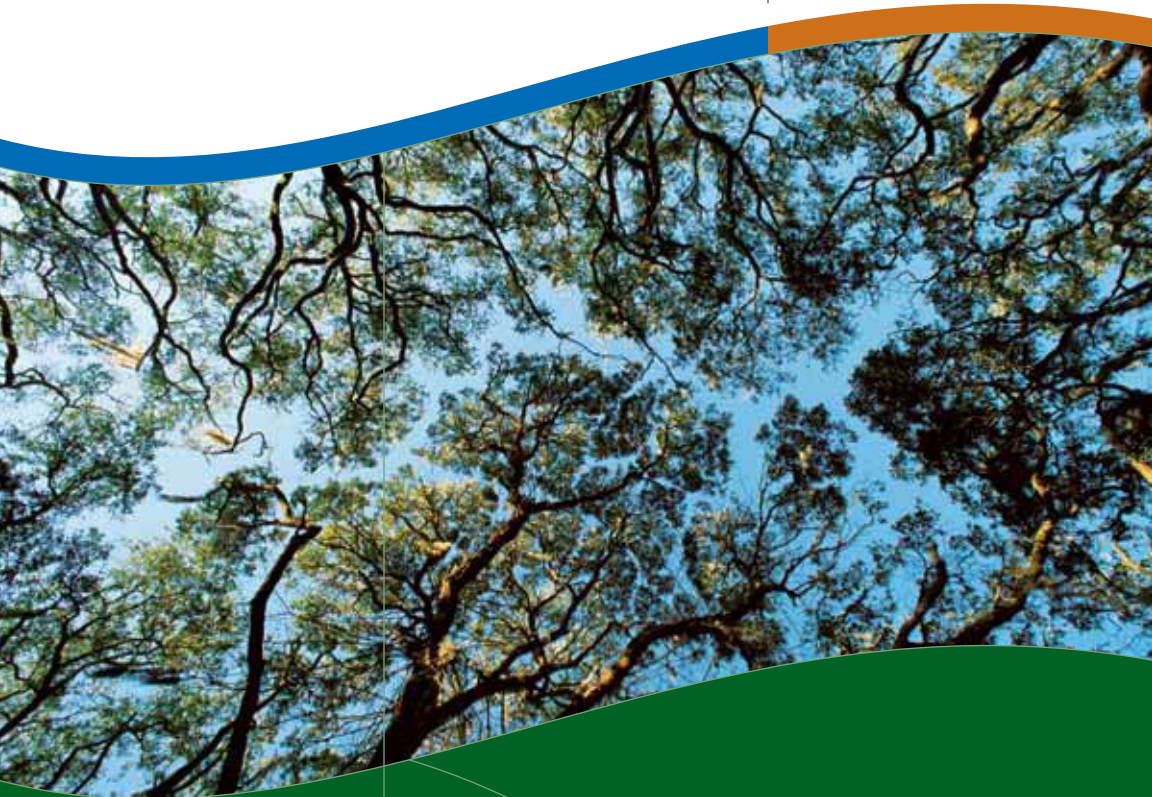




Johns Manville

Glass Wool Insulation Made without Formaldehyde



Johns Manville insulation—
a sustainable choice.



Our pledge to environmental stewardship.

At Johns Manville, we are more than insulation. We are energy conservation. We are resource conservation. With 150 years of experience in the construction industry, we are a leading innovator in North America. We were the first company to manufacture insulation without the use of formaldehyde. Our concern about indoor air quality and the health and well-being of our customers makes us strive to be responsible stewards of the environment. We are committed to building a better tomorrow for future generations.

GLASS WOOL INSULATION SAVES ENERGY AND REDUCES GREENHOUSE GAS EMISSIONS.

Conserving energy is the best way to combat global climate change. But what's the most effective way to reduce energy consumption? Buildings consume 40 percent of the world's energy! This matter is made more urgent by the fact that 20 percent of the energy a home or building uses is either lost or wasted.²



That's where glass wool insulation comes in. It is the overwhelming choice of building contractors over other types of insulation in new construction because it delivers excellent thermal performance. Adding it to existing homes is one of the easiest and best ways to increase energy efficiency.

Glass wool insulation benefits your home by keeping the outdoors where they belong: outside. This keeps your house cool in summer, warm in winter and lowers your energy bills.



- **Reducing energy consumption reduces carbon dioxide and other greenhouse gas emissions. Australian households produce around 20% of our total annual greenhouse gas emissions.**
- **Properly insulating homes worldwide would reduce the amount of carbon dioxide in the atmosphere by approximately 544 million metric tons annually.²**

PROPER INSULATION UNIVERSALLY PROMOTES BETTER HEALTH.

When buildings are adequately insulated, they require less energy to heat and cool. That reduces the demand on power plants, so they burn less fuel and release fewer contaminants into the air. Cleaner air leads to an overall healthier population.

Recycling is key.

Recycling is crucial in caring for the environment. Corporations have a responsibility to be accountable stewards of the environment, and recycling is imperative to any environmental stewardship program.

EACH YEAR WE USE MORE THAN 81,000 METRIC TONS OF POST-CONSUMER RECYCLED CONTENT.

During our manufacturing process, we incorporate post-consumer and post-industrial recycled glass. Using post-consumer materials ensures that the greatest amount of waste possible is diverted from landfills. On the other hand, using post-industrial waste in manufacturing is standard practice for cost-conscious producers. By maximizing the use of post-consumer waste, we help alleviate pressure on landfills and encourage curbside glass-recycling programs.

JM has a long history of dedication to sustainable manufacturing processes.



U.S. insulation manufacturers use almost 1.9 billion kilograms of recycled materials each year—and the use of recycled content is growing. Use of recycled glass has more than doubled since 2005.⁴



GLASS RECYCLING IS A NATURAL FOR GLASS WOOL INSULATION MANUFACTURERS.

The manufacturing of glass wool insulation provides an excellent opportunity to recycle glass. In fact, the Glass Packaging Institute reports that glass wool insulation is the largest secondary market for recycled glass containers, and using recycled glass in glass wool insulation saves more than 765 thousand cubic meters of landfill space per year.⁵

OTHER REASONS TO CHOOSE GLASS WOOL INSULATION:

- **In the first year, glass wool insulation saves 12 times the amount of energy used to make it.**
- **Glass wool batts can be reused when a building is remodeled or demolished.**
- **It's highly compressed when packaged, requiring less plastic wrap and less space while in transit, which reduces fuel demands.**

Why should you be concerned about formaldehyde in insulation?

When given the choice, 89 percent of homeowners prefer building materials made without formaldehyde

In 2002, we eliminated formaldehyde from our glass wool building insulation. Now JM manufactures a complete line of glass wool insulation made without formaldehyde.

Reducing overall formaldehyde levels in your home creates a healthier, safer living environment. Choosing JM glass wool insulation helps achieve that goal.

FORMALDEHYDE AND INDOOR AIR.

There is a growing concern over the potential health effects of exposure to volatile organic compounds (VOCs). VOCs are chemicals --including formaldehyde --that can cause health problems.

FORMALDEHYDE IS AN ALLERGEN.

Formaldehyde can also cause skin problems. In March 2006, the Mayo Clinic listed formaldehyde as one of the 10 most common skin allergens.⁶





“It is best to limit ... exposure [to formaldehyde] as much as possible.”

U.S. EPA, commenting on LEED-NC Version 2.2, Draft Standard for Indoor Environmental Quality



FORMALDEHYDE MAY TRIGGER ASTHMA.

There is evidence that formaldehyde can cause asthma⁷ in people who are exposed to it in the workplace, a condition called occupational asthma. The American Academy of Allergy, Asthma & Immunology lists it as a common substance that can cause occupational asthma in hospital staffs.⁸ The medical community agrees that it can also trigger or worsen asthma attacks.

MAKE A DECISION THAT MAKES A WORLD OF DIFFERENCE.

Choosing JM glass wool insulation is an easy way to promote sustainability and help protect the environment. We all play a role in building the future, in Australia and around the world. As the global demand for energy continues to grow, the importance of energy conservation and recycling becomes even more critical.

When you use JM glass wool insulation made without formaldehyde, you have a positive impact on the health of the planet. That makes a world of difference.

PERFORMANCE ADVANTAGES

- **Improves indoor air quality – because it’s made without formaldehyde**
- **Thermally efficient – provides effective resistance to heat transfer**
- **Enhances sound control**
- **Fire resistant**
- **Resists mold and mildew**
- **Made with 25% recycled content**

1. Queensland Government. “ClimateSmart Living: Materials.” The State of Queensland. http://www.climatesmart.qld.gov.au/your_home/building/materials.
2. *New York Times*, April 6, 2008, source cited: Lawrence Livermore National Laboratory.
3. Yurika Nishioka, Jonathan Levy, Gregory Norris, Andrew Wilson, Patrick Hofstetter and John Spengler. “Integrating Risk Assessment and Life Cycle Assessment: A Case Study of Insulation,” Harvard School of Public Health, Department of Environmental Health; Boston, MA.
4. North American Insulation Manufacturers Association (NAIMA) press release. “Manufacturers Used Almost 5 Billion Pounds of Recycled Materials in the Production of Fiberglass and Slag Wool Insulation.” Sept. 17, 2008.
5. NAIMA. “Using Recycled Materials Is Just the First Step Toward Safeguarding the Environment – Assessing the Environmental Benefits of Fiber Glass and Slag Wool Insulation.”
6. Top Ten Contact Dermatitis Allergens Identified in Mayo Clinic Study. See www.mayoclinic.org/news/2006-rst/3268.html.
7. Malo JL, Bernstein IL. Other Chemical Substances Causing Occupational Asthma. In: Bernstein IL, Chan-Yeung M, Malo JL, Bernstein DI, eds. “Asthma in the Workplace.” New York, Marcel Dekker. 1993; pp. 481-502.
8. “Tips to Remember: Occupational Asthma.” American Academy of Allergy Asthma & Immunology. See www.aaaai.org/patients/publicedmat/tips/occupationalasthma.stm.