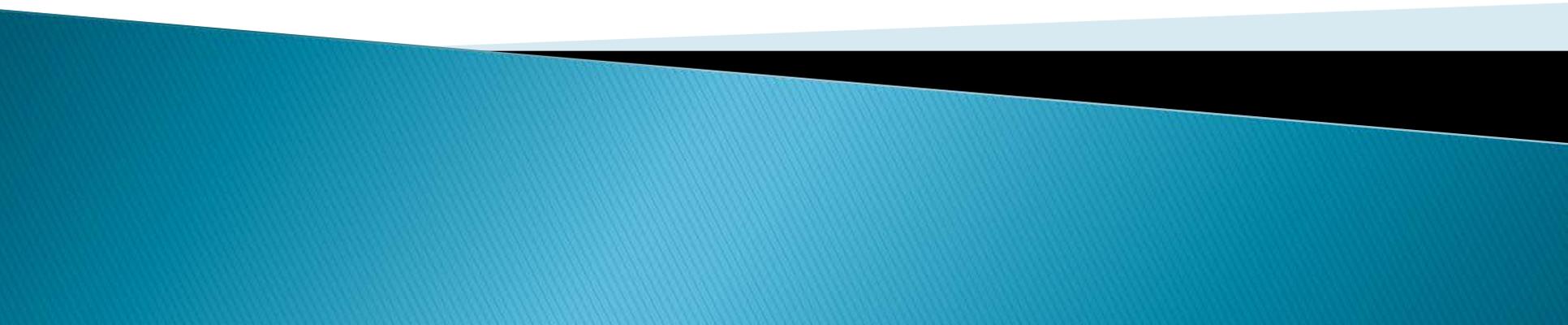


PRESENTATION BEFORE THE NORTHEAST RECYCLING COUNCIL
November 10, 2015

THE USE OF GLASS CULLET: A KEY COMPONENT OF THE FIBER GLASS SUSTAINABILITY STORY

Angus E. Crane
North American Insulation Manufacturers Association



Who Is NAIMA?

- ▶ The North American Insulation Manufacturers Association (“NAIMA”) is the trade association for North American manufacturers of fiber glass and rock and slag wool (mineral wool) insulation
- ▶ NAIMA promotes the energy savings and energy efficiency achieved through the use of fiber glass and mineral wool insulation

NAIMA

**NORTH AMERICAN INSULATION
MANUFACTURERS ASSOCIATION**

NAIMA's Recycling Survey



- ▶ Since 1992, NAIMA has conducted an annual survey of member companies to determine the volume of glass cullet and blast furnace slag used by NAIMA's members
- ▶ Glass cullet numbers are collected for both U.S. and Canadian fiber glass insulation companies
- ▶ Blast furnace slag numbers are collected from mineral wool producers that use slag
- ▶ This presentation focuses on glass cullet

Recycling Data Summary



- ▶ The most recent survey showed that in 2014, NAIMA member companies in the United States and Canada used more than 2.7 billion pounds of recycled glass and blast furnace slag
- ▶ The data showed that in 2014, facilities in the United States used more than 1.7 billion pounds of recycled glass
- ▶ NAIMA tracks the use of pre- and post-consumer glass cullet

Recycling Data Summary



- ▶ The data for Canadian facilities showed that in 2014, 345 million pounds of recycled glass was used in the production of fiber glass insulation products
- ▶ That is a total of 2 billion pounds of recycled glass used in 2014
- ▶ Since 1992, when NAIMA started collecting recycling data, 49.2 billion pounds of recycled material have been diverted from the waste stream

Recycling Data Summary



- ▶ Fiber glass insulation is the second largest user of glass cullet
California Integrated Waste Management Board,
Market Status Report, Container & Plate Glass
(CIWMB.ca.gov/markets/StatusReport.Glass.html)
- ▶ Fiber glass insulation manufacturers are the highest users of mixed bottle cullet (a mix of flint, amber, and green) and, as such, are responsible for recycling more of this material than any other source

Where Glass Cullet Is USED



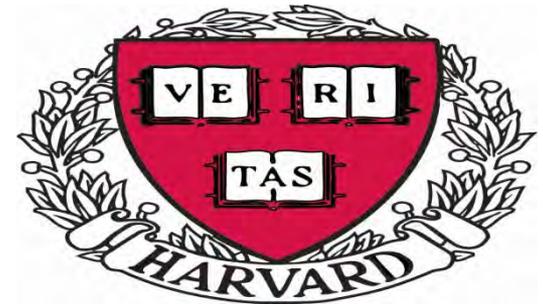
Sustainable Benefit Messaging

- ▶ Insulation makes buildings more energy efficient
- ▶ Insulation keeps buildings cool in the summer and warm in the winter
- ▶ Energy efficient buildings save money and lower utility bills
- ▶ A typical pound of fiber glass insulation saves 12 times as much energy in its first year in place as the energy used to produce it



Sustainable Benefit Messaging

- ▶ Reduced energy consumption translates into reduction of air pollutants
- ▶ Therefore, installation of insulation reduces air pollutants
- ▶ The Harvard School of Public Health has published studies that show specific correlation between insulation and reduction of greenhouse gases
- ▶ The same study concludes that insulation's reduction of emissions greatly improves public health
- ▶ The use of glass cullet is an important part of sustainable messaging



Sustainable Benefit Messaging

- ▶ Installed insulation in U.S. buildings prevents the emission of over 1.56 trillion pounds of carbon dioxide annually . . . That means that total U.S. carbon dioxide emissions would be almost 15 percent higher without insulation.

Jonathan Levy, *et. al.*, “The public health benefits of insulation retrofits in existing housing in the United States”



Glass Cullet Challenges

- ▶ Supply is not always consistent
- ▶ Contaminants in glass cullet can wreak havoc with the manufacturing process
- ▶ Paper and plastic labels, caps, cork, and other debris
- ▶ Cullet sometimes results in additional pollutants
 - NO_x
 - Chromium



How Governments Can Help

- ▶ California mandates specific recycled content for fiber glass insulation – California recognizes the sporadic nature of glass cullet supply and allows averaging of cullet usage
- ▶ The Federal Trade Commission's Green Guides also allows averaging on recycled content claims
- ▶ NOx emissions standards were preserved through recycled content arguments
- ▶ Example of EPA and chromium limits



How Governments Can Help

- ▶ Flexibility in dictating specific recycled content by allowing averaging
- ▶ Recognize that often government mandates or preferred actions can result in unanticipated consequences – work with the regulated community by imposing reasonable emission limits and other accommodations
- ▶ Give special recognition to manufacturers that are supporting and assisting in government driven goals – reduction of solid waste stream, improved energy efficiency, etc.



shutterstock - 152434855

Market and Working With Processors



- ▶ Fiber glass could use a much higher recycled content if it were available
 - Cullet is easier and most cost effective to melt
 - Clean cullet is the issue
 - Fiber glass insulation manufacturers are committed to the use of glass cullet
- ▶ NAIMA is a trade association representing competing companies; therefore, how these companies work with processors is beyond the scope of my presentation

Conclusion



- ▶ Using materials derived from secondary sources not only reduces the demand on virgin resources, it saves landfill space by diverting glass containers and other waste glass from the solid waste stream
- ▶ Products that help to conserve virgin resources, minimize waste, and reduce pollution are becoming the choices of architects, specifiers, and builders