Sarnafil Division

## J42 SINGLE LAYER POLYMERIC SHEET ROOF COVERINGS G410

To be read with Preliminaries/ General conditions and the Sarnafil Ltd project specific specification.

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

A detailed method of work statement and programme of works should be agreed with the Sarnafil Ltd 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 have from a choice of options. All clauses that are not applicable should be deleted.**

### TYPES OF COVERING

110 WARM ROOF COVERING (Insert Job/Roof Name)

- Substrate: Plywood Deck (Minimum 18mm thick and certificated to conform with BS 5268:Part 2: 2002 Structural Use of Timber Code of Practice for Permissable Stress Design, Materials and Workmanship and BS EN636 : Plywood Specifications – Service Class 3, Exterior conditions.)
- Roof covering:
  - Manufacturer: Sarnafil Ltd, Robberds Way, Bowthorpe, Norwich,NR5 9JF, Tel 01603 748985, Fax 01603 743054
  - Vapour Control Layer: Ecovap E as clause 395 and 396B
    Manufacturer: Sarnafil Ltd, Robberds Way, Bowthorpe, Norwich,NR5 9JF.
    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: Light Grey
    Attachment: Fully adhered as clause 720A and 721B
- Surface protection: Sarnatred as clause 850
  - Laying: Hot air welded
- Accessories: Sarnametal/Sarnatred/Double L Insulated RWO/Decor Profile Batten Profile/SarnaLite/Sarnafil Constant Force post

**PERFORMANCE**

201B MANUFACTURERS GUARANTEE

In order ot comply with the 10 year Sarnafil insurance backed guarantee, the work is to be carried out by a Sarnafil Ltd Registered Contractor.

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): 0.25 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: To a relevant British Standard, or Agrément certified.

240A 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 6399-2 incorporating Amendment 1, Hybrid Method.
  - Basic wind speed ($V_b$): (TBC) m/s.
  - Altitude factor ($S_a$): (TBC)
  - Direction factor ($S_d$): (TBC)
  - Seasonal factor ($S_s$): 1.000
  - Probability factor ($S_p$): 1.000
  - Terrain and building factor ($S_b$): (TBC)
  - Size effect factor ($C_a$): 1.000

**PRODUCTS**

310A ANCILLIARY PRODUCTS AND ACCESSORIES
- Types: Recommended by Sarnafil Ltd.
  - Drainage: Fit Sarnafil Double L high drainage capacity insulated rwo.
  - Decoration: Fit Sarnafil Decor Profile standing seams or Sarnafil Batten Profiles.
  - Lightning Protection: Fit Sarnafil Heat Weldable Lightning Conductor Clips.
  - Fall Arrest: Fit Sarnafil Constant Force posts.
  - Rooflights: Fit SarnaLite rooflights.

325 BONDING COMPOUND
- Type: As suggested by Sarnafil Ltd
  - Manufacturer: As recommended by Sarnafil Ltd
    Product reference: Sarnacol 2142s/Sarnacol 2170

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

355 MECHANICAL FASTENINGS, WASHERS, PRESSURE PLATES ETC.
- Type: In accordance with the current addition of the British board of Agrement MOAT 55 'UEAtc Supplementary guide for the assessment of mechanically fastened roof waterproofing' for Class 2 fasteners or a suitable alternative recommended in writing by Sarnafil Ltd.
- Manufacturer: SFS intec Ltd
  Product reference: As clause 681B.

395 VAPOUR CONTROL LAYER
- Type: Polyethylene
  - Manufacturer: Sarnafil
    Product reference: EcoVap E
  - Thickness: 0.16
  - Vapour resistance: 564 MNs/g.

396B VAPOUR CONTROL LAYER SPECIFICATION

**Vapour Control Layer (Ecovap E)**
Over the structural deck loosely lay EcoVap E, polyethylene vapour control layer. **All side and end laps to be a minimum of 100mm and sealed with Sarnavap jointing tape. To provide continuity of the vapour control layer the EcoVap 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 enough to allow an adequate airtight seal of the vapour control layer.**

420A RIGID URETHANE FOAM WARM ROOF INSULATION
- Rigid urethane foam (RUF) roofboard to BSEN 13165.
  - Manufacturer:Kingspan Insulation Ltd.
    Product reference: SarnaTherm G
  - Thickness: (TBC) mm.

- Facing: Mineral Glass Tissue.

**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.

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
- Application rate: Consult Manufacturer L/m².
- Surface coverage: Even and full.
- Coats: Fully bonded. Allow volatiles to dry off thoroughly between coats.

**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): 600 mm

670A LAYING THE NON BITUMINOUS VAPOUR CONTROL LAYER
- Laying: Sheets loose, flat and without wrinkles.
- 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: Butt together.
  - End joints: Stagger.
- Mechanical fixing: A minimum (TBC) no. Sarnafil Ltd SBF fasteners and DTL-70 x 70 pressure plates or Sarnafil SBIW-70 x 70 washers and telescopic SBT screw fasteners per m2, as clause 240A.

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

684B SELF ADHESIVE TAPE
- All insulation board joints to be covered with self adhesive foil tape if Sarnacol 2170 adhesive is used.

**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:
  - Fully bonded with no air pockets.
  - Surface: Smooth.
  - Mechanically fix the Sarnafil membrane at all perimeters, change of plane and upstands.

721B FULLY ADHERED MEMBRANE: Extract from Sarnafil Specification.

**Membrane**
Fully adhere Sarnafil G410-12ELF glass mat reinforced 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 coverstrip, welded on each side of the roll end.

Sarnacol 2142S adhesive is not suitable for use in temperatures remaining below 5$^{o}$C for prolonged periods.

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 detail work a lambswool roller should be used.

**Install Sarnafil Ltd 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 amximum 250mm centres with Sarnafil SBF or TI fasteners or appropriate thermally broken SBT screw fasteners.**

730A WELDED JOINTING
- Side and end joints: for the
  - Laps (minimum): 80 mm
  - 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.

**SURFACING**

850 MEMBRANE WALKWAYS
- Material:
  - Manufacturer: Sarnafil Ltd.
    Product reference: Sarnatred Recycled PVC walkway tiles.
  - Width: 600mm (750mm incl tabs)
  - Thickness: 6mm.
  - Colour: Dark Grey.
  - Attachment: Hot air weld tabs to Sarnafil membrane.

**COMPLETION**

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

920 ELECTRONIC ROOF INTEGRITY TEST (Optional)
- Testing authority: (TBC)
- Timing of test: (TBC)
- 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 (Optional)
- 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: (TBC)days.
- Inspection: Regular, to detect leaks.
- Completion of test: Slowly drain roof. Do not overload or flood outlets.
- Test results: Submit.

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 Sarnafil Ltd and is to be to their satisfaction.