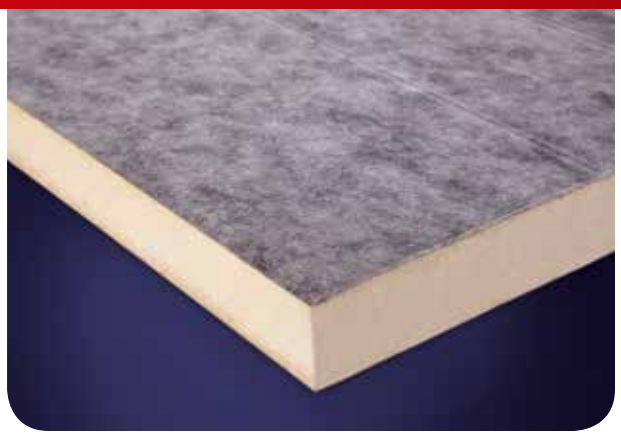
building innovation
ROOFING INSULATION SOLUTIONS

innotorch

Flat roof insulation for use with hot applied roofing systems or adhered single ply systems



Fibre free rigid polyisocyanurate (PIR) insulation core faced with coated glass tissue on one side and bitumenised glass tissue with polypropylene fleece on the other

LIGHTWEIGHT
HIGH THERMAL PERFORMANCE
COST EFFECTIVE
ENVIRONMENTAL PERFORMANCE
TAPERED SOLUTION
FLAT BOARD SOLUTION

APPLICATIONS

Inno-Torch is available in both flat and tapered boards, for use on new roofs, refurbished roofs or for upgrading the thermal performance of existing roofs.

Inno-Torch is suitable for use with torch on and roll and pour felt systems, mastic asphalt and fully adhered single ply systems, on concrete, timber or metal decks. For advice on how Inno-Torch can suit your application, please contact Building Innovation.

DESCRIPTION

Inno-Torch comprises a fibre free rigid polyisocyanurate (PIR) insulation core faced with coated glass tissue on one side and bitumenised glass tissue with polypropylene fleece on the other.

DIMENSIONS

	Flat boards	Tapered boards
Width	600mm	1200mm
Length	1200mm	1200mm
Thickness	30-120mm*	30-110mm
Area	0.72m^2	1.44m^2

* Greater thicknesses of insulation may be achieved with two layers of insulation boards

THERMAL CONDUCTIVITY

Thickness (mm)	Lambda / λ-value
25-79	0.026 W/m·K
80-119	0.025 W/m·K
120+	0.024 W/m·K

Inno-Torch lambda and thermal resistance values stated in this datasheet are in accordance with BS EN 13165:2012 Thermal insulation products for buildings – Factory made rigid polyurethane foam products – Specification.

COMPRESSIVE STRENGTH

Typically exceeds 150 kPa at 10% compression when tested to BS EN 826: 1996 (Thermal insulating products for building applications. Determination of compression behaviour).

RESISTANCE TO SOLVENTS

Inno-Torch resists attack from alkalis, dilute acids, mineral oil and petrol. The fibre free insulation core is not resistant to ketonic solvents. Damaged boards should not be used.

DURABILITY

PIR insulation is rot proof and durable, stable (will not sag or shrink), resists attack by mould and microbial growth and will not provide any food value to vermin. It will remain effective as an insulation system for at least the lifetime of the waterproofing covering.

Please note, durability is dependent on the method of application, the supporting structure and conditions of use.

ENVIRONMENTAL

The insulation core of Inno-Torch is manufactured with a blowing agent that is CFC/HCFC free and has zero Ozone Depletion Potential (ODP) with a low Global Warming Potential (GWP) (less than 5). Inno-Torch has a 2008 Green Guide Summary Rating of A as certified by the BRE.

Inno-Torch is manufactured under an ISO 14001 Environmental Management System (LPCB certificate - 388 - 10EMS).

All manufacturing of Building Innovation insulation and designing of Building Innovation tapered schemes are covered by ISO 14001 Environmental Management System.

FIRE PERFORMANCE

The fire rating of any roof containing the boards will depend heavily on the type of deck and the nature of the roof waterproof covering. The designation of the roof covering must meet or satisfy the requirements of the national Building Regulations.

Finished with 3 layer built-up felt and chippings, the roof will attain an FAA rating when tested to BS 476-3: 2004 Fire tests on building materials and structures, classification and method of test for external fire exposure to roofs.

For further information relating to fire performance of Inno-Torch, please contact Building Innovation.

ROOF LOADING

Inno-Torch is suitable for roof decks which are exposed to limited maintenance foot traffic, depending on the waterproofing system being used. For roofs which require regular pedestrian access, a walkway should be provided. The roof should be boarded out with protective boarding whenever site work is to take place after the roofboard has been laid and the roof made watertight.

ROOF WATERPROOFING SYSTEM

Inno-Torch is suitable for use with most torch-on and roll & pour felts, mastic asphalt and fully adhered single ply systems. When using single ply membranes, Inno-Torch should be installed fleece side down.

Building Innovation recommend the use of a Venting Base Layer as a first layer in partially bonded felt built up roofing applications. Seek specific advice from the felt / waterproofing manufacturer who may offer their own proprietary system - Refer to BS 8217: 2005 (Reinforced bitumen membranes for roofing - Code of practice). For torch-applied systems, torch apply with minimum heat at all times onto the polypropylene fleece side. If unsure of the compatibility of the system, or for any further information, please contact Building Innovation.

Fibre-free Core

SPANNING METAL DECKS

Trough opening (mm)	Minimum roofboard thickness (mm)
<75	25
≥75 and ≤100	30
>100 and ≤125	35
>125 and ≤150	40
>150 and ≤175	45
>175 and ≤200	50
>200 and ≤225	55
>225 and ≤250	60

On metal decks the long edges should be at right angles to the corrugations. All board joints should be fully supported by the deck. Please refer to BS 4841-4: 2006 Specification for laminated insulation boards (roofboards) with auto-adhesively or separately bonded facings for use as roofboard thermal insulation under non-bituminous single-ply roofing membranes for details of thickness of board over metal trough openings.

DESIGN CONSIDERATIONS

Consideration should be given to BS 5250: 2011 Code of Practice for control of condensation in buildings and BS 6229: 2003 Code of Practice for flat roofs with continuously supported coverings.

SPECIFICATION CLAUSES

The insulation shall be Building Innovation Inno-Torch _ mm thick - Fibre free rigid polyisocyanurate (PIR) insulation core with coated glass tissue on one side and bitumenised glass tissue with polypropylene fleece on the other side.

It shall be manufactured in accordance to Quality Management System ISO 9001: 2008, Environmental Management System ISO 14001: 2004 and Occupational Health & Safety Management System BS OHSAS 18001: 2007. Building Innovation Inno-Torch must be installed in accordance with instructions issued by Building Innovation.

STANDARDS AND APPROVALS

The use of Inno-Torch as a thermal insulation layer with single ply, felt and mastic asphalt waterproofing systems is covered by LABC Registered Details certificate number EW547B. Registered Details can be found at www.labc.co.uk. All certificates are available to download from www.building-innovation.co.uk.

Inno-Torch is compliant with BS 4841-4: 2006 Specification for laminated insulation boards (roofboards) with auto-adhesively or separately bonded facings for use as roofboard thermal insulation under non-bituminous single-ply roofing membranes.

Consideration should be given to the recommendations of SPRA (Single Ply Roofing Association) and BRUFMA (British Rigid Urethane Foam Manufacturers' Association).

Building Innovation insulation is manufactured under an ISO 9001 Quality Management System, ISO 14001 Environmental Management System and BS OHSAS 18001 Occupational Health and Safety Management System. All certificates are available for download from Building Innovation.

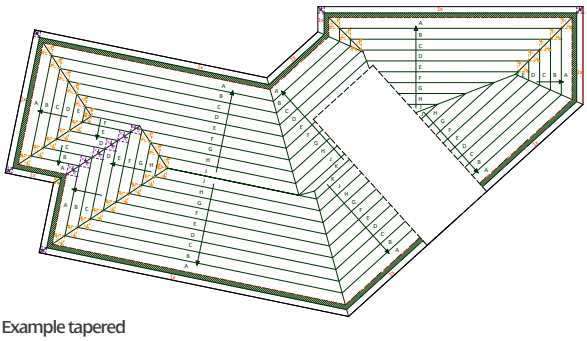
All Building Innovation insulation products have a CE Declaration of Performance available to download from www.building-innovation.co.uk

WIND LOADING

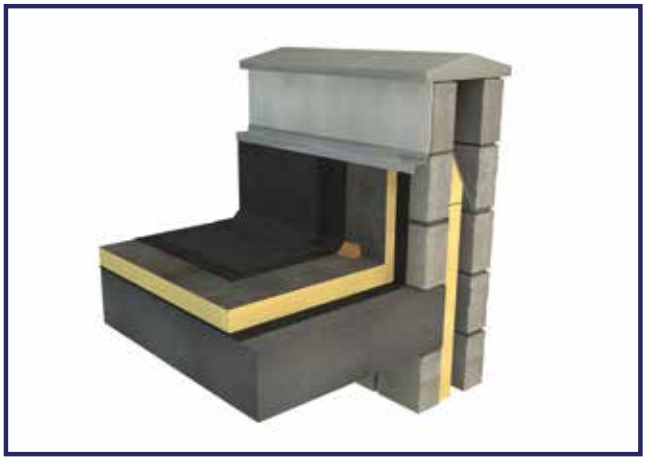
Wind loadings should be assessed in accordance to BS EN 1991-1- 4:2005 + A1:2010 Eurocode 1, Actions on structures, General Actions, Wind Actions and the UK National Annex. Building Innovation recommend contacting the waterproofing manufacturer for a project specific wind uplift calculation.

BENEFITS OF TAPERED ROOFING SCHEMES:

- Creates falls on flat roofs, eliminating the requirement for other means such as structural falls, timber firrings or screed laid to falls.
- Quick and simple installation - ideal for fast track construction.
- Minimises water ponding and premature failures in the waterproofing system.
- Pre-mitred hips and valleys:
  - Reduces cutting on site
  - Reduces cost, time and waste
  - Factory cut for superior finish



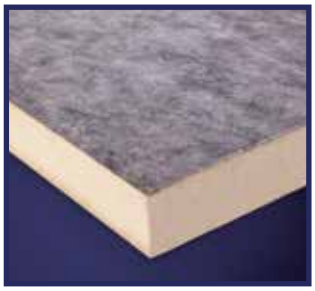
Example tapered scheme roof design



INSTALLATION

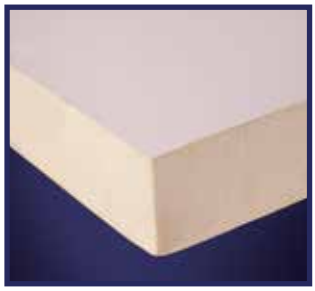
Roof deck should be clean and dry before installation of Inno-Torch boards. If flat Inno-Torch insulation boards are to be installed, roof deck should be constructed to fall to all rainwater outlets. A minimum 25mm upstand of the insulation board should be installed around the roof perimeter and approved angle fillets should be used at upstands or kerbs.

Bitumenised glass tissue with polypropylene fleece side



Lay with polypropylene fleece side up for torch-on and mastic asphalt systems.

Coated glass tissue side



Lay with buff coloured facing side up for single ply adhered and roll and pour felt systems.

BONDING METHOD - TORCH ON FELT

- Fully bond insulation boards to the Vapour Control Layer (VCL), with hot bitumen (max 230˚C) or with PU adhesive. Boards can be mechanically fixed (see below).
- Follow manufacturer's guidelines for the application of the felt waterproofing.
- Apply torch with minimum heat.

MECHANICAL FIXING

Mechanical fixings should be used as recommended in BRUFMA information document ID/1/2009 (Mechanical fixings for rigid polyisocyanurate (PIR) and polyurethane (PUR) roofboards beneath single-ply waterproofing membranes).

Where mechanical fixings are required, Inno-Torch should be restrained over its full surface area; this can be achieved by the use of a single mechanical fixing at each of the four corners of the board.

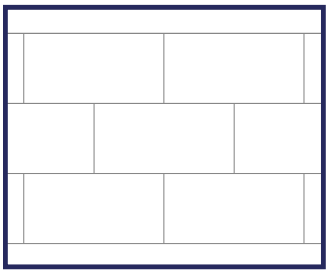
Other fixings required to meet local wind uplift requirements should be evenly distributed over the board.

A 50mm countersunk washer should be used with each fixing and the washer must restrain one board only.

The suitability of the substrate to accept and retain mechanical fixings must be checked prior to the work commencing.

LAYING PATTERN

Boards should be laid with edges butted and in a break bonded pattern laid at right angles to the edges of the roof or diagonally across the roof.



Inno-Torch tapered boards should be laid according to the Building Innovation roof scheme drawing. Each board type will be clearly noted on both the board packaging and the drawing.

HANDLING

- Do not drop boards
- To cut use a sharp knife or fine tooth saw
- Wear eye protection
- Damaged boards should not be used

Cutting with power tools generates dust so should be kept to a minimum. Ideally all operations which produce dust should be carried out in well ventilated conditions; where possible a dust mask selected in accordance with BS EN 149 should be worn.

Ensure accurate trimming to achieve close butt joints and continuity of insulation, particularly around projections through the roof.

STORAGE

At no time should the insulation boards be left exposed to rain. Whenever work is interrupted, a night joint must be made to prevent water penetration.

Packs are stretch wrapped in recyclable polythene. Store boards in a flat, dry area off the ground away from mechanical damage and sources of ignition. Boards should be completely covered with weatherproof sheeting. The boards must be kept dry at all times.

The boards must be protected from prolonged exposure to sunlight and should be stored either under cover or covered with opaque polyethylene sheets.

HEALTH & SAFETY

Inno-Torch is chemically inert and safe to use, product safety information is available to download from www.building-innovation.co.uk.

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