



Fig 1. Paratorch

Fig 2. The roof insulation shall be Paratorch comprising of a 12mm thick factory bonded Bitumen Fibreboard bonded to CFC-free rigid PIR insulation core, having a thermal conductivity of 0.026W/mK and manufactured in accordance with BS EN ISO 9002 : 1994.

APPLICATION

Moy Materials Paratorch is a composite insulation panel with a bitumen impregnated fibreboard upper face for direct bonding of multi-layer modified bitumen torch applied membranes and hot bitumen bonded waterproofing systems.

PRODUCT DESCRIPTION

The upper facing of Paratorch is a factory bonded bitumen fibre board manufactured from high density woodfibre and treated during manufacture with a bitumen emulsion.

The core of Paratorch consists of a high performance CFC-free rigid PIR insulant of typical density 32 kg/m³

The base of Paratorch consists of a bitumenised felt autohesively bonded to the insulation core during manufacture.

CFC FREE

Paratorch is produced using alternative blowing agents in compliance with the Montreal Protocol.

DIMENSIONS & TOLERANCES

Paratorch is available in the following standard sizes and thicknesses.

Dimension	Availability	Tolerance
Length (mm)	1200 (2400)	±3mm
Width (mm)	1200	±3mm
Woodfibre Thickness (mm)	12	
Insulant Thickness (mm)	35,	±1.5mm
	40, 50, 70	±2mm
	80, 90,	±3mm
	100	±4mm
Diagonals	The diagonals of any board do not differ by more than 0.3%	

INSULATION COMPRESSIVE STRENGTH

The insulant core exceeds 150kPa at 10% yield when tested to British Standard 4370 Part 1: 1988 (Methods of Test for Rigid Cellular Materials). The woodfibre component exceeds 240kPa

THERMAL CONDUCTIVITY

The thermal conductivity, (K-value) of the woodfibre component of Paratorch is 0.050W/mk.

The thermal conductivity (K-value) of the insulation core of Paratorch is 0.026W/mk.

TYPICAL U-VALUES

The examples shown are based on the use of Paratorch waterproofed using 2 layers of modified bitumen membrane. The board is laid over a bitumen based vapour control layer which is fixed/loose laid or bonded on the type of deck stated for each application. The suspended ceiling, where shown is 15mm mineral fibre with a cavity between it and the underside of the deck.

Metal Deck with no Ceiling

Insulant Thickness (mm)	U-value (W/m ² k)
50	0.48
80	0.31
100	0.25

Metal Deck with Ceiling

Insulant Thickness (mm)	U-value (W/m ² k)
50	0.38
80	0.26
100	0.22

Dense Concrete Deck with Suspended Ceiling

Insulant Thickness (mm)	U-value (W/m ² k)
50	0.35
80	0.25
100	0.21

Timber Deck with Suspended Ceiling

Insulant Thickness (mm)	U-value (W/m ² k)
50	0.36
80	0.26
100	0.22

FIRE PERFORMANCE

Paratorch when installed under Paralon roofing systems achieves an external FAA rating when tested to BS 476 : Part 3 : 1985 (1975).

DESIGN CONSIDERATIONS

Wind Loading.

Wind loading should be assessed in accordance with the British Standard (BS 6399 : Part 2: 1995)

Water Vapour Control.

Paratorch resists the traffic of water vapour. However, the use of a separate vapour control layer under the board is recommended to control vapour movement.

FIXING DETAILS

Metal Decks.

On metal decks Paratorch should be laid into hot bitumen over the vapour control layer. Alternatively, the boards can be secured using mechanical fixings. Paratorch should be laid break bonded with the long edges at right angles to the trough openings, or alternatively, diagonally across the corrugation line. Whichever system is chosen, care must be taken to ensure that all joints are supported by the deck. The joints should be lightly butted.

Concrete Decks.

Concrete decks should be clean, dry, without large projections, steps or gaps, and should be graded to allow correct falls to all rain water outlets. To ensure an adequate bond between the vapour control layer and the concrete deck the concrete or screed surface should be suitably primed in accordance with the specified manufacturer's instructions. The vapour control layer should be fully bonded to the deck and similarly the Paratorch to the vapour control layer by laying in hot bitumen mopped or poured over the vapour control layer. Alternatively the boards can be secured using mechanical fixings or adhesive systems such as Insta Stik or bonded to Ade vapor, torchable vapour barrier system.

Adhesive Foam

May also be used for bonding Paratorch insulation, see manufacturer's guidelines or contact Moy Materials.

Adevapor Bonding

Paratorch may be bonded to "Adevapor" vapour barrier which has a renewable upper face for direct bonding of insulation.

Mechanical Fixings.

The number of mechanical fixings required to fix Paratorch will vary with the geographical location of the building, the topographical data, and the height and the width of the roof concerned. Each fixing should incorporate a countersunk washer, having a minimum diameter of 50mm.

A minimum of 6 No. fixings should be placed within the individual board area and be sited >50mm and <150mm from the edges and the corners of the board giving a minimum fixing rate of 4.2 fixings per square metre (1200mm x 1200mm board)

The requirement for additional fixings should be assessed in accordance with British Standard Code of Practice CP3 Chapter V: Part 2 or BS 6399 : Part 2: 1995

DAILY WORKING PRACTICE

At the completion of each days work, or whenever work is interrupted, a night joint must be made in order to prevent water penetration of the roof construction.

PACKAGING & STORAGE

The boards are supplied in labelled packs shrink-wrapped in polythene. This packaging of should not be considered adequate for long term outside protection. Boards should, where possible, be stored inside a building. If outside storage cannot be avoided the boards should be stacked clear of the ground and covered with a polythene sheet or weatherproof tarpaulin.

SPECIFICATION CLAUSE

Paratorch should be described in specifications as:-

The roof insulation shall be Paratorch comprising of a 12mm thick factory bonded bitumen fibre board bonded to CFC-free rigid PIR insulation core, having a thermal conductivity of 0.026W/mK and manufactured in accordance with BS EN ISO 9002 : 1994.

PARALON/PARATORCH WARM ROOF SPECIFICATION (TYPICAL)

Paralon Ard/HS Plus granular surfaced modified bitumen cap sheet membrane fully bonded to 3mm Top/S modified bitumen base sheet fully bonded to Paratorch composite insulation c/w 75mm Paratorch angle fillets mechanically fixed or bitumen bonded to 2mm Lotus modified bitumen vapour control layer mechanically fixed or bonded to selected primed substrate laid to falls in accordance with B.S. or I.S. standards.

PARATORCH (TAPERED)

Paratorch tapered insulation is available in 1:60 and 1:80 tapered schemes with single or dual falls. Drawing layouts are provided by Moy Materials Ltd on AutoCAD or sketch form.