



GREEN SCIENCE  
POLICY INSTITUTE

# PFAS in the Built Environment

CHE Webinar Series

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Green Science Policy Institute

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# Outline

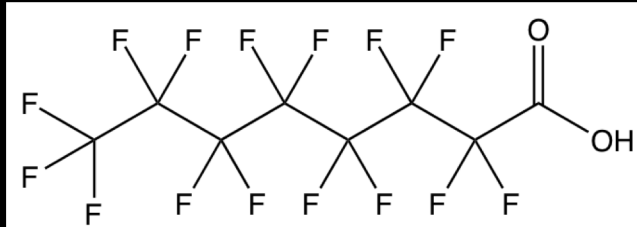
1. Background: why PFAS and building materials?
2. PFAS uses in the built environment
3. Next steps: research, practice, & policy



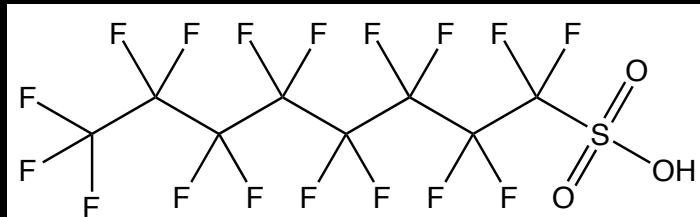
# PFAS

(Per- and polyfluoroalkyl substances)

PFOA  
(C8)



PFOS  
(C8)



Carbon-Fluorine bond strength:

- Leads to oil and water repellency
- “Forever chemicals” -- last for geologic time!

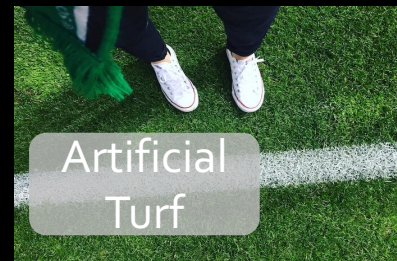
# PFAS Uses in Building Materials

- Goal: Inspire building industry stakeholders to:
  - Reduce unnecessary uses of PFAS
  - Develop safer alternatives





# Building Product Categories



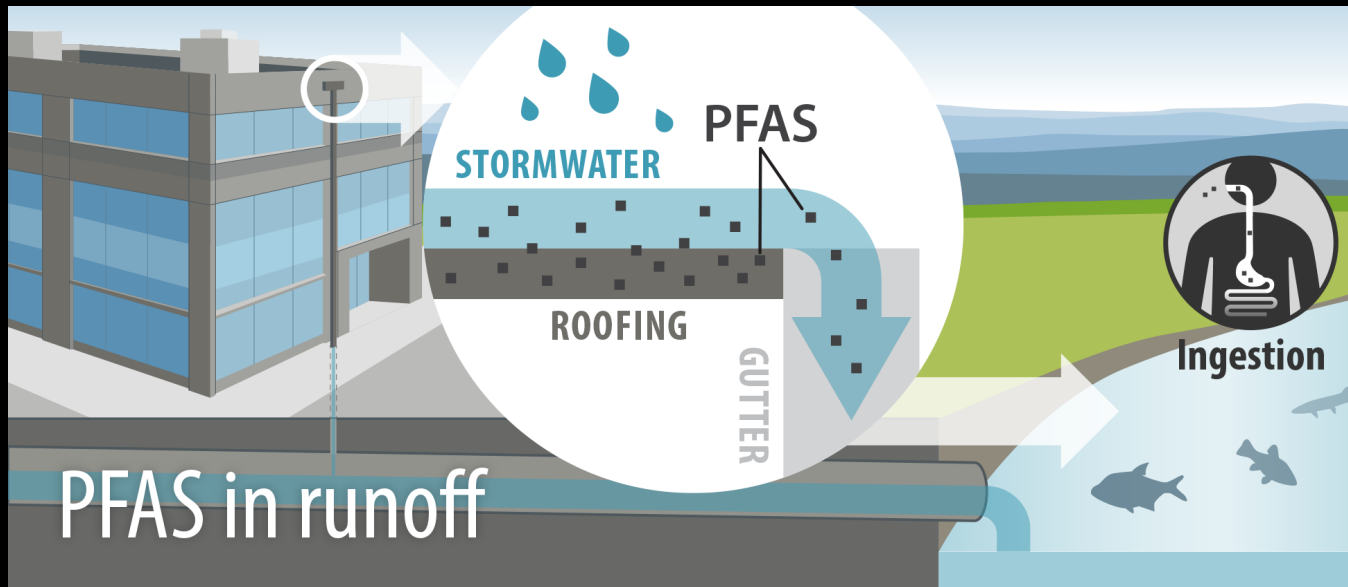


# Roofing

- PFAS used to: resist weathering, prolong roof's useful life, reflecting solar radiation (for cooling).



# Roofing: Potential Source of PFAS to the Environment?



# Coatings

- PFAS used to improve: ease of application, weather resistance, finish & durability



# Sealants & Adhesives

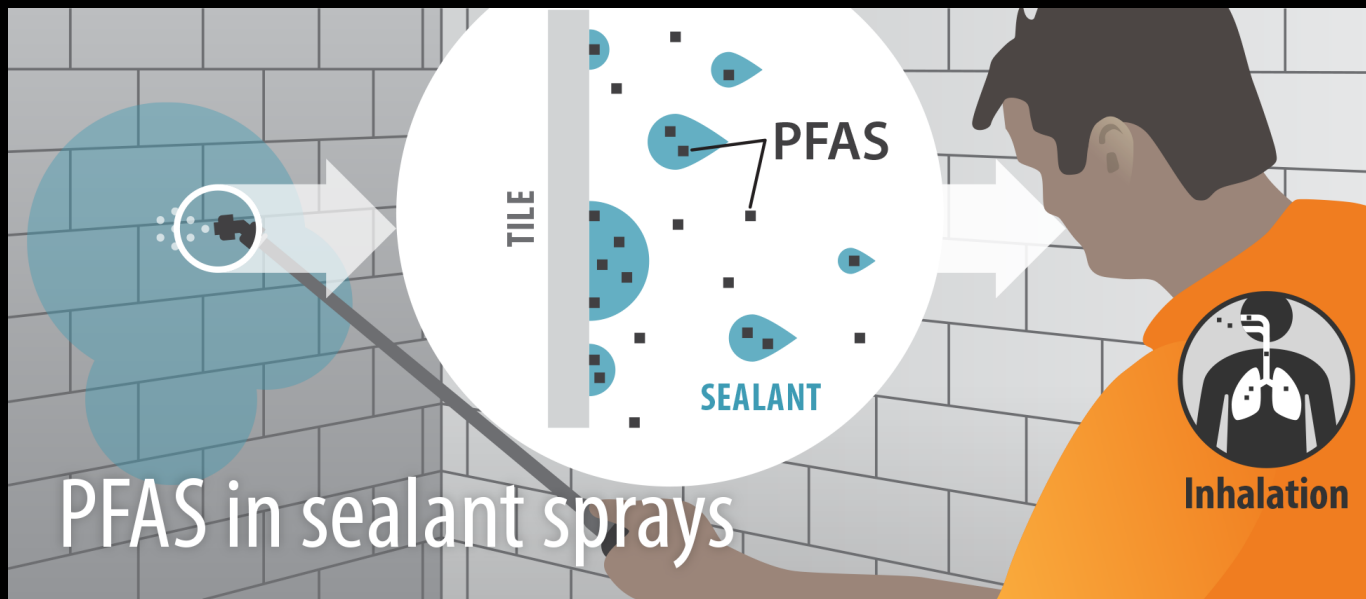
Sealants: Used to create an oil- and water-resistant barrier that protects building materials from stains, mold, and physical damage.





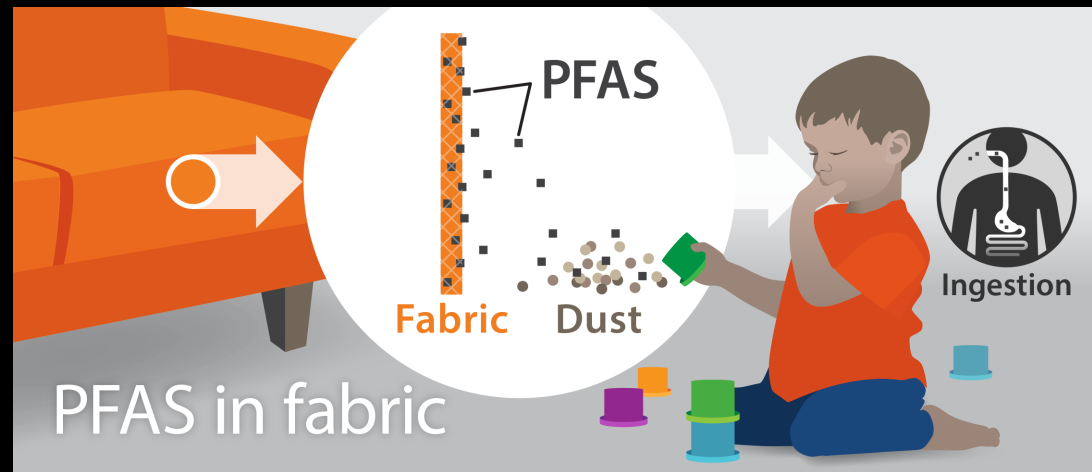
# Grout sealer recall

In 2005, the CPSC recalled 300,000 cans of grout sealer due to respiratory complications associated with fluoropolymer exposure.



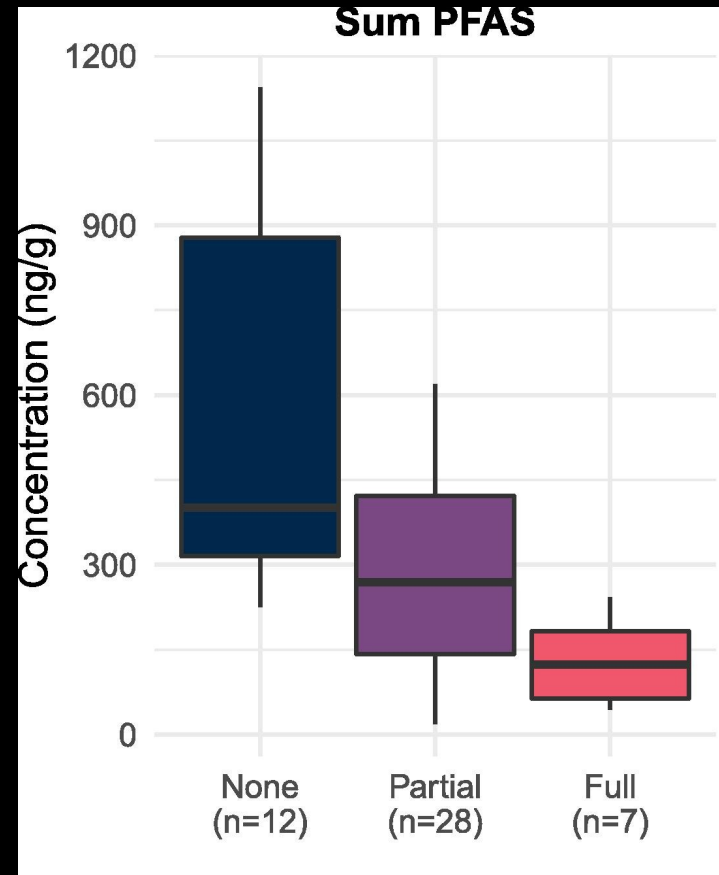
# Fabrics

- PFAS used for stain-, soil-, & water resistance
- Factory applied or after-market treatment
- Exposure concern
- Efficacy?



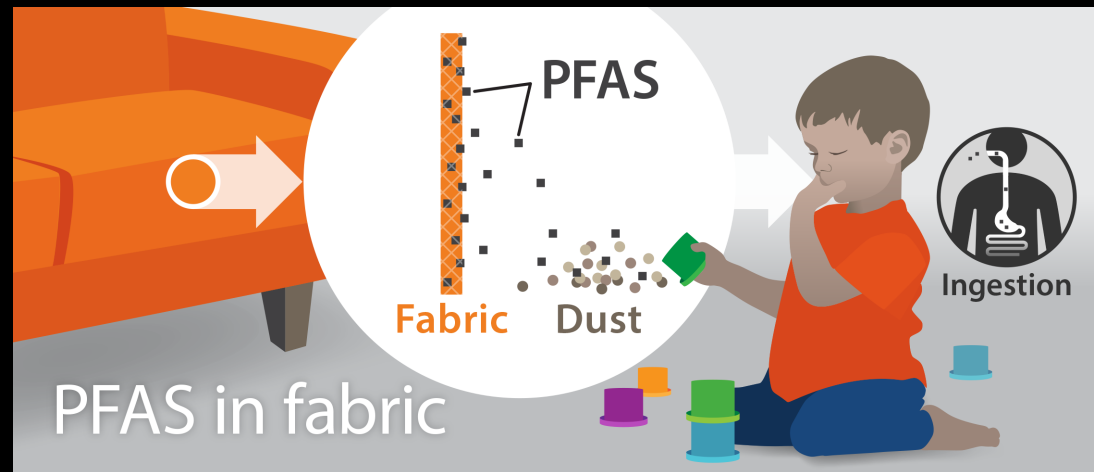
# Healthier Materials Intervention

- Compared PFAS levels in dust in conventional vs. rehabbed academic buildings
- PFAS-free furniture and carpet reduced PFAS levels in dust by 78%



# Fabrics

- PFAS used for stain-, soil-, & water resistance
- Factory applied or after-market treatment
- Exposure concern
- Efficacy?





# Carpet industry phasing out PFAS

- Demand from large purchasers
  - Potential CA regulation
  - Potential liability
- ↓
- Major manufacturers decide to stop using PFAS



## Home Depot plans to phase out selling rugs and carpets containing PFAS

By VIRGINIA GORDAN • SEP 17, 2019

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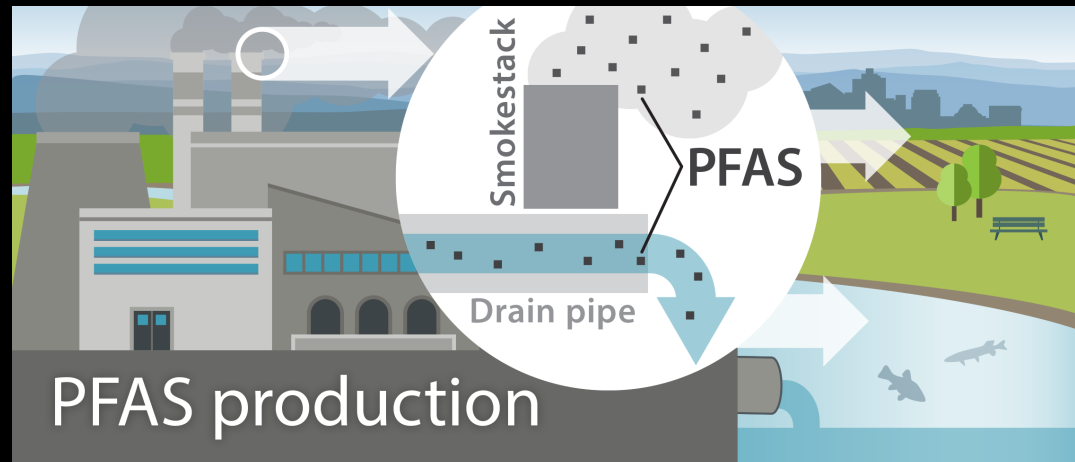
The Home Depot announced Tuesday that it will stop buying from its suppliers any rugs and carpets that contain PFAS chemicals.

"Excluding PFAS from the carpets and rugs we sell is another example of our shared commitment to building a better

PHOTO: ANDREW J. BOONE/ISTOCK

# Lifecycle impacts

- PFAS production and product manufacturing
- Product use
  - Indoor air, dust
  - Stormwater runoff?
- End of life
  - Landfill
  - Recycling



# Next Steps

## Research

- Prevalence of PFAS in different product categories?
- Migration of PFAS from products to indoor & outdoor environments?
- Alternatives to PFAS?

## Regulation

- Reporting requirements for PFAS use
- Restricting unnecessary PFAS uses

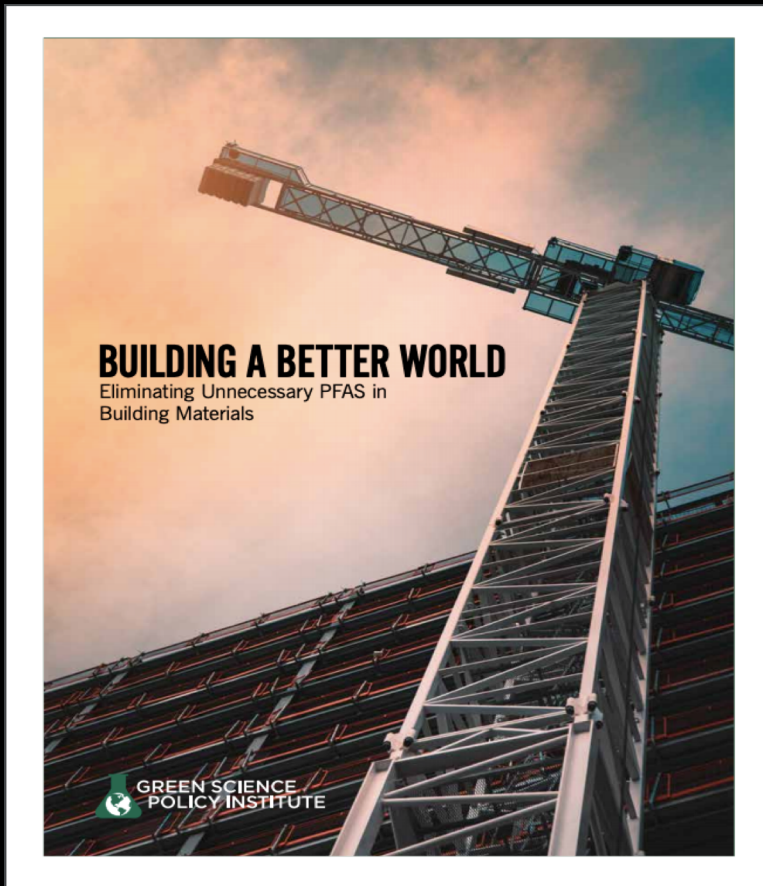
# Next Steps

Architects, Designers, Building Owners...

1. Ingredient disclosure: request it or provide it
  - See our appendix for examples
2. Ask, "Is this function really needed?"
3. Choose safer, non-PFAS alternatives
4. Avoid entire class of PFAS (beware of "PFOA-free")



# Learn More



[GreenSciencePolicy.org](https://GreenSciencePolicy.org)

[PFASCentral.org](https://PFASCentral.org)

[Tom@GreenSciencePolicy.org](mailto:Tom@GreenSciencePolicy.org)