

J42 SINGLE LAYER POLYMERIC SHEET ROOF COVERINGS

To be read with Preliminaries/ General conditions.

TYPES OF COVERING

110 WARM ROOF COVERING

- ◆ Substrate: Galvanised steel deck min thickness 0.7mm to BS 10147:2000 Fe E280G Z275
 - Preparation: As clause 610.
- ◆ Roof covering:
 - Manufacturer: Ruvitex UK Limited.
 - Vapour control layer: Polyethylene min 250 microns. As clause 220
 - Laying: Loose with all laps and terminations fully sealed using self adhesive tape. As clause 670.
 - Insulation: Cellular foam type with foil facing. As clause 230.
 - Attachment: Centrix disc/tube/fastener combinations. As clause 680.
 - Waterproof membrane: Ruvimat D.
 - Thickness: 1.5mm.
 - Colour: Light Grey.
 - Attachment: Mechanical using Centrix disc/tube/fastener combinations. As clause 710.

PERFORMANCE

210 ROOF PERFORMANCE

- ◆ General: Secure, free draining and completely weathertight.

220 VAPOUR CONTROL LAYER

- ◆ Requirement: Determine interstitial condensation risk of roof as recommended in BS 6229. Modify calculation method to conform to BS 5250.
- ◆ Basic design data:
 - Outdoor notional psychrometric conditions, winter:
 - Temperature: -5°C.
 - Relative humidity: 90%.
 - Vapour pressure: 0.361 kPa.
 - Duration: 60 days.
 - Outdoor notional psychrometric conditions, summer:
 - Temperature: 18°C.
 - Relative humidity: 65%.
 - Vapour pressure: 1.341 kPa.
 - Duration: 60 days.
 - Indoor notional psychrometric conditions:
 - Temperature: tbc °C.
 - Relative humidity: tbc %.
 - Vapour pressure: tbc kPa.
 - Winter interstitial condensate:

- Calculated amount (maximum) tbc kg/m².
- Calculated annual net retention (maximum): 5%.
- ◆ Vapour control layer: If calculated amounts of condensate exceed allowed amounts, provide a suitable membrane 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 (maximum): tbc W/m²K.
 - Compressive strength of insulation (minimum) at 10% compression: 150 kPa.
 - Finished surface: Suitably even, stable and robust to receive the covering.
 - Insulation compliance: Building regulations.

240 ATTACHMENT

- ◆ 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 6399-2, Standard Method.
 - Basic wind speed (V_b): tbc m/s.
 - Altitude factor (S_a): tbc.
 - Direction factor (S_d): tbc.
 - Seasonal factor (S_s): 1.
 - Probability factor (S_p): 1.
 - Terrain and building factor (S_b): tbc.
 - Size effect factor (C_a): 1.
 - External pressure coefficients (C_{pe}): tbc.
 - Internal pressure coefficients (C_{pi}): tbc.

PRODUCTS

310 ANCILLIARY PRODUCTS AND ACCESSORIES

- ◆ Types: Recommended by waterproof membrane manufacturer.

330 TIMBER FOR TRIMS, ETC

- ◆ Quality: Planed. Free from wane, pitch pockets, decay and insect attack except ambrosia beetle damage.
- ◆ Moisture content: Not exceeding 22% at time of covering.
- ◆ Preservative treatment: To British Wood Preservation and Damp-proofing Association specification.

355 MECHANICAL FASTENINGS, WASHERS, PRESSURE PLATES ETC.

- ◆ Type: Centrix disc/tube/fastener combinations.
 - Manufacturer: Flat Roofing Supplies Limited.

- Product reference: Centrix.

395 VAPOUR CONTROL LAYER

- ◆ Type: Polyethylene.
 - Manufacturer: tbc.
 - Product reference: tbc.
 - Thickness: Min 250 microns.

420 RIGID URETHANE FOAM WARM ROOF INSULATION

- ◆ Material: PU.
 - Manufacturer: tbc.
 - Product reference: tbc.
 - Density: tbc kg/m³ .
 - Thickness: tbc.
 - Facing: Foil.

EXECUTION GENERALLY

510 ADVERSE WEATHER

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

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 ROOF INSULATION

610 SUITABILITY OF SUBSTRATE

- ◆ Surfaces to be covered: Firmly fixed, clean, dry, smooth, free from frost, contaminants, voids and protrusions.
- ◆ Preliminary work: Complete (including formation of upstands, kerbs, box gutters, sumps, grooves, chases, expansion joints and fixing of battens, fillets, anchoring plugs/ strips, etc.).
- ◆ Moisture content and stability of substrate: Must not impair integrity of roof.

640 INSTALLING TIMBER FOR TRIMS

- ◆ Fixing centres (maximum): 250mm.

670 LAYING VAPOUR CONTROL LAYER

- ◆ Laying: Sheets loose, flat and without wrinkles.
- ◆ Laps: Seal using materials and method recommended by membrane manufacturer.
- ◆ Upstands, kerbs and other penetrations: Enclose edges of insulation. Fully seal at abutment by bonding or taping.

680 INSTALLING WARM ROOF INSULATION

- ◆ Setting out:
 - Long edges: Fully support and run at right angles to the decking.
 - End edges: Adequately support.
 - Joints: Butt together.
 - End joints: Stagger.
- ◆ Mechanical fixing: Centrix disc/tube/fastener combinations plus additional insulation tube/fastener combinations required to satisfy the wind loads as calculate to BS 6399-2, Standard Method .
- ◆ Completion: Boards must be in good condition, well fitting and with no springing, flexing or rocking.

WATERPROOF COVERINGS/ ACCESSORIES**710 MECHANICAL FIXING OF WATERPROOF MEMBRANE**

- ◆ Welding membrane to fastener discs:
 - Use CENTRIX induction welding equipment.
 - Sheet overlaps: Minimum overlap 60mm with minimum 40mm weld.
- ◆ Surface condition at completion: Smooth.

730 WELDED JOINTING

- ◆ Side and end joints:
 - Laps (minimum): 100mm with 40mm welds.
 - Preparation: Clean and dry surfaces for full width of joint.
 - Sealing: Weld together.
- ◆ Condition at completion: Fully sealed, watertight and free draining.
- ◆ Accessories: tbc.

760 PERIMETER OF MEMBRANE

- ◆ General: Secure membrane at roof edge conditions, changes of plane, curb flashings, upstands to roof lights, etc. with restraint bar and mechanical fasteners.

770 PERIMETER DETAILS

- ◆ Upstands, edge trims, drips, kerbs, etc: Form flashings from waterproof membrane material.
- ◆ 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): 40mm.
- ◆ Sealing: Hot air weld.

780 ROOF PENETRATIONS THROUGH THERMOPLASTIC MEMBRANES

- ◆ Roof membrane: Cut around penetrations and secure to deck.
- ◆ Flanged sleeve:
 - Type: PVC.
 - Dress over and around penetration.
 - Roof membrane overlap to flange (minimum): 50 mm beyond fasteners.
 - Sealing: Weld flange to roof membrane.
 - Protection to top edge of sleeve: Flashing or weathering cravat.

SURFACING**850 MEMBRANE WALKWAYS**

- ◆ Material:
 - Manufacturer: Ruvitex UK Limited.
 - Product reference: Walkway.
 - Width: 800mm.
 - Thickness: 1.5mm.
 - Colour: Dark Grey.
 - Attachment: Hot air weld.
- ◆ Reinforcement: tbc.

COMPLETION**910 INSPECTION**

- ◆ Interim and final roof inspections: Submit roof covering manufacturer's reports.

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 against damage from traffic and adjacent or high level working.

SAMPLE