Britmet Lightweight Roofing

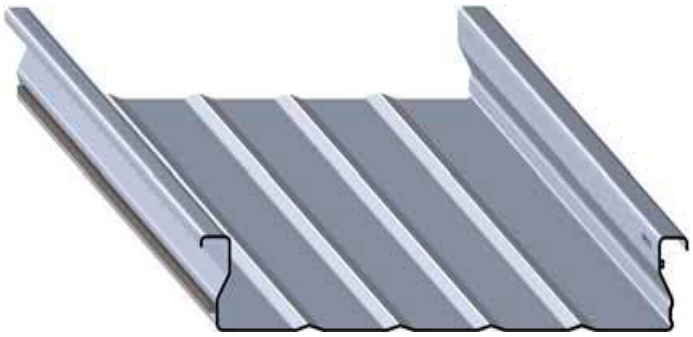
Tactray 90 … Installation Guide

Tactray 90

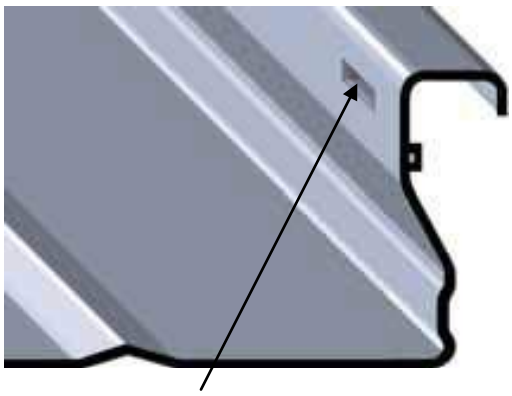
The System

Description

The TACTRAY 90 Tile & Slate Support System is a structural metal lining tray system which replaces timber rafters, facilitating a traditional tiled or slated roof, without the congestion or fire risk of timber. The lightweight and inherent structural strength of the system gives good spanning performance for a variety of roof coverings from fibre-cement slates to heavy stone slates.

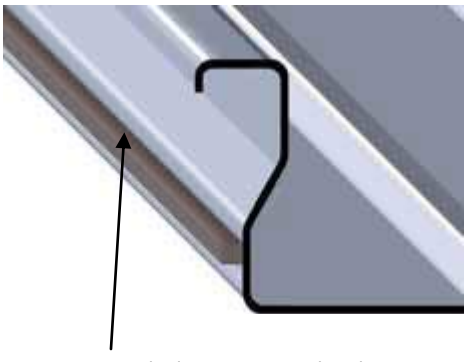


The distinctive 'U' shape of Tactray 90 is rolled to provide underlapping and over-lapping legs. The underlapping leg includes a factory-applied vapour control gasket to limit the passage of moisture vapour at the side laps. As each tray is positioned, the underlapping leg is firmly located by a small tab pressed into the overlapping upstand, helping to ensure a flush alignment to the underside of the trays.



Alignment tab ensures a flush finish

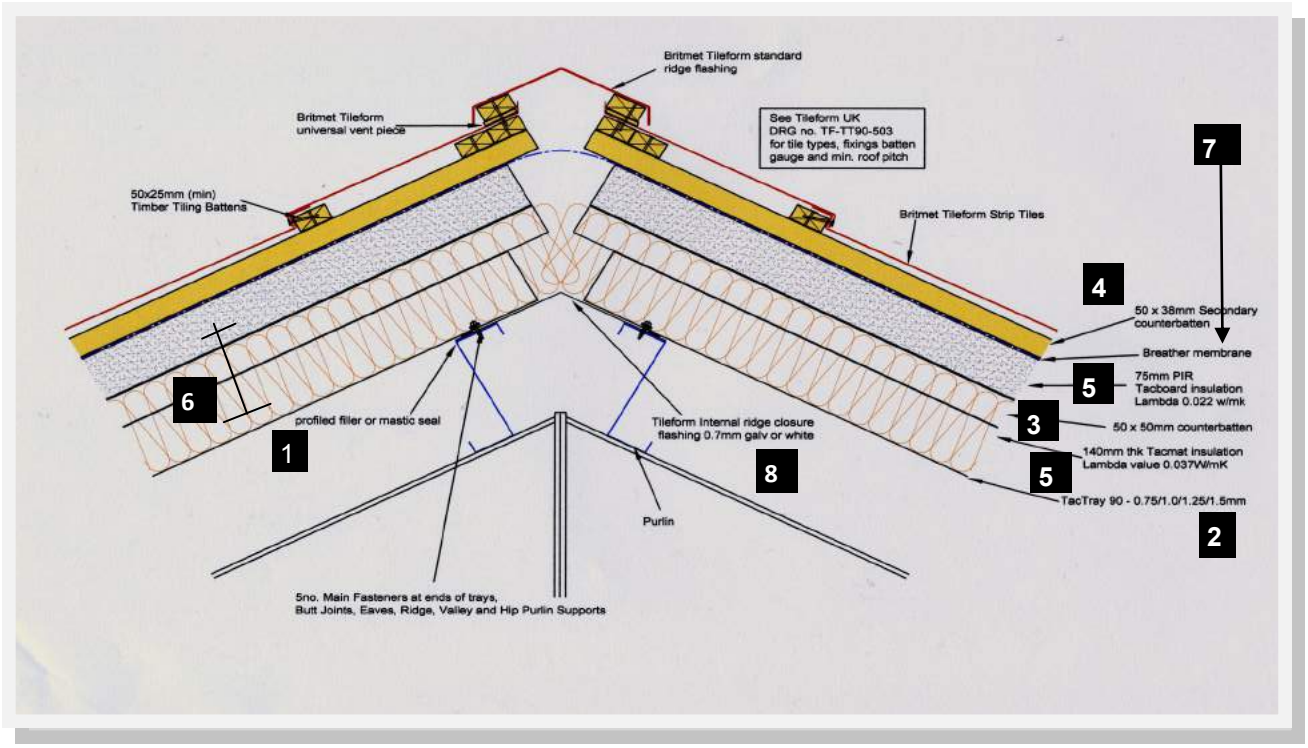
Use of the system does not affect the practice of slating or tiling, as the installation of underlay, battens and tiles remains identical and the completed roof shows no visible evidence of its use. The system offers significant reductions in completion times and reduced fire risk. In addition, the underside of the tray can be used as internal finish to the roof eliminating the need for suspended ceilings.



Factory-applied vapour control gasket

Tactray 90

The System



Key to Tactray 90 system

1. Low-density polyethylene filler supplied by Britmet Tileform, is laid at ridge, eaves, hips & valleys prior to fixing Tactray 90. Alternatively a gun applied mastic may be used in place of the polyethylene foam filler.

2. Galvanised underside as standard. An optional white internal finish is available and other colours may be possible according to quantity. Please refer to Britmet Tileform's commercial team for details.

3. 50 x 50mm counterbattens* are secured to the top of tray upstands at 600mm centres using self-drilling fixings which must penetrate both thicknesses of steel in order to ensure adequate pull-out strength.

4. Secondary 50 x 25 or 38mm counterbattens are nailed at approx 300mm centres.

5. TacMat insulation is laid in the tray pans. Tacboard PIR insulation laid at Rt angles to tray span and fixed to tops of counter battens and metal support bars. Tacboard is available in various thicknesses to achieve a range of U-values. All insulation available from Britmet Tileform.

6. Self-adhesive insulation hangers, or 'stick pins', are available from Britmet Tileform. Fixings at 3m centres are recommended on steep pitches to prevent 'slumping' of TacMat insulation.

7. Britmet Tileform breather membrane with a maximum vapour resistivity of 0.25 mN/s/g.

8. A complete range of flashings is available from Britmet Tileform in white or galvanised finish. All flashings are made to order from drawings submitted by the contractor to suit the dimensions of each project.

9. Fixings. All fixings to suit Tactray 90 are available from Britmet Tileform, please see table four on

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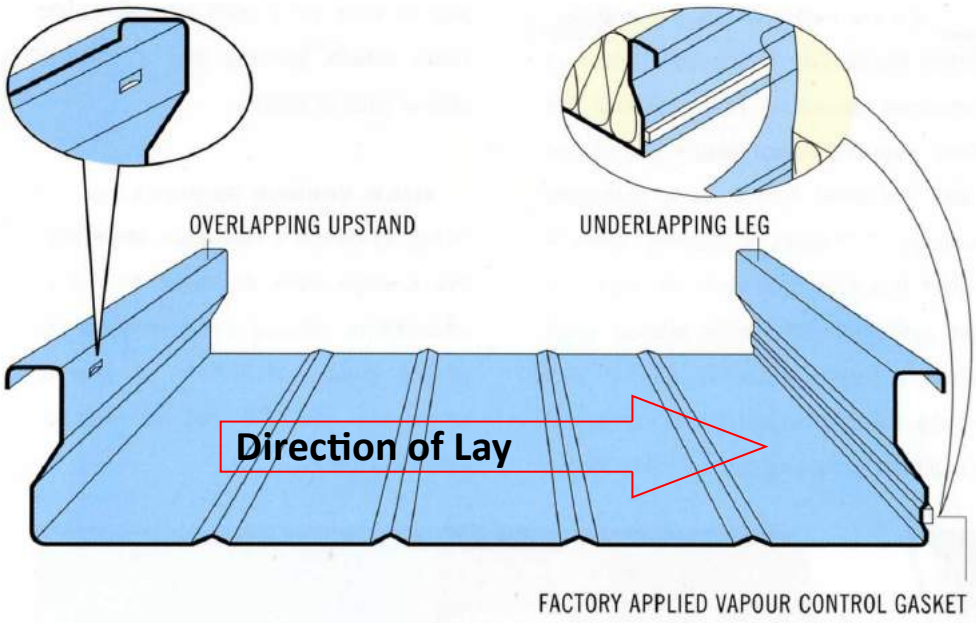
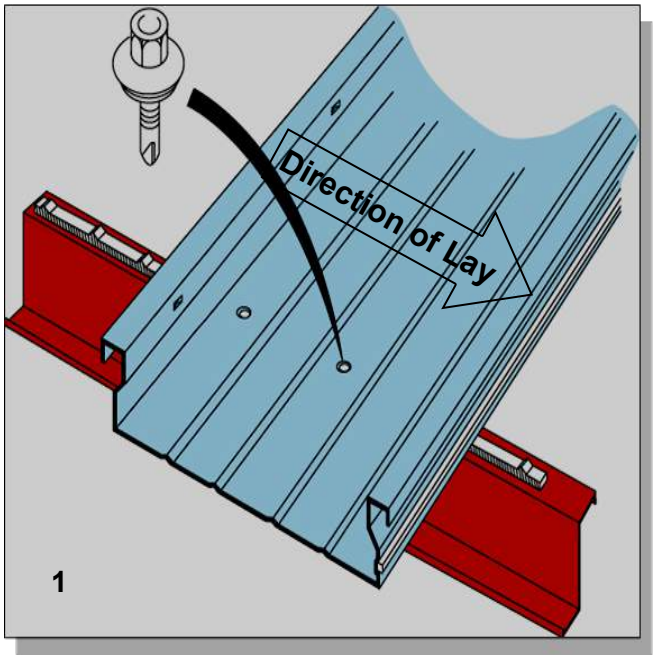
Alignment tab ensures a flush finish



Tactray 90 must be fixed with the non-tabbed underlapping leg facing the direction of laying.

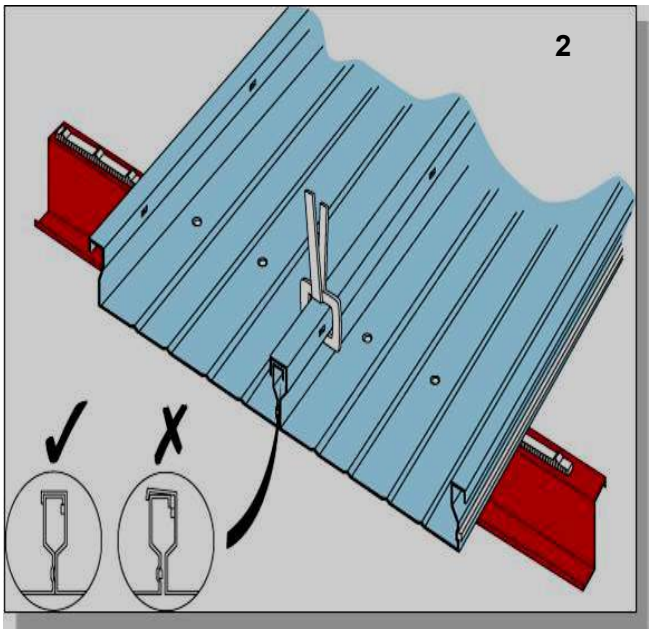
Tactray 90

Installation Procedure



1. Establish a setting-out line and apply the low density profile filler or mastic to the supporting steel-work at ridge/eaves/hips/valleys. Fix the first full length of Tactray 90, using a minimum of three fixings per tray at intermediate purlins and five at ridge/eaves/hips/valleys.

CAUTION: When softwood timber purlins are used it is advisable to use five fixings per tray on all purlins to allow for the various quality of commercially available softwood.

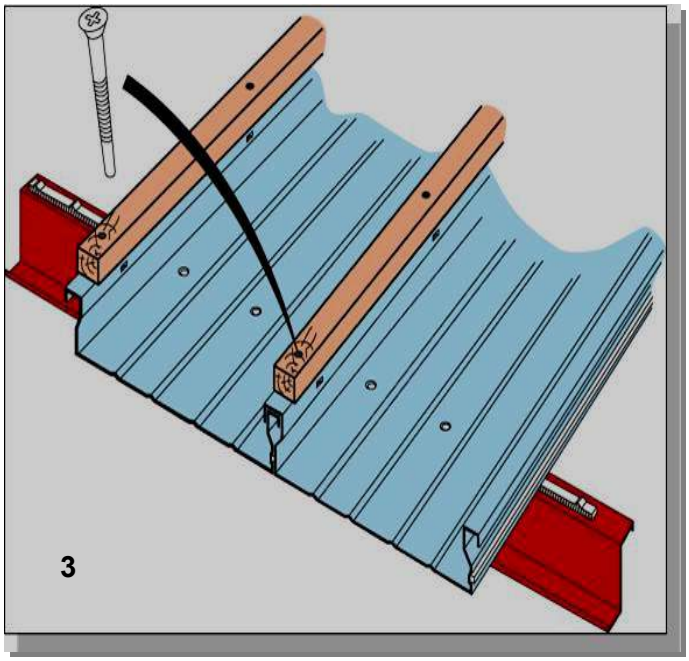


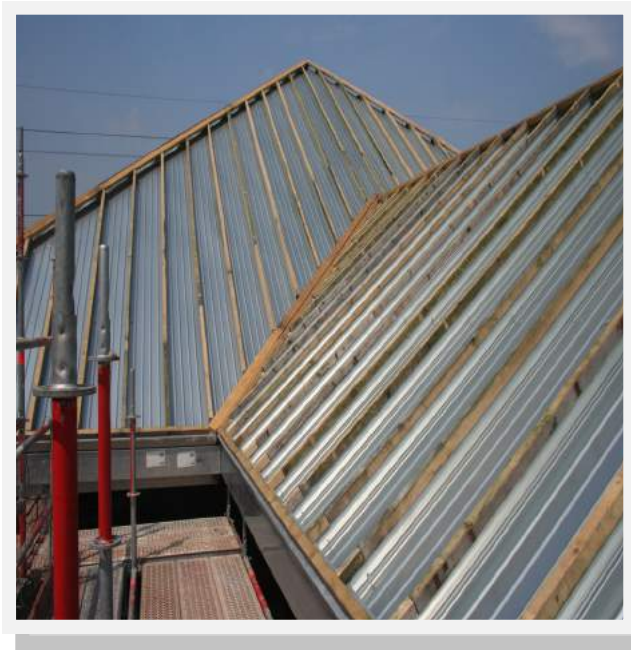
2. Lift the next length into position and tightly butt it against the first sheet, ensuring that the underlapping sheet is securely located on the tab provided. Mole 'C' clamps or similar should be used at eaves, ridge and intermediate purlin positions in order to clamp together the lengths of Tactray 90. This will ensure that there is no slippage prior to fixing, and assist close alignment of the ribs. If possible, joints should coincide with a main rafter so that they are not visible from below. This is especially important where the brilliant white internal finish has been specified as a ceiling soffit.

NOTE: It is important to ensure tight butting of the pans and good compression of factory seal, since failure to do so may result in unsightly wide gaps, which cannot be subsequently rectified and may affect the integrity of the vapour control layer.

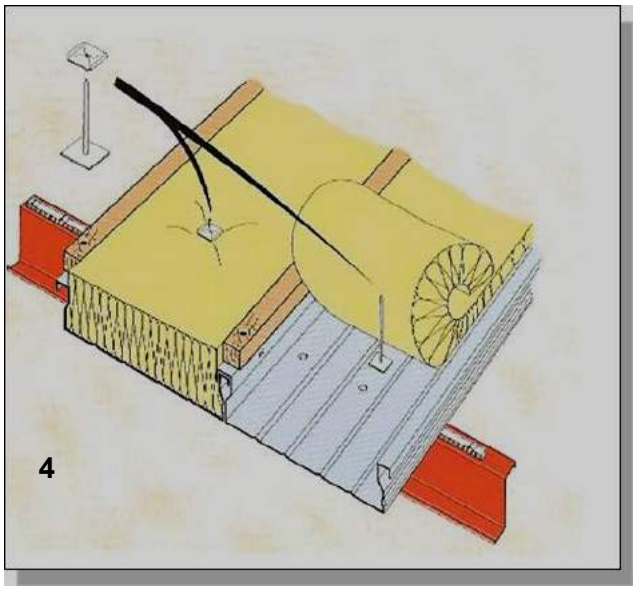
Tactray 90

Installation Procedure





3. Counterbattens are laid over the upstands. These should be a minimum of 50mm x 50mm, be true and relatively knot-free. Counterbattens are secured to the top of tray upstands at 600mm centres using self-drilling fixings The fixing centres are as specified by the structural engineer, but should not exceed 600mm. c/c. A list of recommended fixing screws is given in the Tactray 90 brochure. The self-drilling fixings must penetrate both thicknesses of steel tray in order to ensure adequate pull-out strength.



4. The TacMat insulating quilt is applied, fitting snugly into the pan, with sufficient friction to hold it in place on most roof pitches. For added security, self-adhesive insulation pins may be used to minimise the possibility of slumping. These pins should be fixed at 3.0m centres, and the length of spike remaining above the spire clip cut off for safety.

CAUTION: Insulation must only be installed immediately prior to the fixing of the PIR insulation boards and breather membrane and, once unrolled, must be protected from rainfall. With the insulation, membrane and secondary battens in place, the normal procedure of slating/ tiling can take place.

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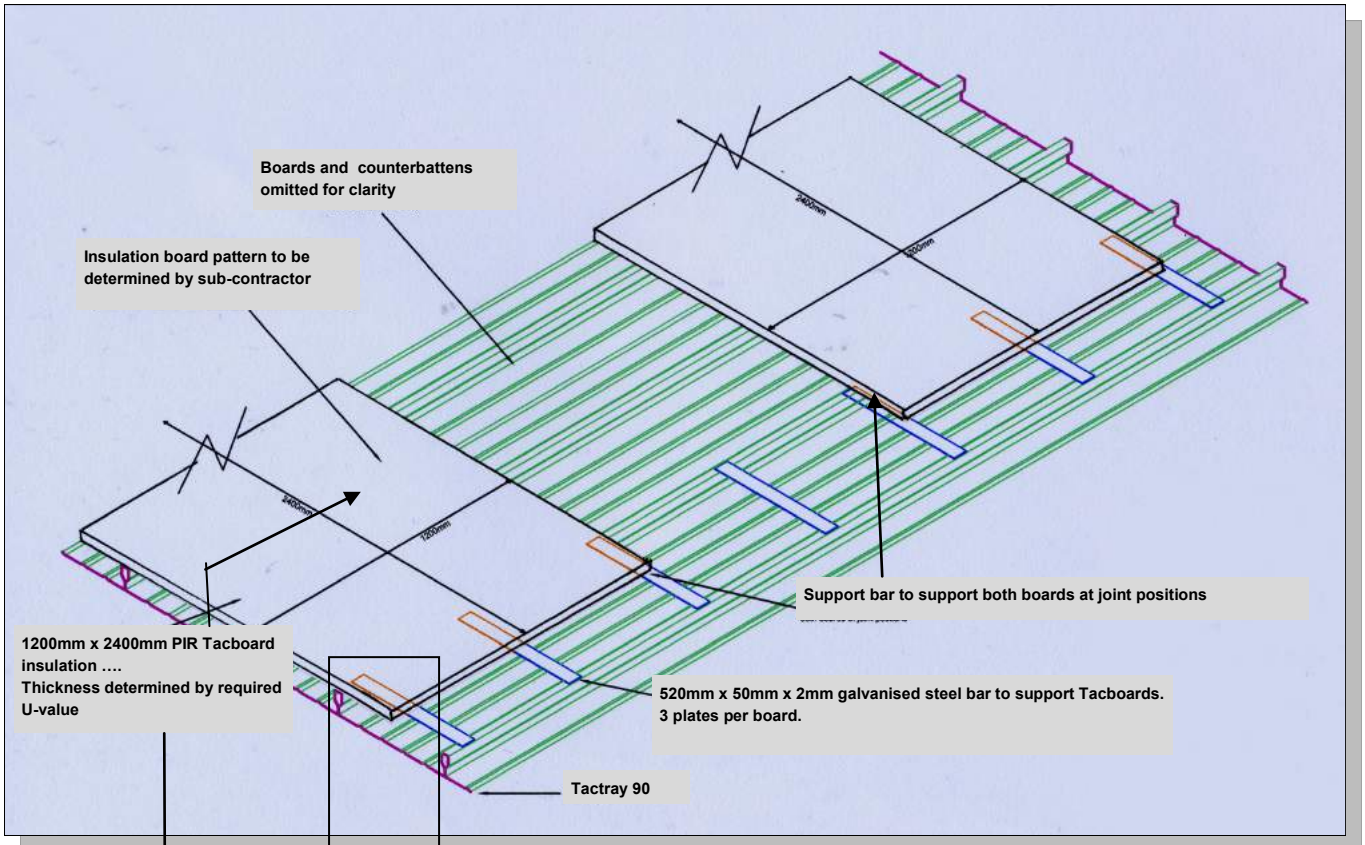
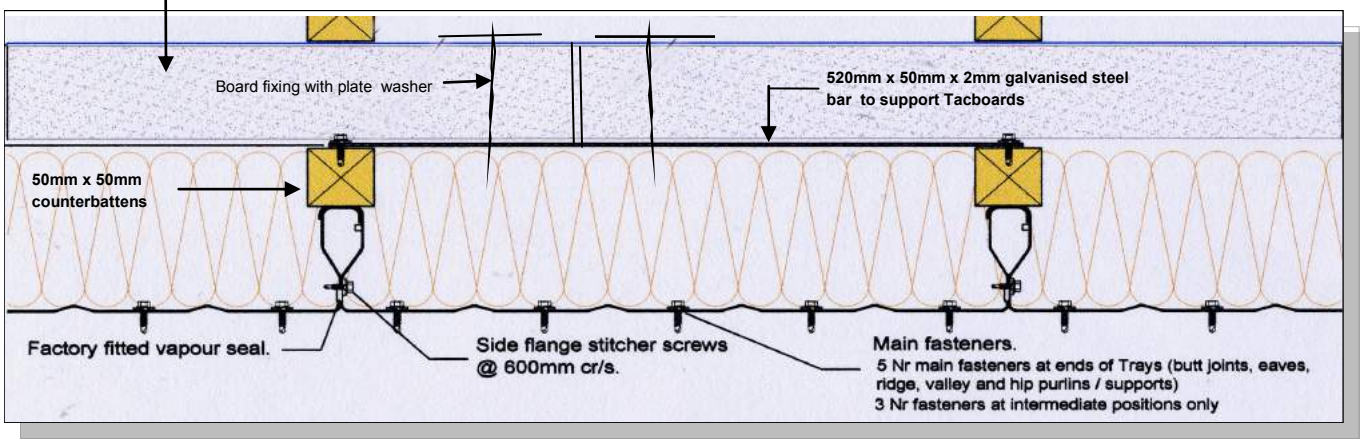
Installation Procedure

Tactray 90 ……. PIR Tacboard Installation

To meet U-value requirements PIR Tacboard is laid and fixed across tray at Rt angle to tray span. Fixings pass through boards and into counterbattens. Fixings at 600mm max c/c

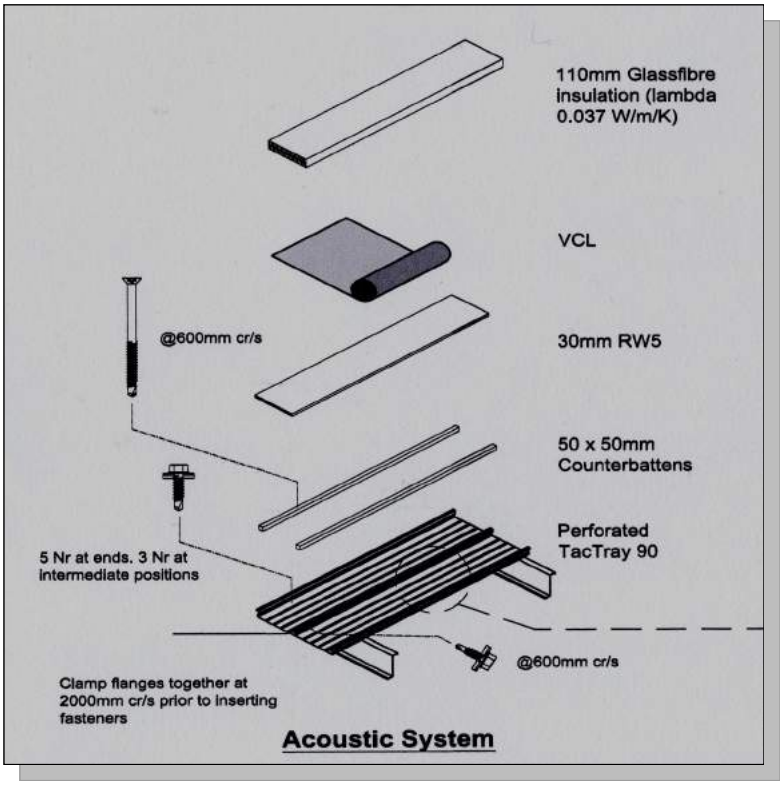


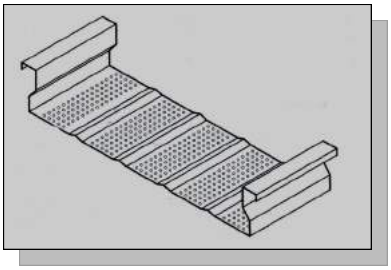


Tactray 90

Installation Procedure

Tactray 90 …. Perforated





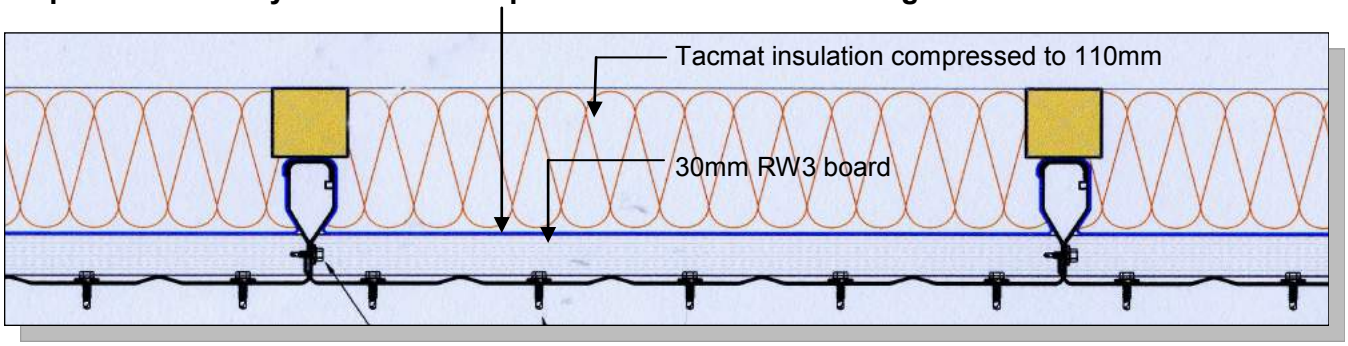
A perforated version of Tactray 90 is offered for enhanced acoustic performance.

The perforated tray is fixed using the same procedure as indicated previously for non-perforated tray. Because of the perforations, a separate vapour control layer (VCL) needs to be introduced.

Once the tray is fixed, 30mm Rockwool RW3 acoustic board (tissue face down) is laid in pan of tray. Then the VCL is laid over the RW3 board.

VCL supplied by Britmet Tileform Ltd.

Vapour Control Layer - Minimum vapour resistance … 250MN/s/g



Dress vapour control layer up and over Tactray 90. As work proceeds ensuring continuity and with minimum joints. Lap edges of sheets not less than 150mm and seal with tape. Seal with tape to pipes, ducts, structural members, etc. which abut or pass through. Prime substrates as necessary to ensure a full bond over the width of the tape. Tape supplied by Britmet Tileform Ltd.

Tape—Double sided with vapour resistance same as VCL

Size—15mm x 2mm

Before covering check for tears and punctures. Carefully repair, sealing with a lapped patch of vapour control membrane and a continuous band of sealant tape along all edges.

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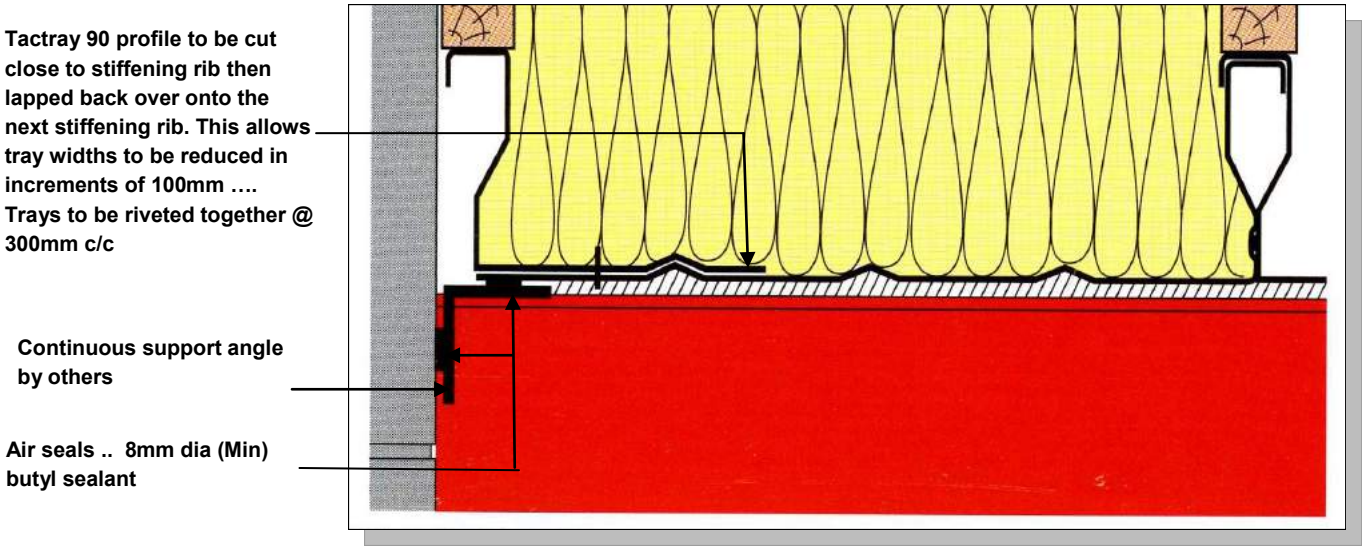
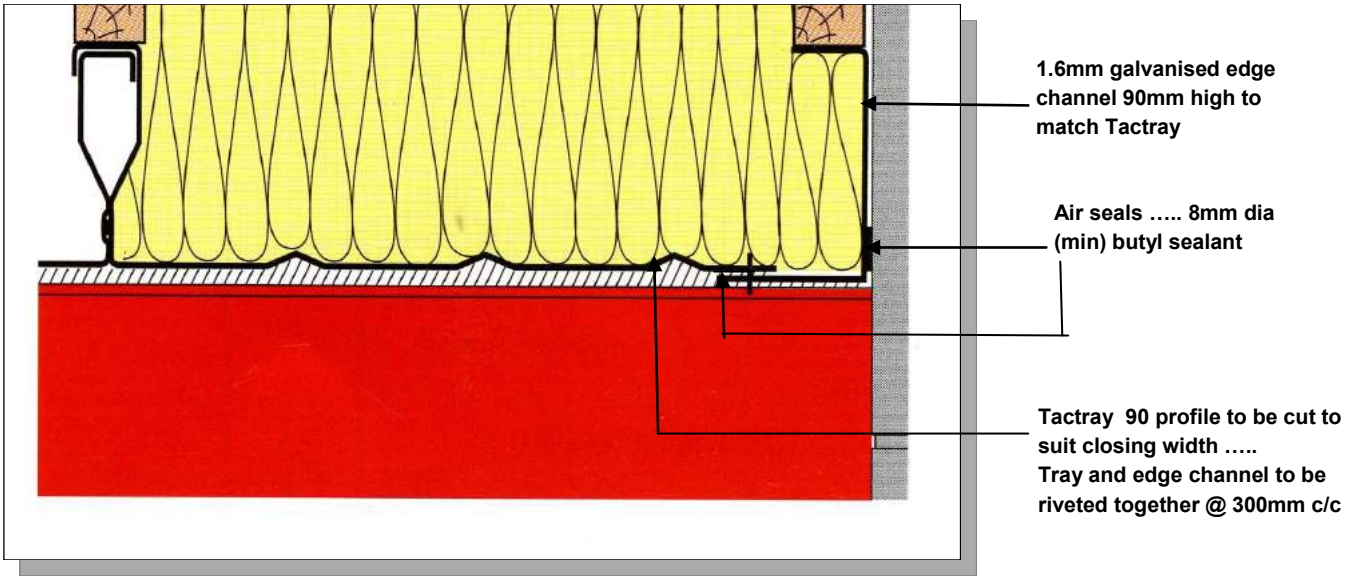
Installation Procedure

Tactray 90 ….. Width Reduction



Tray Back Lap Method



Tray Edge Channel Method

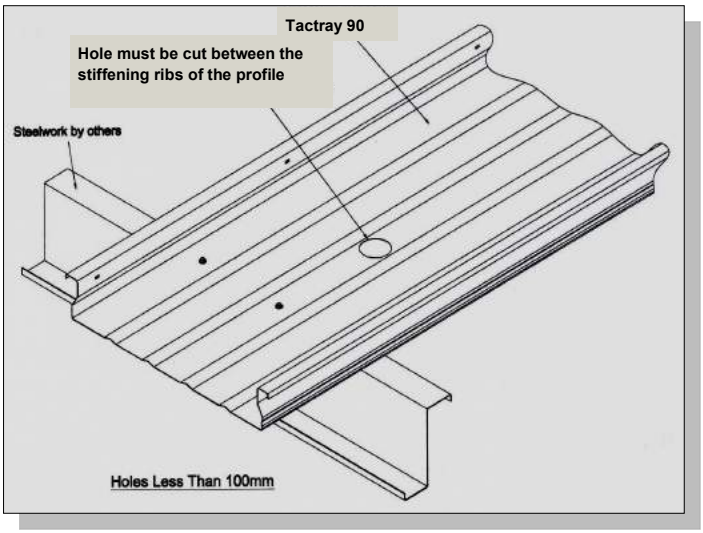
All cutting of Tactray 90 should be carried out with a nibbler or reciprocation saw, site cut edges should be protected by cold-galvanising paint or lacquer. Care taken to prevent swarf or cut edges posing an accidental threat

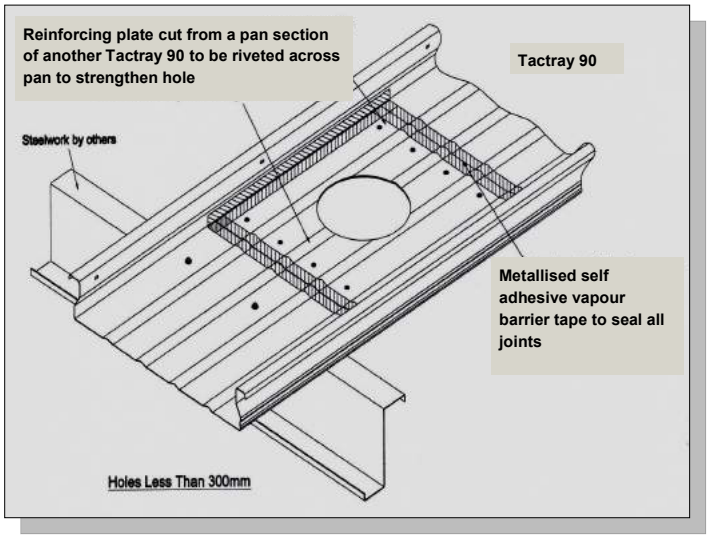
Warning: On no account should disc cutters be used to cut Tactray 90

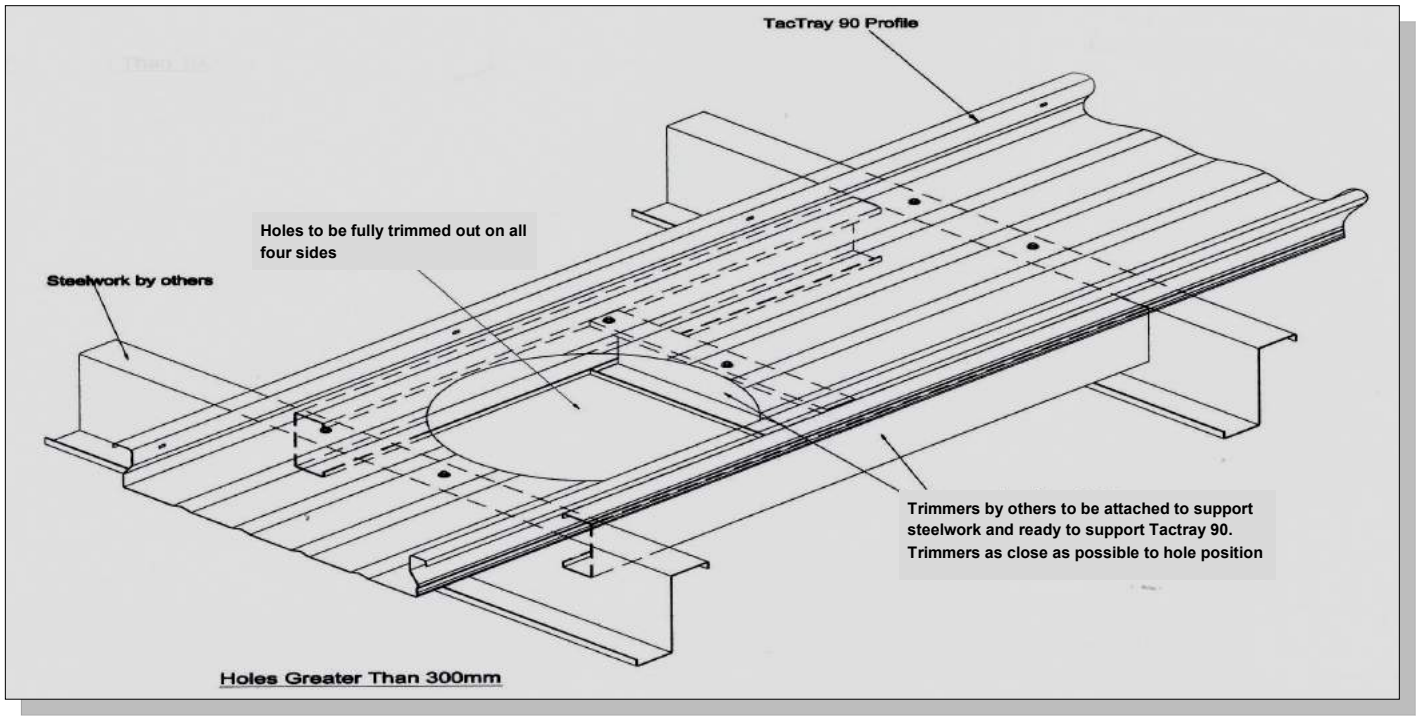
Tactray 90

Installation Procedure

Tactray 90 ….. Penetrations







All cutting of Tactray 90 should be carried out with a nibbler or reciprocation saw, site cut edges should be protected by cold-galvanising paint or lacquer. Care taken to prevent swarf or cut edges posing an accidental threat

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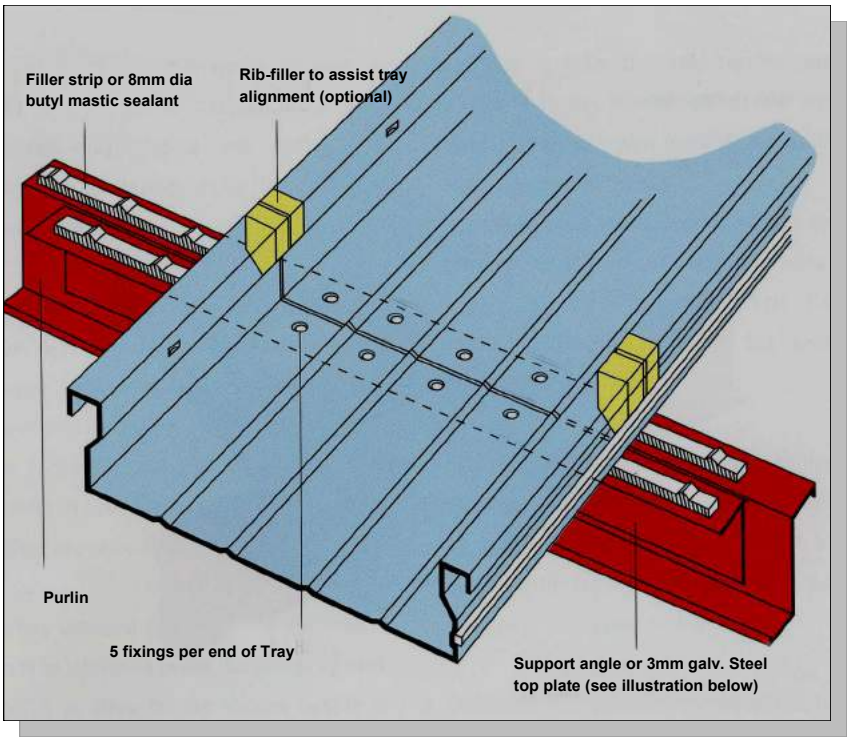
Tactray 90

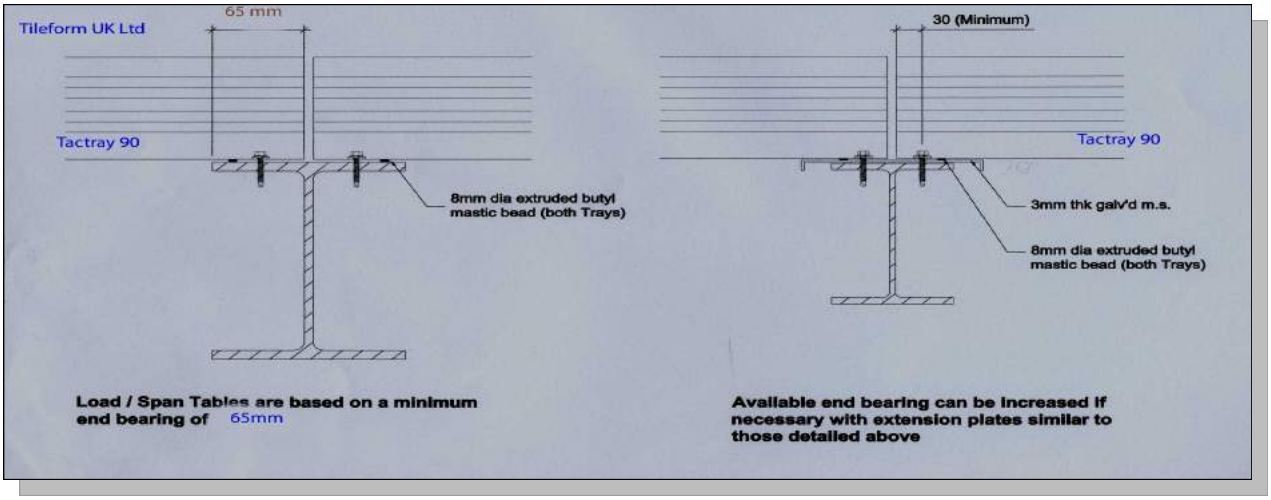
Installation Procedure

Tactray 90 …. Butt Joint



Although Tactray 90 is available in lengths up to 13.5m, on long roof spans it is more practical to use shorter, butt-jointed lengths. The trays are bedded on filler strips or 8mm dia butyl mastic sealant to each end prior to fixing. Trays must be carefully aligned (the use of a foam plastic rib-filler to give temporary alignment could be useful). A self adhesive metallised foil tape (available from Britmet Tileform) is applied over the side lap.

A support angle or 3mm thick galvanised steel top plate is first fixed to purlin to provide minimum bearing of 65mm to each end of Tactray 90



Tactray 90

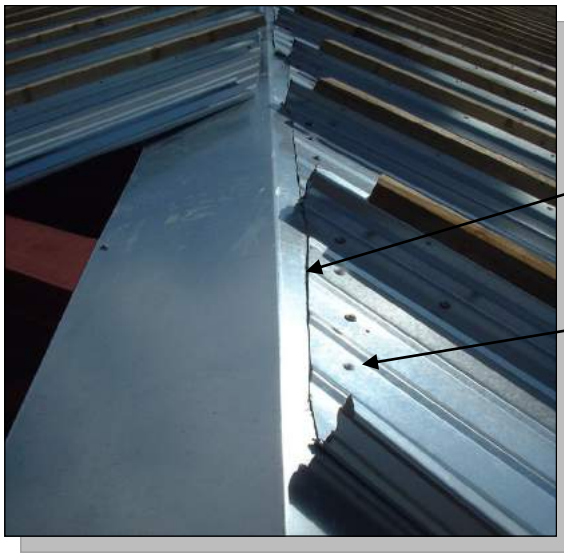
Installation Procedure

Tactray 90 …… Hips and Valleys

Note to structural engineer and steelwork contractor

At hips and valleys it is important to be aware that cleader rails are required to give support and bearing to splay cut ends of Tactray 90

Cleader rails or angles by steelwork contractor



All cutting of Tactray 90 should be carried out with a nibbler or reciprocation saw, site cut edges should be protected by cold-galvanising paint or lacquer. Care taken to prevent swarf or cut edges posing an accidental threat

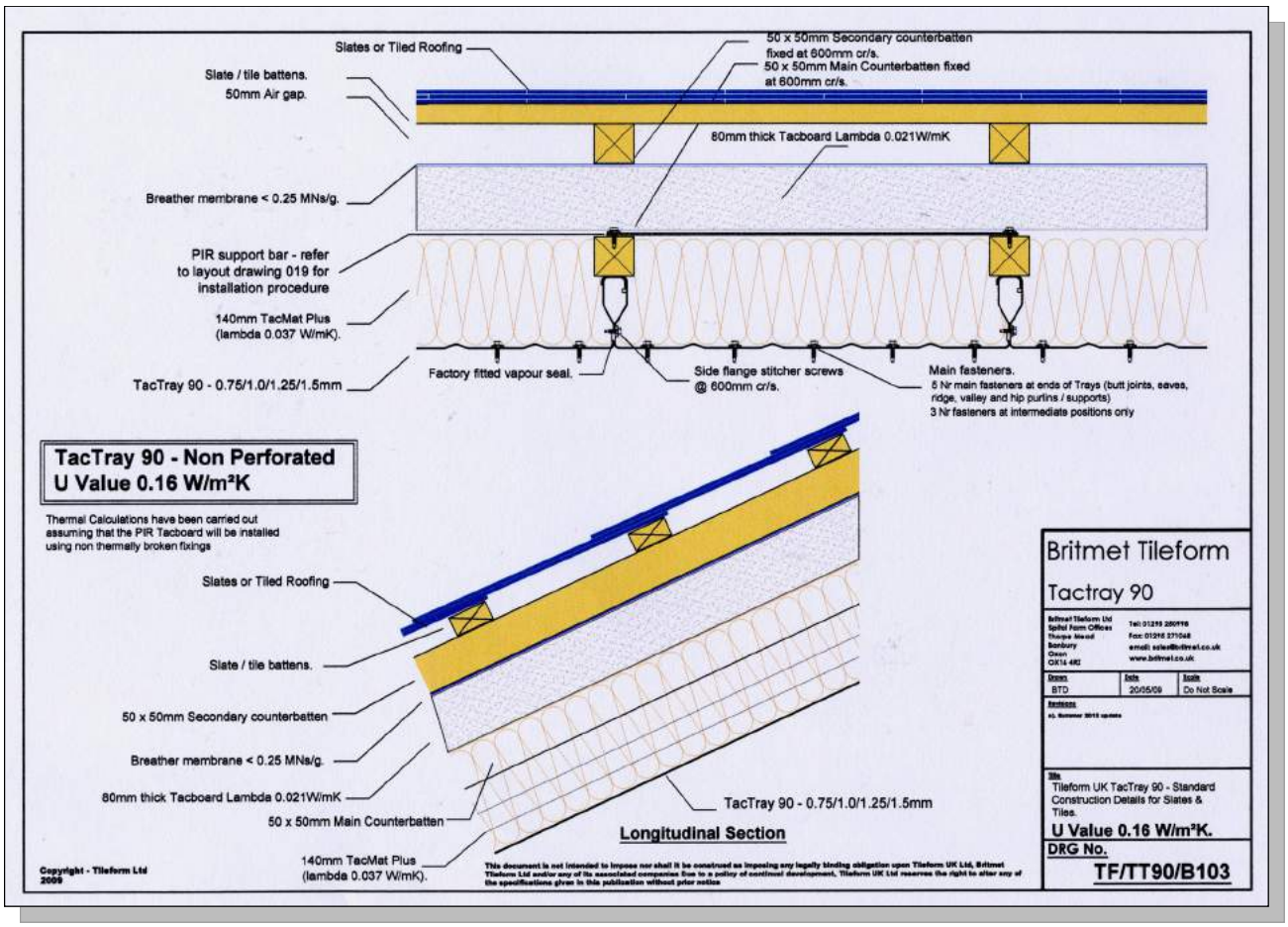
Warning: On no account should disc cutters be used to cut Tactray 90

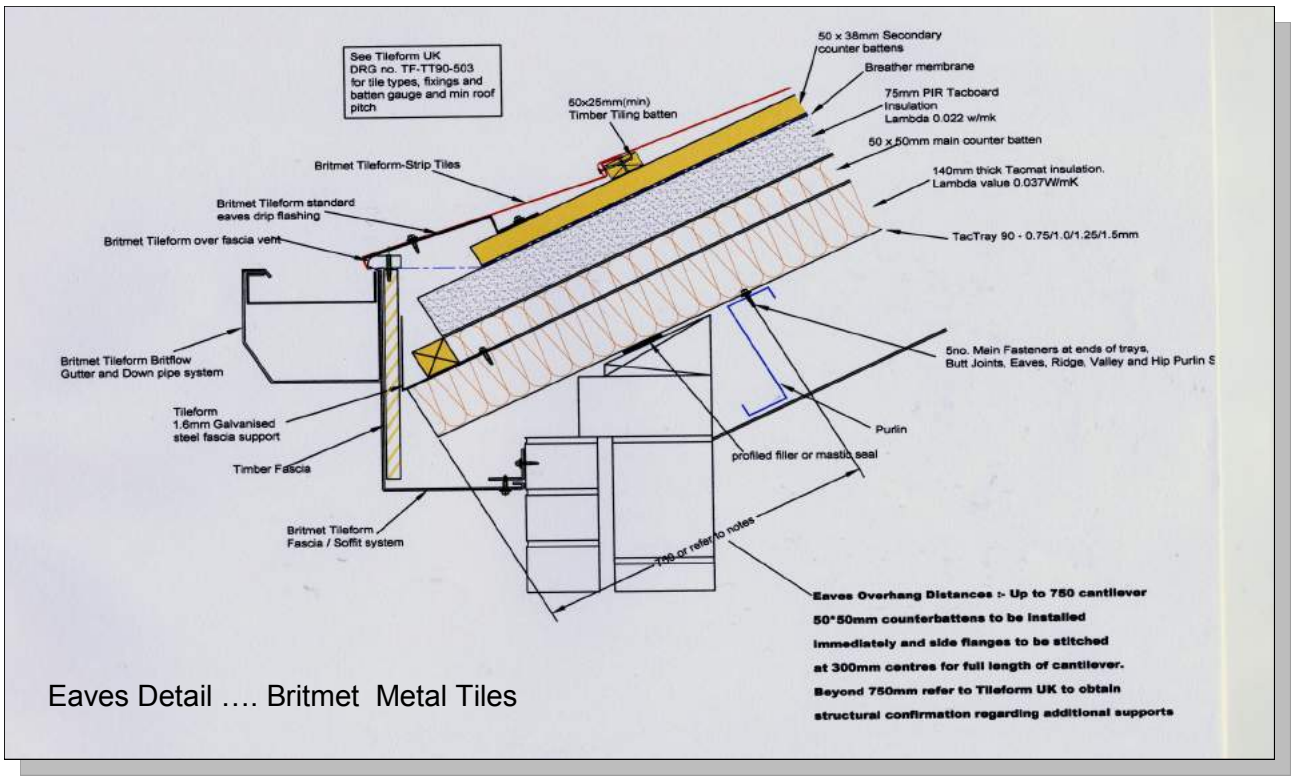
At hips and valleys 5 fixings (min) at tray ends

Note … In the event that cleader rails are not installed, then heavy duty (3mm) hip and valley flashings can provide tray support (Flashings by Roofing Sub-contractor)
Caution … These flashings have only a limited span capability

Tactray 90

Typical Details

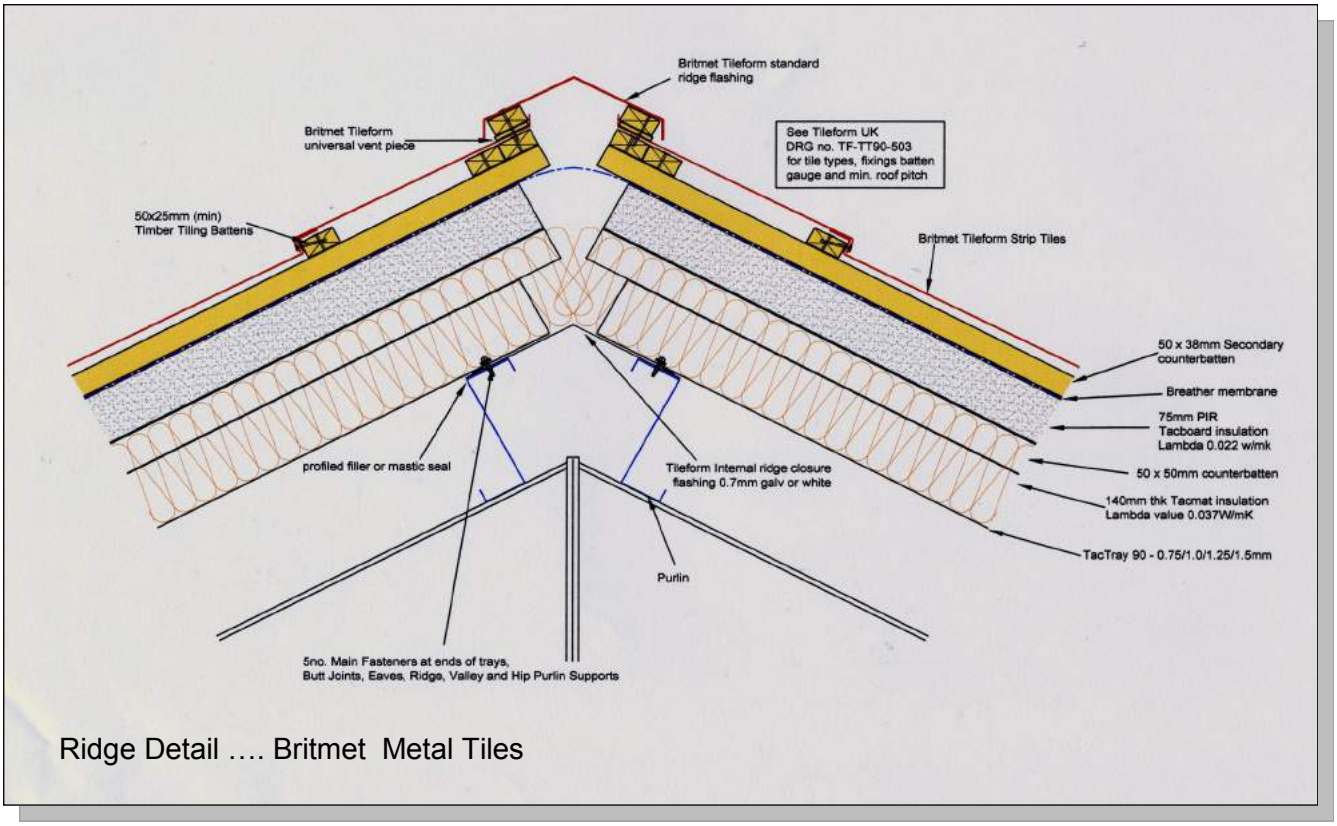




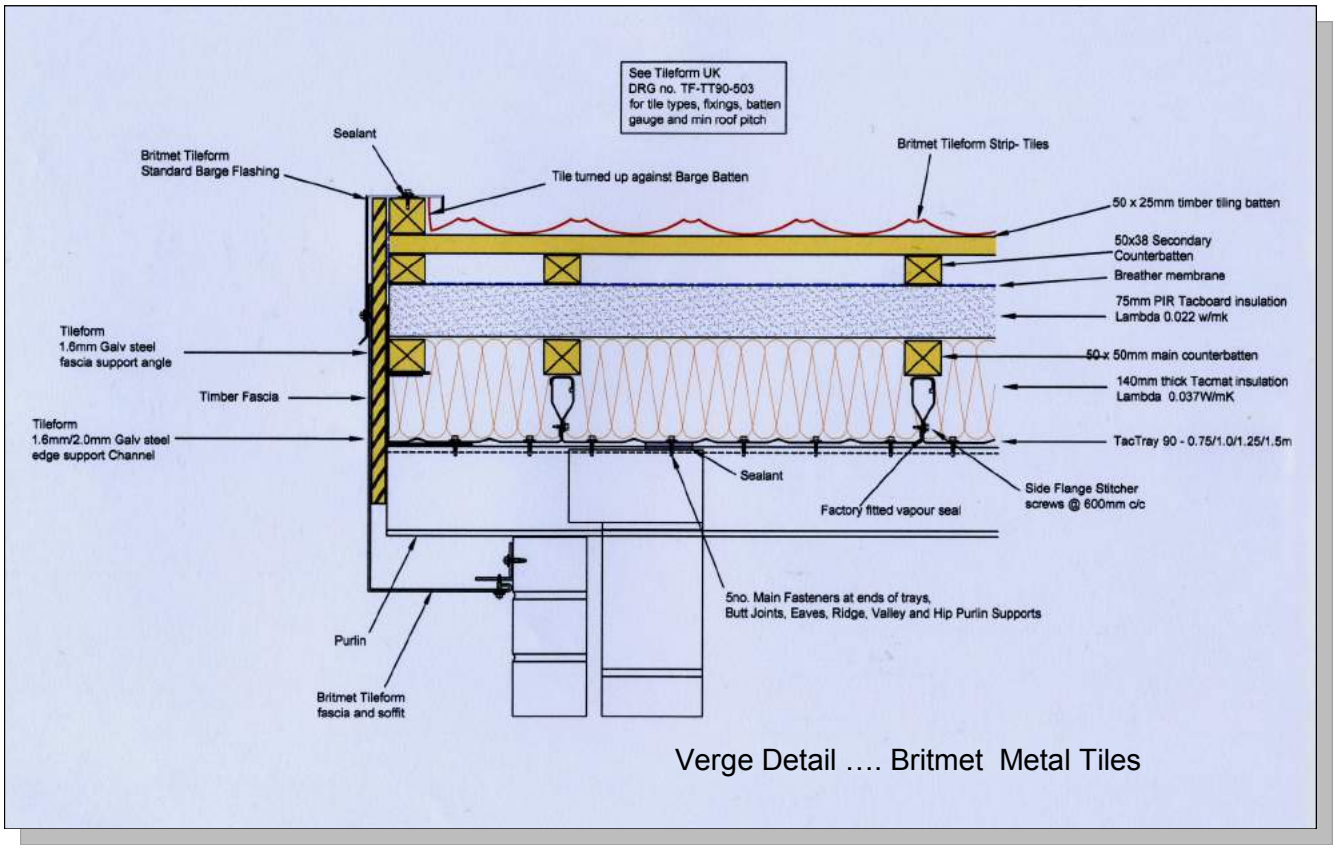
Eaves Detail …. Britmet Metal Tiles

Tactray 90

Typical Details



Ridge Detail …. Britmet Metal Tiles



Verge Detail …. Britmet Metal Tiles

Tactray 90

Fixings

Tactray 90 structural support system

Recommended fixings

Table 4: Recommended fixings

Support section	Tileform UK Code:	Standard spacing
Tactray 90 to cold-rolled purlins/stitchers	TUK—T15 GB 16	3no on intermediate purlins 5no on ridges, eaves, hip and valley purlins. Side lap stitching of Tactray 90 at 600mm (max) c/s
Tactray 90 to hot-rolled purlins <12.5mm Less Than 12.5mm	TUK—T24 GB 16	3no on intermediate purlins 5no on ridges, eaves, hip and valley purlins
Tactray 90 to hot-rolled purlins >12.5mm Greater Than 12.5mm	TUK—DHS 6.3x46 G16 Or Mage Topex 7336	3no on intermediate purlins 5no on ridges, eaves, hip and valley purlins

Screw Pull Out Value - (kN)

Screw Gauge & Pt. Type	Steel Thickness (mm)				
5.5 Dia - No 2 Pt.	1.6	2.0	2.5	2.8	3.2
	4.1kN	5.1kN	7.4kN	9.6kN	10.7kN
5.5 Dia - No 5 Pt	4.0	5.0	6.0	Up to 12.5	
	11.6kN	14.1kN	14.1kN	14.1kN	
6.3 Dia - No 6 Pt	12.5 up to 18.0				
	17.2kN				

Counterbattens* (tray thickness 0.75mm)	TUKWDLS85RIB	600mm centres

*For fixing the counterbattens, use countersunk head self-drilling screws. †Minimum timber depth 50mm.

Tactray 90

Transport, handling & Storage

COSHH
Product data sheets are available covering relevant Health & Safety information. CDM Regulations Tactray 90 should be specified and handled in accordance with the requirements of the Construction Design and Management (CDM) Regulations.

Site preparation
It is advisable to ensure that sufficient room is available for on-site storage (including bulky insulation), and that there is sufficient room for the turning and unloading of vehicles.

Delivery
All deliveries are by road unless otherwise specified. Off-loading is the responsibility of the client.

Storage

If materials are to be left on site for any length of time it is important that the products are stored in their original packing, under cover and in a dry, well-ventilated position. The packs should be laid on even ground, having a slight incline to ensure rainwater run-off.

When covering materials, please ensure that adequate free ventilation has been allowed to prevent condensation. All materials, including insulation, fixings, fillers etc., should be kept under appropriate conditions away from vehicle access roads and building activities, as contamination by lime or cement may cause staining.

Lifting
Packs are supplied with timber collars at two metre centres. A crane beam is available for hire if site access and conditions demand it. Full packs weigh 1-1.5 tons (max. weight 2 tons), and should always be positioned over a rafter to prevent damage to, or collapse of, the purlin system. Remember also to determine that the non-tabbed leg is in the direction of lay before lifting the Tactray 90 onto the roof. Loads Lengths up to 13.5m are supplied stacked, with two pieces side-by-side, and up to 20 pieces in a pack. Orders for packs containing less than 20 pieces may incur a surcharge. Around 1000m2 of Tactray 90 may be loaded onto a typical 12m trailer, assuming all lengths are equal and fill the trailer bed.

Cutting of sheets

All site-cut egdes should be treated with ‘Galvafroid’ or similar cold-galvanising paint according to the manufacturers’ instructions. Tactray 90 can be cut on-site with a nibbler or reciprocating saw and is easy to drill, although care should be taken to prevent swarf or cut edges posing an accident threat.

CAUTION.

On no account should disc cutters be used to cut Tactray 90.

Britmet Tileform Ltd

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