

ADHESIVES AND SEALANTS: Chemical Management and Sustainability Benefits in Retail Markets

*Benefits of adhesives and sealants &
considerations for chemicals management
and best practices in retail channels*

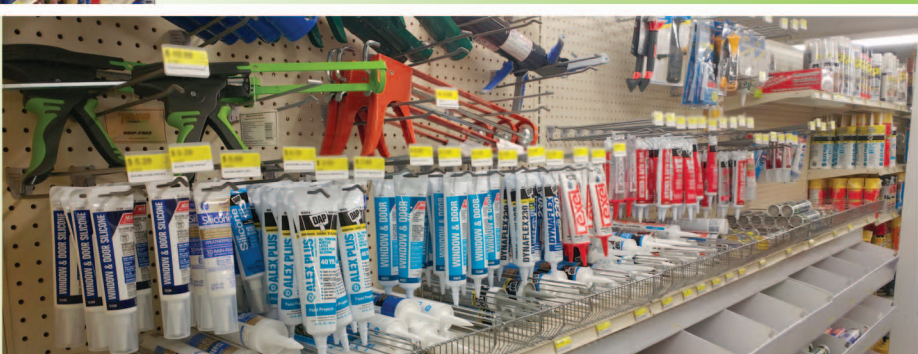
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About this Benefits Guide

WHO IS ASC AND OUR MEMBERS' CHEMICAL MANAGEMENT APPROACH

This guide is prepared by The Adhesive and Sealant Council (ASC) and its members, who are manufacturers, raw material suppliers and affiliate members, who supply retail channels with adhesive and sealant products. This guide is intended for use by those in the retail supply chain. The information encourages a science risk-based approach to chemical management while providing an overview of the sustainability benefits of caulks and sealants.



ASC Members Active in DIY/ Retail Channels Include:

*Note: Logos are clickable.



Franklin International

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Red Devil

ITW Polymers Adhesives
NORTH AMERICA



TAYLOR
Innovative Science. Applied Technology.



Firestone
Firestone Building Products



ASC thanks several of these companies for contributing time, figures, information, charts, pictures, and content for this guide.



Superglue

Fastest fixes and for small repairs

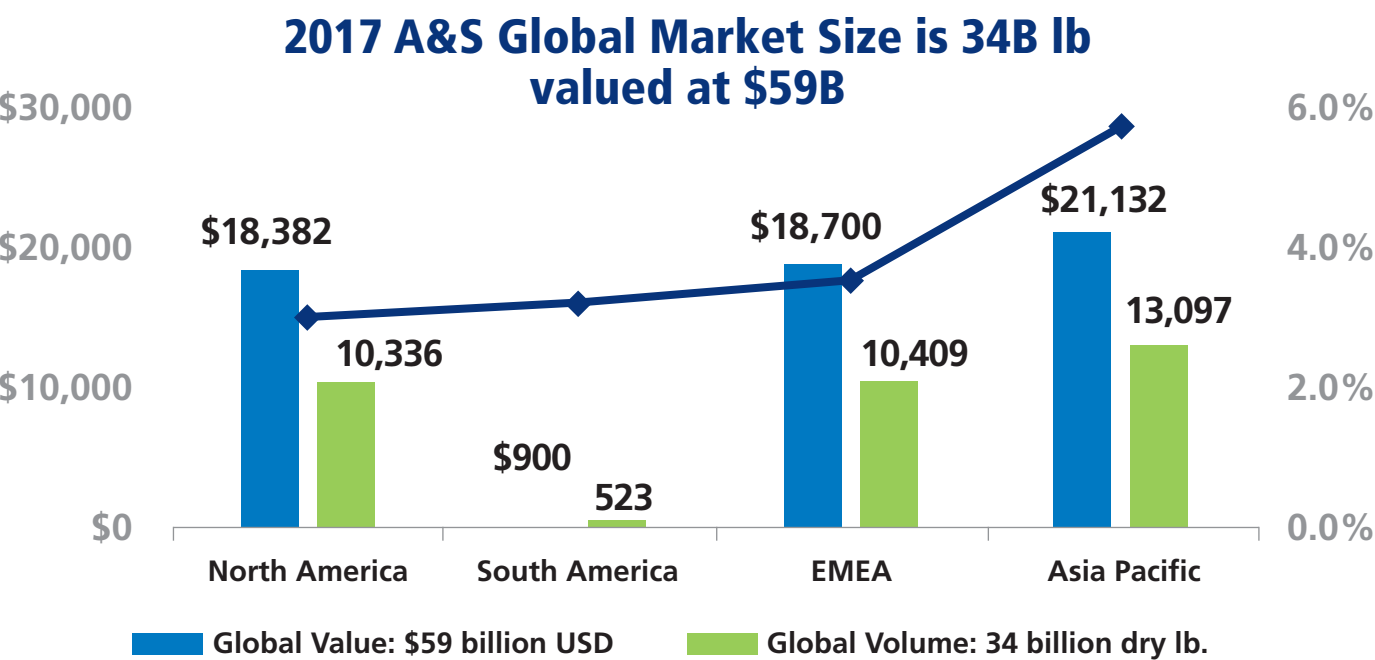


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How Big is the Adhesive and Sealant Industry?

The global market for adhesives and sealants is estimated at 59 billion US dollars. The Consumer Do-It-Yourself market in North America for adhesives and sealants in 2017 is estimated to have demand of 1.1 billion dollars. In the pie chart on the next page are the various types of technologies that are utilized in the DIY channel. The product technology types are broad because adhesives and sealants are used in many different types of applications on multiple types of substrates, such as wood, plastic and metal.



Source: 2017-2020 ASC North American Market Report

The Global & North American DIY Markets for Adhesives & Sealants

34 Billion Pounds



In 2017, the global industry produced 34 billion pounds of adhesives and sealants, valued at more than 59 billion dollars.



\$59 Billion

20,600 Jobs



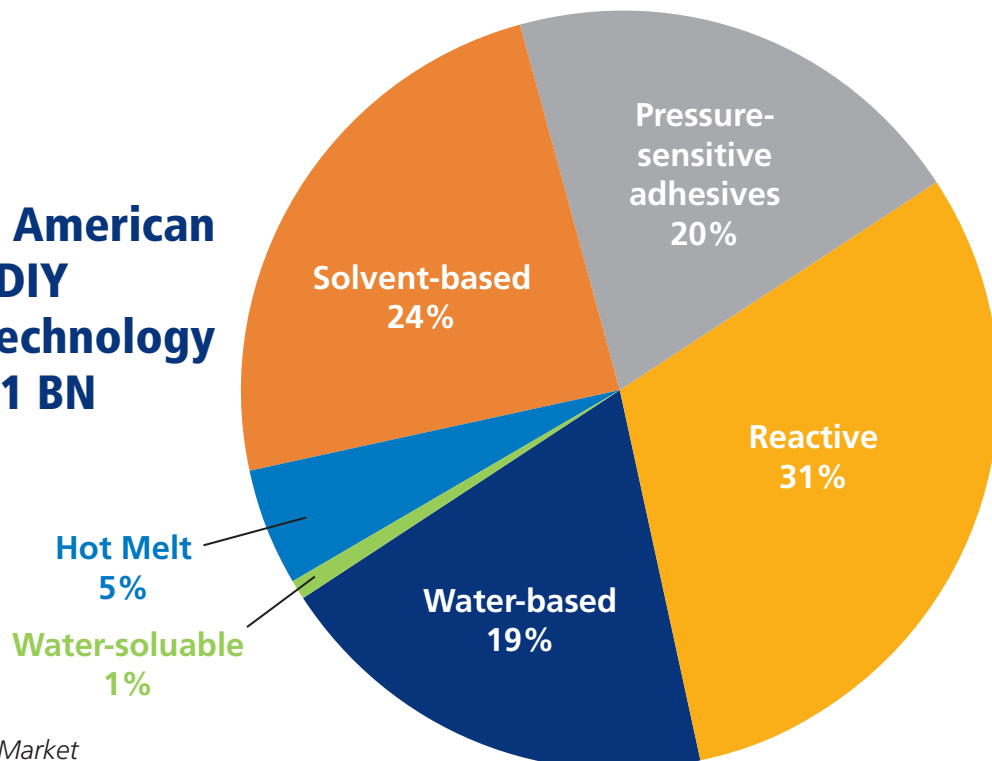
The adhesive and sealant industry is responsible for more than 20,600 manufacturing jobs with a payroll in excess of 1 billion dollars.*



>\$1 Billion

*The Adhesive & Sealant Council (ASC) estimates

2017 North American Consumer/DIY Adhesive Technology Share – \$1.1 BN



Source: North American Market Report (2018) Bar & Pie Chart

Why are Adhesives and Sealants Important?

Adhesives and sealants provide multiple sustainability benefits to everyday life. A few examples of the benefits include:

- Air sealing in residential and commercial buildings to save energy
- Water management solutions preventing water infiltration at critical joints
- Bonding and sealing solutions for multiple substrates
- Eliminating corrosion associated with metal fasteners
- Adhesives are lighter than metal fasteners, leading to lower energy requirements in transportation applications



Sustainability Benefits of Adhesives & Sealants

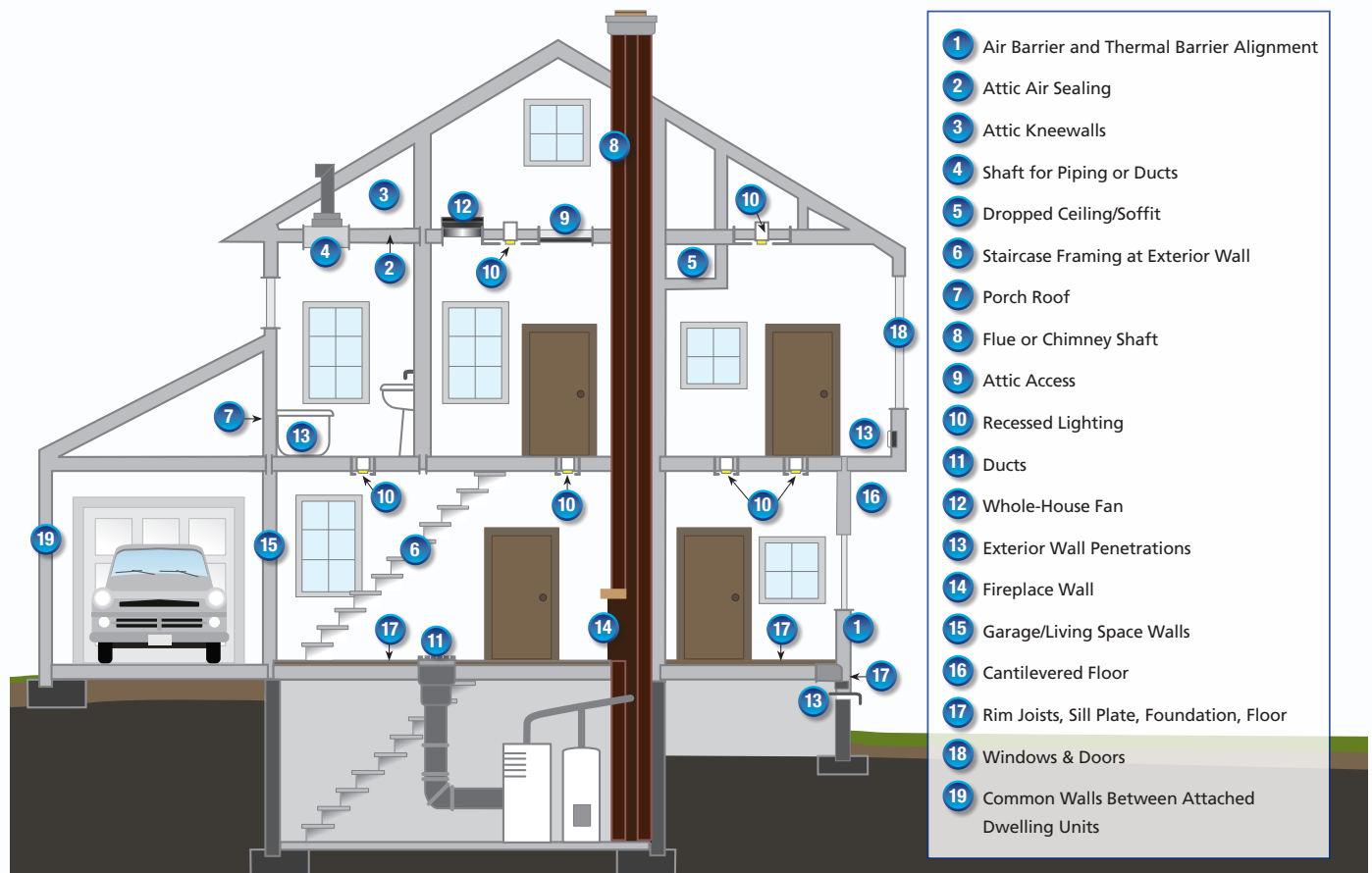
CHALLENGE:

Buildings account for 40% of US Energy consumption. The Department of Energy (DOE) will be introducing cost effective technologies by 2020 with the target to reduce a buildings energy use by 25% to 35% by 2035.

RESPONSE:

Gunnable Sealants and Aerosol Foam Sealants used in the building envelope provide air sealing and prevent water infiltration. The use of these products reduces the energy demand of the structure and provide a more comfortable environment for the occupants.

Critical Air Sealing in a Residential Home



Self-Adhering and Liquid Applied Flashings

CHALLENGE:

Restricting air leakage and preventing water leakage between windows, doors and skylights transitions.

RESPONSE:

Industry development of self-adhering flashing tapes and spray & liquid applied systems.

Photo Courtesy of Dow/Dupont

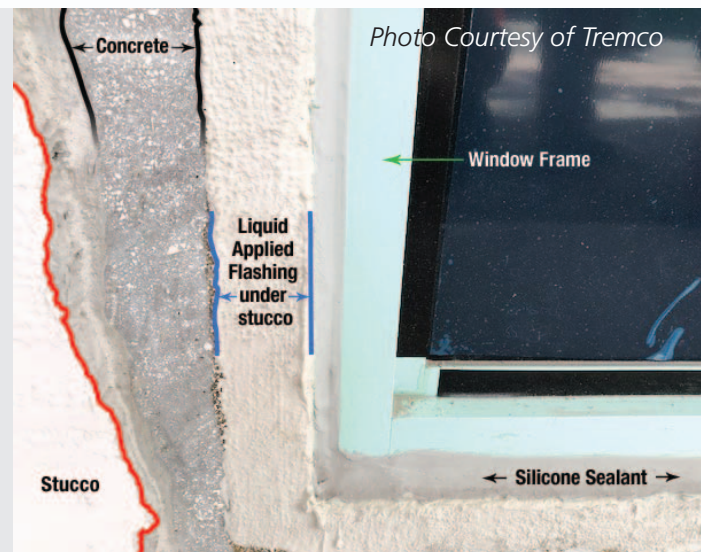


Photo Courtesy of Tremco

Liquid Applied Flashings

*Flexible Self-Adhering
Flashings*

Aerosol Foam Sealants & Gunnable Subfloor Adhesives

CHALLENGE:

How to adhere subfloors to ensure long lasting bonding without squeaks.

RESPONSE:

Industry development of subfloor adhesives in combination with mechanical fasteners, instead of using nails and screws, alone. The consistent bond of an adhesive bond line prevents squeaks in flooring unlike mechanical fasteners.



Photo Courtesy of DAP

*Aerosol Foam
Sealant-Subfloor
Adhesive*

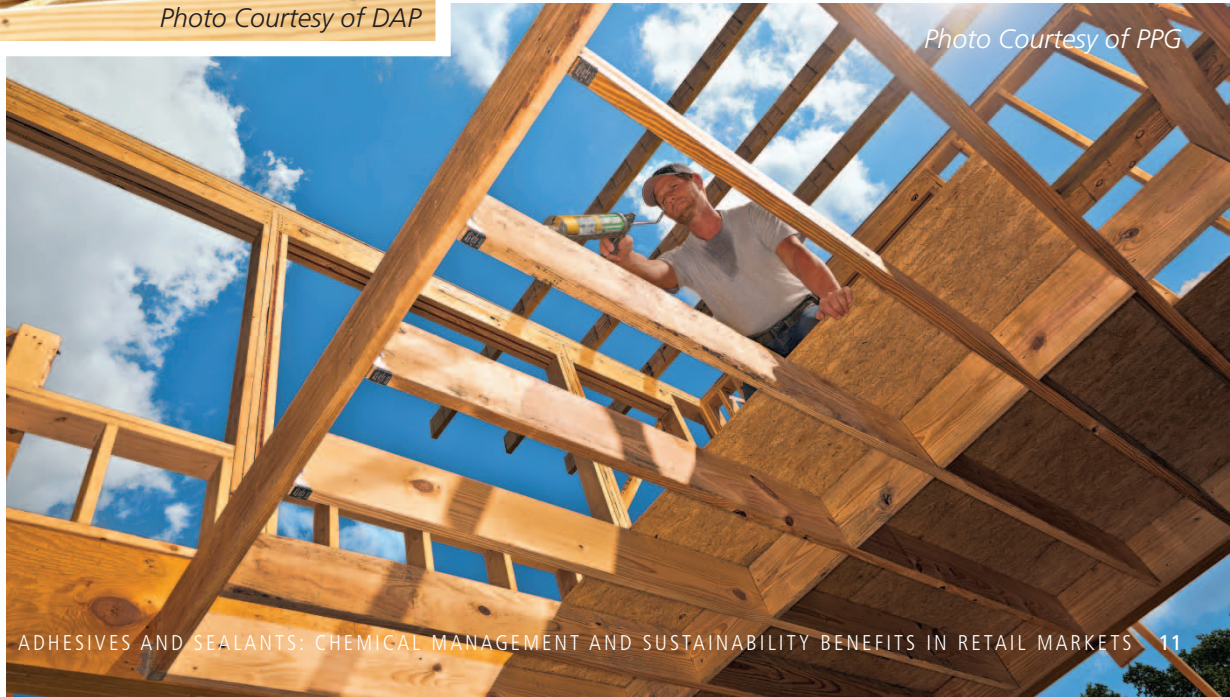


Photo Courtesy of PPG

*Gunnable
Adhesives
for Bonding
Subfloor*

How Do Adhesives and Sealants Support the Broader Efforts in Sustainability?

- Adhesives and sealants contribute to improved energy management in commercial buildings and residences
- A chemical adhesive bond can be stronger than a mechanical fastener such as a nail. This allows for greater strength and longer life of the product or part
- How do ASC member companies additionally support sustainability, the environment and the broader community?
 - Consistent product development with sustainability in mind
 - Sustainable Development Goals from United Nations



- Development and reporting of sustainability metrics and practices in their annual reports. Recognition of efforts by being named to the Dow Jones Sustainability World Index

- Encouragement for volunteerism and community involvement. Such as the ASC annual day of giving back, where individuals from the member companies engage in a community project. These have included:
 - Miami-Dade County Parks, Recreation and Open Spaces Department and the Parks Foundation of Miami-Dade, sand dune restoration via plantings of sea oat plants and beach cleanup at the beautiful beaches of Crandon Park Miami (2018)
 - Urban Garden development at Projects with a Purpose (Atlanta -2017)
 - Weeding and landscaping at the veteran center in Indianapolis (2016)
 - Painting and interior restoration at the Einstein Charter School (New Orleans-2016)



Chemical Transparency

Consumer products are designed to meet customer performance and safety expectations as well as manufacturer and retailer specifications. Increasingly, consumers and retailers want manufacturers to transparently report information about the chemicals, substances, and ingredients, collectively called 'chemicals' found in finished consumer products, especially those within retail stores, such as home building and repair products.

ASC believes that effective chemical management programs must include multi-criteria decision making, including assessments of risk based on both hazard and exposure. A hazard-only approach may erroneously eliminate useful products that do not present significant risk. ASC and its members are aware of efforts across the chemical industry to replace certain technologies, but in many cases

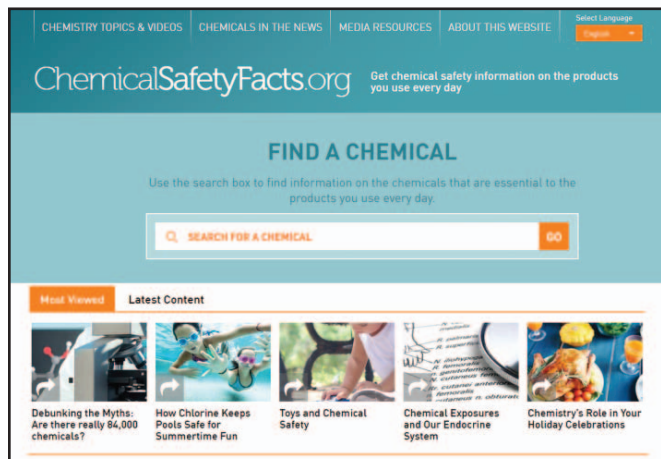
substitution could result in compromised field performance or shorter service life. Understanding the product's intended end-use, the function of the chemical in the product, and how to use the product safely are all important in the development of the product by the manufacturer and in the final product selection by the consumer.

Some outside interested parties often do not consider the context for proper chemical evaluation. Often screening tools that are exclusively hazard based are recommended, and many tools differ in their approach and final categorization. This results in confusion for decision makers in the supply chain. These tools should be paired with exposure tools/ approaches to achieve a balanced approach to evaluate the risk of chemical exposure.

Visit www.MindtheScience.org



Visit www.ChemicalSafetyFacts.org



Does the Chemical Industry Have a Collective Management Policy/Approach?

ASC and its members recognize the industry's desire to use a standard approach for a chemical assessment framework, packaging and waste management practices, alternative assessments, Eco Standards, and performance assessments. ASC in partnership with its members intend to provide information and chemical management guidance on these topics on the ASC DIY landing page at www.adhesives.org/DIY (mid to late 2019).

As the industry develops solutions for chemical management education, access to information remains paramount for industry stakeholders.



Where Can I Find Additional Information?

ASC's DIY/Retail landing page, located at www.adhesives.org/DIY, provides the following segmented information that may be of value to those writing chemical management policy within retail companies:

- Industry Standards
- White Papers
- ASC webinars and videos on the benefits of adhesives and sealants & sustainability
- ASC members, sustainability, and the community

Find the Right Adhesive or Sealant Supplier or Manufacturer.

The Adhesive & Sealant Council has a great web-based tool that allows you to search for:



- Adhesives and sealants by market, technology or chemistry type
- Raw materials
- Equipment
- Consulting services.

The online tool guides you through a customized list of parameters in order to deliver a clickable list of suppliers and manufacturers available to meet your needs.

Try it now at www.adhesives.org/resources

DIY/Retail Channels:

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