



## ONTARIO BUILDING CODE SPECIFICATION FOR FOUNDATION DAMPPROOFING

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### DAMPPROOFING vs WATERPROOFING

There are many choices to make when it comes to protecting your foundation. First, you need to decide whether you are dampproofing or waterproofing.

In the context of below-grade protection, *Dampproofing* refers to treating a surface to resist the passage of soil moisture in the absence of hydrostatic conditions. Liquid Rubber has a perfect dampproofing solution which can be combined with a drainage board and weeping tile in order to facilitate the drainage of water.

*Waterproofing* refers to treating a surface to prevent the passage of water under hydrostatic pressure conditions. This is achieved with the addition of fabric reinforcement embedded into the coating. It provides protection in case of water accumulation when drainage at the bottom of foundation walls doesn't work properly.

### Positive-Side Dampproofing/Waterproofing

Positive side dampproofing/waterproofing consists of installing a waterproofing membrane or layer between the substrate to be protected and the source of water. This type of application is commonly referred to as exterior-side waterproofing, as the waterproofing materials are applied to the outside of the building.

Positive-side waterproofing is **always** the best option to pursue and tends to be the most successful, since it keeps water out and actually benefits from the external water pressure that is applied on the membrane. It also allows design teams to inspect all lap joints and defects with full visibility.



## PREPARATION OF THE SUBSTRATE

If the substrate is concrete, make sure that the curing period is a minimum of 28 days before installing the membrane. This allows the moisture content of the concrete to be low enough to apply a coating. As well, it ensures that the concrete has reached a sufficient compressive strength for the coating to bond properly. It is recommended to perform a moisture / adhesion test before applying membranes.

ICF Foundations should be rasped if oxidized material is present on the surface.

Do not begin any part of the work until the surfaces are uniform and free from defects such as voids and spalls. Holes from form ties should be filled with a suitable patching material and any raised edges should be ground down to be even with the substrate. The surface should be dry and free of dirt, dust, oil, grease, laitance, efflorescence, silicone, form release agents, any previously applied coatings, or any material that may impair the adhesion of the membrane in accordance with Liquid Rubber instructions and recommendations. Do not install materials in rainy or snowy conditions unless protected from the weather and proper application temperatures (including overnight) are maintained until full cure.

## DETAIL WORK

### For Solid Concrete Foundations

**Liquid Rubber 3-Course-Method:** For all cracks less than 3mm (1/8”), cold-joints, non-monolithic inside/outside corners, around pipes, wall/slab, wall/footing, and wall/wall junctures. Apply a thick 6” wide coat of **Liquid Rubber Foundation Sealant** and while still wet, embed 4” wide **Liquid Rubber Geo-Textile** reinforcement fabric followed by a second coat (known as the 3 Course Method). (Figure 2.39)

For all cracks greater than 3mm (1/8”) prefill with **Liquid Rubber Sealant & Adhesive** (or equivalent) prior to 3 Course Method. Ensure the surface is smooth and flush and that patching materials have cured as per manufacturers recommendation prior to application of **Liquid Rubber Foundation Sealant**. Make sure that there are no structural problems that could cause other large cracks. The membranes are not designed to retain the structure in the event of movement of the foundation.



### For Unit Masonry Walls

For all cracks 3mm (1/8") or greater, cold-joints, non-monolithic inside/outside corners, around pipes, wall/slab, wall/footing, and wall/wall junctures, prefill with **Liquid Rubber Sealant & Adhesive** (or equivalent) prior parging. Unit masonry walls (cinder block) that are to be dampproofed or waterproofed should be parged on the exterior face below ground level with no less than 6mm (1/4 in.) of type S mortar, covered over the footing (**Figure 2.38**). This step fills in areas such as grout lines and provides you with a smoother, more monolithic surface (comparable to a solid concrete finish) for the installation of **Liquid Rubber Foundation Sealant**. Be sure that parging materials have cured as per manufacturers recommendation prior to application.

## APPLICATION FOR DAMPPROOFING

After the surface prep and detail work for cracks and transitions has been completed, Apply generous coats of **Liquid Rubber Foundation Sealant**, evenly over the surface until the final coverage rate of 20 sq ft per gallon is reached (4 - 5 coats). The final thickness of the membrane should be at least 1.3 mm (50 mil) DFT. The sealant should extend at least 2 inches down the front face of the footing and extend at least 6 inches above finished grade. Apply the additional coats when the previous coat is dry to the touch, with nothing wet underneath and uniform in color. Tacky is OK, as the material will remain tacky once cured.

### Application Conditions & Limitations

Do not apply to damp surfaces, the surface must be completely dry. Do not apply in humidity above 80%. Do not apply in temperatures below 10°C / 50°F or above 30°C / 86°F. As well the minimum overnight temperature must be above 10°C / 50°F until 72 hours after your last coat. The surface to be coated needs to be at least 5 degrees above the dew point of the environment that you are coating in. Application is only recommended on standard, properly prepared substrates such as concrete, masonry, wood, or ICF. Applying over existing coatings, treatments, or other foundation waterproofing systems is not recommended without a test to confirm adhesion prior to full application.



## PROTECTION & DRAINAGE

It is recommended to apply a dimpled drainage board (**Figure 2.40**) to protect your coating from other trades and work, during backfill, and from thermal expansion and contraction during its life. Install the drainage board according to the manufacturer's written instructions. Alternatively, you can also use; **1**) not less than 19mm of mineral fiber insulation (minimum 57 kg/m<sup>3</sup> density) or **2**) not less than 100mm of free draining backfill (**Figure 2.43 A**). As well, if desired you can install rigid Styrofoam insulation, prior to the drainage board to provide insulation and an "R" value. (**Figure 2.42**) Do not install protection board or backfill until the coating is completely dry. Drying times may vary depending on weather conditions and film thickness. A minimum of at least 48 hours is required. Backfill should be placed within 7 days. Place the backfill in a manner that will not rupture or damage the film or displace the coating or membranes.

### Backfilling

Backfilling is one of the final steps in completing the foundation system. Deleterious materials and boulders larger than 250 mm (10") in diameter must be removed within 600mm (23-5/8") of the foundation prior to backfilling. Pyritic materials or materials that are susceptible to dimensional change must not be used as backfill. As well, materials that may be susceptible to ice lensing must also not be used as backfill e.g. silty soils. Proper backfilling loads the structure in such a way that the weight of the soil is safely distributed throughout the foundation. This involves backfilling first at the corners, then along the shorter walls, and finally along the longer sections (**Figure 2.43 B**). Care must be taken to avoid damage to the perforated weeping tile, the drainage membrane, the foundation wall, any externally applied thermal insulation and the dampproofing membrane. Backfill material should be placed gradually and uniformly in small lifts and compacted to an appropriate density.

**NOTE** – This specification was written using the **2012 Ontario Building Code and the 2012 Ontario Code & Construction Guide for Housing**. It is the responsibility of the homeowner to research and comply with all applicable Building Codes for the State / Province / Territory / Municipality where you live. This should be done before any work takes place or any material is ordered. **Liquid Rubber Canada Inc.** assumes no responsibility or liability for applications that don't meet applicable Building Codes and provides no applied warranty of any kind.

For questions or concerns contact **Liquid Rubber Technical Support**.



## MASONRY WALLS

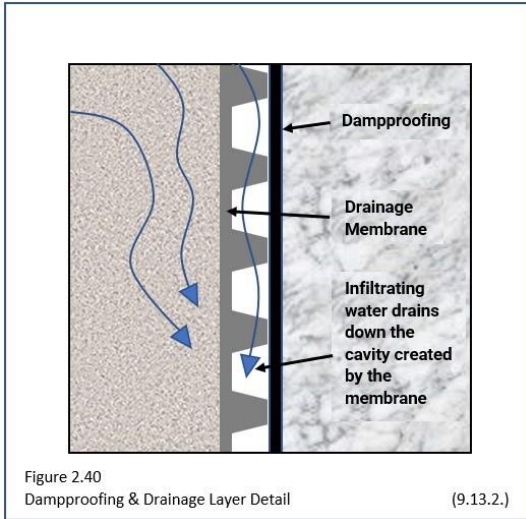
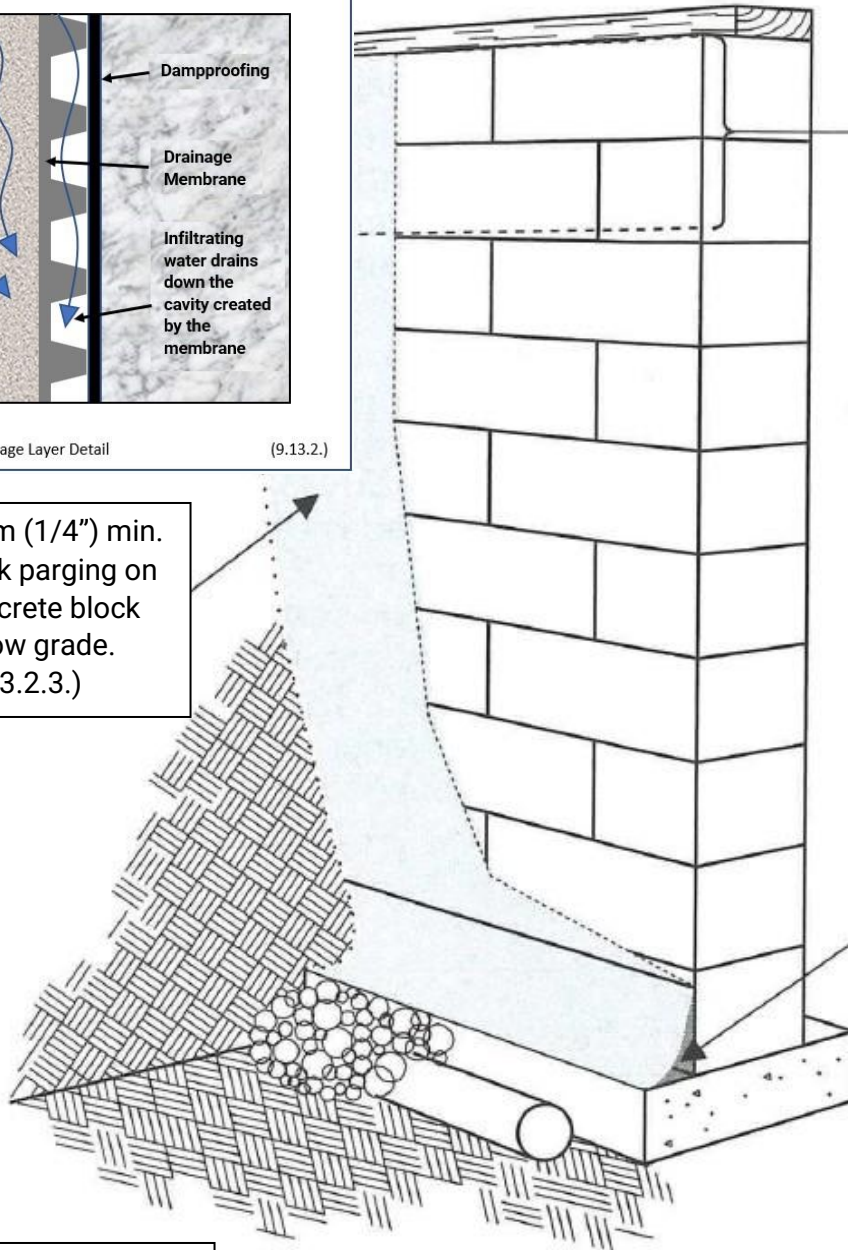


Figure 2.40  
Dampproofing & Drainage Layer Detail

(9.13.2.)

6mm (1/4") min.  
thick parging on  
concrete block  
below grade.  
(9.13.2.3.)

Exterior surfaces of  
concrete block  
foundation walls above  
ground shall have tooled  
joints, or shall be  
rendered, parged, or  
otherwise suitably  
finished.  
(9.15.6.2.)



Parging covered  
over the footing.  
(9.13.2.3.)

Figure 2.38  
Parging Unit Masonry



## CONCRETE WALLS

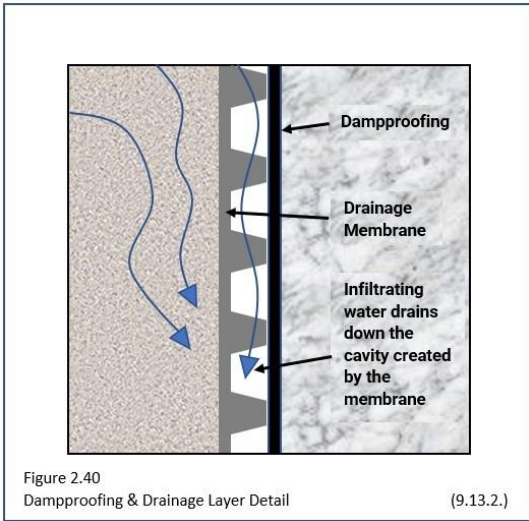
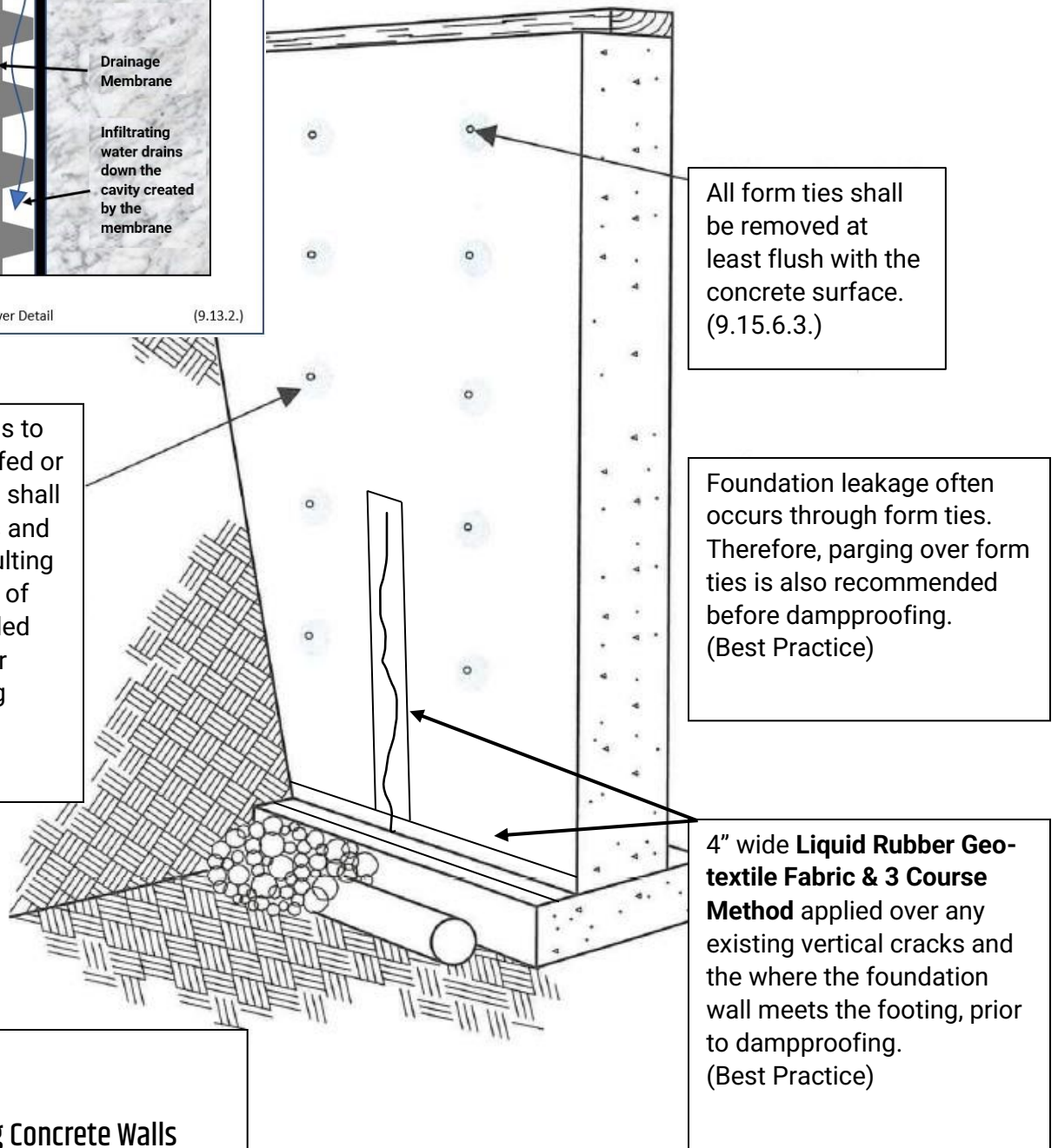


Figure 2.40  
Dampproofing & Drainage Layer Detail (9.13.2.)



Concrete walls to be waterproofed or dampproofed shall have all holes and recesses resulting from removal of form ties sealed with mortar or waterproofing material. (9.13.3.3.)

All form ties shall be removed at least flush with the concrete surface. (9.15.6.3.)

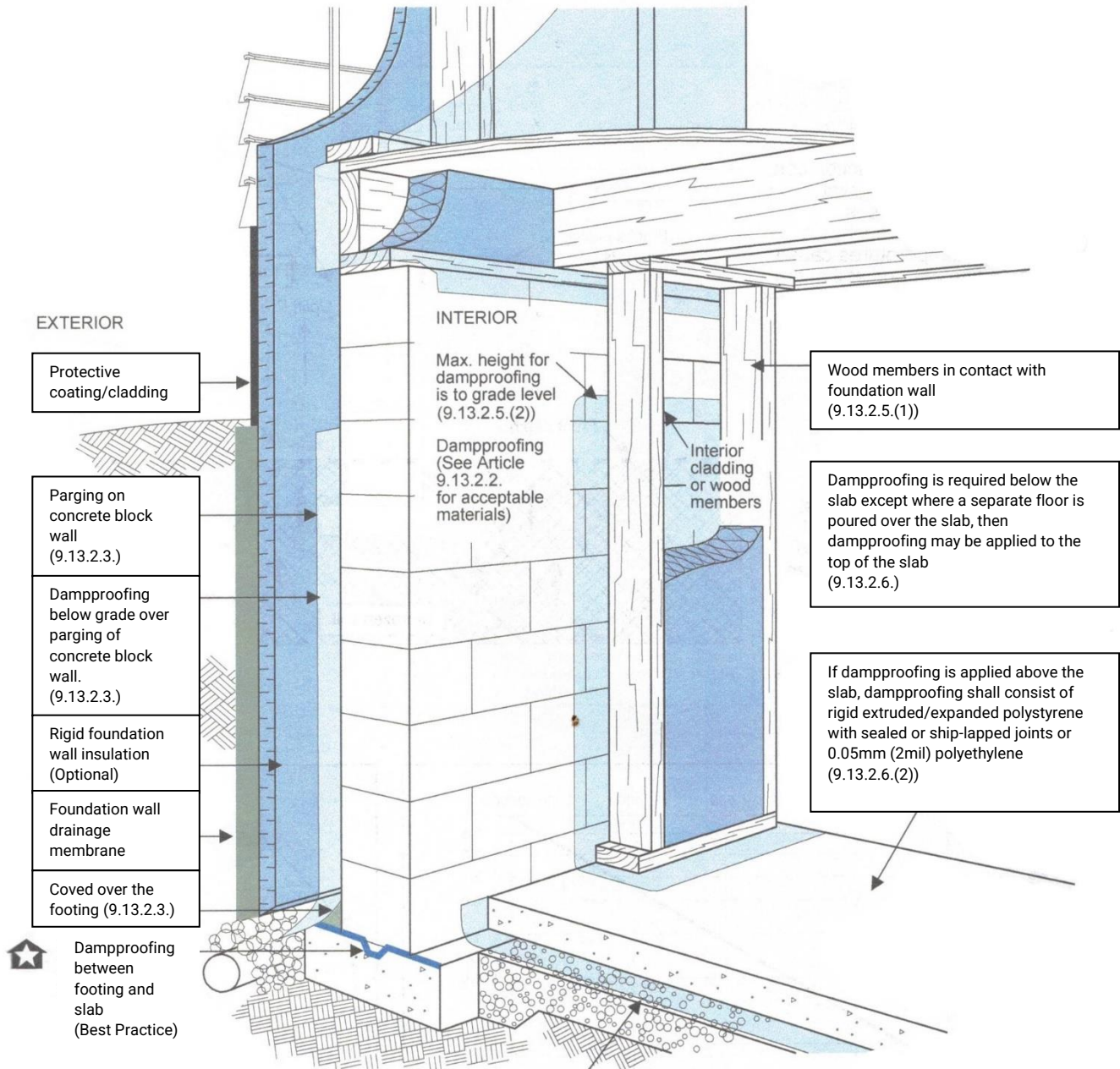
Foundation leakage often occurs through form ties. Therefore, parging over form ties is also recommended before dampproofing. (Best Practice)

4" wide **Liquid Rubber Geotextile Fabric & 3 Course Method** applied over any existing vertical cracks and the where the foundation wall meets the footing, prior to dampproofing. (Best Practice)

Figure 2.39  
Dampproofing Concrete Walls



## EXTERIOR / INTERIOR



**Figure 2.42**

### Dampproofing Unit Masonry

### Interior/Exterior

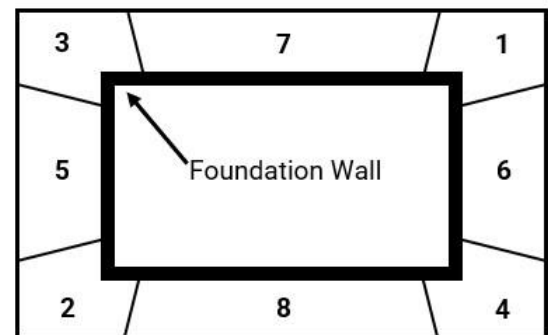
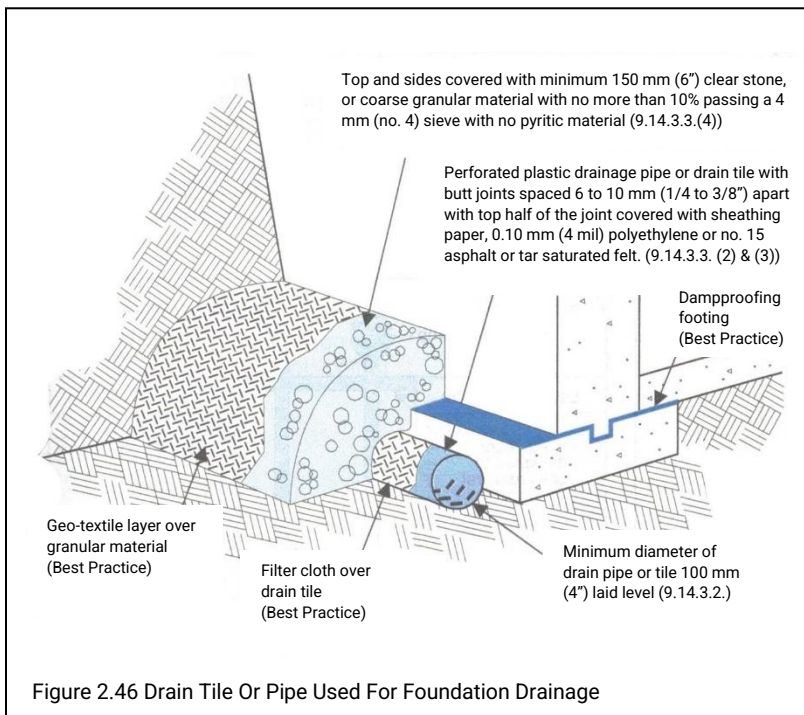
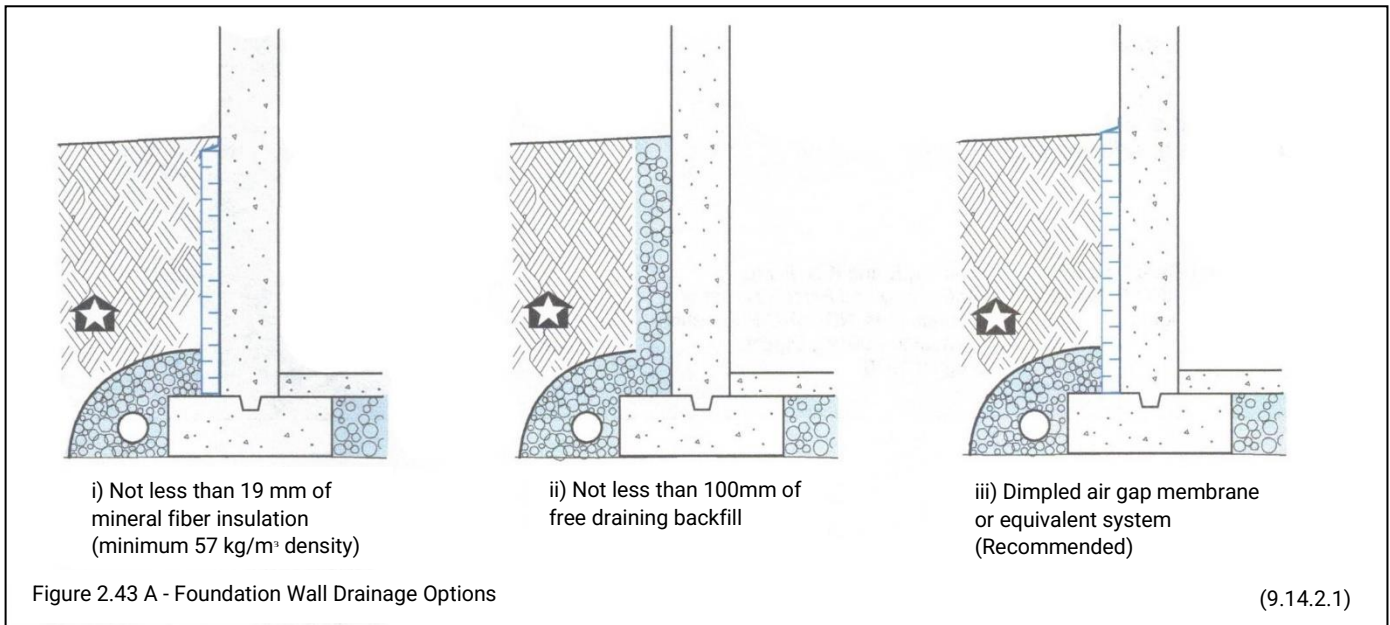
- (1) When installed below the slab, dampproofing shall consist of polyethylene not less than 0.15 mm thick (6 mil) (9.16.4.5.)

Dampproofing is not required if 25MPa (3600 psi) concrete is used. (9.16.4.5.)

- (2) If dampproofing membrane is required, joints in dampproofing shall be lapped not less than 100mm (4") (9.13.2.6.)



## DRAINAGE & BACKFILLING



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