

Plasti-Fab Design Manual

**Exterior & Interior
Foundation Walls**



Better building ideas from PFB ™

PlastiSpan®

Insulation Board

Foundation Application

SPECIFICATION SECTION 7210

PRODUCT CATALOGUE NO. PFF-01

Exterior and Interior Foundation Walls

Plasti-Fab® PlastiSpan® insulation board can be used either on the interior or exterior of the foundation wall to provide a monolithic thermal blanket which eliminates thermal shorts.

Interior Foundation Insulation

PlastiSpan insulation can be attached directly to the interior surface of the foundation wall.

The National Building Code of Canada requires that interior exposed surfaces be covered using a thermal barrier, such as gypsum board, attached through the EPS to the foundation wall.

Exterior Foundation Insulation

With its outstanding resistance to moisture absorption, PlastiSpan insulation provides dependable long-term thermal performance when installed on the exterior face of the foundation wall.

The use of exterior foundation insulation reduces the likelihood of frost heave under footings as compared to interior insulation.

Insulating the exterior surface of the foundation wall provides the advantage of a fully insulated warm wall, which reduces the likelihood of degradation due to freeze thaw and of condensation forming on the inner face of the wall. In 1982 the HUDAC Technical Research Committee investigated this method of insulating basement walls and recommended it.

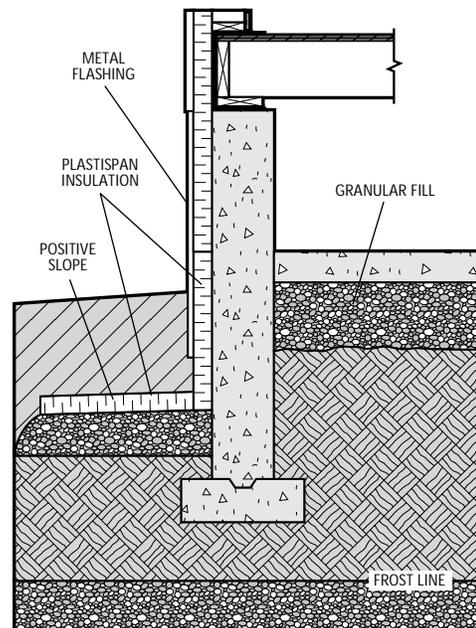
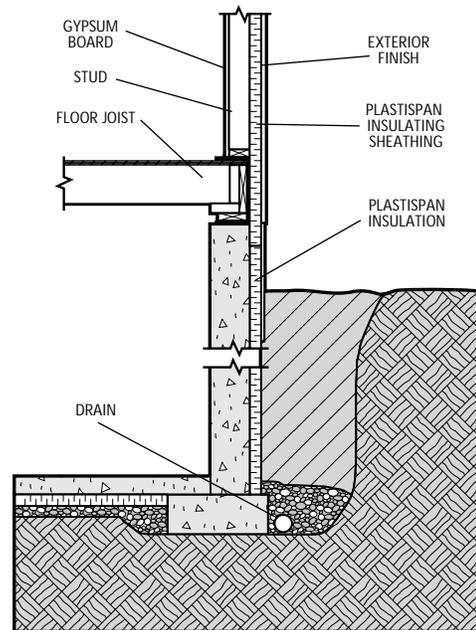
When a footing has to be placed above the frost line, external insulation can be adapted by placing it horizontally out from the foundation. This has the effect of raising the frost line to the level of the footing so there is no heaving of the foundation.

Exterior foundation insulation isolates the foundation wall from outdoor temperature fluctuations, and provides a drainage plane which directs surface moisture to the drainage tile and protects foundation dampproofing during backfilling.

Drainage

In most basement construction a drain is installed around the foundation at the footing level. The use of external insulation does not decrease the requirement for drainage. If there is concern that the drainage system may freeze, or that frost may get under the foundation, a horizontal insulation board, minimum 600 mm (24") wide, sloped away from the foundation, should be placed above the drain and the foundation.

Exterior Foundation Insulation



Application

Choose application instructions from the general application instructions 'PlastiSpan Foundations – Selection, Application and Specification'. The following specifications apply specifically to full height insulated basements and shallow foundations.

Preparation

Concrete Walls

Cast nailing strips into the wall in appropriate locations to attach the insulation and the protective finish. Where the header joist is cast into the wall or is placed flush with the surface of the wall, the nailing strips may be eliminated. Surfaces to be level, straight, and clean. Remove fins or projections. If surfaces are not straight, make good with mortar.

Concrete Block

Surfaces are plumb and straight with mortar joints cut flush with masonry. Apply damp proofing to the wall to ground level. Ensure the damp proofing is cured before applying the insulation.

Grade and install the drainage system around the foundation. Cover with gravel, leaving the top of the footing clear for the insulation.

Insulation to Wall

Application

Starting from a corner, install insulation from top of foundation wall to depth required using 1.2 m (4 ft.) wide sheets. Nail insulation to nailer or to header joist using large head insulation nails or galvanized nails with 25 mm (1") washers. Keep all joints tight. As much as possible use boards placed vertically without a horizontal joint. Where necessary use black mastic adhesive (compatible with expanded polystyrene) applied in 50 mm (2") diameter gobs on 450 mm (18") centres to hold board in place

until backfilling can be completed. Where additional fastening is required use Gripcon Fasteners with 25mm (1") galvanized washers.

For Full Height Insulation

Place 100 mm (4") of gravel against the insulation and over the drainage gravel to tie drainage system to the insulation surface.

For Shallow Foundation

Lay insulation over bed of sand as shown on plans. Backfill with care using soil without large rocks or lumps to avoid damage to the insulation.

Finish

Attach stucco mesh through to the nailers or to the concrete using Gripcon fasteners with galvanized steel washers.

Use galvanized diamond mesh reinforcing at corners or at openings. Extend stucco mesh 300 mm (12") below expected ground level.

OR

Attach asbestos cement board through the insulation to the nailers using nails or Gripcon fasteners. Extend 300 mm (12") below expected ground level.

OR

Attach preservative treated plywood through the insulation to the nailers using nails or Gripcon fasteners. Extend 300 mm (12") below expected ground level. Apply 13 mm (1/2") parging (2 coats) to the stucco mesh or complete other finishes. Install flashing over top to the insulation and finish so joint with wall finish is water tight. Complete grading so that there is a slope away from the foundation.

Specification

Choose specification from Specification section 'PlastiSpan Foundations – Selection, Application and Specification.'