively affects indoor air quality
• Exposure via inhalation, dermal, or occupational

Recommendations:
• CA Department of Public Health (CDPH) Standard Method v1.2–2017 (aka Section 01350) or SCS Indoor Advantage Gold or Greenguard Gold
Antimicrobials

Health Impacts:

• Endocrine problems, reproductive changes and possible increased allergies in kids.

Environmental Impacts:

• Limited evidence that antimicrobials added to furnishings reduces spread of infection

• Exposed through ingestion, inhalation and dermally

• Can create “super bugs”

Recommendation:

• Avoid products with antimicrobials.

• Listen to Webinar: Dr. Ted Schettler speaking on antimicrobials in furnishings

Polyvinyl Chloride (PVC) / Vinyl

Problematic throughout life cycle:
- Manufacture
- Use
- End-of-life

Health Effects:
- Neurodevelopmental, endocrine disruptor, birth defects, reproductive, cancer

Recommendation:
- Avoid products with PVC
- Small components exemption: > 1% of product by weight
Summary: Avoid the Hazardous Handful in Furniture

- Put CEH/HCWH specifications in RFPs and/or contracts
- Request furniture products that meet either:
  - BIFMA 7.4.4 criterion (Targeted Chemical Elimination)
  - GreenScreen certified furniture or textile products.
No Safe Options for Disposal

• Landfill and incineration are **not** safe options (leaching, toxic combustion)

• Extend Product Life When Possible:
  • Redeploy
  • Reupholster/ Refurbish/ Remanufacture

• Extending Life Has Other Benefits:
  • Energy Savings
  • Waste to Energy/Landfill Avoidance
  • CO2 Reduction
  • Natural Resource Savings
  • Waste Reduction Goal
Ecolabels and Standards
Ecolabels & Standards: Furniture & Flooring

Disclosure:

Single-attribute:
- Air Emissions
- Recycled Content
- Wood
- Chemicals of concern

Multi-attribute:
<table>
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<th>Material</th>
<th>Brand</th>
<th>Category</th>
<th>IMP</th>
<th>Report</th>
<th>Improve</th>
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</table>
ANSI/BIFMA e3-2019: A New Tool

Credit 7.4.4: Targeted Chemical Elimination

New criterion restricts the “Hazardous Handful”

- Flame retardants
- PFAS
- Antimicrobials
- PVC
- Formaldehyde

Specify Products That Meet 7.4.4
ANSI/BIFMA e3-2019: A New Tool

Credit 7.4.4: “Hazardous Handful”

Not a Chemical Standard
GreenScreen Certified™ for Furniture & Fabrics

1. Certifies to Kaiser Permanente’s EPP Furniture & Fabrics standard
2. Requires product transparency
3. Restricts chemicals of concern beyond the Hazardous Handful including: bisphenols, azo dyes, California Proposition 65 chemicals, and other hazardous chemicals.
4. Has 8 criteria re: waste and recyclability
5. Three levels of certification: Bronze, Silver and Gold
6. Webinar recording available
   https://www.greenscreenchemicals.org/resources/entry/webinar-gsc-furniture-fabrics
Furniture and Green Building

• Materials & Resources (MR)
  Interior life-Cycle Impact Reduction – furniture reuse
  Building Product Disclosure & Optimization – EPD
  Building Product Disclosure & Optimization – Material Ingredients
• EQ: Low Emitting Materials (BIFMA 7.6.1., 7.6.2)
• LEED HC v4.1: MR Credit includes medical furnishings
Furniture and Green Building

04 VOC Reduction: (p) references BIFMA e3-2011 section 7.6.1, 7.6.2

25 Toxic Material Reduction: (o) PFCs, HFRs, Phthalates, Formaldehyde

26 Enhanced Material Safety: (o) C2C and/or no BM1s

97 Material Transparency: (o) Declare, HPD, or meet LEED
Furniture and Green Building

ILFI LBC 4.0

International Living Future Institute, Living Building Challenge

(materials) Imperative 13:

• **Red List** – applies to furniture
The Numerous Benefits of Reupholstery

<table>
<thead>
<tr>
<th>Align actions with values</th>
<th>Lower cost</th>
<th>Quantifiable sustainability metrics</th>
<th>Creative freedom</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEED point</td>
<td>Repairs needed</td>
<td>Want to use healthy materials</td>
<td>Sentimental attachment</td>
</tr>
<tr>
<td>Statement piece</td>
<td>Pieces fit the space perfectly</td>
<td>Faster lead time</td>
<td>Avoid waste</td>
</tr>
</tbody>
</table>
Reupholstery’s Cost Advantage

- **HBF Perfect Pitch**
  - New: $1,152/net/com
  - Re-uph: $875/net/com

- **Knoll Womb Chair**
  - $2,852/net/com
  - $1,440/net/com

- **Arper Catifa 80**
  - $842/net/com
  - $690/net/com
Reupholstery’s Faster Lead Times

6 week turnaround with Kay Chesterfield

...compared to 4-12 weeks when ordering new
LEED or LEED-like incentivizes Reuse

MATERIALS AND RESOURCES CREDIT

Interiors Life-Cycle Impact Reduction

INTENT

To encourage adaptive reuse and optimize the environmental performance of products and materials.
San Francisco International Airport

**Egg & Swan Chairs** by Arne Jacobsen for Fritz Hansen

- 4 and 5 times more costly to buy new compared to reupholstered
- Lead time for new products is 12-17 weeks vs lead time for Re-Up is 6 weeks
- Carbon Footprint/shipping miles: new is 5,353 miles vs Re-Up is 27 miles.
- Coincides with SFO’s Zero Waste goals
**CEH Furniture and Fabric Guide** (hyperlinks added)

## Healthier Furniture

**A Guide for Purchasing Furniture Free of the Hazardous Handful Chemicals**

The Center for Environmental Health (CEH) created this guide to help furniture purchasers identify safer furniture and fabrics without key chemicals of concern.

The products in this document have been self-reported by the manufacturer as being compliant with restrictions for the following chemicals/materials of concern (aka the "Hazardous Handful"):  
- Formaldehyde and other Volatile Organic Compounds (VOCs) emissions  
- Antimicrobials  
- Flame retardant chemicals  
- Polyvinyl chloride (PVC)  
- Per- and poly-fluorinated chemicals used as stain/water/oil resistant treatments

Furniture products are listed on sheet/tab 2 and fabrics are listed on sheet/tab 3.

### Healthier Furniture

**A Guide for Purchasing Furniture Free of the Hazardous Handful Chemicals**

This Spreadsheet is sortable and filterable by Manufacturer, Product Type, Product Name, and Availability on NASPO contract. Click and Highlight Row 3, then click on the Filter button and select “Create new temporary filter” to create a filterable and sortable document.

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Product Type</th>
<th>Product Name</th>
<th>Exceptions/Comments</th>
<th>Available on NASPO Contract</th>
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<tbody>
<tr>
<td>Gunlocke</td>
<td>DESKS &amp; TABLES</td>
<td>Silla Private Office</td>
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<td>Gunlocke</td>
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<td>Sojourn Lounge</td>
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<tr>
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<td>DESKS &amp; TABLES</td>
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<tr>
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<td>SEATING</td>
<td>Tia (Guest.Side/Stool)</td>
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<td>NO</td>
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</tbody>
</table>
Manufacturers with Products Free of the Key Chemicals of Concern (partial list only)
Purchaser Pledge Signers
Sign the Pledge!

[Logos of various organizations]
Product Selection

- Durability
- Material
- Comfort
- Appropriateness
- Maintenance
- Toxic content
- Cost
- Acoustics
- Recyclability
- Purchasing contract
- Aesthetics
- Toxic legacy
Why Flooring & Carpet?

• High volume, high turnover products
• Major source of waste
• Significant source of chemicals of concern
• Opportunity for exposure across lifecycle
• Products and maintenance impact indoor air quality and health
Frameworks Consulted

- Certified Indoor Air Quality
- Forest Stewardship Council
- UL
- Cradle to Cradle
- Residential Standard
- The Carpet and Rug Institute
- Declare
- HomeFree
- HPDC
- Blauer Engel
- FloorScore
- HBN
## Restrictions & Requirements

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<tr>
<th>Alkylphenols</th>
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<th>Proposition 65 chemicals</th>
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<td>PFAS</td>
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<td>PBT chemicals</td>
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<td>Flame retardants</td>
<td>Polyurethane</td>
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</tbody>
</table>
The Problems with Vinyl (PVC): From Production to Disposal

- Toxic chemicals including mercury, asbestos and PFAS used in production process
- Carbon-intensive production process
- Releases toxic dioxins and furans when burned
- Significant impact on fence-line communities
- Creates microplastics
- Very low recycling rates
- Recycled vinyl may contain legacy contaminants from prior formulations
- Many large corporations and institutions have adopted policies that restrict PVC
Manufacturers that Meet HCWH Resilient Flooring Criteria

Armstrong Flooring
Mohawk Group
Forbo Flooring Systems
Tarkett
nora® by Interface®
patcraft®
shaw contract®
Mannington Commercial
TeknoFlor®
Wineo Purline®
UPOFLOOR®
HOW IT WORKS
A TRANSPARENT PROCESS

PRODUCT VETTING
• Initial application to determine eligibility
  ○ Criteria developed by Health Care Without Harm and Practice Greenhealth
• Vetting and licensing agreement
• Submission of disclosures and claim substantiation
• Pass/Fail analysis
• Approval to use the seal for 3 years

CURRENTLY REVIEWING
Meets Health Care Without Harm Safer Chemicals criteria
• Carpet
• Resilient flooring
• Medical products

NEED MORE INFO?
www.greenhealthapproved.org
or contact
info@greenhealthapproved.org
Product Scope

Resilient Flooring

• All resilient flooring except fluid applied polymer floors and concrete.

• Excludes floor leveling compounds.

Carpet

• All carpet tile, broadloom carpet, and carpet padding, including every part of the carpet (e.g., face fiber, backing and adhesives).

• Excludes area rugs, outdoor carpet and rugs.
Carpet: SF Approved

Greenest: Commercial, Hard-backed Carpet Tiles & Adhesives

A wide variety of compliant products and designs are available (see Manufacturer(s) link below). Waivers are required for all other carpet products except for:

- Patch replacements for existing carpet;
- Renovations that require replacement carpet of a specific thickness, where replacement carpet that both is the required thickness and meets the requirements of Item D in the regulation, cannot reasonably be obtained;
- Carpet for historic spaces, where the San Francisco Historic Preservation Commission or some other public policy body must approve the carpet, and carpet that complies with the requirements herein would necessarily fail to meet the standards of such a body.

Even with a waiver, all carpet tiles must meet indoor air quality requirements and be listed on the Carpet and Rug Institute Green Label Plus Certified Carpet Product list. To request a waiver, email GreenBuilding@sfgov.org (for construction projects) or OCA@sfgov.org (for smaller purchases).

Manufacturer(s)
- Bentley, Shaw/Patcraft, Tarkett (formerly Tandus)

Product/Service Type
- Industrial

https://www.sfapproved.org/
Building Certifications: Flooring Contributions

- LEED v4.0-4.1:
  - Low-Emitting Materials
  - Building Product Disclosure and Optimization
- WELL v2:
  - X05: Enhanced Material Restrictions
  - X08: Materials Optimization
- Living Building Challenge (LBC) v4.0:
  - Imperative 12: Responsible Materials
  - Imperative 13: Red List
- LBC v4.0 Material Petal
Flooring Maintenance

• Stripping and waxing contribute to respiratory issues and safety hazards for workers and staff

• Consider flooring products adjacencies for optimal maintenance

• Confirm manufacturer offers green cleaning protocols
Carpet & Flooring Resources from CEH

Technical Specifications for Carpet

All carpet products supplied under this Price Agreement shall comply with the restrictions on the following chemicals of concern. Verification of compliance shall be provided to [purchasing entity] prior to contract award.

I. Scope

The following requirements apply to carpet tile, broadloom carpet, and carpet padding in order to comply with this agreement. [Link: www.ceh.org/flooring]

Technical Specifications for Resilient (Hard Surface) Flooring

All flooring products supplied under this Price Agreement shall comply with the restrictions on the following chemicals of concern. Verification of compliance shall be provided to [purchasing entity] prior to contract award.

I. Scope

The following requirements apply to all flooring except carpet, fluid applied floors, concrete and floor leveling.

- Model technical specifications
- Spreadsheet of products
- Customized technical assistance available on request!
New Tools and Resources Coming Soon...

- Guide to ecolabels and certifications
- Total cost of ownership tool
- Factsheet on healthier carpet and flooring
Help drive the market toward safer products!

- Ask your manufacturers to apply for Greenhealth Approved
- Put Greenhealth Approved in your RFPs, specifications and contracts
General Tips

• Identify healthier products and block non-EPP products
• Use contract extensions as opportunity for change
• Provide reasonable timelines for supplier conformance
• Be willing to consider new suppliers if needed
• Piggyback on “green” buying agreements
CEH Resources

• Webinars
• Letter for Suppliers
• RFI / RFP/Technical Specifications
• List of Preferable Products
• Survey of Manufacturers
• Product Testing
• Customized Consulting and Technical Assistance
Additional Resources

• CEH Procurement Resources

• CEH Healthier Foodware Database

• CEH Antimicrobials in Furnishings webinar

• Healthcare Without Harm/Practice
  Greenhealth: Furniture, Flooring, Carpet

• Green Science Policy Institute: Six Classes Videos; PFAS Central; PFAS in Building Materials

• San Francisco Approved

• Healthy Building Network: Eliminating Toxics in Carpet: Lessons for the Future of Recycling
Next Steps

- Share this information with appropriate persons in your organization
- Contact CEH to discuss next steps for your organization

You are on your way!
Questions? Contact us!

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