Healthy Basement Renovation Checklist

Renovating a basement space is a great way to increase the living area of your home or apartment building. However, transforming a Maine basement into a living area has some serious challenges, and should only be considered if you are willing to address all of the potential concerns.

It is possible to turn your icky, dank basement into a healthy, energy-efficient space. Just remember this rule of thumb: NEVER renovate a basement for living space until all moisture and soil gas concerns have first been addressed. Use the following checklist as a guide to avoid your new space from becoming a moldy, unhealthy nightmare. If in doubt, hire a qualified professional, or contact the Maine Indoor Air Quality Council (www.maineindoorair.org; 207-626-8115; info@maineindoorair.org) for answers to questions about your specific basement project.

RENOVATING A BASEMENT FOR HEALTHY, ENERGY-EFFICIENT LIVING SPACE

Step 1. Prevent Soil Gas Intrusion – 1/3 of Maine's homes have radon levels above recommended thresholds. Radon is the #1 cause of lung cancer in nonsmokers and the #2 cause of lung cancer nationwide.

- Test your home for radon and fix it if necessary before starting basement renovation
- Seal all sump units to prevent radon, sewer gas, and moisture intrusion.

Step 2. Keep Rainwater Outside Where It Belongs – Maine has a VERY wet climate, with a lot of rainfall each year. Make sure exterior grading and drainage slopes out and away from building. Guideline: 4 inches of pitch for every ten feet.

- Make sure gutters and downspouts direct water away from the building (Never connect downspouts to your subsurface drainage.)
- Seal all foundation cracks to prevent air and water leakage prior to renovation. Use crack injection if exterior excavation is impractical.

Step 3. Insulate for Energy Efficiency and to Prevent Condensation – Maine has a cold climate, and the soil under and around your home stays cool all year long. Warm, moist air from May-October will condense on any cold, uninsulated surface, causing mold growth and building rot.

- If the basement floor is not already insulated under the slab, insulate it with rigid foam on top of the slab if headroom is sufficient and stairs can be reworked.
- If unable to insulate the basement floor, use dehumidification during the summer months to prevent condensation and mold growth. Consider a commercial grade dehumidifier that is both more energy efficient and more effective at removing excess moisture.
- Insulate the walls using rigid foam over block and concrete or spray foam over field stone. (Note: all foams must be covered with a fire preventive barrier—special paint, drywall, or plywood. Refer to local building codes for detail)
- Allow proper drying to both the inside and outside: do not use a vapor barrier or a product that acts as a vapor barrier over the foam insulation.

Step 4. Always Keep Relative Humidity in a Basement Between 30-50% – Even a well-insulated basement can suffer from too much moisture. Cold water pipes, well pressure tanks, and HVAC ductwork can be cold enough to cause condensation.

- Keep your basement windows and vents closed, especially in the summer
- Use dehumidification or mechanical ventilation to reduce basement moisture

Maine Indoor Air Quality Council

Healthy Basement Renovation Checklist

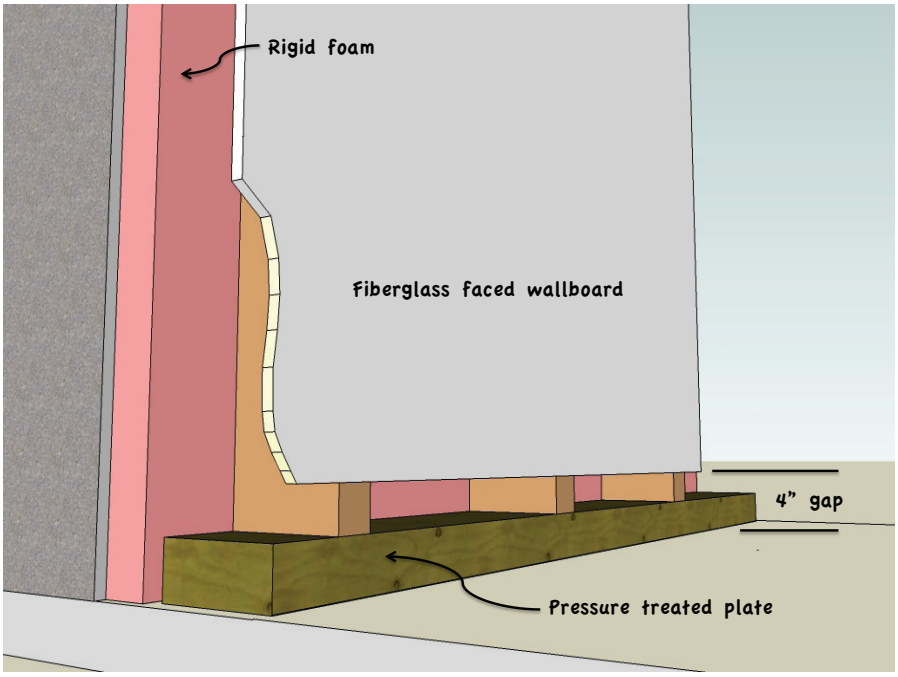
Contact the Maine Indoor Air Quality Council
www.maineindoorair.org
207-626-8115 or
info@maineindoorair.org
for answers to questions about your specific basement project.

Step 5. Expect the Unexpected – Bad things ***will*** happen: catastrophic floods, plumbing leaks, system failures. Use construction strategies that minimize damage, property loss, and mold growth when the unexpected occurs.

- Wallboard should never touch the floor – leave at least a 4" gap (see diagram below) covered by a removable baseboard
- Avoid fiberglass insulation in stud cavities
- Use fiberglass-covered wallboard instead of paper-covered wallboard
- Never install wall to wall carpets in basement spaces. Use concrete floor paint or vinyl composition or ceramic tile (install per manufacturer's instructions). Use only small area rugs that can be quickly removed and/or easily cleaned on a regular basis.
- Avoid a drywall ceiling: install a suspended ceiling, or paint the exposed ceiling above.

Step 6. Living Spaces Are for People

- Ensure adequate ventilation in any space that will be occupied by people



Maine Indoor Air Quality Council