Independent Literature Review:
Termite Resistance of Mineral Wool Insulation

Introduction

Why Termite Resistance Matters in Insulation Selection

Termite damage costs billions annually in structural repairs. Building materials that resist termite activity can reduce maintenance and increase durability particularly in warm or humid climates. While insulation is not a structural component, some materials can support or inhibit biological degradation. Mineral wool insulation, being inorganic, is commonly considered naturally resistant to termites.

The following sections summarize independent studies and publicly available research related to the termite resistance of mineral wool insulation.

Independent Academic Study

1. Applied Sciences (2023) - Independent Academic Study

Citation: Nunes, L. et al. (2023). "Insulation Materials Susceptibility to Biological Degradation Agents: Molds and Subterranean Termites." *Applied Sciences*, 13(20), 11311. DOI: 10.3390/app132011311

Summary:
This peer-reviewed study tested multiple insulation materials-including expanded polystyrene (EPS), cork, and mineral wool-exposed to subterranean termites (Reticulitermes flavipes and R. grassei). Results showed that:
- Mineral wool did not support termite feeding or survival.
- Termites crossed the mineral wool to reach wood but avoided consuming it.
- Mineral wool was among the least biologically degraded materials tested.
This supports its classification as biologically inert and termite-resistant.

Source: https://www.mdpi.com/2076-3417/13/20/11311

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Design Guidance

2. PNNL / Building America Solution Center - Design Guide

Citation: Pacific Northwest National Laboratory (PNNL). "Termite-Resistant Foundations and Walls." Building America Solution Center.

Summary:
This resource outlines best practices for building in termite-prone zones. Mineral wool is noted as an "inherently termite-resistant" option when used in cavity or continuous insulation systems. Although not a barrier to termite passage, it does not support infestation or feeding and is safe for use in high-risk regions.

Recommended practices include:
- Avoiding wood-to-soil contact
- Using borate-treated framing
- Installing inspection gaps and physical shields

Source: https://basc.pnnl.gov/resource-guides/termite-resistant-foundations-and-walls

Industry Discussion

3. Green Building Advisor (2014) - Industry Expert Discussion

Summary:
While not a formal study, the professional forum discussion highlights the consensus that mineral wool boards do not attract termites. Professionals report successful use in humid climates and around foundations but have a number of comments.

Source: https://www.greenbuildingadvisor.com/question/mineral-wool-boards-below-grade-and-termites

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Conclusion

Across academic literature, government-backed design guides, and industry discussion, mineral wool insulation consistently demonstrates termite resistance due to its inorganic, non-cellulose composition. While it is not a pesticide and does not prevent termites from traveling, it does not support termite feeding or biological decay.

Mineral wool remains a reliable, durable insulation material suitable for use in termite-prone areas when combined with integrated pest management and building best practices.

References

1. Nunes, L. et al. (2023). "Insulation Materials Susceptibility to Biological Degradation Agents: Molds and Subterranean Termites." *Applied Sciences*, 13(20), 11311. DOI: 10.3390/app132011311

2. Pacific Northwest National Laboratory. "Termite-Resistant Foundations and Walls." Building America Solution Center. https://basc.pnnl.gov/resource-guides/termite-resistant-foundations-and-walls

3. Green Building Advisor. "Mineral Wool Boards Below Grade and Termites." https://www.greenbuildingadvisor.com/question/mineral-wool-boards-below-grade-and-termites

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