

10 Reasons to Choose Healthier Carpet and Resilient Flooring

A Guide for Institutional Purchasers

Like many products in our built environment, carpet and flooring products are often made with toxic chemicals that threaten our health and the environment. A recent study identified more than 40 harmful substances that should be eliminated from carpet products, many of which are also found in conventional resilient flooring.¹ Many of these hazardous materials are also used in conventional resilient flooring products. Luckily, a growing number of sustainable products made without these toxic chemicals are available for use anywhere commercial products are used, including healthcare, offices, education, government facilities, hospitality, and more.

Many of the ecolabels and certifications commonly used for carpet and flooring in the US fail to address the full spectrum of health and sustainability concerns. To fill this gap, CEH partnered with Health Care Without Harm to make it easy for purchasers to select the safest carpet and resilient flooring products available.

Institutions are making the switch to safer carpet and resilient flooring. Here's why yours should too...



Addresses priority chemicals of concern
For more information visit GREENHEALTHAPPROVED.ORG

In 2020, Health Care Without Harm and its sister organization, Practice Greenhealth, formalized a new set of comprehensive healthier product criteria by launching the Greenhealth Approved Seal, making it even easier to identify safe products.

10 Reasons to Choose Healthier Carpet and Resilient Flooring

1 Carpet and flooring can be a significant source of exposure to chemicals that are associated with a range of serious health issues, including asthma, cancer, diabetes, immune system disorders, and reproductive and developmental harm. Health problems linked to chemical exposure are on the rise.^{2,3} Our guidelines restrict the use of harmful substances—including vinyl, PFAS, bisphenols and flame retardant chemicals—associated with these and other conditions.^{4,5}

2 Conventional carpet and flooring products can release volatile organic compounds (VOCs), which have been found to impair cognition. A recent study found that in a setting with average VOC levels, people had significantly diminished cognitive functions compared to when they worked in a setting with increased ventilation and reduced VOC levels. In the improved indoor environment, participants scored substantially higher on cognition tests that measured functions including crisis response, information usage and strategy, among others.⁶ Our guidelines restrict VOC emissions and require products to meet the highest standards for indoor air quality.

3 Indoor air can be 2-5 times more polluted than outdoor air,⁷ and people in the US spend an estimated 87% of their time indoors.⁸ While sealing buildings is an important component of energy efficiency, it can also trap chemicals inside where they build up in concentration and continue to circulate. Crises like COVID-19 and wildfires have forced people to spend more time indoors. The last thing we need are products in our homes, offices and schools that can compromise our immune systems and exacerbate the health effects of these crises.^{9,10}

4 People are demanding safer, healthier, and more sustainable work and living environments, and employers, designers, and building owners are responding. A recent study found that 90% of millennials, who make up the largest share of the workforce, reported that working for a sustainable workplace was important to them (this was also true for 84% of Gen Xers and 77% of Baby Boomers).¹¹ A commitment to healthier products will help organizations attract and retain employees and tenants, and protect the health and wellbeing of those who work in, live in, or visit your space.

5 Selecting healthier carpet and resilient flooring products can help you earn sustainability credits for building certification programs. Examples of credits that the products on our list contribute to include LEEDv4 (several categories), International WELL Building Institute's v2 X05 (Enhanced Material Restrictions) and X08 (Materials Optimization), and Living Building Challenge v4 Imperative ¹²(Responsible Materials) and Imperative ¹³(Red List).

6 Toxic materials in carpet and flooring endanger health across the product life cycle. People involved in the manufacturing, maintenance, and disposal of these products — and those who live in communities where the chemicals are produced and disposed of — are adversely affected, as are air, water, soil, and wildlife.¹² For example, PVC flooring is manufactured with mercury, PFAS, and/or asbestos, and has a significant carbon footprint.¹² If it burns, it releases cancer-causing dioxins and furans.¹³

7 Products on our list typically require less maintenance than conventional products. Some of the products used to clean and maintain carpet and flooring can harm the health of cleaning and maintenance workers, and the environment. The products that meet our specifications don't require these harmful treatments. For example, the resilient flooring products that meet our criteria don't require stripping, sealing, waxing, and finishing needed for conventional resilient floors, thereby saving time and money, and protecting health. Many of the healthier products come in tile or plank formats, allowing you to replace pieces that become damaged rather than re-carpeting or flooring the whole area.

8 Buying healthier products diverts harmful waste from landfills. In the US, an estimated 2 million tons of carpet is sent to landfills every year,¹⁴ where toxic chemicals can leach into the soil and groundwater.^{15,16} Unlike most conventional carpet products, the ones that meet our specifications must have manufacturer-offered take-back programs.

9 Safer, healthier products are available! The list of products that meets our health and safety criteria come in a large range of designs, colors, and formats. Resilient flooring and carpet products that meet our criteria can be found in our [Guide to Selecting Healthier Carpet and Flooring](#) and on [The Greenhealth Approved](#) website. Healthier carpet products can also be found on [San Francisco's SF Approved](#) website, as Greenhealth Approved for carpet draws heavily from the City's 2018 carpet regulation.

10 Your purchasing power can help shift the market toward safer products for everyone. By selecting products with better health and safety profiles, you are joining with other sustainability leaders and are sending a unified message to manufacturers that purchasers don't want hazardous chemicals in their products, thereby growing the market for safer products. Increased demand can lead to wider availability and a broader range of healthier products, phaseout of harmful chemicals, and/or decreased costs of safer products.

Additional resources on carpet and flooring (at www.ceh.org/flooring):

[Model Technical Specifications for Carpet](#)

[Model Technical Specifications for Resilient Flooring](#)

[Guide to Selecting Healthier Carpet and Flooring](#)

CEH is here to help you each step of the way. In addition to carpet and flooring, we offer resources and support on healthier furniture and food serviceware. For more information, or to request technical assistance, contact us at procurement@ceh.org or visit us www.ceh.org/procurement.



Endnotes

- 1 Vallette, J, Stamm R, Lent T. 2017. Eliminating Toxics in Carpets: Lessons for the Future of Recycling, Healthy Building Network. <https://s3.amazonaws.com/hbnweb.prod/uploads/files/eliminating-toxics-in-carpet-lessons-for-the-future-of-recycling.pdf>
- 2 Di Renzo, G.C., Conry, J.A., Blake, J., DeFrancesco, M.S., DeNicola, N., Martin, J.N., Jr., McCue, K.A., Richmond, D., Shah, A., Sutton, P., Woodruff, T.J., van der Poel, S.Z. and Giudice, L.C. (2015), International Federation of Gynecology and Obstetrics opinion on reproductive health impacts of exposure to toxic environmental chemicals. *International Journal of Gynecology & Obstetrics*, 131: 219-225. <https://doi.org/10.1016/j.ijgo.2015.09.002>
- 3 Kahn, L. G., Philippat, C., Nakayama, S. F., Slama, R., & Trasande, L. (2020). Endocrine-disrupting chemicals: implications for human health. *The Lancet Diabetes & Endocrinology*, 8(8), 703-718.
- 4 Healthcare Without Harm. Feb 2021. Healthy Flooring Criteria: Environmental attributes for healthy flooring in health care. Guidance for Manufacturers. https://noharm-uscanada.org/sites/default/files/documents-files/5650/Healthy%20Flooring%20guidance%20for%20manufacturers_%20February%202021.pdf
- 5 Healthcare Without Harm. Nov 2019. Healthy Carpet Criteria: Environmental attributes for healthy carpet in health care. Guidance for Manufacturers. https://noharm-uscanada.org/sites/default/files/documents-files/6083/HCWH%20Healthy%20Carpet%20criteria%20guidance_November%202019_0.pdf
- 6 Allen JG, MacNaughton P, Satish U, Santanam S, Vallarino J, Spengler JD. (2015) Associations of cognitive function scores with carbon dioxide, ventilation, and volatile organic compound exposures in office workers: a controlled exposure study of green and conventional office environments. *Environ Health Perspect*; doi:10.1289/ehp.1510037. <https://ehp.niehs.nih.gov/doi/full/10.1289/ehp.1510037>
- 7 U.S. Environmental Protection Agency. 1987. The total exposure assessment methodology (TEAM) study: Summary and analysis. EPA/600/6-87/002a. Washington, DC. <https://nepis.epa.gov/Exe/ZyPDF.cgi/2000UC5T.PDF?Dockey=2000UC5T.PDF>
- 8 Klepeis, N. E., Nelson, W. C., Ott, W. R., Robinson, J. P., Tsang, A. M., Switzer, P., Behar, J. V., Hern, S. C., & Engelmann, W. H. (2001). The National Human Activity Pattern Survey (NHAPS): a resource for assessing exposure to environmental pollutants. *Journal of Exposure Science & Environmental Epidemiology*, 11, 231-252.
- 9 Wu, Q., Coumoul, X., Grandjean, P., Barouki, R., & Audouze, K. (2020). Endocrine disrupting chemicals and COVID-19 relationships: a computational systems biology approach. *medRxiv : the preprint server for health sciences*, 2020.07.10.20150714. <https://doi.org/10.1101/2020.07.10.20150714>
- 10 Bernstein, S. April 9, 2019. A growing problem after wildfires: Toxic chemicals. *Washington Post* https://www.washingtonpost.com/national/health-science/a-growing-problem-after-wildfires-toxic-chemicals/2019/04/05/7243d6b4-45bb-11e9-90f0-0ccfeec87a61_story.html
- 11 Two in Three Millennials Would Give Up Social Media if Everyone at Their Company Recycled. April 18, 2017. <http://www.lightspeedresearch.com/two-three-millennials-give-social-media-everyone-company-recycled/>
- 12 Chlorine and Building Materials: A Global Inventory of Production Technologies, Markets, and Pollution Phase 1: Africa, The Americas, and Europe <https://s3.amazonaws.com/hbnweb.dev/uploads/files/wnxz/Chlorine%20%26%20Building%20Materials%20Phase%201%20-%20v2.pdf>
- 13 Verma, R., Vinoda, K. S., Papireddy, M., & Gowda, A., N., S. (2016). Toxic Pollutants from Plastic Waste. A Review. *Procedia Environmental Sciences*, (35), 701-708.
- 14 Testing carpet for toxics: Chemicals affecting human health and hindering the circular economy. 2018. Ecology Center, Changing Markets Foundation, Gaia. <https://changingmarkets.org/wp-content/uploads/2019/07/FINAL-Testing-Carpet-for-Toxics.pdf>
- 15 Johnsie R. Lang, B. McKay Allred, Jennifer A. Field, James W. Levis, and Morton A. Barlaz, National Estimate of Per- and Polyfluoroalkyl Substance (PFAS) Release to U.S. Municipal Landfill Leachate. *Environmental Science & Technology* 2017 51 (4), 2197-2205 DOI: 10.1021/acs.est.6b05005
- 16 Stuart Harrad, Daniel S. Drage, Martin Sharkey, Harald Berresheim, Brominated flame retardants and perfluoroalkyl substances in landfill leachate from Ireland, *Science of The Total Environment*, Volume 695, 2019, 133810, ISSN 0048-9697, <https://doi.org/10.1016/j.scitotenv.2019.133810>