



Basement Wall Insulation Requirements

This pamphlet is one in a series that describes residential energy conservation requirements of the Oregon Residential Specialty Code and Structural Specialty Code. Other pamphlets in this series may be downloaded from Oregon Department of Energy web site at <http://egov.oregon.gov/ENERGY/CONS/Codes/cdpub.shtm> or local building departments or from Oregon Building Codes Division.

Prescriptive insulation requirements for basement walls

All basement walls are required to be insulated to R-15.

The code also refers to basement walls as “below grade walls.” Insulation for below-grade walls must extend from the bottom of the above-grade subfloor to the top of the below-grade finished floor. The entire wall, including the rim joist area, must be insulated.

The energy code specifies required R-values, not specific types of product. Any insulation product or combination of insulation products that meets the installed R-value requirement is acceptable. Only R-values and F-factors for the Standard Base Case may be used.

Basement wall insulation requirements apply only to *heated* basements. For *unheated* basements, the floor between the home and basement must meet floor insulation requirements. If heating is later installed in an unheated basement, wall insulation must be added. Uncovered basement walls should be insulated with fire-rated faced batts, not unrated kraft-faced batts.

Section drawings or written specifications that accompany the plans must indicate basement wall R-value.

R-15 basement wall insulation options

Typically, the R-15 basement wall insulation requirement is met by framing an interior finish wall and installing R-15 high density batt insulation. The wall frame may be 2x4 or 2x3. To keep insulation dry, the wall frame should be held in place from the concrete below grade wall so insulation does not contact concrete. Exterior insulation placement and combinations of batts and rigid foam board insulation are also acceptable. If insulation is applied to the wall exterior, it should be approved for below-grade use and protected from damage above grade.

Figures 1 and 2 show basement wall insulation options for exterior and interior insulation details. Note that rim joists must be insulated.

Moisture protection for basement walls

Requirements for foundation drainage and damp-proofing are part of the Oregon Residential and Structural Specialty Codes. Drawings show footing drains, damp-proofing details and energy code requirements. Other drainage systems may also be used.

The 1-perm rated, interior vapor retarder is optional, not required. A *best practice* would be to use either an unfaced batt or forgiving vapor retarder such as kraft-faced batts, avoid polyethylene, or provide an airspace between interior surface of insulation and finished wallboard.



Figure 1:
Interior basement wall insulation detail

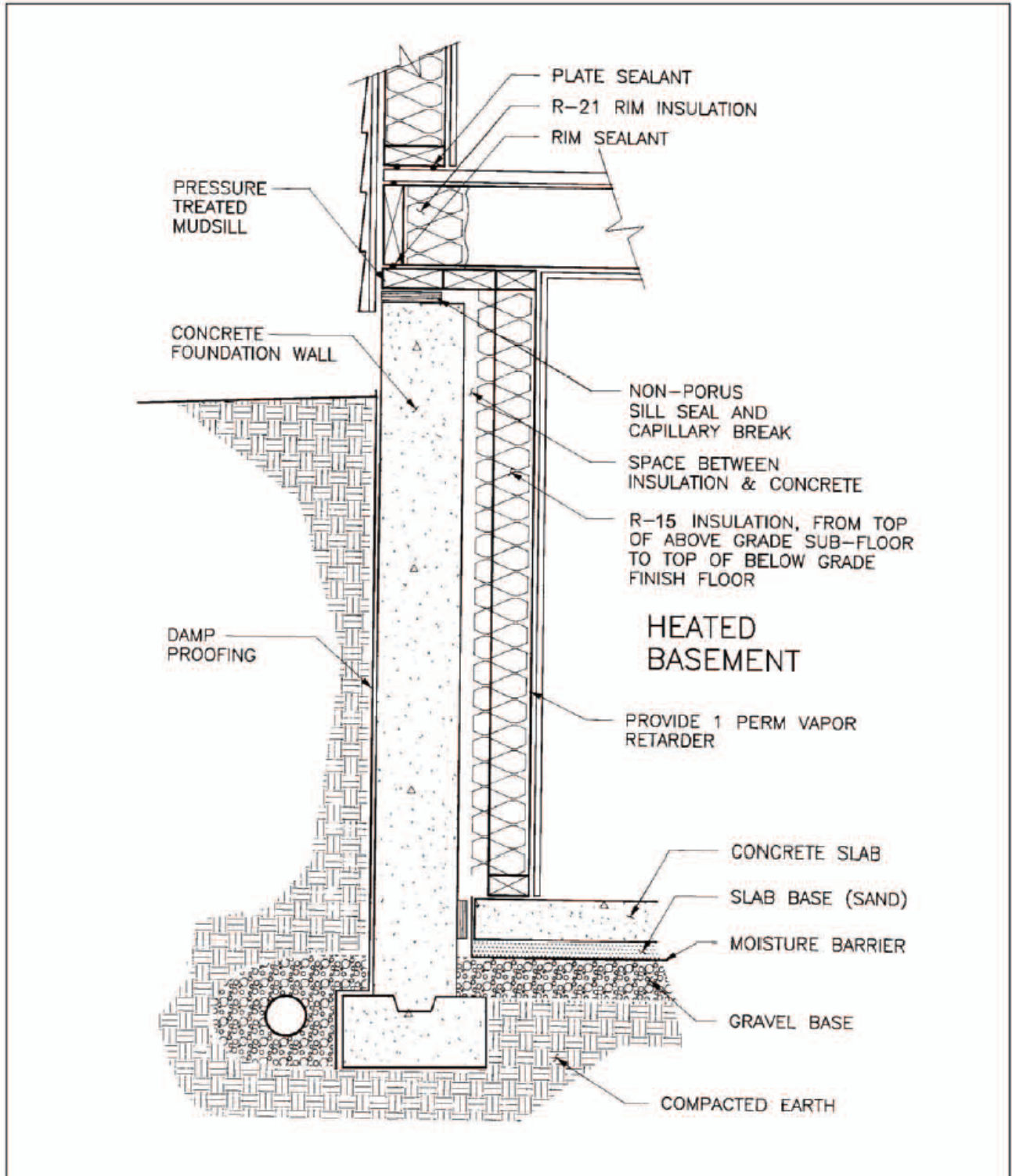
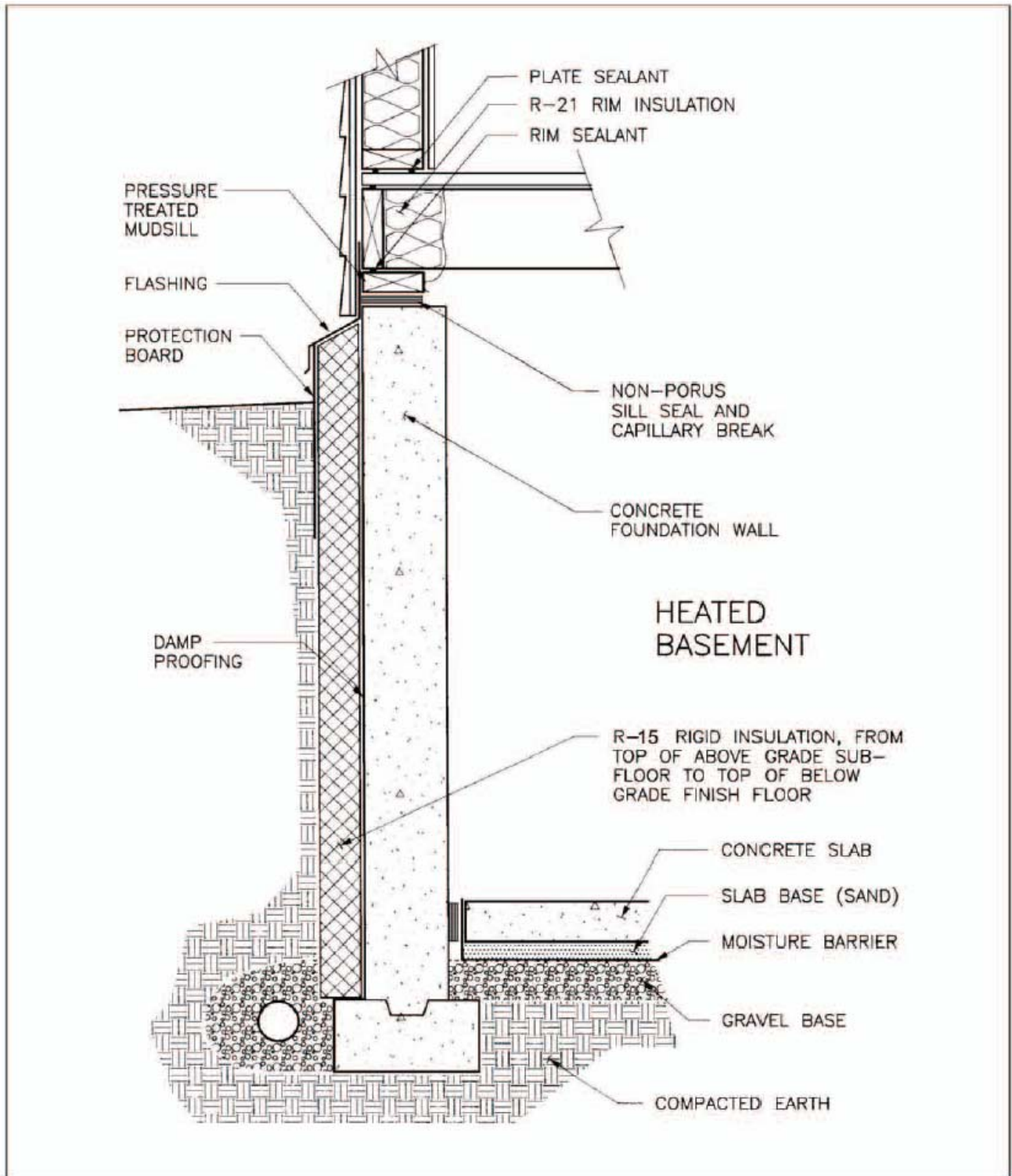


Figure 2:
Exterior basement wall insulation detail



Information presented in this publication supports the Oregon Residential Specialty Code. This publication does not include all code requirements. Refer to the code and check with your code official for additional requirements. If information in this publication conflicts with code or your local officials, follow requirements of code and your local officials.

For more information about the residential energy code, call the Building Codes Division at (503) 378-4133 or the Oregon Dept of Energy (503) 378-4040 in Salem or toll-free, 1-800-221-8035.

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