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**INFORMATION DOCUMENT ID/1/2001**

**MECHANICAL FIXINGS FOR RIGID POLYURETHANE (PUR) AND  
RIGID POLYISOCYANURATE (PIR) ROOFBOARDS BENEATH  
SINGLE-PLY WATERPROOFING MEMBRANES**

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**INFORMATION DOCUMENT  
UNIVERSAL**

**BRUFMA/ID/1/2001  
First Issued : December 1993  
First revision: January 2001**

**MECHANICAL FIXINGS FOR RIGID POLYURETHANE (PUR) AND RIGID POLYISOCYANURATE (PIR) ROOFBOARDS BENEATH SINGLE-PLY WATERPROOFING MEMBRANES**

The purpose of this document is to define the positioning of mechanical fixings for securing rigid polyurethane and polyisocyanurate roofboards to a deck, when the roofboards are to be used in combination with single-ply waterproofing membranes.

The fixing patterns and density described in figure 1 should be considered as the minimum requirement to secure the board. They are not intended to negate or override the requirements of BS 6339 : Part 2 1995 Code of Practice for Wind Loads (or CP3 : Chapter V : Part 2 : 1972) which should be considered independently of these guidelines. The manufacturers of the single-ply membranes to be used in conjunction with the PUR or PIR roofboards will likewise have their own requirements for securing their membrane. These requirements will normally need to be met quite additionally to roofboard fixings. Fixings which act as securement for the weather proofing membrane may only be used to substitute the roofboard fixings when their pattern, size and locations coincide exactly.

The following recommendations are intended to assist designers and contractors to achieve uniform restraint of the roofboard over its full area.

**Fixing location**

PUR and PIR roofboards are normally manufactured with a width of 1200 mm and a length varying from 600 mm to 3000 mm and greater according to the intended application or manufacturer.

Fixings should comprise a suitable screw (to suit board thickness and deck type) and should incorporate a counter sunk washer / plate, having a surface area of not less than 4400 mm<sup>2</sup> - 75 mm diameter or 70 mm square. All fixings and washers should be located within the individual board area and not overlap board joints.

Fixings should be sited >50 mm and <150 mm from the edges and corners of the board. Fixings positioned along the centre line of the insulation board should be offset with those at the board edge.

The pitches / centres of the crown flats of metal decking sheets may influence the location of fixings along the long edges of the boards.

On profiled metal decks boards should be installed with the long edge at right angles to the troughs of the decking and with end joints staggered. All short edges must be fully supported on the crown of the flats of the deck profile.

Where alternative mechanical fixing systems that do not rely on large washers are considered, the system must provide similar restraint to the board as would be attained by the use of conventional washer and screw systems.

**Minimum number of fixings per board size**

<b>Board Size (mm)</b>	<b>Number of Fixings</b>	<b>Rate /m<sup>2</sup></b>
1200 x 600	4	5.55
1200 x 1200	5	3.47
1200 x 1800	8	3.70
1200 x 2400	11	3.8
1200 x 3000	14	3.8

*Whilst any advice given by BRUFMA is given in good faith, all liability therefore so far permitted by law is specifically excluded and the recipient must satisfy themselves as to its efficacy and suitability.*

**Figure 1. Typical mechanical fixing patterns**

