HUNTSMAN
BUILDING SOLUTIONS

RETROFIT APPLICATION GUIDE

BASEMENT WALLS

The following are suggestions for best practices from various sources. Each Company is responsible for its own individual Safety, HCP and PPE programs. Always follow all fire and building codes and equipment manufacturers' manuals, labels, and listings.

OBJECTIVE

To insulate and air seal an uninsulated basement.

This application particularly benefits:

- Homes without adequate insulation and air-sealing of basement walls
- Homes with extensive air leakage at the rim/ band joist area
- Homes where the owner is contemplating finishing the basement

Huntsman Building Solutions' spray polyurethane foam (SPF) has been used in basement wall assemblies for more than 40 years. These systems continue to perform very well and generate substantial energy savings. For best results and consideration of specific issues with respect to your building, it is recommended that you consult a trained BPI or RESNET rater before and after the retrofit.

AutoCAD drawings for these assemblies are attached. If there are any questions regarding the retrofit application, please contact the Huntsman Building Solutions Building Science/Engineering Department.

Set Customer's Expectation Early

Vacate occupants and pets during and after application according to Product Specific Re-Occupancy times. These guidelines require specific ventilation rates (air changes per hour) for a minimum time, after the completed application, before the building can be safely reoccupied. The guidelines can be found on the HBS website.

Before beginning, discuss the project with the homeowner including all health and safety considerations. Instruct the homeowner to remove all portable personal belongings from the work area. Verify that there are no moisture problems in the space. If in doubt have the area reviewed by a Professional Engineer.

CONSIDERATIONS

Any cracks or holes that may lead to water leaks through the basement wall shall be fixed prior to application of spray foam. Hydrostatic pressure can force water through even pin-hole sized openings. Interior spray foam will not be suitable as a water stop or barrier. It is always best practice for homeowners to correct the source of leakage (from the exterior) prior to proceeding with insulating on the interior. Identifying such problems during the quoting phase is ideal.

For finished basements or applications where the interior surfaces are going to be finished with drywall or other sheathing products, it is recommended that a non-structural, stud wall be built with a minimum of 1" offset from the surface of the concrete/block masonry wall. This will allow a continuous layer of insulation behind the studs, and thermally isolate/protect them from cold exterior wall. This will eliminate thermal bridging, and enhance the overall performance of the assembly. This should also reduce the need for excess foam trimming. Care should be taken to minimize the deflection of framing when the foam expands.

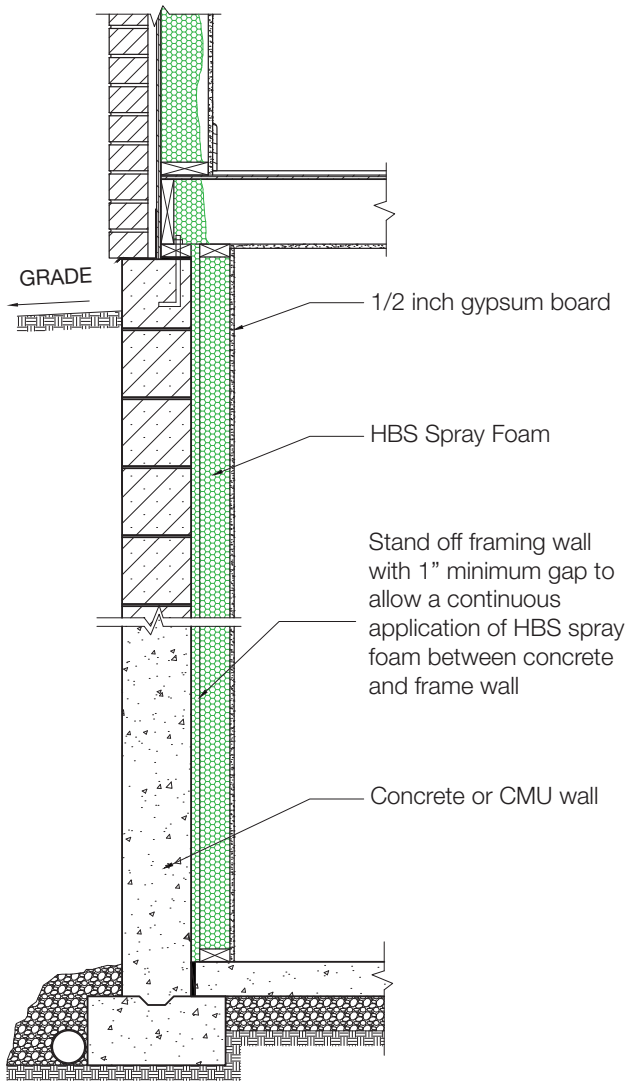
Heat Emitting Devices

Always refer to the manufacturer's information of the heat emitting device for verification of safe distance.

The maximum service temperature for most HBS spray foams (open or closed cell) is 180°F (82°C). Always refer to specific product Technical Data Sheet (TDS) for confirmation. HBS spray foams should not be used in direct contact with chimneys, flues, steam pipes, recessed lighting or other heat emitting devices. A minimum 3" separation distance is recommended.

STEP-BY-STEP GUIDELINES for the Huntsman Building Solutions Contractor

1. Place tarps or polyethylene over possessions left in the space. Remember to consider the area the spray rig is going to be located (Spill Hazard). Seal any openings to separate the work area from the rest of the building. Typical methods could include taping polyethylene tarps over the openings with overlapping flaps that permit access by laborers.
2. Place warning signs at the entrance to the basement restricting entry to the space to workers wearing the prescribed full PPE. At a minimum, warning signage should state: “CAUTION: Spray foam is being applied, personal protective equipment required, otherwise do not enter – No Smoking – No Eating”.
3. Shut down and seal off HVAC openings in the work area to prevent migration of contaminants to other areas of the building. Don’t forget to unseal and restart the HVAC system prior to re-occupancy after the SPF has fully cured and the work area has been ventilated according to the products specific ventilation rates.
4. Seal off all registers and returns in the basement area. Shut off any combustion devices such as domestic water heaters, furnaces and fireplaces.
5. Place a suitably sized exhaust fan capable of providing required Air Changes per Hour from the work area, such that it vents directly to the exterior away from the building and begin exhausting air from the space.
6. Ensure Sprayer and Helper are wearing full Personal Protective Equipment (PPE) including a Supply-Air Respirator (SAR) with full-face protection (hood or full- facepiece type) and chemically resistant gloves and full-body protection to prevent skin contact as directed by their company’s Safety and Hazard Communication Program.
7. After testing spray equipment outside the building, bring hose and gun into the work area by a direct route.
8. Apply spray foam as required (as per contract) to:
   - Provide specified coverage of rim/band joist area.
   - Fill gaps behind studs and plates of stand-off wall (if provided).
   - Insulate cavities between studs to the specified thickness.
   - Seal gaps around windows, rough openings around doors and other penetrations. Use kit foam if required
9. Apply Thermal Barrier coating on areas intended to be left uncovered by drywall sheathing.
10. Clean up any debris in the work area and remove surplus material and all spray equipment (guns, hoses, coating sprayers etc.) while wearing PPE.



Closed cell spray foam may be required in flood prone areas. Consult with local code officials for confirmation.

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