

Plasti-Fab Design Manual

Rain Screen (Cavity) Walls





PlastiSpan™ Insulation

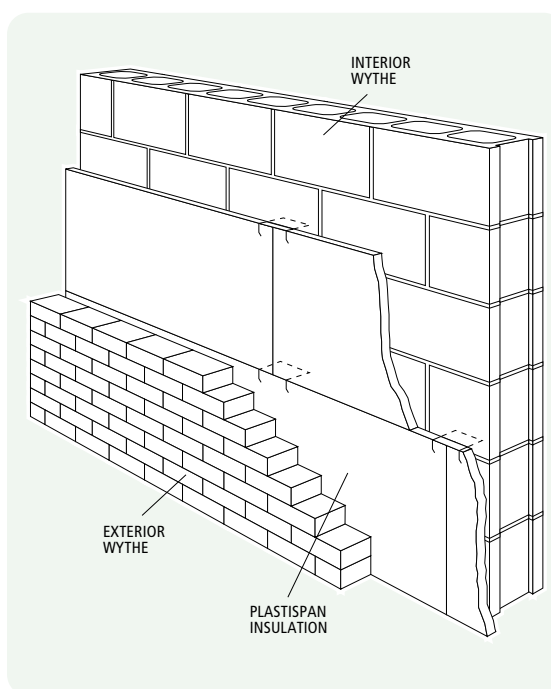
Rain Screen (Cavity) Walls

Rain screen construction is a modification of cavity walls that was developed to prevent rain penetration through the masonry by providing a drainage cavity in the wall. This cavity was an ideal place for the insulation but filling the cavity with insulation diminishes its value as a drain for moisture.

Rain screen designs call for insulating the exterior faces of the inner wythe to provide for the structural and insulation components of the wall system. This wall should also meet the requirements for an air barrier in the construction. A clear ventilated space is maintained to the outer wythe which has a number of vent holes to assure there is no wind pressure differential across the wythe to aid penetration of rain. The exterior wythe provides the exterior finish for the building. Canadian Building Digests 40, 44 and 50 by the Division of Building Research (now the Institute for Research in Construction) at the National Research Council provide design information for this construction.

Plasti-Fab PlastiSpan insulation is recommended for rainscreen walls. It is rigid to allow placement to provide a full covering of the wall surface. It resists penetration of moisture and air and by sealing the joints the wall can be effectively sealed both to moisture and air movement. The rain screen design can be effective because it provides for a complete covering of insulation on the wall.

The total wall thickness must permit installation of sufficient thickness of insulation to provide the required thermal resistance and a ventilated space.



Application

Choose application instructions from the general application instructions in the PlastiSpan brochure "Wall Insulation: Selection, Application and Specification."

The following instructions apply specifically to Rain Screen Walls.

Preparation

Provide through-wall flashings at the base of walls, at headers, over windows and at other locations where water could gather in the cavity. Provide weep holes or vents as required.

Insulation to Inner Wythe

The wythe is built up first. Cut insulation board to fit around projections, into returns, etc. to provide a completely insulated wall.

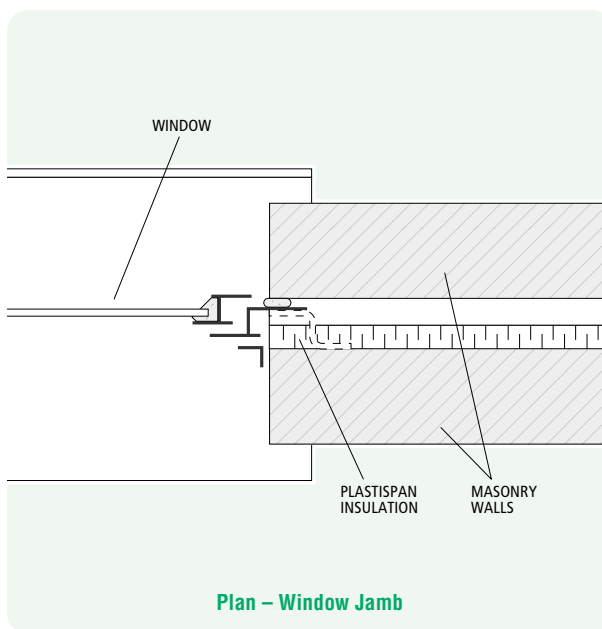
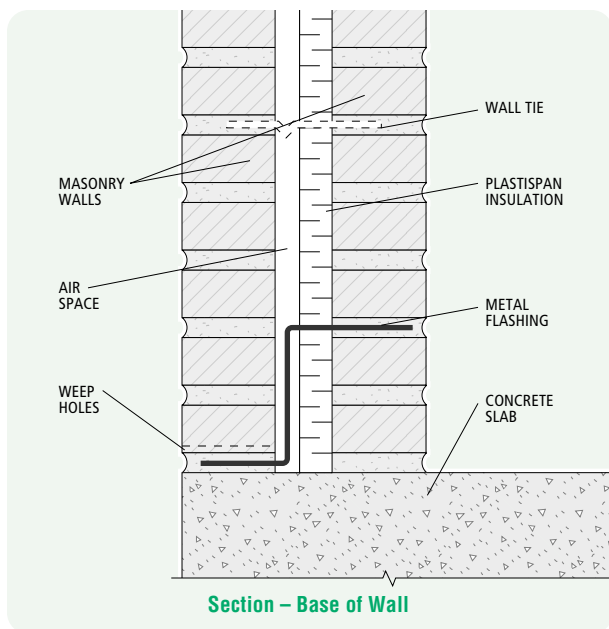
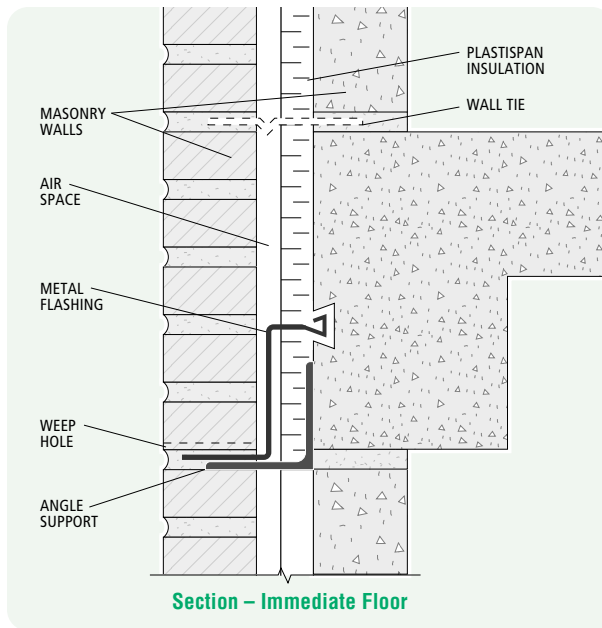
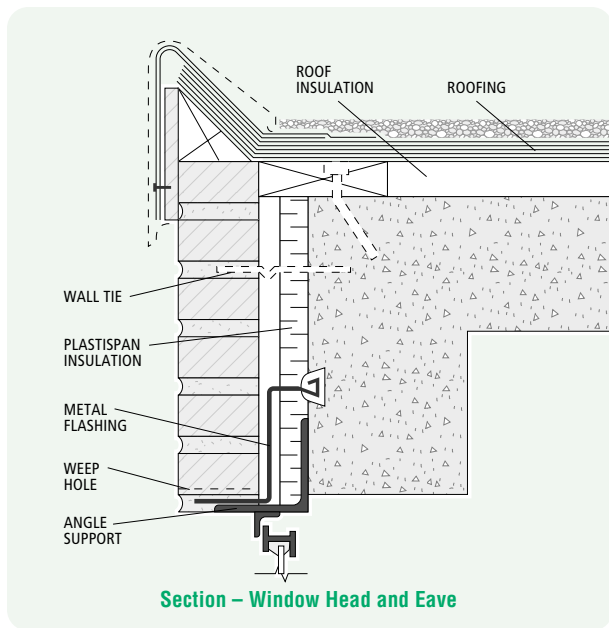
Connect inner and outer wythes with non-corroding metal wall ties, placed so that insulation boards can be fitted between them usually 400 mm (16") o.c.

Provide fire stops where required at floor levels, if construction system does not provide for them.

Use adhesive to caulk around wall ties and to fill any other breaks in the insulation.

Lay outer wythe with care so that cavity is not filled with mortar. Ensure that drain and vent openings are clear.

**Wall Insulation:
Rain Screen (Cavity) Walls**



Specification

Choose specification from specification section from Plasti-Fab Product Information Bulletin No. 216.



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