J42 Specification

Suggested Sarnafil J42 Specification for:

Example - Adhered PVC Specification (G410-ELF - Fleece Backed)

Our Reference:

Example - Adhered / PVC

Date:

N/A

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J42 SINGLE LAYER POLYMERIC SHEET ROOF COVERINGS

To be read with preliminaries / general conditions and the Sarnafil project specific specification.

The details contained within this proposal are based on information available at the time of writing. It covers the installation of Sarnafil materials and the preparation work necessary to provide a suitable substrate. Sika Limited cannot be held responsible for unknown site conditions or for the performance of materials within the system other than Sarnafil products or Sarnafil branded products.

A detailed method of work statement and programme of works should be agreed with the Sarnafil Registered Contractor before the commencement of the works.

The requirements of all relevant British Standards and Industry Codes of Practice should be complied with at all times. A bibliography is available upon request.

Underlined sections of text require the addition of a description or selection from a choice of options. All clauses that are not applicable should be deleted.

TYPES OF COVERING

110 WARM ROOF COVERING – **Example – Adhered PVC Specification (G410-ELF – Fleece Backed)**

- Substrate: Plywood deck to suit the loads and span of the joists. The plywood is to be a minimum 18mm thick and certificated to conform with BS EN 1995-1-1: Eurocode 5 – 'Design of timber structures. General. Common rules and rules for buildings' and the appropriate grade according to BS EN 636: Plywood Specifications. A minimum Service Class 2 "plywood for use in humid conditions" should be used, however higher Service Class plywood may be required, depending on climatic conditions, and should therefore be defined by the specifier.
- Roof covering:
  - Manufacturer: Sika Limited, Watchmead, Welwyn Garden City, Hertfordshire, AL7 1BQ, T: 01707 394444, F: 01707 329129, www.sarnafil.co.uk
    Sika Sarnafil Technical Advisor: TBC
  - Vapour Control Layer: Sarnavap 500E as clause 395 and 396B
    Manufacturer: Sika Limited, Watchmead, Welwyn Garden City, Hertfordshire, AL7 1BQ, T: 01707 394444, F: 01707 329129, www.sarnafil.co.uk
    Laying: Loose lay and overlap all side and end laps by a minimum 100mm, seal with Sarnavap jointing tape. As clause 670A
  - Insulation: SarnaTherm insulation board. As clause 420A
  - Attachment: Mechanically fixed as clause 681B
  - Waterproof membrane: Sarnafil G410-12ELF Lacquered Reinforced PVC membrane
    Thickness: 1.2mm
    Colour: Lead Grey
    Attachment: Adhered as clause 720A and 721B
- Accessories: Drainage: SarnaDrain RWO or Double L Insulated RWO
  Fall Arrest: Sarnafil Constant Force posts
  Flashings: Sarnametal
  Lightning Protection: Fit Sarnafil Heat Weldable Lightning Conductor Clips
  Rooflights: SarnaLite Rooflights

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Walkways: SarnaTred Walkway Tiles
Solar Accessories: Sarnafil Solar Panel Support post, Sarnafil 110 Cable Bend

PERFORMANCE

201B MANUFACTURER'S GUARANTEE
In order to comply with the **10** year Sarnafil insurance backed guarantee, the work is to be carried out by a Sarnafil Registered Contractor. See Sarnafil project specification for full details.

210 ROOF PERFORMANCE
- Roof covering: Secure, free draining and weathertight.

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/m².
  - 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.

225 AVOIDANCE OF INTERSTITIAL CONDENSATION: WARM AND INVERTED ROOFS
- Determine: Interstitial condensation risk of roof construction as recommended in BS 5250, annex D.
- Vapour control layer: If necessary, provide a suitable membrane so that damage and nuisance from interstitial condensation do not occur.

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240B 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_b): (TBC) m/s (10 min.)
  - Altitude factor (C_{alt}): (TBC)
  - Orography factor (C_o): (TBC)
  - Exposure factor (√C_e): (TBC)
  - Directional factor (C_{dir}): (TBC)
  - Seasonal factor (C_{season}): (TBC)
  - Probability factor (C_{prob}): (TBC)
  - Size factor (C_s): (TBC)

PRODUCTS

310B ANCILLARY PRODUCTS AND ACCESSORIES

- Types: Recommended Sarnafil products to be used *where required.*
  - Drainage: Fit Sarnafil Double L fully insulated, high drainage capacity RWO, ensuring Part L compliance with air tightness and thermal insulation continuity at the deck opening. Alternatively where Double L outlets cannot be accommodated, use SarnaDrain Rigid rainwater outlets to allow a continuous weld of the membrane to the body of the outlet.
  - Decoration: Fit Sarnafil Décor Profile standing seams or Sarnafil Batten Profiles.
  - Fall Arrest: The Sarnafil Constant Force posts fall arrest/restraint system should be considered for rooftop safety.
  - Flashings: Sarnametal
  - Lightning Protection: Fit Sarnafil Heat Weldable Lightning Conductor Clips.
  - Rooflights: Fit SarnaLite rooflights.
  - Solar Accessories: Sarnafil Solar Panel Support post, Sarnafil 110 Cable Bend

325 ADHESIVE

- Type: As suggested below by Sika Limited
  - Manufacturer: Sika Limited
    Product reference: Sarnacol 2142s / Sarnacol 2170

330A TIMBER 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 Preserving and Damp-roofing Association Commodity Specification C8.
  - Type: _____
  - If treated timber is in direct contact with Sarnafil membrane: only aqueous, salt-based preservative is to be used.

345 PERIMETER TRIMS
- Type: Galvanised steel sheet with Sarnafil membrane factory laminated
- Manufacturer: Sika Limited.
  - Product reference: Sarnametal.
- Colour: Lead Grey
- Size: _____

355 MECHANICAL FASTENERS, WASHERS, PRESSURE PLATES, ETC.
- Type: In accordance with the current addition of the British board of Agrèment MOAT 55 'UEAtc Supplementary guide for the assessment of mechanically fastened roof waterproofing' for Class 2 fasteners or a suitable alternative recommended in writing for use with Sarnafil systems.
- Manufacturer: SFS intec Ltd

375 MINOR MOVEMENT JOINTS IN SUBSTRATES
- Manufacturer: Sika Limited
  - Product reference: Sarnafil Aluminium Tape
- Size: 50mm wide
- Insert colour: Silver

395 VAPOUR CONTROL LAYER
- Type: Polyethylene
  - Manufacturer: Sika Limited
  - Product reference: Sarnavap 500E
  - Thickness: 0.15mm
  - Vapour resistance: >450MNs/g

396B VAPOUR CONTROL LAYER SPECIFICATION

In accordance with BS 5250 Code of Practice for control of condensation in buildings (Table D7) the suitability of the vapour control layer specified below is based on the Humidity Class **3**.

Should the specifier require a different Humidity Class to be used for this design, then Sika Limited should be notified. A change of Humidity Class will probably require a change to the specification for the vapour control layer.

Vapour Control Layer (Sarnavap)
Over the structural deck loosely lay a Sarnavap 500E flame retarded, polyethylene vapour control layer. All side and end laps to be a minimum of 100mm and continuously sealed with Sarnavap jointing tape. To provide continuity of the vapour control layer the Sarnavap should have fully supported laps and is to be sealed to the abutment at the perimeter of the roof and around all penetrations. The surface of the abutment should be smooth to allow an adequate airtight seal of the Sarnavap.

For the Sarnafil guarantee to include the vapour control layer, the appropriate Sarnavap must be used.

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420A RIGID URETHANE FOAM WARM ROOF INSULATION
- Rigid urethane foam (RUF) roofboard to BS EN 13165
  - Manufacturer: Kingspan Insulation Ltd
  - Product reference: FM approved SarnaTherm G
  - Edges: Staggered bond pattern with lightly butted joints
  - Thickness: TBC mm to achieve the required U Value
  - Facing: Mineral Glass Tissue

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.

520A INCOMPLETE WORK
- End of working day: Provide temporary seal to prevent water infiltration.
- On resumption of work: Cut away tail of any contaminated Sarnafil membrane from completed area and remove from roof.

530 APPLYING PRIMERS
- Coverage per coat (minimum): _____
- Surface coverage: Even and full.
- Coats: Fully bonded. Allow volatiles to dry off thoroughly between coats.

550 CONTROL SAMPLES
- Type of covering: _____
- Sample area (minimum): _____
  - Location: _____
  - Features: _____
- Approval of appearance: Obtain before proceeding with remaining work.

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.
- 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.

640 FIXING TIMBER TRIMS
- Fasteners: _____
- Fixing centres (maximum): _____

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660 JOINTS IN RIGID BOARD SUBSTRATES

- Cover strip: Lay centrally over substrate joints before laying vapour control layers or coverings. Adhere to substrate with bonding compound along edges only.

670A LAYING A NON BITUMINOUS VAPOUR CONTROL LAYER

- Laying: Sheets loose, flat and without wrinkles.
- Side and head laps: Seal using materials and method recommended by the vapour control layer manufacturer.
- Upstands, kerbs and other penetrations: Enclose edges of insulation. Fully seal at abutment by bonding or taping.

681B INSTALLING WARM ROOF MECHANICALLY FASTENED INSULATION

- Setting out:
  - Long edges: Fully support and run at right angles to the troughs.
  - End edges: Adequately support
  - Joints: Butted together
  - End joints: Staggered
- Mechanical fixings: Sarnafil SBIW-70 x 70 washers and telescopic SBT screw fasteners as clause 240A.

  For 600mmx1200mm board size there should be a minimum of **(TBC) no.** fasteners per board throughout the roof.

  For 1200mmx2400mm board size there should be a minimum of **(TBC) no.** fasteners per board throughout the roof.

  All fixings and washers must be in an even pattern (see Sarnafil “Typical Fastener Layouts for PIR Insulation” drawing for further information) and located >50mm and <150mm from the edges and corners of the board and not overlap board joints.

- Completion: Boards must be in good condition, well fitting and with no springing, flexing or rocking.

690B SELF ADHESIVE TAPE

- If using Sarnacol 2170 adhesive cover all board joints with self-adhesive aluminium tape, unless it has been confirmed by Sika Limited that self-adhesive aluminium tape can be omitted. However please note that when using non-fleece backed membrane omitting the tape may increase the 'ghosting' of the insulation board joints through the membrane.

WATERPROOF COVERINGS / ACCESSORIES

720A ADHESIVE BONDING OF WATERPROOF MEMBRANE

- Laying membrane:
  - On a continuous even coating of adhesive.
  - Do not wrinkle or stretch.
- Condition at completion:
  - Bonded with no air pockets.
  - Surface: Smooth.
  - Mechanically fix the Sarnafil membrane at all perimeters, change of plane and upstands.

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721B ADHERED MEMBRANE: Extract from Sarnafil Specification.

Membrane
Adhere Sarnafil G410-12ELF Lead Grey fleece backed glass fibre carried roofing membrane to the substrate using an appropriate Sarnacol adhesive. Hot air weld minimum 80mm side laps and end coverstrips. Fleece backed Sarnafil membrane is butt jointed at roll ends and weathered with Sarnafil G410-12EL Lead Grey coverstrip, welded on each side of the roll end.

Sarnafil reinforced membranes are manufactured by extrusion coating at a state of the art manufacturing plant in Switzerland to ISO 9001 & 14001. Manufactured with a dirt repellent lacquered top coat and treated with fire retardants, it provides a self-extinguishing, dimensionally stable and vapour permeable waterproofing membrane certified by the BBA as having a 'life expectancy in excess of 40 years - see BBA for details.

Sarnacol 2142S adhesive is not suitable for use in temperatures remaining below 5°C for prolonged periods and on roof pitches >10° without additional restraints.

In the main area of the roof use a water filled, foam covered roller to ensure that the membrane achieves intimate contact with the substrate. For sloping, vertical and detail work a lambswool roller should be used.

Install Sarnafil peelstops to the perimeter of the roof, at all internal angles of roof detail and around all roof penetrations. Peelstops can be fastened into the abutment if possible. Fix at maximum 250mm centres with appropriate thermally broken SBT screw fasteners.

Sarnafil thermally broken fasteners must be installed with the appropriate tooling and the membrane must be pre-punched with the Sarnafil SMP tool.

730A WELDED JOINTING
- Side and end joints: for the
  - Laps (minimum): 80mm
  - Preparation: Clean and dry surfaces for full width of joint.
  - Sealing: Heat weld together.
- Condition at completion: Fully sealed and watertight.
- Accessories: Not required.

760A PERIMETER OF SARNAFIL MEMBRANE
General: Secure Sarnafil membrane with a Sarnafil peelstop at roof edge conditions, changes of plane, curb flashings, upstands to roof lights, etc. with Sarnafil approved mechanical fasteners.

770A PERIMETER DETAILS
- Upstands, edge trims, drips, kerbs, etc: Form flashings from Sarnafil membrane material. Edge trims and drips to be formed from the Sarnametal.
- Roof membrane: Terminate Sarnafil membrane in horizontal plane immediately adjacent to change in direction and fixed down with Sarnafil peelstop.

- Flashings: Dress Sarnafil membrane flashing over the Sarnafil peelstop. Overlap horizontal Sarnafil roof membrane beyond the Sarnafil peelstop by (minimum): 50 mm
- Sealing: Hot air weld the overlap.

780A ROOF PENETRATIONS THROUGH THERMOPLASTIC MEMBRANES
- Sarnafil roof membrane: Cut Sarnafil membrane around penetrations and secure Sarnafil membrane with a peelstop.
- Flanged sleeve:
  - Type: Form from Sarnafil roof membrane complete with base flange.
  - Dress Sarnafil membrane flashing over, and around penetration.
  - Sealing: Weld flange to roof membrane.
  - Protection to top edge of sleeve: Flashing or compatible weathering cravat.

COMPLETION

910A INSPECTION
Inspection of the roof installation whilst in progress and/or on completion must be made by the Sika Roofing Field Technician. Copies of Sarnafil site reports of interim and final inspection to be made available if required and previously agreed with Sarnafil Registered Contractor.

920 ELECTRONIC ROOF INTEGRITY TEST *(If required)*
- Testing authority: _____
- Timing of test: _____
- Condition of roof prior to testing:
  - Sarnafil membrane complete to a stage where integrity can be tested.
  - Surface: Clean.
- Test results: Submit.
- Waterproof integrity certificate: On completion of testing, submit.

930 FLOOD TEST _____ *(If required)*
- Condition of roof prior to testing:
  - Sarnafil membrane complete to a stage where integrity can be tested.
- Outlets: Externally cover and seal. Protect against damage from water pressure using temporary kerbs. Do not use plugs to seal outlets.
- Flood levels: Submit proposals. In no case higher than kerbs.
- Flood duration: _____ days
- Inspection: Regular, to detect leaks.
- Completion of test: Slowly drain roof. Do not overload or flood outlets.
- Test results and warranty: Submit on completion of testing.

940A 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.

- Request the Sarnafil Guarantee.
- The roof has to be finally inspected by the Sika Roofing Applications Department and is to be to their satisfaction.