

Plasti-Fab Design Manual

Built Up Roofing Insulation





PlastiSpan™ Insulation

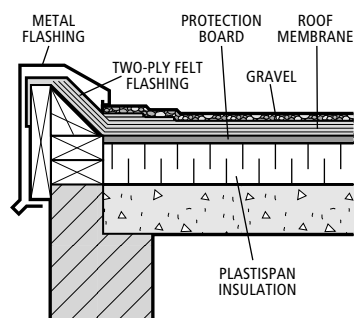
Built Up Roofing

Plasti-Fab PlastiSpan sloped or flat insulation board is used extensively as the insulation component within built up roof assemblies. Built up roof assemblies have been used commonly for many years, and are suitable for new or maintenance requirements. Built up roof assemblies incorporating PlastiSpan insulation board have been tested for compliance with requirements for fire rated roof assemblies (see PlastiSpan brochure “PlastiSpan Insulation: Fire Rated Roof Assemblies”).

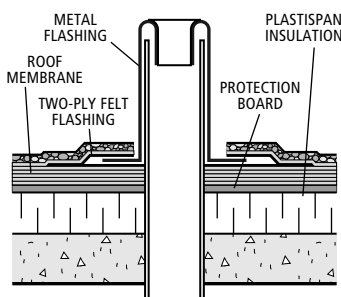
A protection board, such as 13 mm fibreboard, must be placed over the PlastiSpan insulation board prior to applying

the built up roof membrane. The protection board protects the top surface of the PlastiSpan insulation from contact with the hot asphalt.

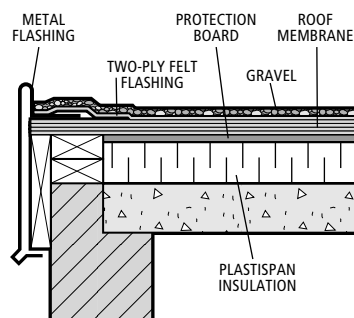
Traffic decks can be installed in the normal manner over built up roof assemblies using PlastiSpan insulation. However, as with any type of insulated roof assembly, care must be taken to ensure adequate drainage is provided at the membrane surface. Care must also be taken at the edge of the roof, parapets and at wall junctions to ensure that the membrane is put under strain and is kept water tight.



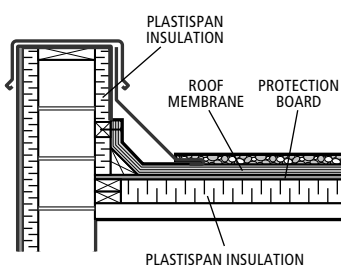
Eave



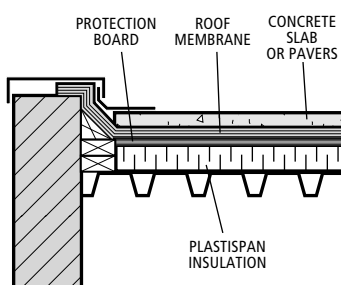
Vent



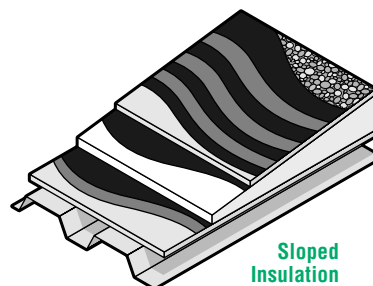
Gravel Stop



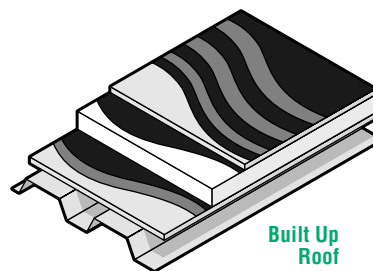
Parapet Insulation



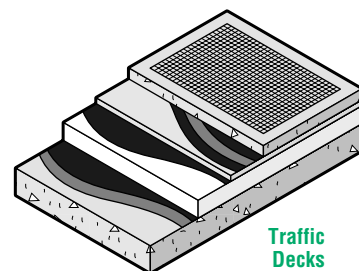
Traffic Deck



Sloped Insulation



Built Up Roof



Traffic Decks

Typical Details

Application

General application recommendations can be found in the PlastiSpan brochure "Roof & Deck Insulation: Selection, Application and Specification."

The following instructions apply specifically to Built Up Roofing:

Asphalt

Do not mop or allow contact of hot asphalt directly onto PlastiSpan insulation. Cool asphalt until it does not degrade the insulation or apply asphalt to other surface when PlastiSpan insulation is to be bonded.

Vapour Barrier to Various Decks

Apply felt and bitumen vapour barriers in accordance with CRCA Specifications for the type of deck. (Proprietary vapour barriers may also be used).

Insulation to Concrete Deck (Poured or Precast), to Thermal Barrier or to Felt and Bitumen Vapour Barrier

Mop (primed deck) (thermal barrier) (vapour barrier) with hot asphalt at a rate of 0.54 kg/m² (20 lbs/ft²). Keep asphalt back 50 mm (2") from joints of precast concrete.

Lay insulation into asphalt while it is still liquid.

Protection Board to PlastiSpan Insulation

Protection board is back mopped with hot asphalt and adhered to the PlastiSpan roof insulation while asphalt is still hot.

Stagger joints of protection board with underlying joints in insulation.

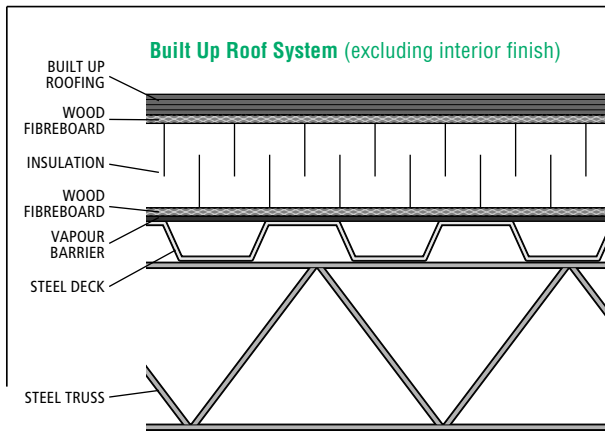
Prevent asphalt from flowing through protection board joints by either:

- taping joints with 50 mm (2") masking or other tape.
- using mopping techniques over protection board that will minimize asphalt flow through joints.
- using a coated layer to apply first ply of felt.
- use protection board with shiplapped joint.

Specification

An outline for a recommended specification section can be found in the PlastiSpan brochure "Roof & Deck Insulation: Selection, Application and Specification."

Sample Thermal Resistance Calculation



Components	Metric (SI) Calculation RSI Through Insulation m ² · °C/W
Outside Air Film	0.03
Built Up Roofing	0.06
11 mm Wood Fibreboard (11 mm x 0.016 RSI/mm)	0.18
EPS Insulation (133 mm x 0.026 RSI/mm)	3.46
12.7 mm Wood Fibreboard (12.7 mm x 0.016 RSI/mm)	0.20
Inside Air Film	0.12
TOTAL RSI_T	4.05
Overall Thermal Transmittance	0.246 m² · °C/W

Notes to the Table:

- The sample calculation uses principles detailed in the National Energy Code for Buildings 1997, issued by the Canadian Commission on Building and Fire Codes National Research Council of Canada.
- PlastiSpan insulation board meets the requirements of CAN/ULC-S701, Type 1. To calculate the RSI at any insulation thickness, multiply the specified thickness in millimetres by 0.026 RSI/mm.
- PlastiSpan HD insulation board meets the requirements of CAN/ULC-S701, Type 2. To calculate the RSI at any insulation thickness, multiply the specified thickness in millimetres by 0.028 RSI/mm.