



Fiber Glass Building Insulation Products:

The Facts About Mold Growth

Fiber glass itself is inherently resistant to mold.¹ Stringent testing in accordance with the American Society of Testing Materials (ASTM) standards [ASTM C1338: Standard Test Method for Determining Fungi Resistance to Insulation Materials and Facings²] confirms that fiber glass insulation meets the requirements for mold resistance.³ ASTM is recognized worldwide for its full-consensus standards covering materials, products, systems and services.

Requirements for Mold Growth

In order for mold to grow there must be mold spores present, a conducive temperature range, a nutrient source, and water.⁴ The first three are difficult or impossible to control. Mold spores (the reproductive structures produced by growing mold colonies) are ubiquitous in nature and almost everywhere in a building — so it would be impossible to eliminate them. The temperatures found in buildings are within the temperature range that supports mold growth, and extremes of temperature will only slow down the growth of mold. Many building materials, such as

cellulose-based products, could serve as a food source for mold, and even dust and dirt that may accumulate in cavities, attics and plenums or that are carried in with water can be a nutrition source for mold. That leaves only one practical factor that can be controlled to reduce the occurrence of mold — and that is water.⁵

Reducing the Opportunity for Mold Growth

The U.S. Department of Energy (DOE) states that, “Wet or damp construction cavities, attics and plenums are a major source of mold.”⁶ These conditions do not normally occur in properly designed, built and maintained buildings. Given that moisture is a major contributor to mold growth, it follows that insulation products should be installed dry and kept dry. If leaks occur because of defects in construction and/or poor maintenance the source of the leak should be identified immediately and fixed. Owners should check also for condensation problems as well as water leaks.

Since dirt, sawdust and other materials can serve as a nutrient source for mold,

owners should also ensure fiber glass insulation is stored indoors and kept clean at all times. ASTM 1320⁷ recommends to “keep materials dry, off the ground, and protected from water.” These guidelines should be followed when transporting and storing fiber glass insulation materials.

Replacement of Wet Insulation

Whether or not insulation or other building materials should be replaced after getting wet depends on several factors, and opinions differ on this subject. The American Red Cross and the Federal Emergency Management Agency (FEMA) suggest that fiber glass batts can be removed, dried and replaced if they are wet from clean water. They also suggest that cellulose (loose or blown-in treated paper) insulation can lose its antifungal and fire retardant abilities when wet and, therefore, should be replaced.⁸ The U.S. Environmental Protection Agency (EPA), however, recommends that all wet insulation be discarded and replaced.⁹ Although fiber glass can be reused in many circumstances, NAIMA suggests consulting FEMA,¹⁰ EPA, the American Red Cross, or other reputable sources for specific guidance and definition of terms, before taking any remedial action. If, after consulting these organizations, a question still remains, NAIMA suggests

consumers err on the side of caution and replace the wet insulation.

Conclusion

Mold spores are everywhere in nature and the built environment. Scientific research demonstrates that with sufficient water and an appropriate food source mold will grow on virtually any surface.¹¹ The key to minimizing the possibility of mold growth is keeping water out of the built environment and reducing the possibility of condensation. Insulation products that are installed dry and kept dry will help minimize the possibility of mold growth.

References

- 1 “The New Complete Book of Home Remodeling, Improvement and Repair,” A.M. Watkins, 1979, p. 171.
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- 3 “Owens Corning Integrex Testing Systems Report: Certification to ASTM C665 Specification,” January 20, 2000, Report #71392-1.
- 4 “Mold: Cause, Effect and Response,” FWCI, March 2002, p. 31. <http://www.awci.org/mold-series-1.pdf>
- 5 “Mold Remediation in Schools and Commercial Buildings,” EPA, 25 June 2001, p. 39. http://www.epa.gov/iaq/molds/mold_remediation.html
- 6 “National Best Practices Manual for Building High Performance Schools,” US DOE, 10/25/01, p. 123. www.doe.gov/bridge
- 7 “2002 Annual Book of ASTM Standards,” ASTM C1320: Standard Practice for Installation of Mineral Fiber Batt and Blanket Thermal Insulation for Light Frame Construction, section 4, vol. 04.06, p. 714.

- 8 “Repairing Your Flooded Home,” American Red Cross and FEMA, August 1992, p. 21. http://www.redcross.org/static/file_cont333_lang0_150.pdf
- 9 “Mold Remediation in Schools and Commercial Buildings,” EPA, 25 June 2001, p. 11. http://www.epa.gov/iaq/molds/mold_remediation.html
- 10 www.fema.gov/fima
- 11 “Mold Remediation in Schools and Commercial Buildings,” EPA, 25 June 2001, p. 2. http://www.epa.gov/iaq/molds/mold_remediation.html

About NAIMA

NAIMA is the association for North American manufacturers of fiber glass, rock wool, and slag wool insulation products. Its role is to promote energy efficiency and environmental preservation through the use of fiber glass, rock wool, and slag wool insulation, and to encourage the safe production and use of these materials.

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