HEALTHY BUILDING NETWORK
KNOW BETTER

Date: February 15, 2022
To: The Honorable Delores G. Kelley, The Honorable Brian J Feldman, The Honorable C.T. Wilson, The Honorable Brian M. Crosby
From: Teresa McGrath, Chief Research Officer, Healthy Building Network
Bill: SB 524
Position: Favorable

Subject: SB 524 and HB 108 - Public Utilities - Energy Efficiency and Conservation Programs - Energy Performance Targets and Low-Income Housing.

The non-profit Healthy Building Network (HBN) is one of the nation's leading authorities on building material composition, and the analysis of hazards associated with chemicals used in building products. HBN has published comprehensive analyses of insulation products, including purchasing guidance for the affordable housing industry.

Healthy Building Network supports the language in SB 524 and HB 108 to protect the most vulnerable populations from hazardous chemicals. The language prevents the use of formaldehyde, a carcinogen, present in some mineral wool batts and boards that use a formaldehyde-based binder.

The language also prevents the use of any category 1 respiratory sensitizer, which includes diphenylmethane diisocyanate (MDI), the main component of spray foam insulation (SPF).

The language would ensure that the worst in class insulation product types, from a chemical hazards perspective, are not used in new construction and retrofits. This is a practical approach for the following reasons:

1. Safer, effective, affordable insulation materials are available today.
2. Elimination of hazards is the most effective way of protecting people.
3. Impacts of these hazardous chemicals extend beyond the building and into fenceline communities, and in the case of MDI used in spray foam insulation (aka SPF), raising environmental justice concerns.

This bill takes an important first step toward health and environmental justice, minimizing or eliminating hazardous chemical exposures and pollution, including protecting workers, residents and families of affordable housing units, as well as fenceline communities living near production facilities that often have a higher percentage of people of color, children, and people with low incomes.

Excerpt A. from SB 524 and HB 108

(5) (I) SUBJECT TO SUBPARAGRAPH (II) OF THIS PARAGRAPH, THE
15 PROGRAMS AND SERVICES PROVIDED UNDER PARAGRAPH (1) OF THIS SUBSECTION
16 MAY NOT USE THERMAL INSULATING MATERIALS FOR BUILDING ELEMENTS,
17 INCLUDING WALLS, FLOORS, CEILINGS, ATTICS, AND ROOF INSULATION, THAT
18 CONTAIN:
19 1. FORMALDEHYDE; OR
20 2. ANY SUBSTANCE THAT IS A CATEGORY 1
21 RESPIRATORY SENSITIZER AS DEFINED IN 29 C.F.R. PART 1910 (APPENDIX A).
22 (II) THERMAL INSULATING MATERIALS FOR BUILDING
23 ELEMENTS MAY NOT CONTAIN A SUBSTANCE UNDER SUBPARAGRAPH (I) OF THIS
24 PARAGRAPH IF THE SUBSTANCE:
25 1. WAS INTENTIONALLY ADDED; OR
26 2. IS PRESENT IN THE PRODUCT AT GREATER THAN 0.1%
27 BY WEIGHT.

1. **Safer, effective, affordable insulation materials are available today.**

The 2018 report "Making Affordable Multifamily Housing More Energy Efficient. A Guide to Healthier Upgrade Materials" compares different insulation and sealant materials from a cost, performance, and healthier materials perspective. Spray foam insulation was ranked lowest (worst) of all insulation materials from a healthier materials perspective.

Examples of insulation products that would be acceptable for use under SB 524 and HB 108 include, but are not limited to:

1. Expanded cork (Note - cork is not considered an affordable product type)
2. Blown-in in fiberglass (loose fill, dense pack, and spray-applied)
3. Kraft-faced and unfaced fiberglass batts
4. Formaldehyde-free mineral wool batts
5. Unfaced cellulose/cotton batts
6. Blown-in cellulose (loose fill, dense pack, and wet-blown)

Product types that MAY meet this requirement include:
7. PSK- or FSK-faced fiberglass batts or blankets that are formaldehyde-free

It is worth noting that all low-density fiberglass insulation batt manufactured in North America has been formaldehyde-free since 2015[1], and The Home Depot announced in 2017 that 100% of these products offered for sale in its North American stores were formaldehyde-free.

[1] https://healthybuilding.net/blog/446-new-research-shows-formaldehyde-no-longer-used-in-residential-fiberglass-insulation

2. **Hierarchy of controls suggests that elimination of hazards is the most effective way of protecting people.**

The National Institute for Occupational Safety and Health (NIOSH) developed a framework called the “Hierarchy of Controls” used in occupational safety. Elimination and substitution of hazards are the most effective strategies. Administrative controls and personal protective equipment (PPE) are the least effective controls. (See Image 1)

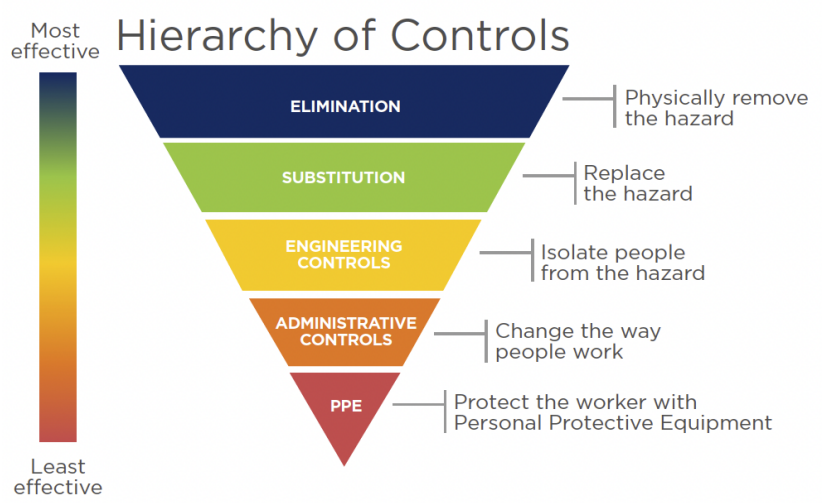

Image 1: Hierarchy of Controls

SPF is a type of insulation material that, unlike any other insulation material, is reacted on site. The reactants include MDI, which is a category 1 respiratory sensitizer. Anyone installing reactive products based on MDI or isocyanate chemistry may become exposed by touch or breathing.

“The controls currently recommended by the SPF industry include the least effective controls: administration controls (such as policies and training), PPE, and engineering controls (like ventilation). The California Department of Toxic Substances Controls states ‘PPE and engineering controls are considered the lowest tiers in the hierarchy of controls against occupational hazards because any user-error or malfunction can result in exposure to the hazard…Because SPF applications produce measurable concentrations of airborne [isocyanates] in the breathing zone, any person involved in, or near, the application risks exposure to [isocyanates] even when protective measures are used.’”[2]

Avoiding SPF altogether is the best way to avoid exposures both to MDI and to the other

[2] Quote from “Making Affordable Multifamily Housing More Energy Efficient. A Guide to Healthier Upgrade Materials” by Energy Efficiency for All (EEFA). Citation from Centers for Disease Control and Prevention, Hierarchy of Controls, 2016, www.cdc.gov/niosh/topics/hierarchy/; Dennis Fengmao
Guo et al., Summary of Technical Information and Scientific Conclusions for Designating Spray Polyurethane Foam Systems with Unreacted Methylene Diphenyl Diisocyanates as a Priority Product.

chemicals of concern commonly present in SPF. With many safer, affordable alternative insulation materials available, there is no reason to continue its use.

3. **Environmental Justice Impacts: Negative impacts of hazardous spray foam chemicals extend beyond the building and into fenceline communities.**

The negative impacts of spray foam insulation are not isolated to installation. The manufacturing of MDI, the main reactive component of SPF, impacts the workers and surrounding communities through the release of toxic pollution into the environment from facilities. Communities located near manufacturing facilities are often referred to as "fenceline communities." In a recent analysis, we found that three out of the four main MDI manufacturing facilities in the US had significant violations of environmental regulations in the last three years. Fifty percent (50%) of those facilities had significant violations of environmental regulations EVERY QUARTER OF THE LAST THREE YEARS.[3] Compare this to glass fiber manufacturing facilities (the main component in fiberglass insulation), where only 9% of facilities (2 of 22 facilities) had significant violations of environmental regulations every quarter of the last three years.

MDI Manufacturer	Location	Number of Quarters with Significant Violations
Covestro	Baytown, TX	12 of 12
Dow	Freeport, TX	12 of 12
BASF	Geismar, LA	8 of 12
Rubicon	Geismar, LA	0 of 12

The MDI facilities are located in fenceline communities that are disproportionately people of color (59% people of color in MDI fenceline vs. 39% US Average). These fenceline communities also have a greater percentage of children than in the US overall (30% vs. 23%). SPF manufacture and use places a disproportionate and unacceptable burden of hazardous chemical exposure on children, low-income families, and people of color.

Safer, affordable insulation options are available. This bill takes an important first step toward protecting workers, residents of affordable housing units, and fenceline communities from exposure to hazardous chemicals.

[3] EPA's ECHO database. Significant Violations of EPA Regulations for the Most Recent 12 Quarters (3 Years) as of May 2021