

## (EXTERIOR) FOUNDATION DRAINAGE AND WATERPROOFING

- This handout is intended only as a guide. It shall not be considered a complete set of requirements.
- Materials and installation must comply with the current Minnesota State Building Code and the manufacturers' installation specifications for each product.
- Permits are required for all new and repair work on foundation drainage systems for existing homes.

### **PERMIT CARD AND APPROVED PLANS (throughout the project) shall be:**

**POSTED** prior to start of work - **VISIBLE** from street or driveway - **ACCESSIBLE** to the inspector.

### **INSPECTION REQUIREMENTS:**

Inspections **MUST** be scheduled during office hours **AT LEAST** one business day prior to inspection. If a specific date and time is required, additional notice may be needed. Failure to cancel a scheduled inspection may result in a reinspection fee.

- **Office Hours:** Monday - Friday • 8:00 a.m. - 4:30 p.m.
- **Phone:** (952) 442-7520 or (888) 446-1801

**Inspections:** (Refer to your permit card regarding project-specific inspections)

- **Foundation/pre-backfill:** PRIOR TO BACKFILLING around a foundation. Exterior drainage system, waterproofing, and exterior insulation (if required) must be in place.

With regard to the drainage system, the following shall be in place at the time of inspection:

- ✓ Aggregate installed below drain tile
- ✓ Perforated drain tile with sock installed
- ✓ Aggregate installed on top of drain tile
- ✓ Fabric installed over entire aggregate area

**NOTICE:** Construction or work for which a permit is required shall be subject to inspection by the Building Official, and such **construction or work shall remain accessible and exposed for inspection purposes until approved.** It is the responsibility of the permit applicant to be in attendance on site and provide access to the Building Official for all required inspections. If work is concealed and/or work is not complete at time of inspection, an additional inspection is required and a **reinspection fee may apply.**

**Note:** The State of Minnesota requires all residential building contractors, remodelers, roofers, plumbers, and electricians to obtain a state license, unless they qualify for a specific exemption. Any person claiming an exemption must provide a copy of a Certificate of Exemption from the Department of Labor & Industry to the Municipality before a permit will be issued.

**Note:** To determine contractor requirements, or to check the licensing status of a contractor, please call the Minnesota Department of Labor & Industry at 651-284-5065 or toll free 1-800-342-5354.

**Note:** For specific code requirements, contact the Building Inspection Department at 952-442-7520 or 888-446-1801 or e-mail: [info@mnspect.com](mailto:info@mnspect.com).

### **PROJECT INFORMATION:**

The following is a guideline to assist in compliance with the requirements of the MN State Building Code.

**R405.1 Concrete or masonry foundations.** Drains shall be provided around all **concrete** and **masonry foundations** that retain earth and enclose habitable or usable spaces located below grade. Drainage tiles, gravel, or crushed stone drains, perforated pipe or other *approved* systems or materials shall be installed at or below the top of the footing or below the bottom of the slab and shall discharge by gravity or mechanical means into an approved drainage system. Gravel or crushed stone drains shall extend at least 1 foot beyond the outside edge of the footing and 6 inches above the top of the footing and be covered with an approved filter membrane material. The top of open joints of drain tiles shall be protected with strips of building paper, and the drainage tiles or perforated pipe shall be placed on a minimum of 2 inches of washed gravel or crushed rock at least one sieve size larger than the tile joint openings or perforation and covered with not less than 6 inches of the same material.

A drainage system is not required when the foundation is installed on well-drained ground or sand-gravel mixture soils according to the Unified Soil Classification System, Group I Soils.

**R.406.2 Concrete and masonry foundation waterproofing.** Exterior foundation walls that retain earth and enclose below grade interior spaces, floors, and crawl spaces shall be waterproofed. Waterproofing shall be installed at a minimum from the top of the footing to the top of the foundation wall (refer to the following requirements) or in accordance with the manufacturer's installation instructions. Walls shall be waterproofed in accordance with one of the following:

1. 2-ply hot-mopped felts.
2. 55-pound (25 kg) roll roofing.
3. 6-mil (0.15 mm) polyvinyl chloride.
4. 6-mil (0.15 mm) polyethylene.
5. 40-mil (1 mm) polymer-modified asphalt.
6. 60-mil (1.5 mm) flexible polymer cement.
7. 1/8-inch (3 mm) cement-based, fiber-reinforced, water proofing coating.
8. 60-mil (1.5 mm) solvent-free liquid-applied synthetic rubber.

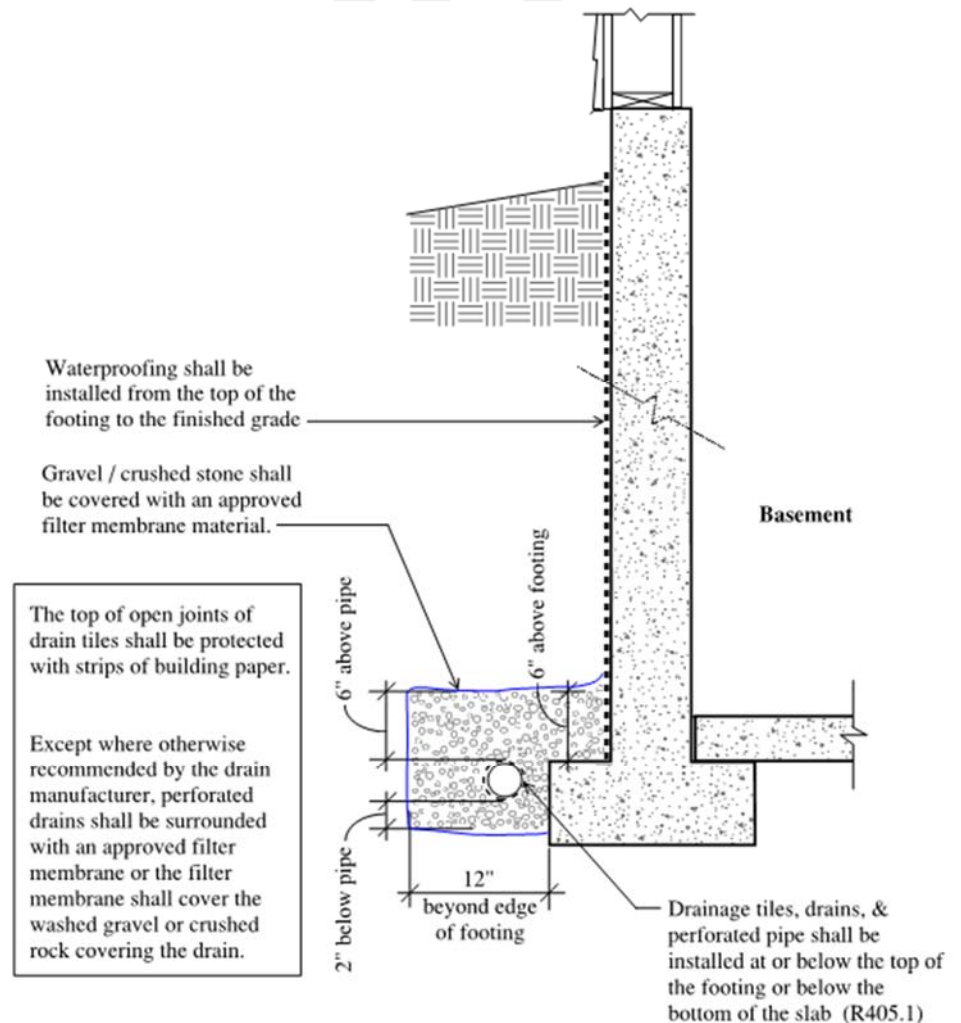
**Exception:** Organic solvent-based products such as hydrocarbons, chlorinated hydrocarbons, ketones, and esters shall not be used for ICF walls with expanded polystyrene form material. Use of plastic roofing cements, acrylic coatings, latex coatings, mortars, and parings to seal ICF walls is permitted. Cold-setting asphalt or hot asphalt shall conform to Type C of ASTM D 449. Hot asphalt shall be applied at a temperature of less than 200° F (90° C).

All joints in membrane waterproofing shall be lapped and sealed with an adhesive compatible with the membrane.

**\*Damp proofing is no longer allowed on masonry or concrete foundations.**

**R406** Cast-in-place concrete and masonry block foundation walls shall be waterproofed according to R406 and the following requirements:

1. The waterproofing shall extend from the top interior wall edge, across the top of the wall, and down the exterior wall face to the top of the footing. If a full width, closed-cell material is installed to create a seal between the sill plate and the top of the foundation wall, the installation is deemed to meet the requirements for the top of the wall waterproofing.
2. If the walls are exposed to the exterior environment, the waterproofing system shall have a rigid, opaque, and weather-resistant protective covering to prevent degradation of the waterproofing system. The protective covering shall cover the exposed waterproofing and extend a minimum of 6 inches below grade. The protective covering system shall be flashed in accordance with 1309.703.8.



## 1 Typical Foundation Drain Detail