

Vapor Barrier/Crawlspace Encapsulation

Overview

- Crawlspace in Delaware can experience moisture and subsequent mold growth due to the humid climate of the state.
- To prevent moisture-related damage to the structure, the crawlspace can either be encapsulated or a vapor barrier can be installed.
- Vapor barriers are plastic or foil sheeting that is installed on the underside of the structure to keep moisture away from the flooring.
- Crawlspace encapsulation involves sealing the underside of a structure to keep water away from the flooring. It is also known as sealing or closing the crawlspace.
- In addition to sealing the crawlspace against moisture and mold, these methods can also protect the crawlspace from pest infestations, heat loss, and dust/allergen accumulation.
- Crawlspace encapsulation and vapor barriers will improve the air quality within the structure as well as decrease heating and cooling energy bills.
- Both these strategies should only be completed by a professional contractor. If these methods are completed poorly, the encapsulation or vapor barrier could cause more problems for the structure.
- Although these strategies can prevent some low-level flooding within the structure, they cannot be relied upon for medium to high level flooding or velocity flooding. Crawlspace encapsulation and vapor barriers are designed primarily to protect the structure from moisture from humidity.
- Consult a licensed professional contractor to determine whether a vapor barrier installation or crawlspace encapsulation would be better for your structure.



Key Takeaways

During flood events, flood water entering the building can cause damage to living space. Moisture from high humidity levels can also cause damage to structures.

To avoid continuous replacement or repair costs related to moisture damage, install a vapor barrier in the crawlspace or encapsulate the crawlspace.





I-ADAPT

Interior Adaptation Vapor Barrier/ Crawlspace Encapsulation

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Estimated Costs/Benefits

*U.S. dollars (2022), estimates are subject to change

Potential Costs		Potential Benefits	
Item	Estimate	Post-Flooding Recovery Action	Estimate
Vapor barrier and installation	\$1,200-\$4,000	Mold remediation	\$1,100-\$3,400
OR			
Crawlspace encapsulation materials and installation	\$2,000-\$15,000	Crawlspace repair	\$1,500-\$10,000
ESTIMATED TOTAL COST (1,000 sq ft structure)	\$1,200-\$15,000	ESTIMATED TOTAL SAVINGS	\$2,600-\$13,400

Expected Maintenance

- Periodically ensure that the vapor barrier is functioning properly and that there are no tears.

Additional Actions

- Anything stored in the crawlspace will need to be stored somewhere else.
- Add insulation to the crawlspace if you would like to further reduce energy bills.
- If there are pipes and/or wires running through the crawlspace, plumbers and/or electricians may need to access the crawlspace to perform repairs. This may require breaking and resealing seals.

Potential Funding Sources

- [Building Resilient Infrastructure and Communities Grant \(BRIC\)](#)
- [FEMA Flood Mitigation Assistance \(FMA\) Grant](#)

Additional Resources

- [US Dept. of Energy: Guide to Closing and Conditioning Ventilated Crawlspace](#)

Resources can also be found at <https://de.gov/iadapt>

Permitting Agencies

Contacts for permitting requirements include but are not limited to the following:

- Your city and/or county government for local flood ordinances or regulations
- Your city and/or county government for building permits

Who to Contact

- Crawlspace contractor
- Utility companies
- Design engineer or professional

Technical definitions and more information are located on the I-ADAPT website: <https://de.gov/iadapt>.



This information is intended to be used for planning purposes. It is not intended to substitute or take precedence over the guidance of design engineers, contractors, utility companies or regulatory agencies.

For more information, contact DNREC's Division of Climate, Coastal and Energy at DNREC_IADAPT@Delaware.gov

