

## Project

Sample specification: Mechanically side-lap fixed membrane

## Client

Tecron

## J42 Specification

FF810 Mechanically side-lap fixed membrane

## Fatra Project Reference

n/a

## Issue Date

dd/mm/yyyy

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## Specification Summary

This table below provides an outline summary of the proposed specification. It is not intended to be fully comprehensive and must be read in conjunction with the full specification, drawings, calculations and relevant supporting information.

Fatra Specification Overview	
<b>Project Name</b>	Example mechanically fixed specification
<b>Project Type</b>	New build
<b>Roof Area Name</b>	Flat roofs
<b>Substrate</b>	18mm Plywood deck
<b>Preparation</b>	Ensure substrate is secure, clean, dry & smooth
<b>Primer</b>	n/a
<b>AVCL</b>	Fatra FF818 polyethylene VCL
<b>Insulation</b>	Uniform thickness foil-faced PIR
<b>Insulation fixing method</b>	FR-75 Tube washers & FBS-5.8 Fasteners
<b>U-value</b>	0.15 W/m <sup>2</sup> K TBC
<b>Waterproofing membrane</b>	Fatra FF810 membrane
<b>Membrane fixing method</b>	Side-lap fixed with FR-50 Tube washers & FBS-5.8 Fasteners
<b>Accessories</b>	Fatra membrane coated perimeter metal Fatra FO Range rainwater outlets Fatra FF812 Slip-resistant walkway membrane <i>Refer to J42 Specification for full details</i>

## Project Contacts

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**J42 SINGLE LAYER POLYMERIC SHEET ROOF COVERINGS**

To be read with Preliminaries / General Conditions

**TYPES OF ROOF COVERING**

**110 WARM DECK ROOF COVERING TO FLAT ROOF AREAS**

**FF810 mechanically side-lap fixed membrane system**

- Substrate: **18mm Plywood deck**
  - Preparation: **as clause 610**
- Roof Coverings System
  - Lower Protective Layer: **n/a**
  - Vapour Control Layer: **Fatra FF818 Polyethylene Vapour Barrier as clause 395**
  - Insulation: **Uniform Thickness Rigid PIR Insulation Board as clause 425**
  - Separating Layer: **n/a**
  - Waterproof Membrane: **Fatra FF810V Roof Membrane System**
    - *High Performance, PVC-P Reinforced Membrane*
    - *Mechanically Side-lap Fixed*
    - *Accredited with Quality Management Standard ISO 9001*
    - *Accredited with Environmental Standard ISO 14001*
    - *British Board of Agrément Certificate No. 02/3921*
    - *BBA Durability Accreditation in excess of 30 years*
    - *Fire tested to BS 476 & BS EN 13501-5, BROOF(t4) classification*
    - *Low Vulnerability Fire Rating*
    - *Green Guide rating of A+, BRE Ecopoints Rating*
    - *FLL Root Resistance Certification*
- Manufacturer:
  - Fatra UK Limited**
  - Unit 12, The Timber Yard, East Moors Road, Ocean Park, Cardiff CF24 5EE**
  - t: 029 2048 7954**
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Width: **1.3m**

Length: **20m**

Thickness: **1.5mm**

Colour: **Dark Grey, RAL 7012**

- Attachment: **Mechanically side-lap fixed as clause 710**

- Surface Protection: **Fatra FF812 Slip-Resistant Walkway Membrane (If required)**
  - Width: **650mm**
  - Thickness: **1.2mm**
  - Colour: **Light Grey, RAL 7035 (To contrast with the Field Area)**
  - Attachment: **Heat welded to Fatra FF810, 50mm end and side laps**

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## PERFORMANCE

### 210 ROOF PERFORMANCE

- Roof covering: Secure, free draining and weather tight.

### 220 AVOIDANCE OF INTERSTITIAL CONDENSATION: WARM AND INVERTED ROOFS

- Determine: Interstitial condensation risk of roof construction as recommended in BS 6229.
- Basic design data:
  - Outdoor notional psychrometric conditions, winter:
    - Temperature: -5°C
    - Relative humidity: 90%.
    - Vapour pressure: 0.36 kPa
    - Duration: 60 days
  - Outdoor notional psychrometric conditions, summer:
    - Temperature: 18°C
    - Relative humidity: 65%
    - Vapour pressure: 1.34 kPa
    - Duration: 60 days
  - Indoor notional psychrometric conditions:
    - Temperature:
    - Relative humidity:
    - Vapour pressure:
- Winter interstitial condensate (warm roof):
  - Calculated amount (maximum): 0.35 kg/m<sup>2</sup>
  - Calculated annual net retention: Nil
- Vapour control layer: If necessary, provide a suitable membrane or sealed deck so that damage and nuisance from interstitial condensation do not occur

### 230 INSULATION

- Requirement: Determine type and thickness of insulation and integral or separate overlay to satisfy the following criteria:
  - Thermal transmittance of the roof: **0.15 W/m<sup>2</sup>K TBC**
  - Compressive strength of insulation (minimum) at 10% compression:
  - Finished surface: Suitably even, stable and robust to receive roof covering.
  - Insulation compliance: To a relevant British Standard, or Agrément certified.

### 240 ATTACHMENT OF ROOF COVERING INCLUDING INSULATION

- Requirement: Determine methods of attachment to resist wind loads. Provide for relative movement of materials and effects of vapour pressure. Do not reduce performance of vapour control layer.
- Wind loads: **Calculate to BS EN 1991-1-4, UK National Annex Method**
  - Basic wind speed (V<sub>b</sub>): - m/s
  - Altitude factor (C<sub>alt</sub>): -
  - Orography factor (C<sub>o</sub>): -
  - Exposure factor (√C<sub>e</sub>): -
  - Directional factor (C<sub>dir</sub>): -
  - Seasonal factor (C<sub>season</sub>): -
  - Probability factor (C<sub>prob</sub>): -
  - Size factor (C<sub>s</sub>): -
- Post code: -
- OS Grid reference: -

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## PRODUCTS

### 340 PREFORMED SLEEVES

- Type: **Fatra Un-Reinforced Membrane FF804 Discs**
- Manufacturer: **Fatra UK Ltd**  
- Product reference: **Fatra FF858 Universal Sleeve**  
Colour: **Dark Grey, RAL 7012**
- Size: **400mm**

### 341 PREFORMED CORNERS

- Type: **Preformed PVC corner manufactured from Fatra FF804 un-reinforced membrane**
- Manufacturer: **Fatra UK Ltd**  
- Product reference: **Fatra FF850 PVC Internal Corner & FF851 PVC External Corner**  
Colour: **Dark Grey, RAL 7012**
- Size: **FF850: 120mm diameter, FF851: 160mm diameter**

### 345 PERIMETER TRIMS

- Type: **0.6mm PVC Faced Galvanized Steel**
- Manufacturer: **Fatra UK Ltd**  
- Product reference: **Fatra FP Range Steel Trims**  
Colour: **Dark Grey, RAL 7012**
- Size: **Standard 50mm x 50mm @ 2m or 3m lengths**

### 346 PERIMETER TRIMS

- Type: **Galvanised Bar**
- Manufacturer: **Fatra UK Ltd**  
- Product reference: **Fatra FP882 Galvanised Steel Termination Bar**
- Colour: **Grey**
- Profile: **30mm wide, 1.2mm thick, 4.5mm leg height**
- Length: **2.1m**
- Hole size: **Alternate 6.5mm holes (for fasteners) and 15mm holes (for Tube washers)**
- Fastener centres: **50mm (Fix at 200mm centres)**

### 355 MECHANICAL FASTENINGS, WASHERS, PRESSURE PLATES ETC. (Insulation)

All part of membrane roof package

- Manufacturer: **Fatra UK Ltd**  
- Product reference: **Fatrafix**
- Tube Washer: **FR-75 Tube Washer**
- Fastener: **FBS-5.8 Steel & Timber Fastener**
- Size: **FR-75 x 125mm & FBS-5.8 x 75mm**

### 356 MECHANICAL FASTENINGS, WASHERS, PRESSURE PLATES ETC. (Membrane)

All part of membrane roof package

- Manufacturer: **Fatra UK Ltd**  
- Product reference: **Fatrafix**
- Washer: **FR-50 Tube Washer**
- Fastener: **FBS-5.8 Steel & Timber Fastener**
- Size: **FR-50 x 125mm & FBS-5.8 x 75mm**

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**395 VAPOUR CONTROL LAYER**

- Type: **Polyethylene sheet, 100 mm side and end laps sealed with PVC tape**
- Manufacturer: **Fatra UK Ltd**  
- Product reference: **FF818 Polyethylene Vapour Barrier**
- Thickness: **0.15mm (600 gauge)**
- Roll size: **50m x 2m / 4m**
- Vapour resistance: **450 MNs(gm)<sup>-1</sup>**

**425 WARM DECK ROOF INSULATION**

- Type: **Uniform Thickness Insulation Board**
- Manufacturer: **Xtratherm or equal approved**  
- Product reference: **Xtratherm FR/ALU or equal approved**
- Thickness: **140mm TBC**
- Facing: **Foil**

**450 PROTECTION LAYER (If required for plant, PV panels etc.)**

- Manufacturer: **Fatra UK Ltd**  
- Product reference: **Fatra FF914 Stafol Protection Membrane**
- Material: **PVC**
- Width: **1.4m**
- Length: **60m**
- Thickness: **0.5mm**

**480 PIPE COLLARS**

- Manufacturer: **Fatra UK Ltd**  
- Product reference: **Fatra FF858 Universal Sleeve**
- Size: **400mm**

**485 MEMBRANE WALKWAY (If required)**

- Manufacturer: **Fatra UK Ltd**  
- Product reference: **Fatra FF812 Slip-Resistant Membrane**
- Width: **650mm**
- Thickness: **1.2mm**
- Colour: **Light Grey, RAL 7035 (To contrast with the Field Area)**
- Finish: **Textured Slip-Resistant (Diamond-embossed pattern)**
- Reinforcement: **n/a**
- Attachment: **Hot air welded along length and ends**

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#### 487 RAINWATER OUTLETS

- Manufacturer: **Fatra UK Ltd**
  - Product Reference: **Fatra FO Range Outlet (Vertical & Horizontal outlets available)**
- Diameter: **TBC (82mm, 110mm and 160mm available as standard)**
- Spigot: **210mm as standard (Longer sizes available on request)**
  - Description: **Polyamide spigot and baseplate with factory fitted membrane flange**
- Type of grate / fittings: **Perforated leaf guard**
  - Outlet: **Type and direction to suit pipework (with suitable adaptors and connections sourced by M&E contractor)**
- Accessories: **Leaf guard as standard**
- Installation: **Mechanically fix through the baseplate fixing lugs into the substrate. Hot air weld the factory fitted membrane flange to field area.**
  - **Refer to Fatra installation guide for further details**

#### EXECUTION GENERALLY

##### 510 ADVERSE WEATHER

- General: Do not lay membrane at temperatures below 5°C or in wet or damp conditions unless effective temporary cover is provided over working area.
- Unfinished areas of roof: Keep dry and protect edges of laid membrane from wind action.
- Work in severe or continuously wet weather: Suspend or provide effective temporary cover over working area.
- Unavoidable wetting: Minimise and make good any damage.

##### 520 INCOMPLETE WORK

- End of working day: Provide temporary seal to prevent water infiltration.  
On resumption of work: Cut away tail of membrane from completed area and remove from roof.

#### SUBSTRATES / VAPOUR CONTROL LAYERS / WARM DECK ROOF INSULATION

##### 610 SUITABILITY OF SUBSTRATES

- Surfaces to be covered: Secure, clean, dry, smooth, free from frost, contaminants, voids and protrusions.
- Ensure all decking works are completed and inspect works for damage prior to commencing.
- Preliminary work: Complete, including
  - Grading to correct falls.
  - Formation of upstands, kerbs, box gutters, sumps, grooves, chases and expansion joints.
  - Fixing of battens, fillets and anchoring plugs/ strips.
- Moisture content and stability of substrate: Must not impair integrity of roof.
- Substrate Tolerances / Levels to be checked prior to commencement to ensure effectiveness of drainage scheme.

##### 670 LAYING VAPOUR CONTROL LAYER

- Laying: **Lay FF818 loose, flat and without wrinkles**
- Side and head laps: **Seal all laps with Fatra FA1 Strip Sealant**
- Side and head laps: **Allow for 100mm side and end laps**
- Upstands, kerbs and other penetrations: Enclose edges of insulation. Fully seal at abutment by bonding or taping.

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## 680 LAYING WARM DECK ROOF INSULATION

- Setting out:
  - Long edges: Fully supported and running at right angles to troughs in metal decking.
  - End edges: Adequately supported.
  - Joints: Butted together.
  - End joints: Staggered.
- Attachment: **Mechanically fixed as clause 355**
- Completion: Boards must be in good condition, well-fitting and secure.

## WATERPROOF MEMBRANES / ACCESSORIES

### 710 MECHANICAL FIXING OF WATERPROOF MEMBRANE

- Attachment: **Mechanically Side-lap Fixed**
- **Membrane should run a maximum of 1300mm wide with each sheet overlapping the next by 120mm to cover the fixings**
- **Fixings should be at 150mm centres or according to Fatra wind load calculations**
- **Washers should be 10mm away from the edge of the membrane**
- Manufacturer: **Fatra UK Ltd**
  - Product reference: **Fatrafix**
- Washer: **FR-50 Tube Washer**
- Fastener: **FBS-5.8 Steel & Timber Fastener**
  - Insertion: Correct and consistent.
- Washers / Pressure plates / Bars:
  - Regular grid pattern. **Fix at 150mm centres, or refer to Fatra wind load calculations**
  - Fixing: Flush with membrane.
- Surface condition at completion: Fully sealed, smooth, weatherproof and free draining

### 720 ADHESIVE BONDING OF WATERPROOF MEMBRANE

- Attachment: Do not wrinkle or stretch.
- Surface condition at completion: Fully sealed, smooth, weatherproof and free draining.

### 730 WELDED JOINTING OF WATERPROOF MEMBRANE

- Side and end joints: **40mm**
- Laps (minimum): **50mm**
- Preparation: **Clean and dry surfaces beyond full width of joint**
- Sealing: **Weld together**
- Seam sealant: **Site-cut edges of FF810 membrane only**
- Condition at completion: **Fully sealed, smooth, weatherproof and free draining**

### 770 PERIMETER DETAILS

- Upstands, edge trims, drips, kerbs, etc: Form flashings from waterproof membrane material.
- All **Fatra PVC Membrane Coated Steel Trims** to be fixed at **200mm centres**
- Roof membrane: Terminate in horizontal plane immediately adjacent to change in direction and secure with mechanical fasteners.
- Flashings: Dress over perimeter profile. Overlap horizontal roof membrane beyond perimeter securement by minimum 50mm

### 785 ROOF PENETRATIONS THROUGH PVC MEMBRANES

- All in accordance with membrane manufacturer's details

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**COMPLETION**

**910 INSPECTION**

- Interim and final roof inspections: Submit reports.

**920 ELECTRONIC ROOF INTEGRITY TEST**

- Testing authority:
- Timing of test:
- Condition of roof prior to testing:
  - Waterproof membrane complete to a stage where integrity can be tested.
  - Surface: Clean.
- Test results and warranty: Submit on completion of testing.

**940 COMPLETION**

- Roof areas: Clean.
  - Outlets: Clear.
- Work necessary to provide a weathertight finish: Complete.
- Storage of materials on finished surface: Not permitted.
- Completed membrane: Do not damage. Protect from traffic and adjacent or high level working.

**943 PRODUCT WARRANTY**

- On satisfactory completion of the contract, our Manufacturer’s Warranty for the roof covering is to be issued after final payment.
- Guarantee Period: **20 year product guarantee**

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