

Add Waterproof Veneer to Exterior Walls

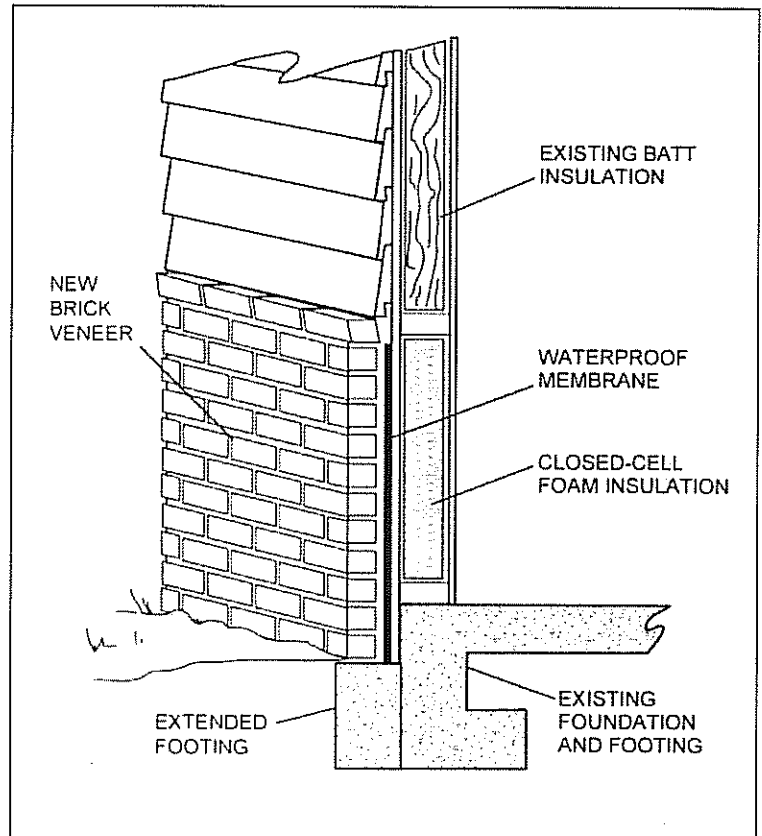


FEMA

PROTECTING YOUR PROPERTY FROM FLOODING

Even in areas where flood waters are less than 2 feet deep, a structure can be severely damaged if water reaches the interior. The damage to walls and floors can be expensive to repair, and the structure may be uninhabitable while repairs are underway.

One way to protect your property from shallow flooding is to add a waterproof veneer to the exterior walls and seal all openings, including doors, to prevent the entry of water. As shown in the figure, the veneer can consist of a layer of brick backed by a waterproof membrane. Before the veneer is applied, the siding is removed and replaced with exterior grade plywood sheathing. If necessary, the existing foundation footing is extended to support the brick. Because the wall may be exposed to flood water, changes are also made to the interior walls to resist moisture damage. In the area below the flood level, standard batt insulation is replaced with washable closed-cell foam insulation, and any wood blocking added inside the wall cavity is made of exterior grade lumber.



BENEFITS OF UTILIZING THIS MITIGATION STRATEGY

- Helps to prevent flood water from entering a building, which could result in the structure being uninhabitable while undergoing repairs

TIPS

Keep these points in mind if you plan to have a waterproof veneer added to the exterior walls:

- ✓ Adding a waterproof veneer is appropriate in areas where the flood depth is less than 2 feet. When flood depths exceed 2 feet, the pressure on waterproofed walls increases greatly, usually beyond the strength of the walls. If greater flood depths are expected, consult with a licensed civil or structural engineer before using this method.
- ✓ Changes to the foundation must be done by a licensed contractor, who will ensure that the work is done correctly and according to all applicable codes. This is important for your safety.

- ✓ If your property is being remodeled or repaired, consider having the veneer added as part of the remodeling or repair work. It will probably be less expensive to combine these projects than to have them done separately.
- ✓ If your property has brick walls, you can still use this method. The new brick veneer and waterproof membrane are added over the existing brick.
- ✓ If your property is flooded by groundwater entering through the floor, a waterproof veneer will not be effective.

ESTIMATED COST

If you have a contractor add a waterproof brick veneer, you can expect to pay about \$10 per square foot of exterior wall. For example, a 3-foot high brick veneer on a structure measuring 60 feet by 30 feet would cover about 540 square feet and would cost approximately \$5,400. This figure does not include the cost of sealing doors and other openings or extending the foundation.

OTHER SOURCES OF INFORMATION

FEMA 259, *Engineering Principles and Practices for Retrofitting Flood Prone Residential Buildings*, January 1995, <http://www.fema.gov/library/viewRecord.do?id=1645>.

FEMA 549, *Hurricane Katrina in the Gulf Coast: Mitigation Assessment Team Report, Building Performance Observations, Recommendations, and Technical Guidance*, July 2006, <http://www.fema.gov/library/viewRecord.do?id=1857>.

FEMA 549, *Hurricane Katrina in the Gulf Coast: Mitigation Assessment Team Report, Building Performance Observations, Recommendations, and Technical Guidance*, Recovery Advisory "Designing for Flood Levels Above the BFE," July 2006, <http://www.fema.gov/library/viewRecord.do?id=2633>.

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