

# BRITMET

LIGHTWEIGHT ROOFING

|                        |          |
|------------------------|----------|
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| CI/SFB                 | (29) Hh2 |

February 2015



## TACTRAY 90. THE COMPLETE BUILDING ENVELOPE SOLUTION

Tile and slate support system



Rainscreen cladding system



Roofing support system



Structural ceiling system



Cladding support system



NOW AVAILABLE

### BritSpec

A new online  
specification tool  
for TacTray 90

SEE PAGE 23



# TACTRAY 90. THE COMPLETE BUILDING ENVELOPE SOLUTION

# BRITMET

LIGHTWEIGHT ROOFING



03 > Structural support system for slates and tiles  
A structural metal tray lining system, replacing traditional timber rafters.



20 > Structural support system for roofing  
An ideal structural tray to support a wide range of roofing systems including secret-fix standing seam, lead, zinc, copper, green roofs and single ply membranes.



26 > Structural support system for wall cladding  
The perfect structural tray, designed to provide support for metal cladding, rainscreen systems, vertical tiling and timber boarding and shingles.



28 > Rainscreen cladding system  
Our rainscreen cladding system provides a cost effective and quick to install solution for a thru wall system, with all components enjoying a proven track record and thorough testing, alongside many other benefits.



32 > Structural ceiling system  
A structural tray specifically designed to encapsulate and support failing and ageing CLASP, SEAC or similar modular roofing systems. Trays provide a ready finished ceiling, perforated for acoustic solutions.



36 > Handling and performance  
A brief overview of best practice covering transport, handling and storage, as well as detail on Tactray 90 performance and maintenance.



38 > Case studies  
A selection of recent projects.

## Welcome to Britmet Lightweight Roofing

Britmet Lightweight Roofing is a leading British manufacturer offering a wide range of products and systems for the roofing and cladding industry.

Our comprehensive Tactray product range includes structural liner tray support systems, metal slate and tiled roofing systems, built up metal wall and roof systems. We supply a wide range of accessories including standard and purpose made flashings, gutters and downpipes. In addition we can also supply fixings and insulation material.

From technical advice at the start, or during a project, to careful order processing, through to delivery where and when you want it - Britmet Lightweight Roofing will help ensure that your project runs smoothly and cost effectively.

Britmet Lightweight Roofing is the largest british manufacturer of lightweight roofing systems in the UK.





# TT90

***STRUCTURAL SUPPORT SYSTEM FOR SLATES AND TILES <***

A structural metal tray lining system, replacing traditional timber rafters.

# Tacray 90 structural support system for slates and tiles

## THE MODERN WAY TO A TRADITIONAL ROOF



To meet the growing requirement for faster construction methods to facilitate earlier project handover, Britmet Lightweight Roofing has developed Tacray 90 for use on low and medium rise buildings.

### Replaces timber rafters

Tacray 90 is a structural metal tray lining system which replaces timber rafters. Each tray side-laps its neighbour to form a unique air sealed system running from eaves to ridge fixed directly to the purlins. Tacray 90 creates a structural support for all types of roof system, without the congestion or fire risk of a timber construction.

It does not affect the practice of tiling or slating, since the installation of underlay, battens and tiles remains identical and externally the completed roof displays no visible evidence of its use. The light weight and inherent structural strength of Tacray 90 gives good spanning performance for a variety of roof coverings including fibre-cement slates, heavy stone tiles standing seam and lightweight systems.

### Meets legislation

Tacray 90 meets the requirements of the Building Regulations 2006 and the standard construction is BBA certified.

The flexibility of the system facilitates the integration of insulation zones having properties tailored to suit specific needs. In this way, a range of thermal performance characteristics can be achieved beyond the minimum requirement under ADL2.

### Versatility of application

Tacray 90's ease of installation and assured performance make it ideally suited for all building types where early completion is advantageous. Projects completed to date include hospitals, schools, supermarkets, sports centres, industrial units and commercial developments.

### Easy to install

Designed for ease of installation, Tacray 90 is easily cut on site and is fixed by Britmet Lightweight Roofing recommended contractors, widely experienced in the installation of structural metal tray systems under both tiled and slated roofs.

### Flexibility

The BBA Approved Tacray 90 Structural Support system for roofs gives the specifier:

- A range of U-values
- Strong acoustic performance where specified
- The ability to carry a range of external finishes
- Large span capabilities

### Acoustic performance

A perforated option of Tacray 90 is available and, dependent on the specification, can be used to achieve:

- 37db sound reduction
- 30% sound absorption

Higher and lower levels of sound reduction and absorption can be achieved dependant on various grades of acoustic insulation boards specified. Please consult Britmet Lightweight Roofing for further information.

Top left: Surf Centre. Newquay, Cornwall.

left: Skoda Showroom, Bristol

Right: Beach restaurant, Saunton Sands Hotel, Devon.

## SAVES TIME, TROUBLE AND MONEY

### Earlier completion

Tactray 90 offers significant reductions in building completion times by providing a secure and weatherproof overhead canopy at an early stage in the programme. This means that finishing trades can work beneath it before the final weathering is introduced, thereby removing the roof construction from the critical path.

Independent research by a firm of chartered quantity surveyors has shown that the contract period can be reduced by up to 10% - four weeks on a typical 40-week project.

### Saves building costs

On hundreds of successfully completed projects, Tactray 90's higher overall efficiency as a white finished ceiling soffit has consistently proven that total costs are actually less than apparently cheaper methods such as timber rafters and plastered ceilings.

### Reduces steelwork costs

Because of its inherent structural strength, Tactray 90 requires fewer supports, permitting greater purlin spacings and significantly reducing the weight and cost of the structural steelwork.

Tactray 90 is so versatile in comparison to a tile support system:

Can span up to 6.6m without additional supports, dependant on loads, whereas a composite will only span up to 2m.

Very light and can be manually installed and doesn't require cranes with suction pads.

Suited to hip/valley projects with ease cutting and sealing the areas.

Helps with acoustic performance with ability to reduce sound by up to 30%.

With use of a breather membrane, the eave details is simple compared to tile support with doesn't allow for condensation.



# Tactray 90 structural support system for slates and tiles

## EXCEPTIONAL ROOFING PERFORMANCE

### Cuts finishing costs

Inside the building Tactray 90 provides an attractive decorative ceiling without the time, cost and vapour-control problems of more traditional systems using suspended ceilings. It features a pleasing 'planked' effect that runs from eaves to ridge, and the optional brilliant white internal finish gives a bright, attractive interior with strong reflective qualities and subsequent reductions in lighting costs. Tactray 90 can also be used as a soffit for over-sailing eaves details provided that a suitable exterior paint is applied.

Note: further colours available upon request.

### Air leakage control (Tactray only)

The Building Regulations include a requirement to control air leakage through the building envelope. The current requirement is for a maximum air leakage standard of  $10\text{m}^3/\text{HR}/\text{m}^2$  at a pressure difference of 50 pascals.

### High vapour resistance

Tactray 90 incorporates a factory fitted side flange vapour control seal along the entire length of the tray. This significantly reduces the risk of interstitial condensation within the insulation zone. Allowing a maximum internal relative humidity of 86% for an internal temperature of  $20^\circ\text{C}$  and external temperature of  $5^\circ\text{C}$ .

### Better fire protection

Flame-resistant Tactray 90 has a Class 0 fire rating. It provides a non-combustible lining, and can resist fire penetration from inside to outside for much longer than required by the Building Regulations.

Whether specified as galvanised or in its optional white finish, Tactray 90 helps prevent the spread of flame and continues to support the roof covering during evacuation and fire fighting. This provides much-improved fire safety in terms of both life and financial loss.

### Secure underlining

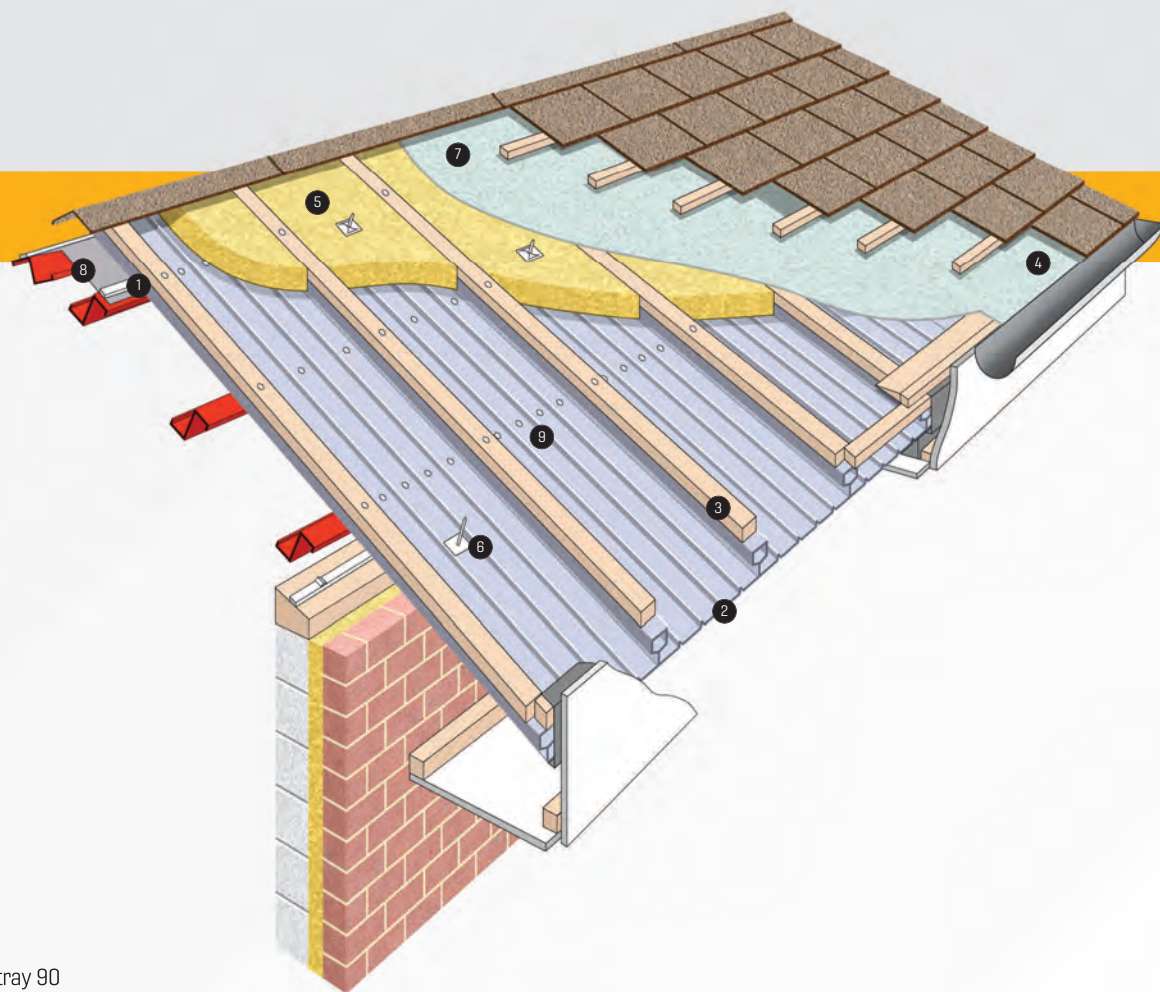
As a secure barrier beneath the completed roof, Tactray 90 provides a short-term weatherproof seal against the elements, should the slates become dislodged. It also prevents access by intruders where high value goods are stored. Its continued integrity also offers enhanced security for police stations and prisons, etc.



Right: Eveswell Primary School, Newport.  
Below: Supermarket entrance.



## THE SYSTEM



### Description

The distinctive 'U' shape of TacTray 90 is rolled to provide underlapping and overlapping 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 (see overleaf).

### Principles of construction

TacTray 90 replaces timber rafters without affecting the installation of underlay, battens and tiles. The trays are secured through the pan to the purlins using washered fixings, and a system of timber counterbattens is incorporated to support the hip and eaves details and aid the roofing contractor.

It is recommended that the counterbattens be fixed at centres not exceeding 600mm. Once these are secured, the structure is completed using a conventional felt and slate/tile roof finish.

### Key to TacTray 90 system

1. A high performance butyl, non setting bedding mastic, 10mm diameter by Britmet Lightweight Roofing is to be installed at all ridge / eave / hip / valley / upstand / apron / verge locations.
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 Lightweight Roofing commercial team for details.
3. 50 x 50mm counterbattens\* are secured to the 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 25mm counterbattens are nailed at approx 300mm centres.
5. TacMat Plus insulation is laid in the pans. This is available from Britmet Lightweight Roofing in 140mm and 180mm thicknesses. Other insulation types are available on request to achieve required U-values.
6. Self-adhesive insulation hangers, or 'stick pins', are available from Britmet Lightweight Roofing. Fixings at 3m centres are recommended on steep pitches to prevent 'slumping' of the insulation.
7. Britmet Lightweight Roofing breather membrane with a maximum vapour resistivity of 0.25 mN/s/g. Note: Suitable air gap must be provided.
8. A complete range of flashings is available from Britmet Lightweight Roofing 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 Lightweight Roofing, please see table four on page 18 for more details.

\*Various batten depths and other construction options can be provided to suit a range of U-values, please contact us for details.

# TacTray 90 structural support system for slates and tiles

## DESIGN CONSIDERATIONS

TacTray 90 dimensions and design features

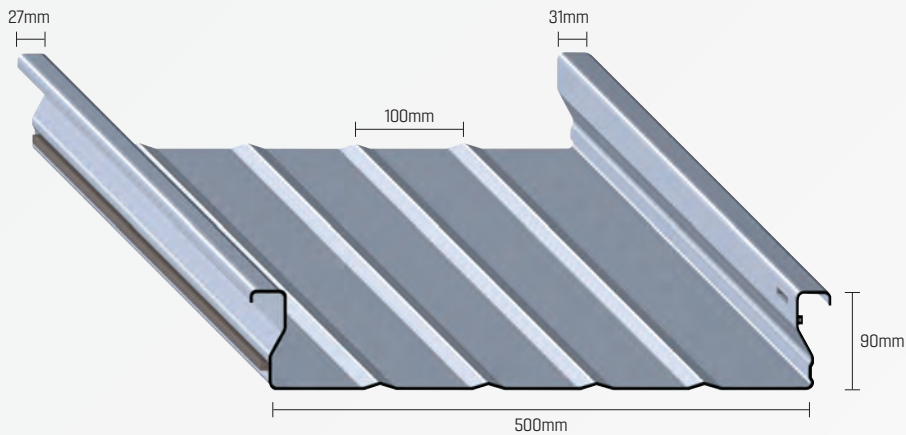
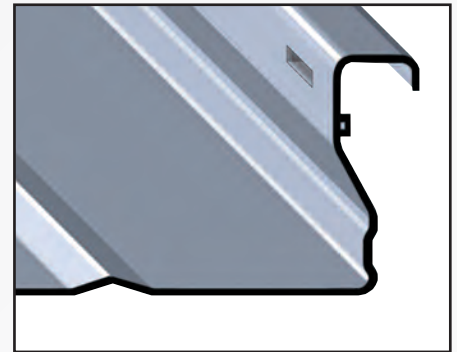


Table 1: Gauges

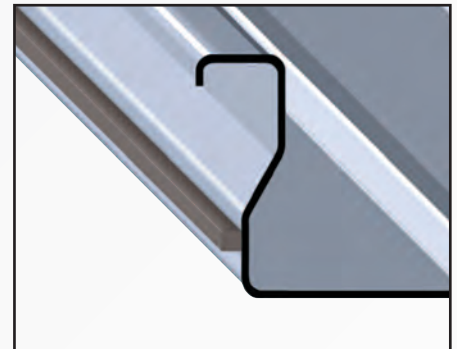
| Gauge | Weight (kg/m <sup>2</sup> ) | Load (kN/m <sup>2</sup> ) |
|-------|-----------------------------|---------------------------|
| 0.75  | 8.83                        | 0.09                      |
| 1.00  | 11.78                       | 0.12                      |
| 1.25  | 14.72                       | 0.15                      |
| 1.50  | 17.35                       | 0.17                      |

Table 2: 'U' Values

| Insulation Type                     | Thickness (mm)          | Lambda (W/m <sup>2</sup> K) | U-value (W/m <sup>2</sup> K) |
|-------------------------------------|-------------------------|-----------------------------|------------------------------|
| TacMat 140 Plus                     | 140                     | 0.037                       | 0.25                         |
| TacMat 180 Plus                     | 180<br>(165 compressed) | 0.037                       | 0.20                         |
| TacMat 200 Plus                     | 200<br>(190 compressed) | 0.037                       | 0.18                         |
| TacMat 140 Plus<br>+ 50mm PIR Board | 190                     | 0.037                       | 0.16                         |



Alignment tab ensures a flush finish



Factory-applied vapour control gasket

### TacTray 90 sizes

TacTray 90 is available to order in lengths up to 20m, depending upon site access and transport requirements, and can be utilised in single, double or triple span configurations.

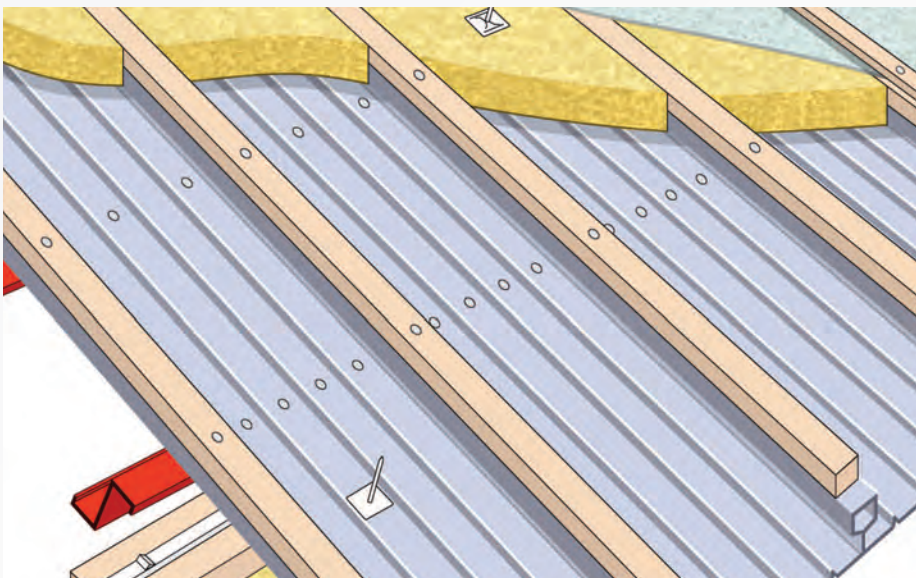
### TacTray 90 'U' values

Construction systems for U values ranging from 0.25 W/m<sup>2</sup>K to 0.10 W/m<sup>2</sup>K are available. Please contact the Britmet Lightweight Roofing commercial team for further details.

See pages 12 through to 17 for construction details. Please contact Britmet Lightweight Roofing commercial team for further details.

### Thermal insulation

Table 2 indicates the 'U' value calculations based on the construction detail shown left.





## LOADS AND SPANS

### Roof loadings

The primary function of Tactray 90 is to support the dead and live loads associated with the roof. The dead load is defined as the weight of the roof covering, insulation zone, timber battens and the like. Live loads are superimposed loads associated with access, wind and snow. Service loads from heating, ventilation and lighting systems together with ceiling loads must also be taken into account where these are to be supported by the Tray.

The weight of roof loads can vary considerably from 7-11kg/m<sup>2</sup> with a Britmet Lightweight Roofing steel tile sheet to 80-90kg/m<sup>2</sup> with a reconstituted stone slate. Imposed loads are taken as a minimum of 0.6 kN/m<sup>2</sup> plus any other transient loads such as positive or negative wind loads and snow drift.

### Spanning performance

Tactray 90 achieves excellent spanning performance as indicated in table overleaf. Once all relevant loadings have been calculated, the table overleaf can be used to determine the gauge of Tactray and the purlin spaces required.

To calculate the load from a typical weight use the following formula:

$$\frac{\text{Weight (kg/m}^2\text{)} \times 9.81}{1000} = \text{kN/m}^2$$

NB - The cost of these calculations can be linked to the supply price of Tactray 90 as long as delivery of materials occurs within three months of calculation being provided. Alternatively, payment of calculation costs will become due immediately after the three month period is complete. Payment of calculations will also become due if Britmet Lightweight Roofing do not secure Tactray 90 order or if the project is cancelled.

### Structural calculations

In addition to sustaining loads acting on the face of the tray, Tactray 90 can be used to transfer lateral loads. These lateral loads from wind pressure on the walls of the building are transferred through the length and/or width of the tray. The method of construction is called diaphragm or stressed skin.

Britmet Lightweight Roofing recommends that specific engineering requirements are considered at an early design stage. Project specific calculations can be provided by Britmet Lightweight Roofing. The structural calculations can confirm the performance characteristics of Tactray 90, relevant to each individual project.

## SYSTEM BENEFITS

### Speed and ease of construction

- Reduces overall contract times by allowing internal trades to commence at a much earlier stage.
- Provides a working platform
- Patented 'tab' side lap support system ensures a flush finish.
- Comprehensive technical support, including structural design, acoustic and thermal calculations.

### Technical performance

- Flexible system with choice of insulation zone to deliver a range of thermal performance characteristics beyond the minimum requirement under ADL2.
- Meets the requirements of Approved documents B and F2.
- Low air leakage rate of 4.1m<sup>3</sup>/HR/m<sup>2</sup> at 50 pascals pressure.
- Suitable for buildings up to 86% Rh due to the superior vapour resistance afforded by the factory applied gasket system.
- 60 year durability.
- Provides a tertiary barrier in the event of a failure of the external roof covering.



# Tactray 90 structural support system for slates and tiles

## STRUCTURAL LINER TRAY - LOAD / SPAN TABLES - DEFLECTION L/300

Example roofing finishes: Concrete tiles / Natural slates / Man-made slates

### Working Load UDL (kN/m<sup>2</sup>) - Gravity

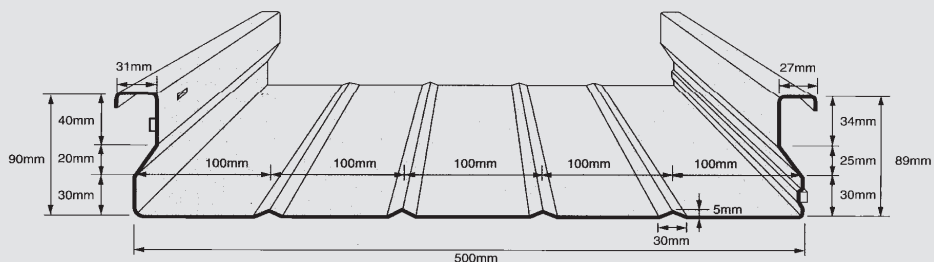
| Thickness<br>(mm) | Span<br>Condition | Span (M) |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------|-------------------|----------|------|------|------|------|------|------|------|------|------|------|------|------|
|                   |                   | 1.60     | 1.80 | 2.00 | 2.20 | 2.40 | 2.60 | 2.80 | 3.00 | 3.20 | 3.40 | 3.60 | 3.80 | 4.00 |
| 0.75              | Single            | 2.57     | 2.28 | 2.05 | 1.87 | 1.71 | 1.58 | 1.47 | 1.37 | 1.28 | 1.21 | 1.14 | 1.08 | 0.94 |
| 1.00              | Single            | 4.61     | 4.09 | 3.69 | 3.35 | 3.07 | 2.83 | 2.63 | 2.46 | 2.30 | 2.08 | 1.76 | 1.50 | 1.29 |
| 1.25              | Single            | 7.19     | 6.39 | 5.75 | 5.23 | 4.79 | 4.42 | 4.11 | 3.83 | 3.18 | 2.65 | 2.24 | 1.90 | 1.63 |
| 1.50              | Single            | 10.30    | 9.16 | 8.24 | 7.49 | 6.87 | 6.34 | 5.77 | 4.69 | 3.86 | 3.22 | 2.71 | 2.31 | 1.98 |
| 0.75              | Double            | 2.39     | 2.02 | 1.73 | 1.50 | 1.31 | 1.16 | 1.03 | 0.93 | 0.84 | 0.76 | 0.69 | 0.63 | 0.58 |
| 1.00              | Double            | 4.16     | 3.51 | 3.00 | 2.60 | 2.28 | 2.02 | 1.80 | 1.61 | 1.45 | 1.32 | 1.20 | 1.10 | 1.01 |
| 1.25              | Double            | 6.12     | 5.15 | 4.40 | 3.80 | 3.33 | 2.94 | 2.61 | 2.34 | 2.11 | 1.91 | 1.74 | 1.59 | 1.46 |
| 1.50              | Double            | 8.39     | 7.04 | 6.01 | 5.19 | 4.53 | 4.00 | 3.55 | 3.18 | 2.86 | 2.59 | 2.35 | 2.15 | 1.97 |
| 0.75              | Multi             | 2.83     | 2.39 | 2.05 | 1.79 | 1.57 | 1.39 | 1.24 | 1.11 | 1.01 | 0.91 | 0.83 | 0.76 | 0.70 |
| 1.00              | Multi             | 4.92     | 4.16 | 3.57 | 3.10 | 2.72 | 2.41 | 2.15 | 1.93 | 1.75 | 1.59 | 1.45 | 1.33 | 1.22 |
| 1.25              | Multi             | 7.25     | 6.12 | 5.24 | 4.54 | 3.98 | 3.52 | 3.14 | 2.81 | 2.54 | 2.30 | 2.10 | 1.92 | 1.77 |
| 1.50              | Multi             | 9.95     | 8.38 | 7.17 | 6.21 | 5.43 | 4.80 | 4.27 | 3.82 | 3.45 | 3.13 | 2.85 | 2.60 | 2.39 |

### Working Load UDL (kN/m<sup>2</sup>) - Uplift

| Thickness<br>(mm) | Span<br>Condition | Span (M) |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------|-------------------|----------|------|------|------|------|------|------|------|------|------|------|------|------|
|                   |                   | 1.60     | 1.80 | 2.00 | 2.20 | 2.40 | 2.60 | 2.80 | 3.00 | 3.20 | 3.40 | 3.60 | 3.80 | 4.00 |
| 0.75              | Single            | 2.57     | 2.28 | 2.05 | 1.87 | 1.71 | 1.58 | 1.45 | 1.26 | 1.11 | 0.93 | 0.79 | 0.67 | 0.57 |
| 1.00              | Single            | 4.61     | 4.09 | 3.69 | 3.35 | 3.07 | 2.83 | 2.43 | 1.97 | 1.62 | 1.35 | 1.14 | 0.97 | 0.83 |
| 1.25              | Single            | 7.19     | 6.39 | 5.75 | 5.23 | 4.79 | 3.95 | 3.16 | 2.57 | 2.12 | 1.77 | 1.49 | 1.27 | 1.09 |
| 1.50              | Single            | 10.30    | 9.16 | 8.24 | 7.49 | 6.25 | 4.92 | 3.94 | 3.20 | 2.64 | 2.20 | 1.85 | 1.58 | 1.35 |
| 0.75              | Double            | 2.85     | 2.43 | 2.10 | 1.84 | 1.62 | 1.45 | 1.30 | 1.17 | 1.06 | 0.96 | 0.86 | 0.78 | 0.71 |
| 1.00              | Double            | 4.74     | 4.03 | 3.48 | 3.04 | 2.68 | 2.38 | 2.14 | 1.92 | 1.74 | 1.59 | 1.45 | 1.33 | 1.23 |
| 1.25              | Double            | 6.88     | 5.86 | 5.05 | 4.40 | 3.87 | 3.44 | 3.08 | 2.77 | 2.51 | 2.28 | 2.08 | 1.91 | 1.76 |
| 1.50              | Double            | 9.11     | 7.72 | 6.64 | 5.78 | 5.08 | 4.51 | 4.03 | 3.62 | 3.27 | 2.97 | 2.72 | 2.49 | 2.25 |
| 0.75              | Multi             | 3.33     | 2.85 | 2.47 | 2.17 | 1.92 | 1.71 | 1.54 | 1.39 | 1.26 | 1.14 | 1.03 | 0.94 | 0.85 |
| 1.00              | Multi             | 5.56     | 4.75 | 4.11 | 3.60 | 3.18 | 2.83 | 2.54 | 2.29 | 2.08 | 1.90 | 1.74 | 1.60 | 1.39 |
| 1.25              | Multi             | 8.11     | 6.92 | 5.98 | 5.22 | 4.60 | 4.10 | 3.67 | 3.31 | 3.00 | 2.73 | 2.48 | 2.11 | 1.81 |
| 1.50              | Multi             | 10.76    | 9.15 | 7.89 | 6.88 | 6.06 | 5.38 | 4.82 | 4.34 | 3.93 | 3.57 | 3.09 | 2.63 | 2.25 |



Construction details in both CAD and PDF format are available from Britmet Lightweight Roofing upon request.



Deflection L/300: consider when Tacray 90 is supporting slates and tiles

|      | 4.20 | 4.40 | 4.60 | 4.80 | 5.00 | 5.20 | 5.40 | 5.60 | 5.80 | 6.00 | 6.20 | 6.40 | 6.60 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 0.81 | 0.71 | 0.62 | 0.55 | 0.48 | 0.43 | 0.39 | 0.35 | 0.31 | 0.28 | 0.26 | 0.23 | 0.21 |      |
| 1.12 | 0.97 | 0.85 | 0.75 | 0.67 | 0.59 | 0.53 | 0.47 | 0.43 | 0.39 | 0.35 | 0.32 | 0.29 |      |
| 1.41 | 1.23 | 1.08 | 0.95 | 0.84 | 0.75 | 0.67 | 0.60 | 0.54 | 0.49 | 0.44 | 0.40 | 0.36 |      |
| 1.71 | 1.49 | 1.30 | 1.14 | 1.01 | 0.90 | 0.80 | 0.72 | 0.65 | 0.59 | 0.53 | 0.48 | 0.44 |      |
| 0.54 | 0.50 | 0.46 | 0.43 | 0.40 | 0.37 | 0.35 | 0.33 | 0.31 | 0.29 | 0.28 | 0.26 | 0.25 |      |
| 0.93 | 0.86 | 0.80 | 0.74 | 0.69 | 0.65 | 0.61 | 0.57 | 0.54 | 0.51 | 0.48 | 0.45 | 0.43 |      |
| 1.34 | 1.24 | 1.15 | 1.07 | 1.00 | 0.93 | 0.87 | 0.82 | 0.77 | 0.73 | 0.69 | 0.65 | 0.61 |      |
| 1.82 | 1.68 | 1.56 | 1.45 | 1.35 | 1.26 | 1.18 | 1.11 | 1.04 | 0.98 | 0.89 | 0.80 | 0.73 |      |
| 0.65 | 0.60 | 0.56 | 0.52 | 0.49 | 0.45 | 0.43 | 0.40 | 0.38 | 0.36 | 0.34 | 0.32 | 0.30 |      |
| 1.13 | 1.04 | 0.97 | 0.90 | 0.84 | 0.79 | 0.74 | 0.70 | 0.66 | 0.62 | 0.58 | 0.53 | 0.48 |      |
| 1.63 | 1.51 | 1.40 | 1.30 | 1.21 | 1.14 | 1.06 | 1.00 | 0.90 | 0.81 | 0.73 | 0.67 | 0.61 |      |
| 2.20 | 2.04 | 1.89 | 1.76 | 1.64 | 1.50 | 1.34 | 1.20 | 1.08 | 0.98 | 0.89 | 0.80 | 0.73 |      |

| Thickness mm | Weight Kg/m <sup>2</sup> |
|--------------|--------------------------|
| 0.75         | 8.83                     |
| 1.00         | 11.78                    |
| 1.25         | 14.72                    |
| 1.50         | 17.35                    |

Please note:  
Load factor (working load to ultimate) = 1.5

Tables indicate total load carrying capacity of tray: kN/m<sup>2</sup>

Tables do not include self weight of trays

Tray bearing: minimum 65mm

Load/Span tables for Tacray 90 perforated available upon request

Deflection L/300: consider when Tacray 90 is supporting slates and tiles

|      | 4.20 | 4.40 | 4.60 | 4.80 | 5.00 | 5.20 | 5.40 | 5.60 | 5.80 | 6.00 | 6.20 | 6.40 | 6.60 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 0.49 | 0.43 | 0.38 | 0.33 | 0.29 | 0.26 | 0.23 | 0.21 | 0.19 | 0.17 | 0.15 | 0.14 | 0.13 |      |
| 0.72 | 0.63 | 0.55 | 0.48 | 0.43 | 0.38 | 0.34 | 0.30 | 0.27 | 0.25 | 0.22 | 0.20 | 0.19 |      |
| 0.94 | 0.82 | 0.71 | 0.63 | 0.56 | 0.49 | 0.44 | 0.40 | 0.36 | 0.32 | 0.29 | 0.27 | 0.24 |      |
| 1.17 | 1.01 | 0.89 | 0.78 | 0.69 | 0.61 | 0.55 | 0.49 | 0.44 | 0.40 | 0.36 | 0.33 | 0.30 |      |
| 0.65 | 0.59 | 0.55 | 0.50 | 0.47 | 0.43 | 0.39 | 0.35 | 0.31 | 0.28 | 0.26 | 0.23 | 0.21 |      |
| 1.14 | 1.04 | 0.91 | 0.80 | 0.71 | 0.63 | 0.56 | 0.51 | 0.45 | 0.41 | 0.37 | 0.34 | 0.31 |      |
| 1.56 | 1.36 | 1.19 | 1.05 | 0.93 | 0.82 | 0.74 | 0.66 | 0.59 | 0.54 | 0.49 | 0.44 | 0.40 |      |
| 1.94 | 1.69 | 1.48 | 1.30 | 1.15 | 1.02 | 0.92 | 0.82 | 0.74 | 0.67 | 0.60 | 0.55 | 0.50 |      |
| 0.78 | 0.72 | 0.63 | 0.55 | 0.49 | 0.43 | 0.39 | 0.35 | 0.31 | 0.28 | 0.26 | 0.23 | 0.21 |      |
| 1.20 | 1.04 | 0.91 | 0.80 | 0.71 | 0.63 | 0.56 | 0.51 | 0.45 | 0.41 | 0.37 | 0.34 | 0.31 |      |
| 1.56 | 1.36 | 1.19 | 1.05 | 0.93 | 0.82 | 0.74 | 0.66 | 0.59 | 0.54 | 0.49 | 0.44 | 0.40 |      |
| 1.94 | 1.69 | 1.48 | 1.30 | 1.15 | 1.02 | 0.92 | 0.82 | 0.74 | 0.67 | 0.60 | 0.55 | 0.50 |      |

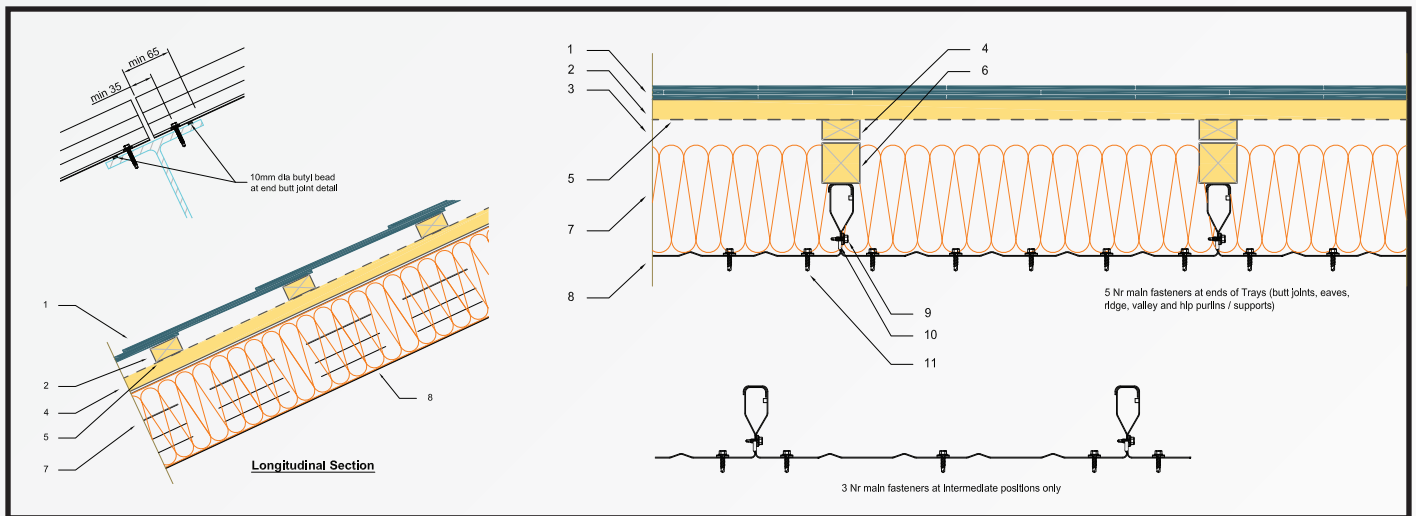


Tables calculated and assessed by the SCI to Eurocode-EN1993-1-2:2006

# Tacray 90 structural support system for slates and tiles

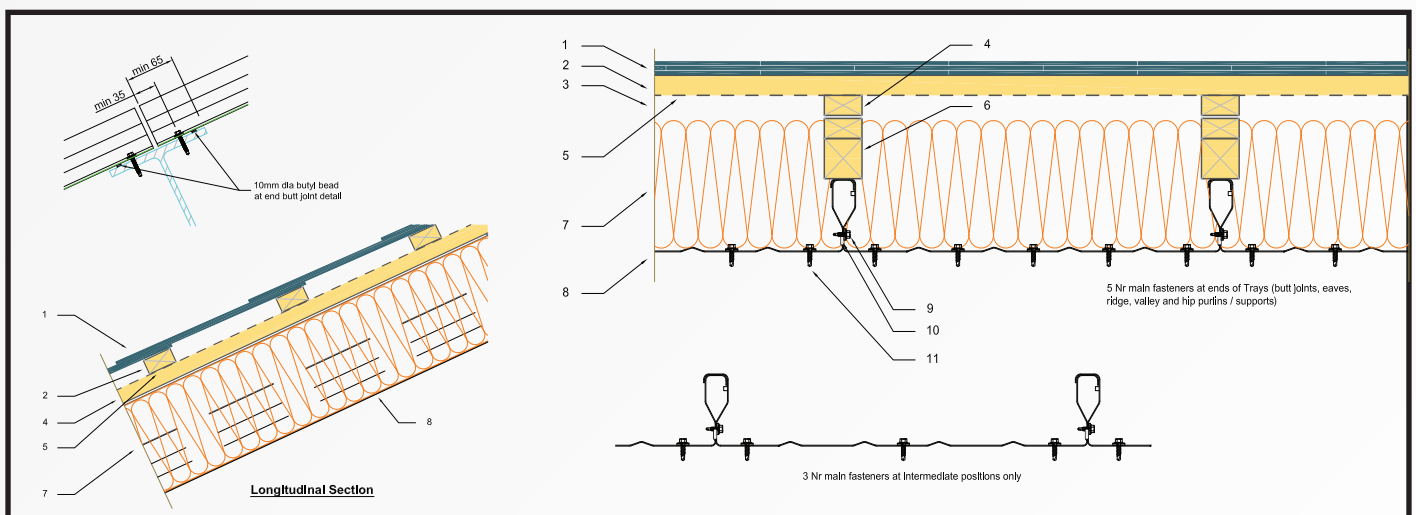
## TYPICAL SECTIONS - NON-PERFORATED TRAY

Section through standard system - U value 0.25W/m<sup>2</sup>/K



1. Roof finish such as slates, tiles or profiled metal tiled sheets. 2. Slate/Tile battens. 3. 25mm Air gap. 4. 50 x 25mm Secondary counterbattens fixed at 600mm cr/s. 5. Breather membrane < 0.25 MNs/g. 6. 50 x 50 Counterbattens fixed at 600mm cr/s. 7. 140mm Tacmat plus insulation (lambda 0.037 W/mK.) 8. Tacray 90 - 0.75 / 1.00 / 1.25 / 1.50mm gauge. 9. Side flange stitcher screws @ 600 mm cr/s. 10. Factory fitted vapour seal. 11. Main fasteners.

Section through standard system - U value 0.20W/m<sup>2</sup>/K

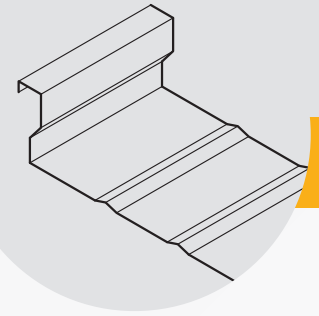


1. Roof finish such as slates, tiles or profiled metal tiled sheets. 2. Slate/Tile battens. 3. 25mm Air gap. 4. 50 x 25mm Secondary counterbattens fixed at 600mm cr/s. 5. Breather membrane < 0.25 MNs/g. 6. 50 x 75 Overall depth counterbattens (50+25mm) fixed at 600mm cr/s. 7. 180mm thk insulation, compressed to 165mm (lambda 0.037 W/mK.) 8. Tacray 90 - 0.75 / 1.00 / 1.25 / 1.50mm gauge. 9. Side flange stitcher screws @ 600 mm cr/s. 10. Factory fitted vapour seal. 11. Main fasteners.

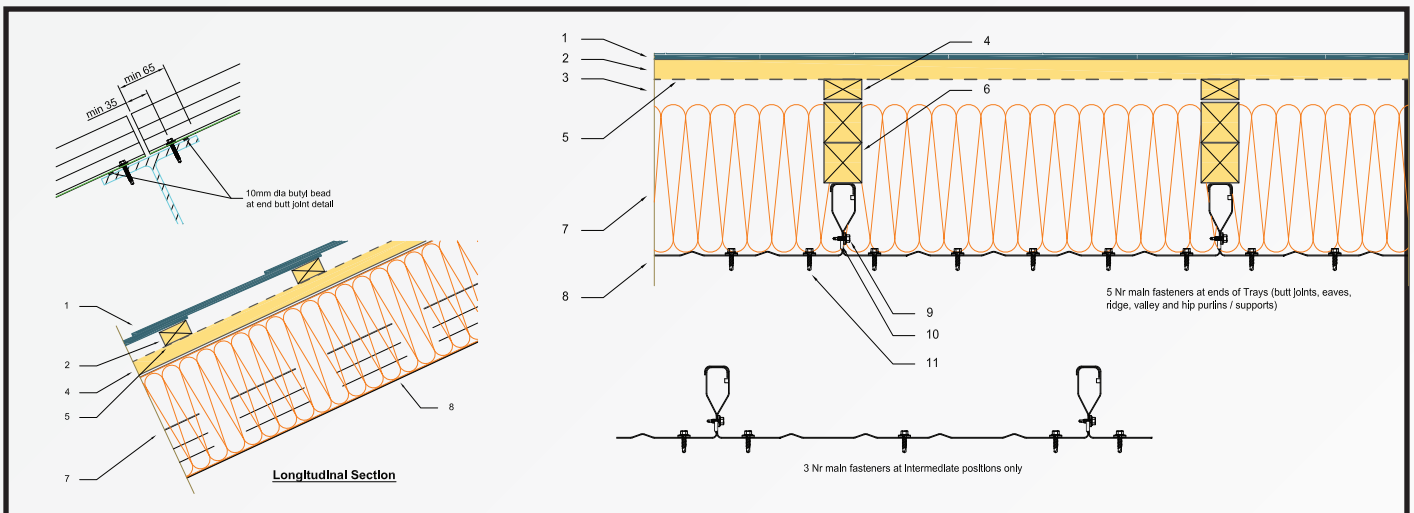


• Construction systems for U values ranging from 0.25 W/m<sup>2</sup>K to 0.10 W/m<sup>2</sup>K are available.  
• Construction details in both CAD and PDF format are available from Britmet Lightweight Roofing upon request.

## TYPICAL SECTIONS - NON-PERFORATED TRAY

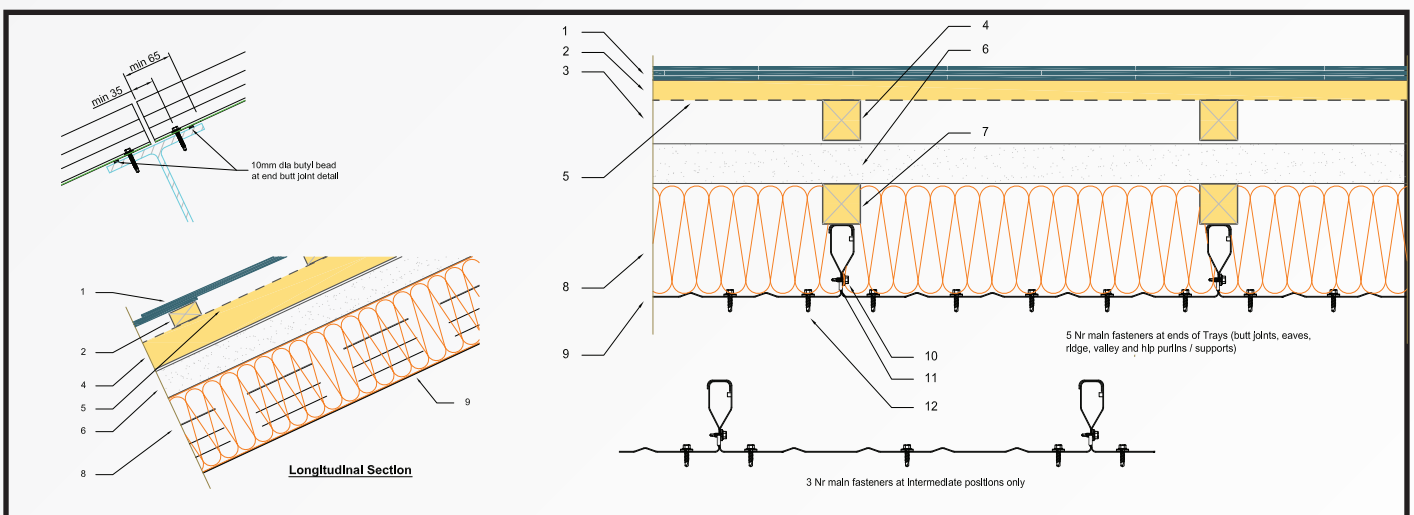


Section through standard system - U value 0.18W/m<sup>2</sup>/K



1. Roof finish such as slates, tiled or profiled metal tiled sheets. 2. Slate/Tile battens. 3. 25mm Air gap. 4. 50 x 25mm Secondary counterbattens fixed at 600mm cr/s. 5. Breather membrane < 0.25 MNs/g. 6. 50 x 100 Overall depth counterbattens (50+50mm) fixed at 600mm cr/s. 7. 200mm thk insulation (or 2x100mm) compressed to 190mm (lambda 0.037 W/mK). 8. Tactray 90 - 0.75 / 1.00 / 1.25 / 1.50mm gauge. 9. Side flange stitcher screws @ 600mm cr/s. 10. Factory fitted vapour seal. 11. Main fasteners.

Section through system - U value 0.16W/m<sup>2</sup>/K



1. Roof finish such as slates, tiles or profiled metal tiled sheets. 2. Slate/Tile battens. 3. 50mm Air gap. 4. 50 x 50mm Secondary counterbattens fixed at 600mm cr/s. 5. Breather membrane < 0.25 MNs/g. 6. 50mm thk tissue faced PIR boards, (lambda 0.022 W/mK). 7. 50 x 50mm Counterbattens fixed at 600 cr/s. 8. 140mm Tacmat plus insulation, (lambda 0.037 W/mK). 9. Tactray 90 - 0.75 / 1.00 / 1.25 / 1.50mm gauge. 10. Side flange stitcher screws @ 600mm cr/s. 11. Factory fitted vapour seal. 12. Main fasteners.

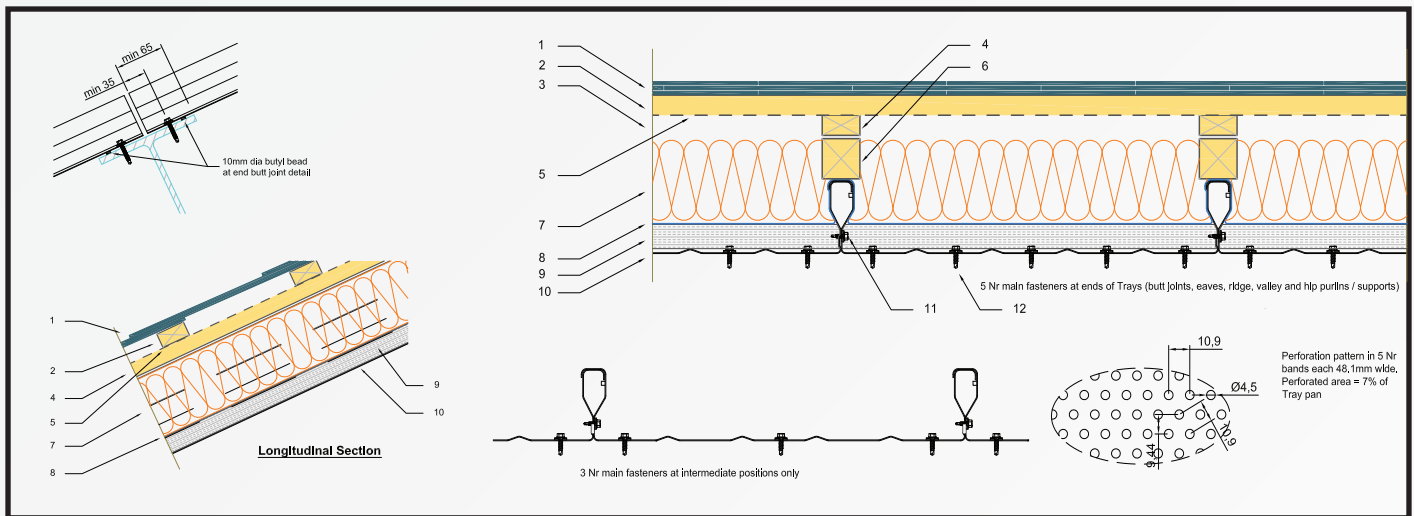


• Construction systems for U values ranging from 0.25 W/m<sup>2</sup>/K to 0.10 W/m<sup>2</sup>/K are available.  
• Construction details in both CAD and PDF format are available from Britmet Lightweight Roofing upon request.

# Tacray 90 structural support system for slates and tiles

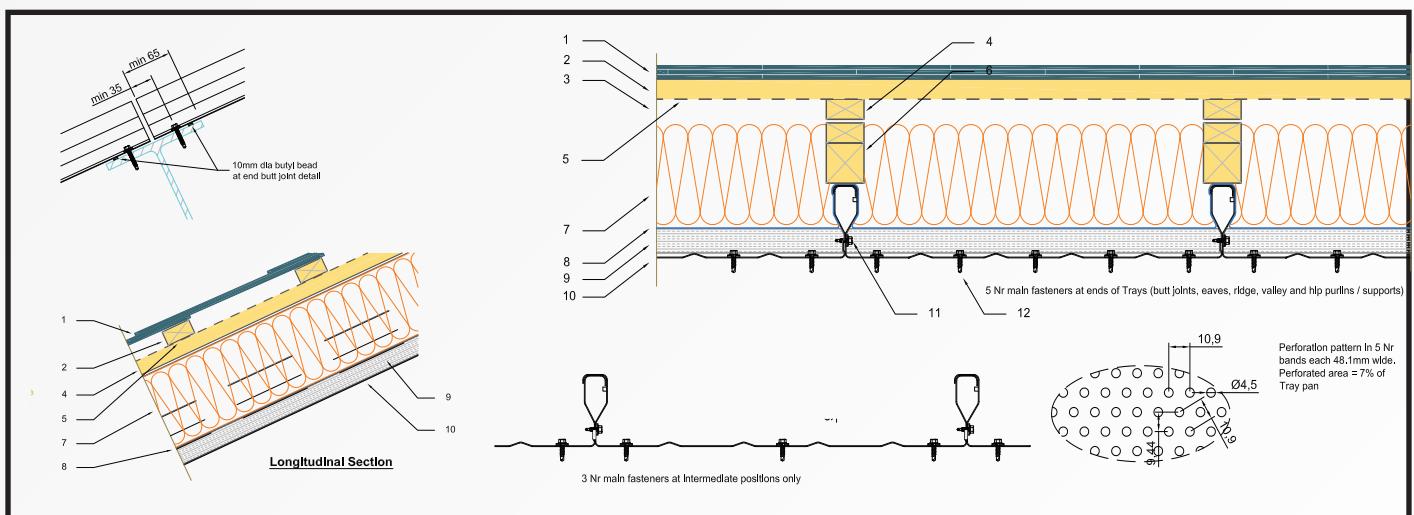
## TYPICAL SECTIONS - PERFORATED TRAY (ACOUSTIC)

Section through standard perforated system - U value 0.25W/m<sup>2</sup>/K



1. Roof finish such as slates, tiles or profiled metal tiled sheets. 2. Slate/Tile battens. 3. 25mm Air gap. 4. 50 x 25 Secondary counterbattens fixed at 600mm cr/s. 5. Breather membrane < 0.25MNs/g. 6. 50 x 50mm Counterbattens fixed at 600mm cr/s. 7. 120mm thk insulation, compressed 110mm. (lambda 0.037 W/mK). 8. Vapour control layer (VCL). 9. 30mm RW3 insulation board (black tissue faced). 10. Perforated Tacray 90 - 1.00 / 1.25 / 1.50mm gauge. 11. Side flange stitcher screws @ 600mm cr/s. 12. Main fasteners.

Section through perforated system - U value 0.20W/m<sup>2</sup>/K

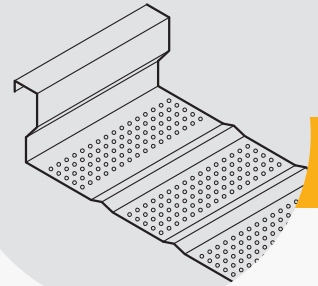


1. Roof finish such as slates, tiles or profiled metal tiled sheets. 2. Slate/Tile battens. 3. 25mm Air gap. 4. 50 x 25 Secondary counterbattens fixed at 600mm cr/s. 5. Breather membrane < 0.25MNs/g. 6. 50 x 75mm Overall depth counterbattens (50+25) fixed at 600mm cr/s. 7. 140mm thk Tacmat plus insulation, compressed 135mm. (lambda 0.037 W/mK). 8. Vapour control layer (VCL). 9. 30mm RW3 insulation board (black tissue faced). 10. Perforated Tacray 90 - 1.00 / 1.25 / 1.50mm gauge. 11. Side flange stitcher screws @ 600mm cr/s. 12. Main fasteners.

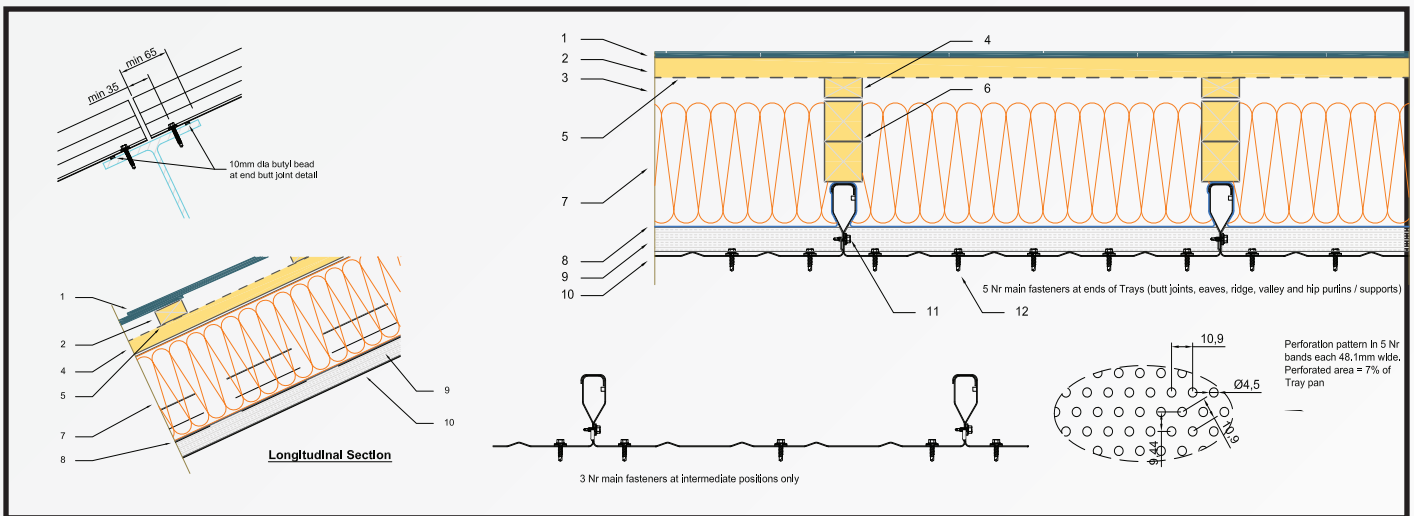


- Construction systems for U values ranging from 0.25 W/m<sup>2</sup>K to 0.10 W/m<sup>2</sup>K are available.
- Construction details in both CAD and PDF format are available from Britmet Lightweight Roofing upon request.

# TYPICAL SECTIONS - PERFORATED TRAY (ACOUSTIC)

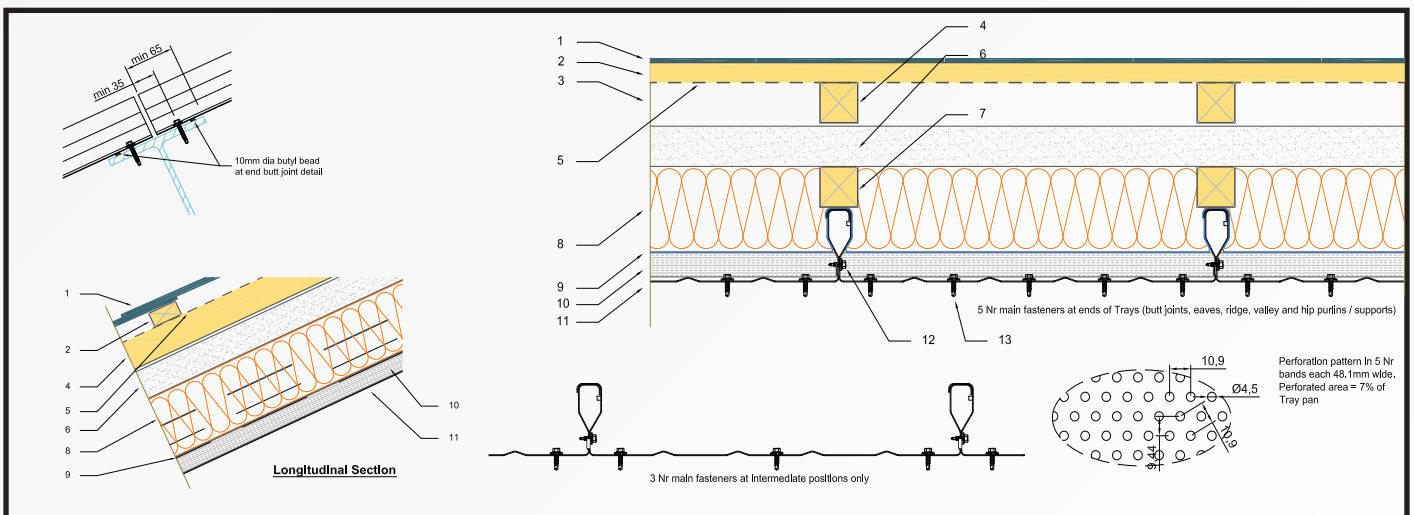


Section through standard perforated system - U value 0.18W/m<sup>2</sup>/K



1. Roof finish such as slates, tiles or profiled metal tiled sheets.
2. Slate/Tile battens.
3. 25mm Air gap.
4. 50 x 25 Secondary counterbattens fixed at 600mm cr/s.
5. Breather membrane < 0.25MNs/g.
6. 50 x 100mm Overall depth counterbattens (50+50) fixed at 600mm cr/s.
7. 160mm thk insulation, (lambda 0.037 W/mK).
8. Vapour control layer (VCL).
9. 30mm RW3 insulation board (black tissue faced).
10. Perforated Tactray 90 - 1.00 / 1.25 / 1.50mm gauge.
11. Side flange stitcher screws @ 600mm cr/s.
12. Main fasteners.

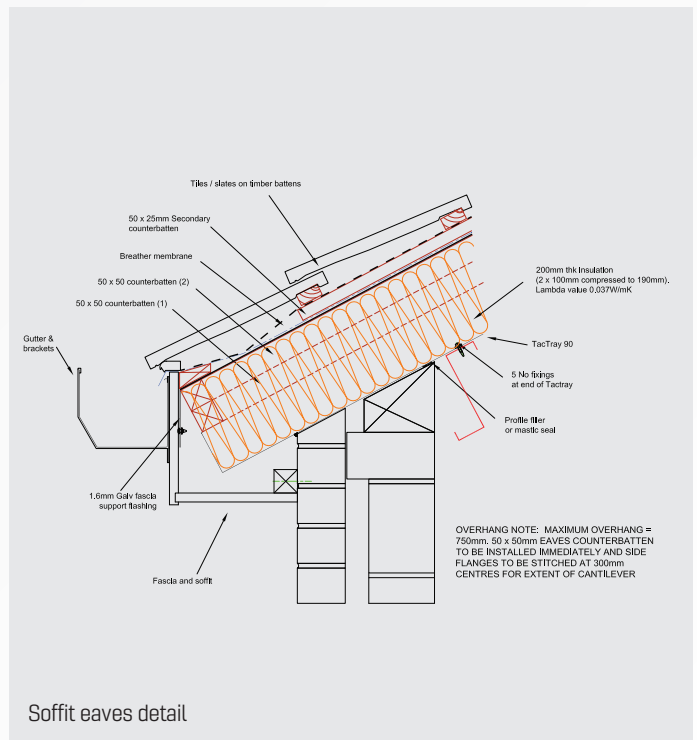
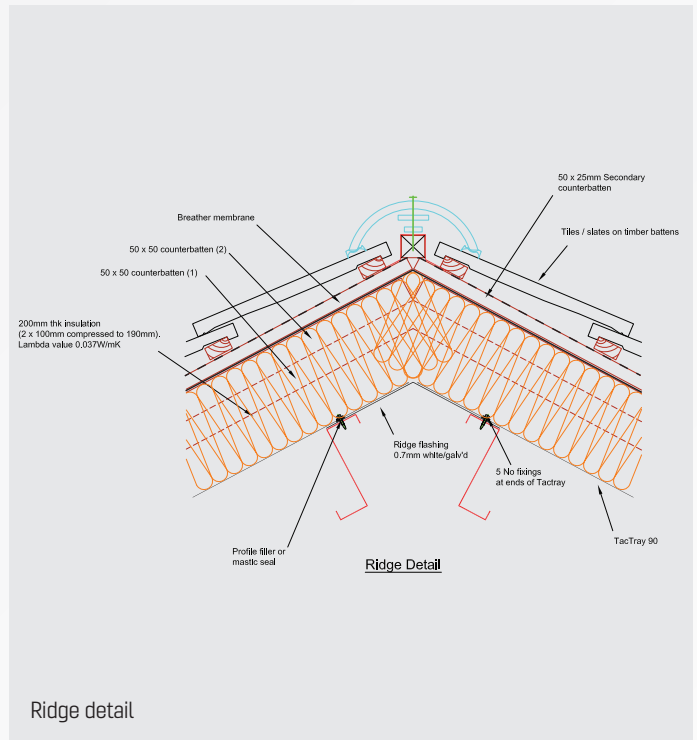
Section through perforated system - U value 0.16W/m<sup>2</sup>/K



1. Roof finish such as slates, tiles or profiled metal tiled sheets.
2. Slate/Tile battens.
3. 50mm Air gap.
4. 50 x 50 Secondary counterbattens fixed at 600mm cr/s.
5. Breather membrane < 0.25MNs/g.
6. 50mm thk tissue faced PIR boards, (lambda 0.022 W/mK).
7. 50 x 50mm Counterbattens fixed at 600mm cr/s.
8. 120mm thk insulation, compressed to 110mm, (lambda 0.037 W/mK).
9. Vapour control layer (VCL).
10. 30mm RW3 insulation board (black tissue faced).
11. Perforated Tactray 90 - 1.00 / 1.25 / 1.50mm gauge.
12. Side flange stitcher screws @ 600mm cr/s.
13. Main fasteners.

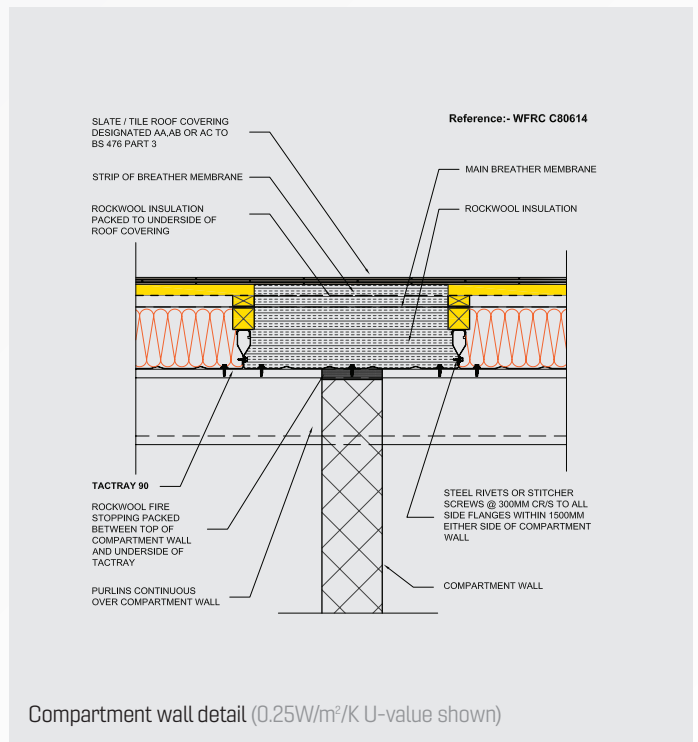
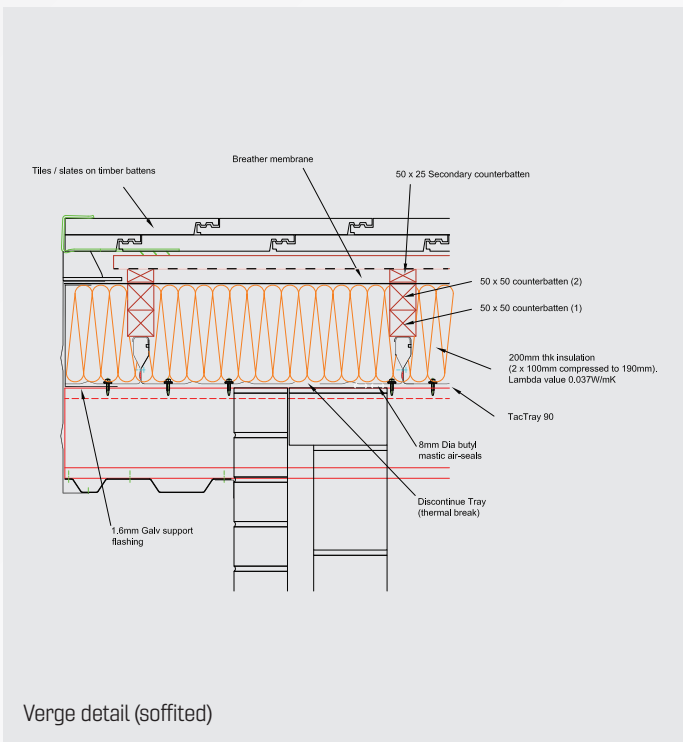
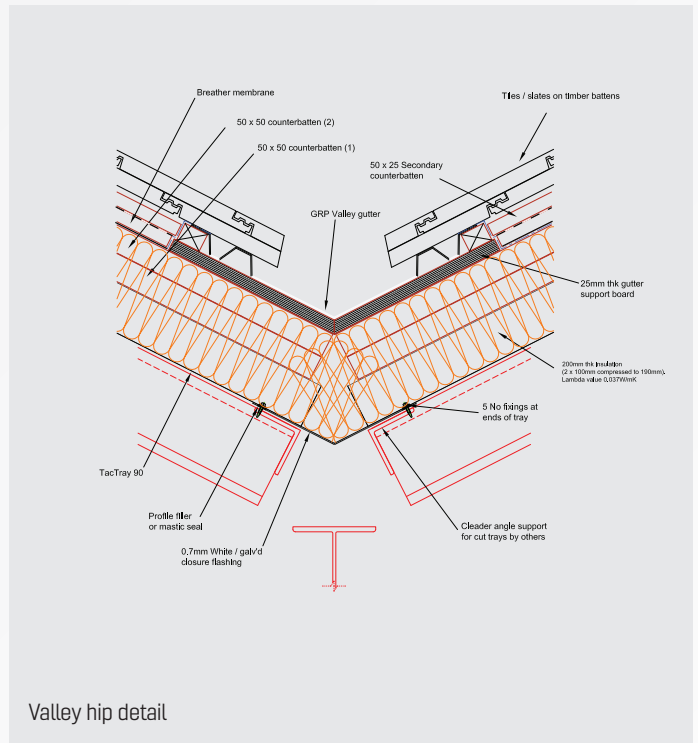
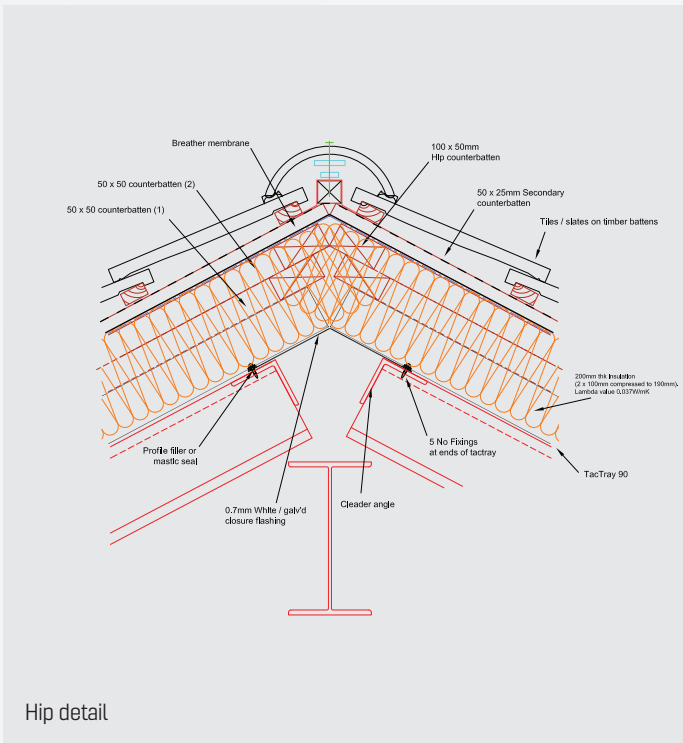
# TacTray 90 structural support system for slates and tiles

**TYPICAL CONSTRUCTION DETAILS FOR 'U' VALUE 0.18W/M<sup>2</sup>K**



Construction details in both CAD and PDF format are available from Britmet Lightweight Roofing upon request.










# Tactray 90 structural support system for slates and tiles

## RECOMMENDED FIXINGS AND INSTALLATION PROCEDURE

Table 4: Recommended fixings

| Support section  | Code:            | Standard spacing  |
|--|------------------|---|
| Tactray 90 to cold-rolled purlins/stitchers<br>                           | TUKT15GB16       | 3no on intermediate purlins<br>5no on ridges, eaves, hip and valley purlins. Side lap stitching of Tactray 90 at 600mm (max) cr/s |
| Tactray 90 to hot-rolled purlins <12.5mm<br>5no on ridges, eaves, hip<br> | TUKT24GB16       | 3no on intermediate purlins and valley purlins  |
| Tactray 90 to hot-rolled purlins >12.5mm<br>                            | TUKDH56.3X43GB16 | 3no on intermediate purlins<br>5no on ridges, eaves, hip and valley purlins   |
| Tactray 90 to timber <sup>†</sup> purlins/plates<br>                    | TUKT21GB16       | 5no on all purlins  |
| Counterbattens* (tray thickness 0.75mm)<br>                             | TUKWDL585RIB     | 600mm centres   |

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

Please note. All fixings are recommended only and must be approved by an appropriate installer and/or structural engineer.

### Fixings

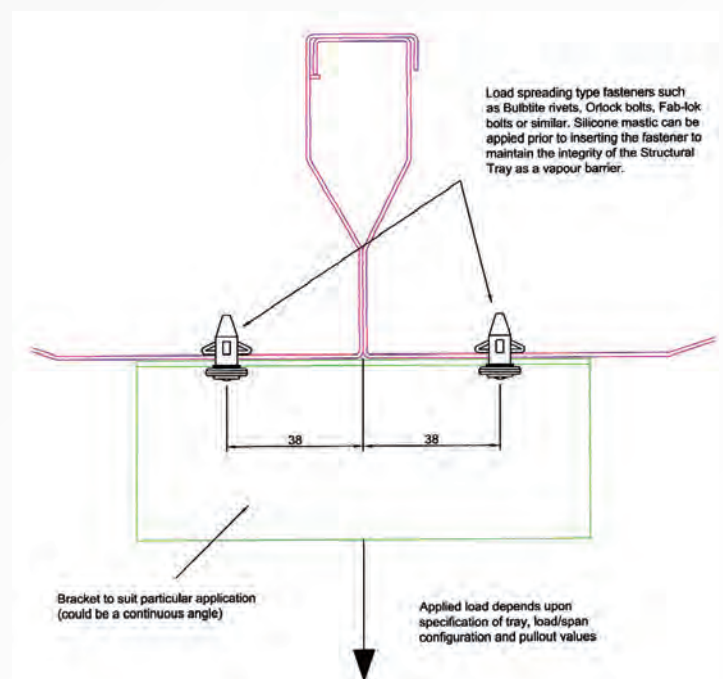
The fixings listed in Table 4 are recommended for use by Britmet Lightweight Roofing as part of the product guarantee.

### Eave and verge overhang

Where the specifier requires a large eave and verge overhang a structural 'Z' purlin support can be incorporated to provide additional strength and stability. The size and gauge of 'Z' purlins are required to be calculated by a suitable structural engineer; Britmet Lightweight Roofing can provide assistance with this calculation. Please contact us for details.

### Services

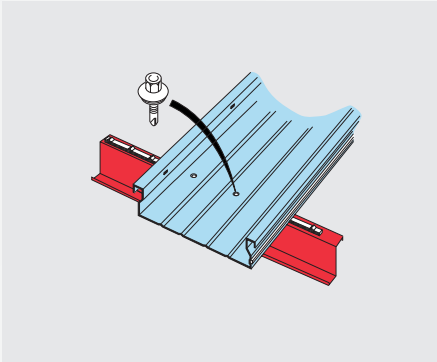
For lightweight services, such as fire sprinklers, a structural bracket can be incorporated into Tactray 90 to assist in supporting the load. For more details please contact Britmet Lightweight Roofing.



**Installation**

Tacray 90 must be fixed with the non-tabbed underlapping leg facing the direction of laying, using the following procedure:

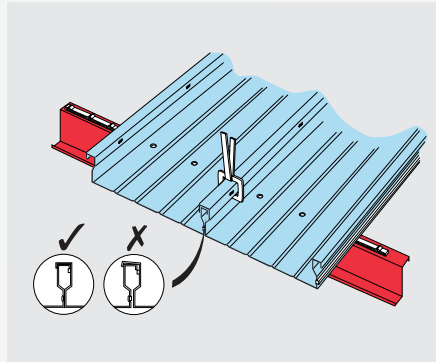
1. Establish a setting-out line and apply the low density profile filler or mastic to the supporting steelwork at ridge and eaves. Fix the first full length of Tacray 90, using a minimum of three fixings at intermediate purlins and five at ridge/eaves/hips/valleys.



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

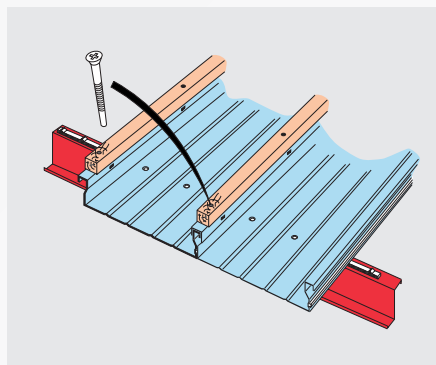
2. Lift the next length into position and tightly butt it against the first sheet, ensuring that the underlapping sheet is securely located on the tab provided. Mole 'C' clamps or similar should be used at eaves, ridge and intermediate purlin positions and at the side lap stitching position (600mm) in order to clamp together the lengths of Tacray 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.

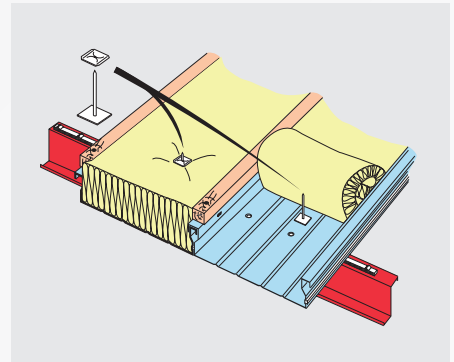


NOTE: It is important to ensure tight butting of the pans, since failure to do so may result in unsightly wide gaps, which cannot be subsequently rectified and may affect the integrity of the vapour control layer.

3. Counterbattens are laid over the upstands. These should be a minimum of 50mm x 50mm, be true and relatively knot-free. The fixing centres are as specified by the structural engineer, but should not exceed 600mm. A list of recommended fixing screws is given in this brochure.



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 underlay felt and, once unrolled, must be protected from rainfall.

With the insulation, felt and battens in place, the normal procedure of slating/tiling can take place.

**Training**

Training can also be provided. A fee for this service can be obtained from Britmet.

**Recommended contractor**

Britmet Lightweight recommends that a roofing contractor fully experienced in installing structural metal tray systems should be employed. A list of recommended contractors is available on request.

**TACTRAY 90, THE IDEAL SOLUTION TO CANTILEVERS AND OVERHANGS**



Galvanised zed stiffeners designed for particular eaves cantilever case (applied loads and overhang). Tophat sections can be used if necessary.

50 x 50mm softwood counterbatten

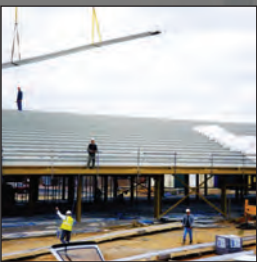
50 x 50mm softwood counterbattens between galvanised tophat sections

Galvanised zed stiffeners designed for particular eaves cantilever case (applied loads and overhang). Tophat sections can be used if necessary.

Galvanised top hat sections designed for particular verge cantilever case (applied loads and overhang). This method is generally suitable for verge overhangs up to 450mm.

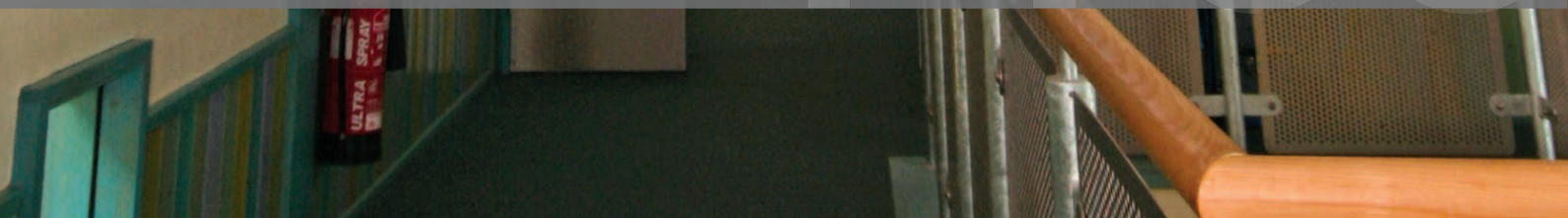
Tacray 90 can normally cantilever 750mm without stiffening. Beyond this dimension steel zed or top hat sections can be incorporated within the depth of Tacray 90. This solution can provide extended overhangs to eaves and verge details.

For further information and technical support on the use of Tacray 90 for building applications please contact Britmet Lightweight Roofing.



## **> *STRUCTURAL SUPPORT SYSTEM FOR ROOFING***

An ideal structural tray to support a wide range of roofing systems including secret-fix standing seam, lead, zinc, copper, green roofs and single ply membranes.



# Tactray 90 structural support system for roofing

## *THE FLEXIBLE OPTION*

Tactray 90 is an ideal structural tray to support a wide range of roofing systems such as secret-fix standing seam, lead, zinc, copper, green roofs and single ply membranes.

### **Key benefits**

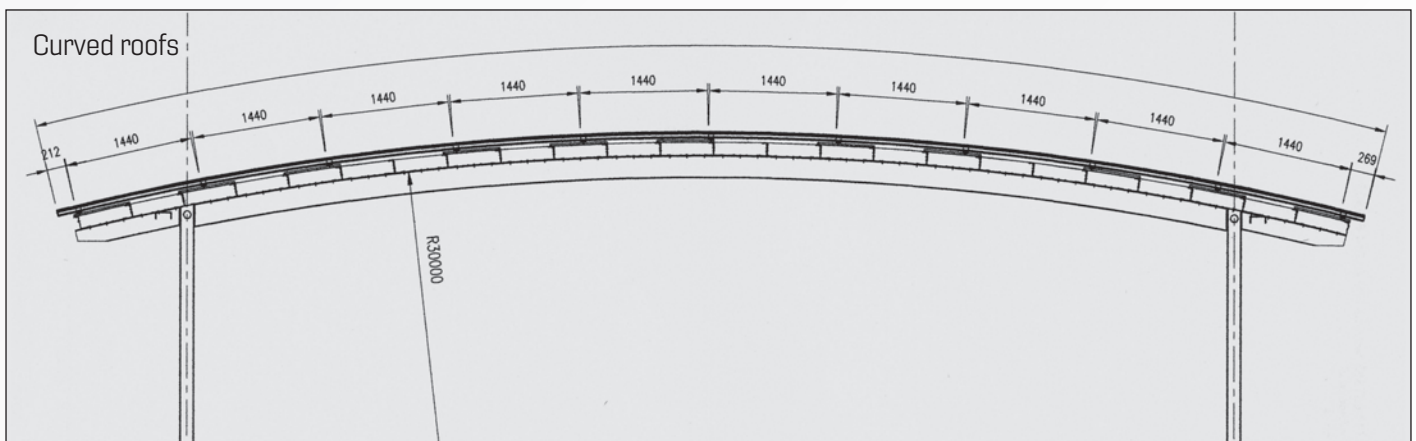
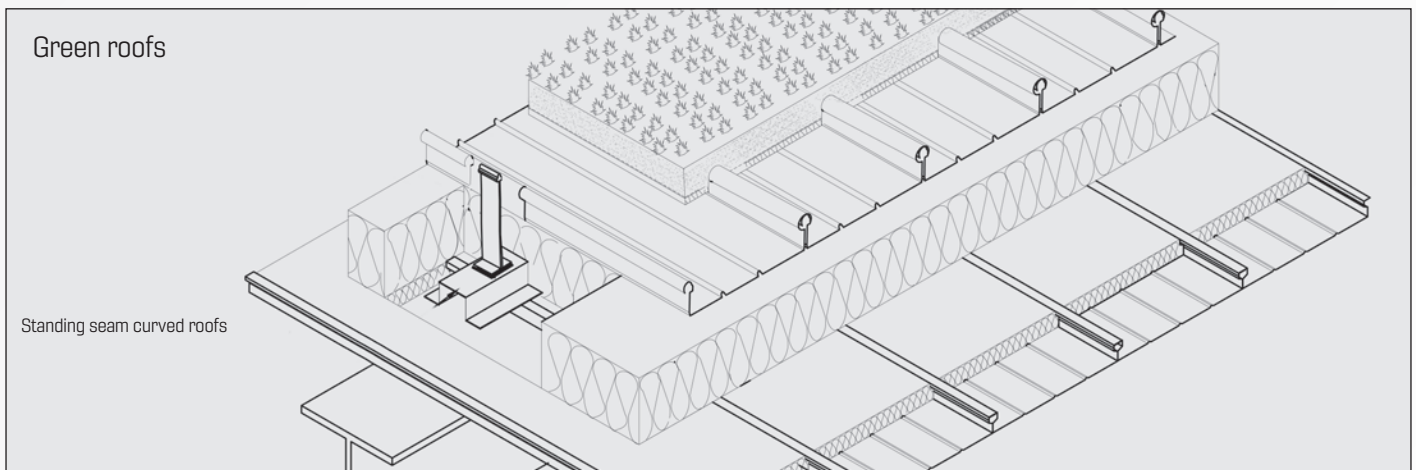
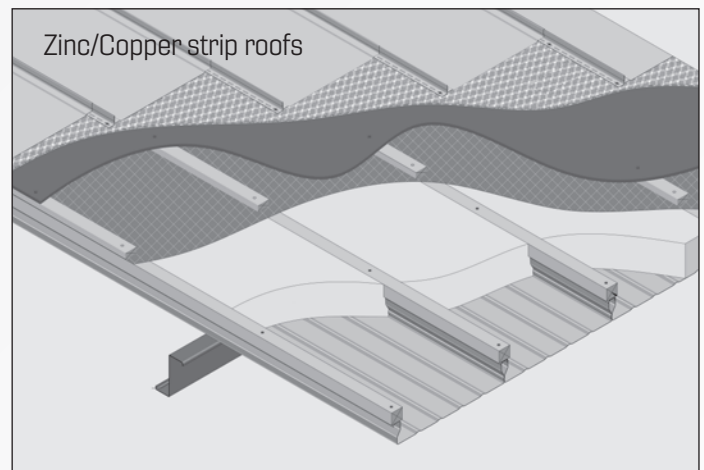
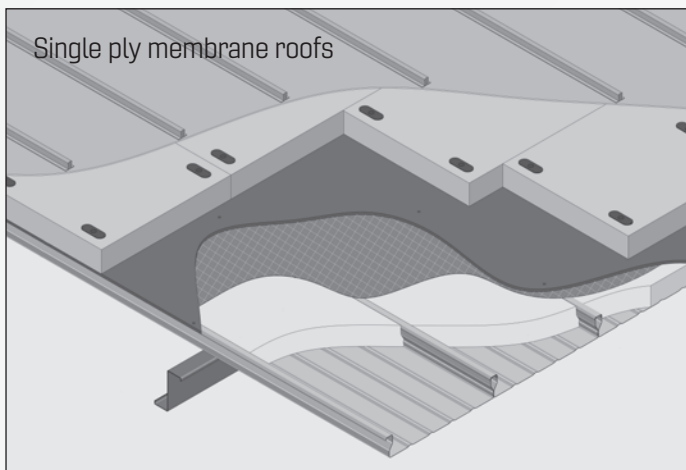
- Reduces the need for roof purlins
- Perforated option to contribute towards acoustic solutions
- Available with standard white polyester finish - other colours and coatings available on request
- Factory fitted gasket - low air leakage rate of  $4.1\text{m}^3/\text{Hr}/\text{m}^2$
- Working with structural engineers, Tactray 90 can provide lateral and stressed skin or diaphragm action to roof structure
- Provides a working platform
- Choice of insulation options to deliver a range of thermal performances



# Tacray 90 structural support system for roofing/walls

Tacray 90, structural tray liner ideal for supporting a range of roofing systems:

Single ply membrane roofs · Zinc / copper lead roofs  
Green roofs · Standing seam roofs · Rainscreen systems



# BritSpec

## A new online specification tool for TacTray 90

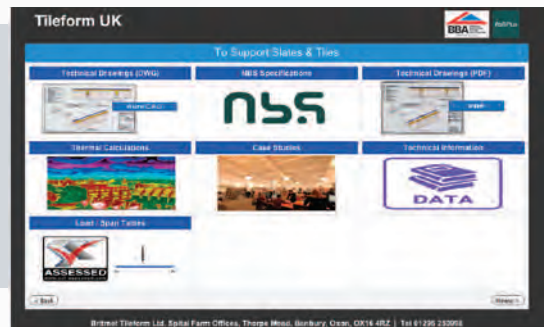
An innovative solution  
 BritSpec is our new online specification tool providing detailed drawings, thermal calculations, load tables and more for your project.



- Step 1. Select your roofing type::**
- Slates & Tiles
  - Metal Tile Effect Strip Panels
  - Metal Tile Effect Sheets (Eaves to Ridges)
  - Metal Scret Fix Standing Seam
  - Single Ply Membranes
  - Zinc, Copper, Lead Roofing Systems

- Step 2. Input project specifics:**
- Thermal value
  - Perforated or non-perforated
  - Span
  - Span type
  - Confirm required UDL
- View thickness and load span

- Step 3. Support:**
- Technical drawings (PDF/DWG)
  - NBS Specifications
  - Thermal calculations
  - Technical information
  - Load and span tables
  - Case studies



Get started, visit [www.bit.ly/britspec](http://www.bit.ly/britspec)

# Tactray 90 structural support system for roofing

## STRUCTURAL LINER TRAY - LOAD / SPAN TABLES - DEFLECTION L/200

Example roofing finishes: Standing seam / Single-ply / Tile effect / Copper / Aluminium

### Working Load UDL (kN/m<sup>2</sup>) - Gravity

| Thickness<br>(mm) | Span<br>Condition | Span (M) |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------|-------------------|----------|------|------|------|------|------|------|------|------|------|------|------|------|
|                   |                   | 1.60     | 1.80 | 2.00 | 2.20 | 2.40 | 2.60 | 2.80 | 3.00 | 3.20 | 3.40 | 3.60 | 3.80 | 4.00 |
| 0.75              | Single            | 2.57     | 2.28 | 2.05 | 1.87 | 1.71 | 1.58 | 1.47 | 1.37 | 1.28 | 1.21 | 1.14 | 1.08 | 0.99 |
| 1.00              | Single            | 4.61     | 4.09 | 3.69 | 3.35 | 3.07 | 2.83 | 2.63 | 2.46 | 2.30 | 2.17 | 2.05 | 1.88 | 1.70 |
| 1.25              | Single            | 7.19     | 6.39 | 5.75 | 5.23 | 4.79 | 4.42 | 4.11 | 3.83 | 3.59 | 3.22 | 2.87 | 2.58 | 2.32 |
| 1.50              | Single            | 10.3     | 9.16 | 8.24 | 7.49 | 6.87 | 6.34 | 5.86 | 5.12 | 4.50 | 3.99 | 3.56 | 3.20 | 2.89 |
| 0.75              | Double            | 2.39     | 2.02 | 1.73 | 1.50 | 1.31 | 1.16 | 1.03 | 0.93 | 0.84 | 0.76 | 0.69 | 0.63 | 0.58 |
| 1.00              | Double            | 4.16     | 3.51 | 3.00 | 2.60 | 2.28 | 2.02 | 1.80 | 1.61 | 1.45 | 1.32 | 1.20 | 1.10 | 1.01 |
| 1.25              | Double            | 6.12     | 5.15 | 4.40 | 3.80 | 3.33 | 2.94 | 2.61 | 2.34 | 2.11 | 1.91 | 1.74 | 1.59 | 1.46 |
| 1.50              | Double            | 8.39     | 7.04 | 6.01 | 5.19 | 4.53 | 4.00 | 3.55 | 3.18 | 2.86 | 2.59 | 2.35 | 2.15 | 1.97 |
| 0.75              | Multi             | 2.83     | 2.39 | 2.05 | 1.79 | 1.57 | 1.39 | 1.24 | 1.11 | 1.01 | 0.91 | 0.83 | 0.76 | 0.70 |
| 1.00              | Multi             | 4.92     | 4.16 | 3.57 | 3.10 | 2.72 | 2.41 | 2.15 | 1.93 | 1.75 | 1.59 | 1.45 | 1.33 | 1.22 |
| 1.25              | Multi             | 7.25     | 6.12 | 5.24 | 4.54 | 3.98 | 3.52 | 3.14 | 2.81 | 2.54 | 2.30 | 2.10 | 1.92 | 1.77 |
| 1.50              | Multi             | 9.95     | 8.38 | 7.17 | 6.21 | 5.43 | 4.80 | 4.27 | 3.82 | 3.45 | 3.13 | 2.85 | 2.60 | 2.39 |

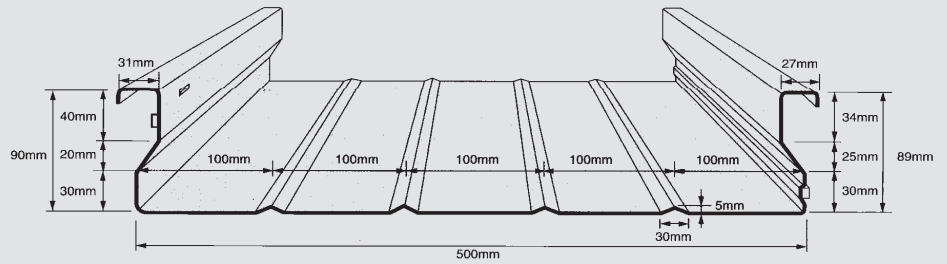
### Working Load UDL (kN/m<sup>2</sup>) - Uplift

| Thickness<br>(mm) | Span<br>Condition | Span (M) |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------|-------------------|----------|------|------|------|------|------|------|------|------|------|------|------|------|
|                   |                   | 1.60     | 1.80 | 2.00 | 2.20 | 2.40 | 2.60 | 2.80 | 3.00 | 3.20 | 3.40 | 3.60 | 3.80 | 4.00 |
| 0.75              | Single            | 2.57     | 2.28 | 2.05 | 1.87 | 1.71 | 1.58 | 1.45 | 1.26 | 1.11 | 0.98 | 0.88 | 0.79 | 0.71 |
| 1.00              | Single            | 4.61     | 4.09 | 3.69 | 3.35 | 3.07 | 2.83 | 2.52 | 2.19 | 1.93 | 1.71 | 1.52 | 1.37 | 1.23 |
| 1.25              | Single            | 7.19     | 6.39 | 5.75 | 5.23 | 4.79 | 4.10 | 3.53 | 3.08 | 2.71 | 2.40 | 2.14 | 1.90 | 1.63 |
| 1.50              | Single            | 10.3     | 9.16 | 8.24 | 7.49 | 6.39 | 5.44 | 4.69 | 4.09 | 3.59 | 3.18 | 2.78 | 2.36 | 2.03 |
| 0.75              | Double            | 2.85     | 2.43 | 2.10 | 1.84 | 1.62 | 1.45 | 1.30 | 1.17 | 1.06 | 0.96 | 0.86 | 0.78 | 0.71 |
| 1.00              | Double            | 4.74     | 4.03 | 3.48 | 3.04 | 2.68 | 2.38 | 2.14 | 1.92 | 1.74 | 1.59 | 1.45 | 1.33 | 1.23 |
| 1.25              | Double            | 6.88     | 5.86 | 5.05 | 4.40 | 3.87 | 3.44 | 3.08 | 2.77 | 2.51 | 2.28 | 2.08 | 1.91 | 1.76 |
| 1.50              | Double            | 9.11     | 7.72 | 6.64 | 5.78 | 5.08 | 4.51 | 4.03 | 3.62 | 3.27 | 2.97 | 2.72 | 2.49 | 2.29 |
| 0.75              | Multi             | 3.33     | 2.85 | 2.47 | 2.17 | 1.92 | 1.71 | 1.54 | 1.39 | 1.26 | 1.14 | 1.03 | 0.94 | 0.85 |
| 1.00              | Multi             | 5.56     | 4.75 | 4.11 | 3.60 | 3.18 | 2.83 | 2.54 | 2.29 | 2.08 | 1.90 | 1.74 | 1.60 | 1.48 |
| 1.25              | Multi             | 8.11     | 6.92 | 5.98 | 5.22 | 4.60 | 4.10 | 3.67 | 3.31 | 3.00 | 2.73 | 2.50 | 2.30 | 2.12 |
| 1.50              | Multi             | 10.76    | 9.15 | 7.89 | 6.88 | 6.06 | 5.38 | 4.82 | 4.34 | 3.93 | 3.57 | 3.27 | 3.00 | 2.76 |



Construction details in both CAD and PDF format are available from Britmet Lightweight Roofing upon request.





Deflection L/200: consider when Tac-tray 90 is supporting roofing

| 4.20 | 4.40 | 4.60 | 4.80 | 5.00 | 5.20 | 5.40 | 5.60 | 5.80 | 6.00 | 6.20 | 6.40 | 6.60 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 0.87 | 0.78 | 0.70 | 0.63 | 0.57 | 0.52 | 0.47 | 0.43 | 0.40 | 0.37 | 0.34 | 0.31 | 0.29 |
| 1.54 | 1.40 | 1.28 | 1.13 | 1.00 | 0.89 | 0.79 | 0.71 | 0.64 | 0.58 | 0.52 | 0.48 | 0.43 |
| 2.11 | 1.85 | 1.62 | 1.42 | 1.26 | 1.12 | 1.00 | 0.90 | 0.81 | 0.73 | 0.66 | 0.60 | 0.55 |
| 2.56 | 2.23 | 1.95 | 1.72 | 1.52 | 1.35 | 1.21 | 1.08 | 0.97 | 0.88 | 0.80 | 0.72 | 0.66 |
| 0.54 | 0.50 | 0.46 | 0.43 | 0.40 | 0.37 | 0.35 | 0.33 | 0.31 | 0.29 | 0.28 | 0.26 | 0.25 |
| 0.93 | 0.86 | 0.80 | 0.74 | 0.69 | 0.65 | 0.61 | 0.57 | 0.54 | 0.51 | 0.48 | 0.45 | 0.43 |
| 1.34 | 1.24 | 1.15 | 1.07 | 1.00 | 0.93 | 0.87 | 0.82 | 0.77 | 0.73 | 0.69 | 0.65 | 0.61 |
| 1.82 | 1.68 | 1.56 | 1.45 | 1.35 | 1.26 | 1.18 | 1.11 | 1.04 | 0.98 | 0.92 | 0.87 | 0.83 |
| 0.65 | 0.60 | 0.56 | 0.52 | 0.49 | 0.45 | 0.43 | 0.40 | 0.38 | 0.36 | 0.34 | 0.32 | 0.30 |
| 1.13 | 1.04 | 0.97 | 0.90 | 0.84 | 0.79 | 0.74 | 0.70 | 0.66 | 0.62 | 0.58 | 0.55 | 0.52 |
| 1.63 | 1.51 | 1.40 | 1.30 | 1.21 | 1.14 | 1.06 | 1.00 | 0.94 | 0.89 | 0.84 | 0.79 | 0.75 |
| 2.20 | 2.04 | 1.89 | 1.76 | 1.64 | 1.53 | 1.44 | 1.35 | 1.27 | 1.20 | 1.13 | 1.07 | 1.01 |

| Thickness mm | Weight Kg/m <sup>2</sup> |
|--------------|--------------------------|
| 0.75         | 8.83                     |
| 1.00         | 11.78                    |
| 1.25         | 14.72                    |
| 1.50         | 17.35                    |

Please note:  
Load factor (working load to ultimate) = 1.5

Tables indicate total load carrying capacity of tray: kN/m<sup>2</sup>

Tables do not include self weight of trays

Tray bearing: minimum 65mm

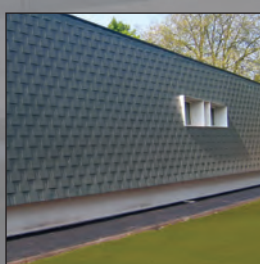
Load/Span tables for Tac-tray 90 perforated available upon request

Deflection L/200: consider when Tac-tray 90 is supporting roofing

| 4.20 | 4.40 | 4.60 | 4.80 | 5.00 | 5.20 | 5.40 | 5.60 | 5.80 | 6.00 | 6.20 | 6.40 | 6.60 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 0.65 | 0.59 | 0.54 | 0.49 | 0.44 | 0.39 | 0.35 | 0.31 | 0.28 | 0.25 | 0.23 | 0.21 | 0.19 |
| 1.08 | 0.94 | 0.82 | 0.72 | 0.64 | 0.57 | 0.51 | 0.45 | 0.41 | 0.37 | 0.34 | 0.30 | 0.28 |
| 1.41 | 1.22 | 1.07 | 0.94 | 0.83 | 0.74 | 0.66 | 0.59 | 0.53 | 0.48 | 0.44 | 0.40 | 0.36 |
| 1.75 | 1.52 | 1.33 | 1.17 | 1.04 | 0.92 | 0.82 | 0.74 | 0.66 | 0.60 | 0.54 | 0.49 | 0.45 |
| 0.65 | 0.59 | 0.55 | 0.50 | 0.47 | 0.43 | 0.40 | 0.37 | 0.35 | 0.33 | 0.30 | 0.29 | 0.27 |
| 1.14 | 1.06 | 0.98 | 0.92 | 0.85 | 0.80 | 0.75 | 0.70 | 0.66 | 0.62 | 0.56 | 0.51 | 0.46 |
| 1.63 | 1.51 | 1.40 | 1.30 | 1.21 | 1.13 | 1.06 | 0.99 | 0.89 | 0.80 | 0.73 | 0.66 | 0.60 |
| 2.12 | 1.96 | 1.82 | 1.70 | 1.59 | 1.48 | 1.37 | 1.23 | 1.11 | 1.00 | 0.91 | 0.82 | 0.75 |
| 0.78 | 0.72 | 0.66 | 0.61 | 0.56 | 0.52 | 0.48 | 0.45 | 0.42 | 0.40 | 0.37 | 0.35 | 0.32 |
| 1.37 | 1.27 | 1.18 | 1.10 | 1.03 | 0.95 | 0.85 | 0.76 | 0.68 | 0.62 | 0.56 | 0.51 | 0.46 |
| 1.96 | 1.82 | 1.69 | 1.57 | 1.39 | 1.24 | 1.10 | 0.99 | 0.89 | 0.80 | 0.73 | 0.66 | 0.60 |
| 2.56 | 2.37 | 2.20 | 1.95 | 1.73 | 1.54 | 1.37 | 1.23 | 1.11 | 1.00 | 0.91 | 0.82 | 0.75 |



Tables calculated and assessed by the SCI to Eurocode-EN1993-1-2:2006



## > *STRUCTURAL SUPPORT SYSTEM FOR WALL CLADDING*

The perfect structural tray, designed to provide support for metal cladding, rainscreen systems, vertical tiling and timber boarding and shingles.

# TT90

# Tactray 90 structural support system for wall cladding

## THE FLEXIBLE OPTION

Tactray 90 provides support for a range of external cladding systems such as metal cladding, rainscreen systems, vertical tiling, timber boarding and shingles.

### Key benefits

- Reduces need for cladding rails
- Clean lines internally - no collection of dust and debris on cladding rails
- Perforated option to contribute towards acoustic solutions
- Available with standard white polyester finish – others colours and coatings available on request
- Factory fitted gasket - low air leakage rate of  $4.1\text{m}^3/\text{Hr}/\text{m}^2$  - BBA tested
- Choice on insulation options to deliver range of thermal performances
- Tactray 90 can span either horizontally or vertically





## **> RAINSCREEN CLADDING SYSTEM**

Our rainscreen cladding system provides a cost effective and quick to install solution for a thru wall system, with all components enjoying a proven track record and thorough testing, alongside many other benefits.

# TT90



# Tactray 90 rainscreen cladding system

## *A FLEXIBLE AND PROVEN SOLUTION*

Tactray 90 is an ideal structural tray to support a wide range of wall systems, such as rainscreen cedar wood, shingles and many more.

### **Key benefits**

- Provides a cost effective and quick to install solution for a thru wall system, all components proven track record and tested.
- Provides a natural void for insulation
- Provides greater structural properties/stability
- Long span capacity reduces the number of purlins by increasing purlin centres
- Can act as a diaphragm to provide further stability
- Return flanges can be used to carrier external envelope brackets/mullions
- Speed of installation allows for weather tight envelope to achieve quicker than with other methods of construction
- Trays can be laid horizontally be fixed directly to the primary structure subject to centres and avoid the use of sheeting rails. Reducing overall building costs
- Manufactured in the UK avoids costly transport costs and long lead times
- Provides excellent vapour resistance to interstitial condensation
- Fire Protection
- Excellent performance with regards to air leakage
- Cantilever 750mm from last support, useful for parapet walls without extra steel



# Tactray 90 structural support system for wall cladding

## STRUCTURAL LINER TRAY - LOAD / SPAN TABLES - DEFLECTION L/150

Example wall finishes: Steel / Rainscreen / Timber / Vertical cladding / Slating / Tiling

### Working Load UDL (kN/m<sup>2</sup>) - Gravity

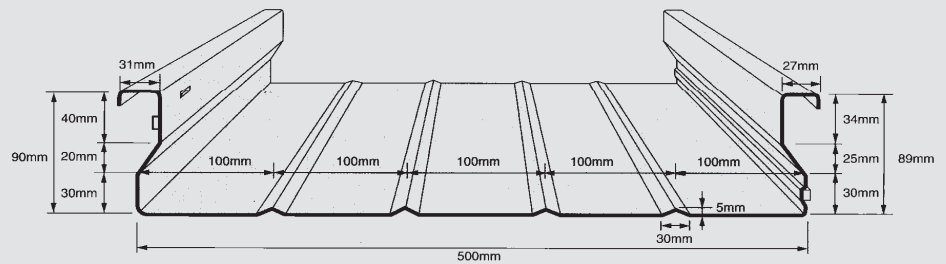
| Thickness<br>(mm) | Span<br>Condition | Span (M) |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------|-------------------|----------|------|------|------|------|------|------|------|------|------|------|------|------|
|                   |                   | 1.60     | 1.80 | 2.00 | 2.20 | 2.40 | 2.60 | 2.80 | 3.00 | 3.20 | 3.40 | 3.60 | 3.80 | 4.00 |
| 0.75              | Single            | 2.57     | 2.28 | 2.05 | 1.87 | 1.71 | 1.58 | 1.47 | 1.37 | 1.28 | 1.21 | 1.14 | 1.08 | 0.99 |
| 1.00              | Single            | 4.61     | 4.09 | 3.69 | 3.35 | 3.07 | 2.83 | 2.63 | 2.46 | 2.30 | 2.17 | 2.05 | 1.88 | 1.70 |
| 1.25              | Single            | 7.19     | 6.39 | 5.75 | 5.23 | 4.79 | 4.42 | 4.11 | 3.83 | 3.59 | 3.22 | 2.87 | 2.58 | 2.32 |
| 1.50              | Single            | 10.30    | 9.16 | 8.24 | 7.49 | 6.87 | 6.34 | 5.86 | 5.12 | 4.50 | 3.99 | 3.56 | 3.20 | 2.89 |
| 0.75              | Double            | 2.39     | 2.02 | 1.73 | 1.50 | 1.31 | 1.16 | 1.03 | 0.93 | 0.84 | 0.76 | 0.69 | 0.63 | 0.58 |
| 1.00              | Double            | 4.16     | 3.51 | 3.00 | 2.60 | 2.28 | 2.02 | 1.80 | 1.61 | 1.45 | 1.32 | 1.20 | 1.10 | 1.01 |
| 1.25              | Double            | 6.12     | 5.15 | 4.40 | 3.80 | 3.33 | 2.94 | 2.61 | 2.34 | 2.11 | 1.91 | 1.74 | 1.59 | 1.46 |
| 1.50              | Double            | 8.39     | 7.04 | 6.01 | 5.19 | 4.53 | 4.00 | 3.55 | 3.18 | 2.86 | 2.59 | 2.35 | 2.15 | 1.97 |
| 0.75              | Multi             | 2.83     | 2.39 | 2.05 | 1.79 | 1.57 | 1.39 | 1.24 | 1.11 | 1.01 | 0.91 | 0.83 | 0.76 | 0.70 |
| 1.00              | Multi             | 4.92     | 4.16 | 3.57 | 3.10 | 2.72 | 2.41 | 2.15 | 1.93 | 1.75 | 1.59 | 1.45 | 1.33 | 1.22 |
| 1.25              | Multi             | 7.25     | 6.12 | 5.24 | 4.54 | 3.98 | 3.52 | 3.14 | 2.81 | 2.54 | 2.30 | 2.10 | 1.92 | 1.77 |
| 1.50              | Multi             | 9.95     | 8.38 | 7.17 | 6.21 | 5.43 | 4.80 | 4.27 | 3.82 | 3.45 | 3.13 | 2.85 | 2.60 | 2.39 |

### Working Load UDL (kN/m<sup>2</sup>) - Uplift

| Thickness<br>(mm) | Span<br>Condition | Span (M) |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------|-------------------|----------|------|------|------|------|------|------|------|------|------|------|------|------|
|                   |                   | 1.60     | 1.80 | 2.00 | 2.20 | 2.40 | 2.60 | 2.80 | 3.00 | 3.20 | 3.40 | 3.60 | 3.80 | 4.00 |
| 0.75              | Single            | 2.57     | 2.28 | 2.05 | 1.87 | 1.71 | 1.58 | 1.45 | 1.26 | 1.11 | 0.98 | 0.88 | 0.79 | 0.71 |
| 1.00              | Single            | 4.61     | 4.09 | 3.69 | 3.35 | 3.07 | 2.83 | 2.52 | 2.19 | 1.93 | 1.71 | 1.52 | 1.37 | 1.23 |
| 1.25              | Single            | 7.19     | 6.39 | 5.75 | 5.23 | 4.79 | 4.10 | 3.53 | 3.08 | 2.71 | 2.40 | 2.14 | 1.92 | 1.73 |
| 1.50              | Single            | 10.30    | 9.16 | 8.24 | 7.49 | 6.39 | 5.44 | 4.69 | 4.09 | 3.59 | 3.18 | 2.84 | 2.55 | 2.30 |
| 0.75              | Double            | 2.85     | 2.43 | 2.10 | 1.84 | 1.62 | 1.45 | 1.30 | 1.17 | 1.06 | 0.96 | 0.86 | 0.78 | 0.71 |
| 1.00              | Double            | 4.74     | 4.03 | 3.48 | 3.04 | 2.68 | 2.38 | 2.14 | 1.92 | 1.74 | 1.59 | 1.45 | 1.33 | 1.23 |
| 1.25              | Double            | 6.88     | 5.86 | 5.05 | 4.40 | 3.87 | 3.44 | 3.08 | 2.77 | 2.51 | 2.28 | 2.08 | 1.91 | 1.76 |
| 1.50              | Double            | 9.11     | 7.72 | 6.64 | 5.78 | 5.08 | 4.51 | 4.03 | 3.62 | 3.27 | 2.97 | 2.72 | 2.49 | 2.29 |
| 0.75              | Multi             | 3.33     | 2.85 | 2.47 | 2.17 | 1.92 | 1.71 | 1.54 | 1.39 | 1.26 | 1.14 | 1.03 | 0.94 | 0.85 |
| 1.00              | Multi             | 5.56     | 4.75 | 4.11 | 3.60 | 3.18 | 2.83 | 2.54 | 2.29 | 2.08 | 1.90 | 1.74 | 1.60 | 1.48 |
| 1.25              | Multi             | 8.11     | 6.92 | 5.98 | 5.22 | 4.60 | 4.10 | 3.67 | 3.31 | 3.00 | 2.73 | 2.50 | 2.30 | 2.12 |
| 1.50              | Multi             | 10.76    | 9.15 | 7.89 | 6.88 | 6.06 | 5.38 | 4.82 | 4.34 | 3.93 | 3.57 | 3.27 | 3.00 | 2.76 |



Construction details in both CAD and PDF format are available from Britmet Lightweight Roofing upon request.



Deflection L/150: consider when Tacray 90 is supporting wall cladding

| 4.20 | 4.40 | 4.60 | 4.80 | 5.00 | 5.20 | 5.40 | 5.60 | 5.80 | 6.00 | 6.20 | 6.40 | 6.60 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 0.87 | 0.78 | 0.70 | 0.63 | 0.57 | 0.52 | 0.47 | 0.43 | 0.40 | 0.37 | 0.34 | 0.31 | 0.29 |
| 1.54 | 1.40 | 1.28 | 1.17 | 1.08 | 0.99 | 0.91 | 0.85 | 0.78 | 0.73 | 0.68 | 0.64 | 0.58 |
| 2.11 | 1.92 | 1.75 | 1.60 | 1.47 | 1.36 | 1.25 | 1.16 | 1.08 | 0.97 | 0.88 | 0.80 | 0.73 |
| 2.62 | 2.39 | 2.19 | 2.01 | 1.85 | 1.71 | 1.58 | 1.44 | 1.30 | 1.17 | 1.06 | 0.97 | 0.88 |
| 0.54 | 0.50 | 0.46 | 0.43 | 0.40 | 0.37 | 0.35 | 0.33 | 0.31 | 0.29 | 0.28 | 0.26 | 0.25 |
| 0.93 | 0.86 | 0.80 | 0.74 | 0.69 | 0.65 | 0.61 | 0.57 | 0.54 | 0.51 | 0.48 | 0.45 | 0.43 |
| 1.34 | 1.24 | 1.15 | 1.07 | 1.00 | 0.93 | 0.87 | 0.82 | 0.77 | 0.73 | 0.69 | 0.65 | 0.61 |
| 1.82 | 1.68 | 1.56 | 1.45 | 1.35 | 1.26 | 1.18 | 1.11 | 1.04 | 0.98 | 0.92 | 0.87 | 0.83 |
| 0.65 | 0.60 | 0.56 | 0.52 | 0.49 | 0.45 | 0.43 | 0.40 | 0.38 | 0.36 | 0.34 | 0.32 | 0.30 |
| 1.13 | 1.04 | 0.97 | 0.90 | 0.84 | 0.79 | 0.74 | 0.70 | 0.66 | 0.62 | 0.58 | 0.55 | 0.52 |
| 1.63 | 1.51 | 1.40 | 1.30 | 1.21 | 1.14 | 1.06 | 1.00 | 0.94 | 0.89 | 0.84 | 0.79 | 0.75 |
| 2.20 | 2.04 | 1.89 | 1.76 | 1.64 | 1.53 | 1.44 | 1.35 | 1.27 | 1.20 | 1.13 | 1.07 | 1.01 |

| Thickness mm | Weight Kg/m <sup>2</sup> |
|--------------|--------------------------|
|--------------|--------------------------|

|      |       |
|------|-------|
| 0.75 | 8.83  |
| 1.00 | 11.78 |
| 1.25 | 14.72 |
| 1.50 | 17.35 |

Please note:  
Load factor (working load to ultimate) = 1.5

Tables indicate total load carrying capacity of tray: kN/m<sup>2</sup>

Tables do not include self weight of trays

Tray bearing: minimum 65mm

Load/Span tables for Tacray 90 perforated available upon request

Deflection L/150: consider when Tacray 90 is supporting wall cladding

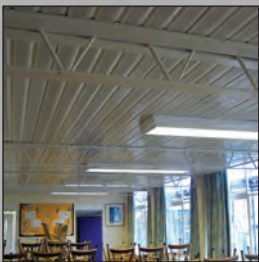
| 4.20 | 4.40 | 4.60 | 4.80 | 5.00 | 5.20 | 5.40 | 5.60 | 5.80 | 6.00 | 6.20 | 6.40 | 6.60 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 0.65 | 0.59 | 0.54 | 0.49 | 0.46 | 0.42 | 0.39 | 0.36 | 0.34 | 0.32 | 0.30 | 0.28 | 0.26 |
| 1.12 | 1.02 | 0.93 | 0.86 | 0.79 | 0.73 | 0.68 | 0.61 | 0.55 | 0.49 | 0.45 | 0.41 | 0.37 |
| 1.57 | 1.43 | 1.31 | 1.20 | 1.11 | 0.99 | 0.88 | 0.79 | 0.71 | 0.64 | 0.58 | 0.53 | 0.48 |
| 2.09 | 1.90 | 1.74 | 1.56 | 1.38 | 1.23 | 1.10 | 0.98 | 0.89 | 0.80 | 0.73 | 0.66 | 0.60 |
| 0.65 | 0.59 | 0.55 | 0.50 | 0.47 | 0.43 | 0.40 | 0.37 | 0.35 | 0.33 | 0.30 | 0.29 | 0.27 |
| 1.14 | 1.06 | 0.98 | 0.92 | 0.85 | 0.80 | 0.75 | 0.70 | 0.66 | 0.62 | 0.59 | 0.55 | 0.52 |
| 1.63 | 1.51 | 1.40 | 1.30 | 1.21 | 1.13 | 1.06 | 1.00 | 0.94 | 0.88 | 0.83 | 0.79 | 0.75 |
| 2.12 | 1.96 | 1.82 | 1.70 | 1.59 | 1.48 | 1.39 | 1.30 | 1.23 | 1.15 | 1.09 | 1.03 | 0.97 |
| 0.78 | 0.72 | 0.66 | 0.61 | 0.56 | 0.52 | 0.48 | 0.45 | 0.42 | 0.40 | 0.37 | 0.35 | 0.33 |
| 1.37 | 1.27 | 1.18 | 1.10 | 1.03 | 0.96 | 0.90 | 0.85 | 0.80 | 0.75 | 0.71 | 0.67 | 0.62 |
| 1.96 | 1.82 | 1.69 | 1.57 | 1.47 | 1.37 | 1.29 | 1.21 | 1.14 | 1.07 | 0.97 | 0.88 | 0.81 |
| 2.56 | 2.37 | 2.20 | 2.06 | 1.92 | 1.80 | 1.69 | 1.58 | 1.48 | 1.33 | 1.21 | 1.10 | 1.00 |



Tables calculated and assessed by the SCI to Eurocode-EN1993-1-2:2006

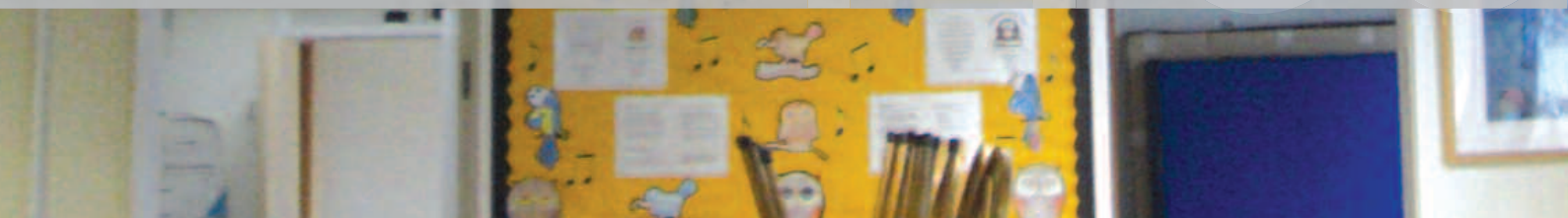


Construction details in both CAD and PDF format are available from Britmet Lightweight Roofing upon request.



## > ***STRUCTURAL CEILING SYSTEM***

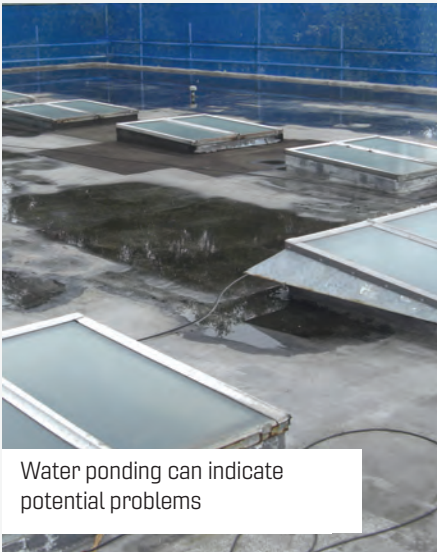
A structural tray specifically designed to encapsulate and support failing and ageing CLASP, SEAC or similar modular roofing systems. Trays provide a ready finished ceiling, perforated for acoustic solutions.





# Tactray 90 structural ceiling system

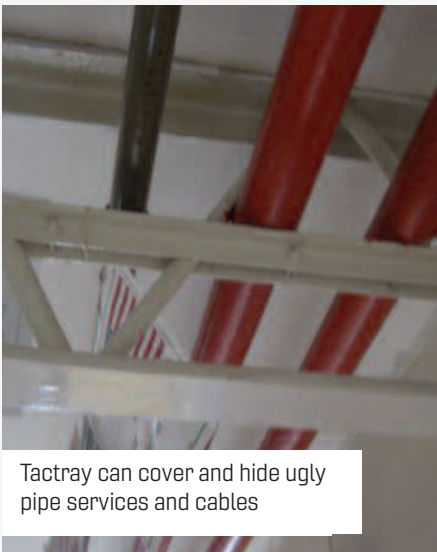
## THE FLEXIBLE OPTION



Water ponding can indicate potential problems



Cracked decking indicates structural failure



Tactray can cover and hide ugly pipe services and cables



Structural ceiling tray system to support failed Clasps & SEAC asbestos decks and ceiling systems on ageing schools. Tell tale signs being water ponding and cracked and damaged asbestos decking.

### Key benefits

- Provides structural support to existing roof system in the event of structural failure
- With minimum disturbance Tactray 90 covers and hides ugly pipework, cables and damaged ceilings
- Encapsulates and contains asbestos particles within existing roof system
- New low maintenance ceiling finish in bright white finish offering clean lines with reflective index of 79%
- Tactray 90 perforated offering enhanced acoustic solutions
- Choice of insulations to provide range of enhanced thermal U-value requirements
- Best economic solution
- Keeping the classroom warm in winter and cool in summer means that the Tactray 90 ceiling system has the potential to create 'More Education Perfect Days' for the occupants of the building

# Tactray 90 structural ceiling system

## ROOF SUPPORT AND ACOUSTIC CEILING SYSTEM

### The issue

Across the UK there are quite simply hundreds of schools that have been originally designed with an asbestos deck sandwiched between the ceiling and the roof covering.

Some 50 years later the roof decks and ceilings are starting to show signs of distortion, ponding and possible risk of collapse.

### The challenge

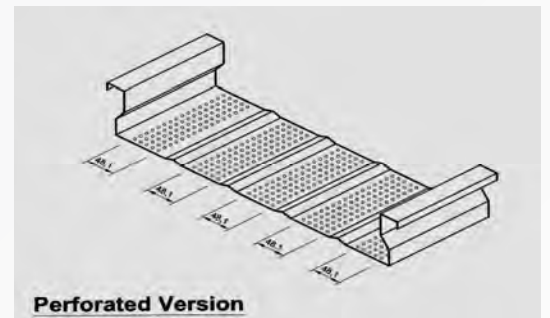
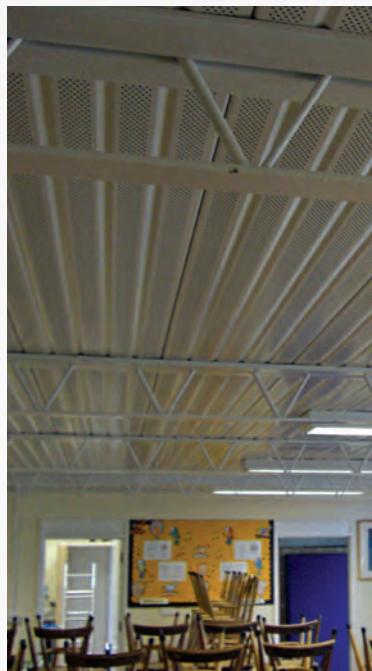
To provide an acoustic ceiling and structural roof support system to extend the life of Post War System Built Schools and similar properties Britmet Lightweight Roofing were tasked with designing and supplying a solution to a prolific problem on several schools in the Hertfordshire area.

A test school site was available to Britmet Lightweight Roofing in which we could trial the system and redesign as necessary.

### The model

The schools in question were all of a similar design and their construction based on typical Hills / SEAC / Clasp systems which included an asbestos deck system.

Typically the main roof supports, usually lattice, beams followed virtually the same design layout and were modular in their spacings at 8'3" (2.51m) centres. Tactray 90 (perforated) spans between the existing lattice beams. The trays are fixed in position with special purpose made angles and cleats, which are securely fixed to the existing lattice beams.



### The Result

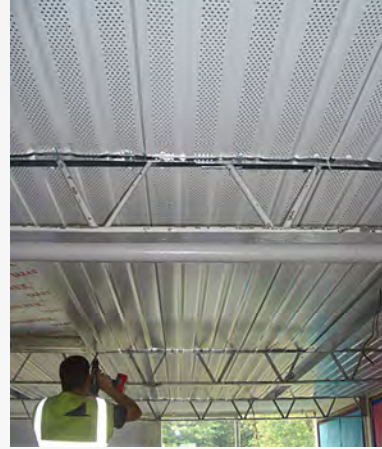
Tactray 90 can offer a retro fit system that can combine and offer structural support to the existing roof plus encapsulate the asbestos and at the same time provide a new acoustic ceiling.

***TACTRAY 90. A BUDGET SAVING METHOD OF EXTENDING THE LIFE OF YOUR SCHOOL.***

## INSTALLATION, IN BRIEF



A structurally engineered angle is securely attached to the existing lattice beams. This forms the primary support for a second angle to follow.



The Tactray 90 ceiling system continues to be installed. Consideration for cabling, pipe work and future services has been taken into account. These can be accommodated by using integral duct trays, which can be accessed quickly for ongoing maintenance.



40mm solid insulation board is glued/fixes to existing ceiling, to improve sound and thermal performance. A secondary angle/cleat is securely attached to the first angle. This second angle forms the mainbearing to support the Tactray.



The duct trays can be installed as often as required. They can be bespoke for each project or a modular layout could be established. Removable colour coated cover plates are provided to match Tactray 90.



Tacmat insulation and Rockwool RW3 acoustic board is pre-installed within the Tactray pan. The whole assembly is offered up and the tray is securely attached to the second angle. Combinations of Tacmat and acoustic board are available to provide thermal and acoustic requirements.



The remaining exposed lattice beams can be encased with purpose made box flashings, colour coated to match Tactray. Perimeter flashing or edge trims can also be provided.

# 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 1000m<sup>2</sup> 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 edges 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.**



## PERFORMANCE

### Authority

Tactray 90 manufacture complies with ISO 9002 (BS 5750) and the finished roof construction is BBA certified No 95/3192.

### Patents

Tactray 90 is patented under patent number 2185501 when used in lieu of timber rafters under felt and tiles. It is not patented when used horizontally in lieu of cladding rails, or under profiled steel roofing.

### Composition

The trays are roll-formed from either 0.75mm or 1.0mm Fe E 350 G grade steel, galvanised with a thickness of coating to Z275 to BS EN 10147:1992.

### Appearance

Galvanised: minimum spangled, dull metallic finish for hidden or purely functional use.

Painted: Tactray 90 is also available coated with a brilliant white 25 micron polyester paint applied over the primer and galvanising, supplied with a strippable protective film.

### Condensation

When correctly laid and sealed, Tactray 90 meets the requirements of BS 5250:1989 and approved document F2. Providing the internal humidity does not exceed the limits given, there will be no significant accumulation of condensation on the internal surface. The maximum internal relative humidity is 86% for an internal temperature of 20°C and an external temperature of 5°C.

### Thermal movement

When correctly installed using TacMat quilt, and with the insulation provided by the air spaces, slates, tiles, lightweight roofing system or standing seam, the Tactray 90 should be at ambient room temperature. At this temperature thermal expansion does not present a problem.

### Light & optical performance

The brilliant white inner face of Tactray 90 has a reflectivity index of 79%. A lighting consultant can advise on maximising this high performance.

### Fire protection

Tactray 90 has been approved to give the following performance:

- Coated steel sheeting, tested to BS 476:Part 5, ignitability test was graded 'P' - not easily ignitable.
- Surface spread of flame tests to BS 476: Part 7:1971, gave an index of performance within the requirements of a Class O surface as defined by the current Building Regulations and the Building Standards (Scotland) Regulations.

The material used in the manufacture of Tactray 90 has a Class 1 surface spread of flame to BS476:Part 4 and Class O Fire rating in accordance with the Building Regulations. Tactray 90 meets the Fire Officers Committee (FOC) rules for use in Class 2 buildings.

### Acoustic performance

A perforated version is offered for enhanced acoustic performance. Please consult the Britmet Lightweight Roofing technical department for further details.

### Environmental performance

Under normal atmospheric conditions, the steel and galvanised finish of Tactray 90 remains unaffected. Tactray 90 is impervious to insects, birds, vermin, fungal and biological attack. If localised conditions are such that Tactray 90 may be exposed to specific liquid, gas or solid chemical pollutants, the Britmet Lightweight Roofing technical department should be consulted.

### Durability

When correctly installed by an approved contractor in accordance with our instructions, Tactray 90 would be expected to have a serviceable life in excess of sixty years. The galvanised coating would typically protect the steel substrate for at least fifteen years and when the polyester finish is specified, the expected period of protection offered by the coating system would be over twenty-five years. This anticipated performance would be reduced where the product is subject to high humidity levels or where exposure to chemical contaminants or physical damage occurs.

### Corrosion resistance

Where a softwood timber treated with preservative is used, the preservative manufacturer should be consulted regarding potential electrolytic corrosion of the galvanised tray or fasteners. The allowable maximum moisture content of the timber is 20%. Run-off water from lead or copper flashings should also be prevented from coming into contact with the galvanised surface of Tactray 90.

### Maintenance

No maintenance is required apart from occasional cleaning of the internal painted surface where required. Where a change of colour is required an approved proprietary paint system should be used. Please contact the Britmet Lightweight Roofing technical department for further details.

# Tactray 90

## CASE STUDIES

Health...



Bristol Royal  
Hospital For Children.  
Bristol



Product:  
**Tactray 90 - Mansard Tile Support  
and Flat Membrane Roof.**

Coating/Colour:  
**Galvanised/Natural.**

Architect:  
**Whicheloe Macfarlane (MDP), Bristol.**

Roofing Contractor:  
**Mitie Roofing, Bristol.**

## CASE STUDIES

Residential...



### Apartments. Port Marine, Portishead, Somerset

Product:  
**Tactray 90 - Tile Support.**

Coating/Colour:  
**Galvanised/Natural.**

Architect:  
**BBA Architects. Bath.**

Main Contractor:  
**Crest Nicholson. Bristol.**

Roofing Contractor:  
**S & J Roofing Ltd. Bristol.**

Education



### Cunningham Hill Junior School, St Albans, Hertfordshire

Product:  
**Tactray 90 - Perforated Structural Ceiling system.**

Coating/Colour:  
**Polyester/White.**

Architect:  
**Mouchel. Hertford.**

Main Contractor:  
**T & B Contractors. Wheathampstead.**

Roofing Contractor:  
**WM Cooper. Barnsley.**

# Tactray 90

## CASE STUDIES

Education...



St Joseph's R.C.  
School. Newport,  
South Wales



Product:  
**Tactray 90 - Tile Support.**

Coating/Colour:  
**Plain Galvanised & Polyester/White.**

Architect:  
**Boyes Rees Architects. Newport.**

Main Contractor:  
**E. Turner & Sons. Cardiff.**

Roofing Contractor:  
**Fersons Ltd. Bristol.**



## CASE STUDIES

Public & Community...



### National Maritime Museum. Falmouth, Cornwall



Product:  
**Tactray 90 - Tile Support.**

Coating/Colour:  
**Double Sided Granite/Black.**

Architect:  
**Long & Kentish. London.**

Main Contractor:  
**Tilbury Douglas Construction.**

Roofing Contractor:  
**ISCA Roofing. Exeter.**

# Tactray 90

## CASE STUDIES

Commercial...



Car showroom.  
Bristol



Product:  
**Tactray 90 - Tile Support.**

Coating/Colour:  
**Polyester/White.**

Roofing Contractor:  
**Sevenside Roofing, Bristol.**

## CASE STUDIES

Public & Community...



### Library & Information Centre. Hungerford, Berkshire

Product:  
**Tactray 90 - Perforated Supporting Single Ply Membrane Roof.**

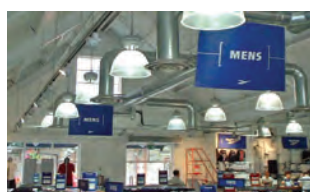
Coating/Colour:  
**Polyester / White.**

Architect:  
**Edgington Spink & Hyne. Datchet, Berkshire.**

Main Contractor:  
**Claude Fenton Construction. Reading, Berkshire.**

Roofing Contractor:  
**Malone Roofing. Newbury, Berkshire.**

Retail...



### Clarks Village Outlet Shopping. Street, Somerset

Product:  
**Tactray 90 - Tile Support.**

Coating/Colour:  
**Polyester/White.**

Architect:  
**Lyons Sleeman Hoare. Hook, Hampshire.**

Main Contractor:  
**Edgar Builders. Somerton, Somerset.**

Roofing Contractor:  
**Sheppard Roofing. Weston-Super-Mare.**

# BRITMET

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**FOR COMPLETE BUILDING ENVELOPE SOLUTIONS**

## **LIGHTWEIGHT TILE EFFECT PANELS**

- > Slate 2000
- > Plaintile
- > Profile 49
- > Ultratile
- > Villatile
- > Shingle
- > Liteslate

## **LIGHTWEIGHT EAVES TO RIDGE TILE EFFECT SHEETS**

- > Pantile 2000

## **STRUCTURAL TRAYS**

- > Tactray 90
- > Tac Ceilings
- > Tac Walls

## **RAINSCREENS**

- > Class A1 and A2 powder coated aluminium rainscreens

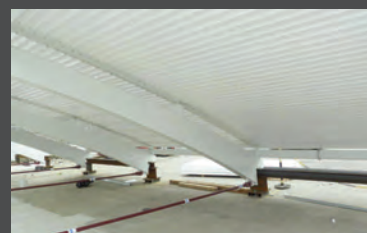
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- > Flat packed, cassette and modular

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- > Guttering
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- > Breathable Membranes
- > Flat to Pitch Systems

**BRITMET LIGHTWEIGHT  
ROOFING IS A LEADING  
BRITISH MANUFACTURER  
OF INNOVATIVE LIGHTWEIGHT  
ROOFING SYSTEMS**



### **Britmet Lightweight Roofing**

Kingfisher House  
Unit 17  
Overthorpe Road  
Banbury OX16 4SX

Tel: **(01295) 250998**  
Fax: **(01295) 271068**  
Email: **sales@britmet.co.uk**  
Visit our website: **www.britmet.co.uk**

