since 1895

Proposal Specification

StressPly Flex – Bituminous Waterproofing Warm Roof System

Shire House
Mount Folly Square
Bodmin
Cornwall
PL31 2DQ

January 2019

High-Performance Waterproofing Systems

Safe2Torch REGISTERED

CONTENTS

CONTACT INFORMATION SHEET

Prepared for:	RTP Surveyors, 9 Mount Folly Square Bodmin PL31 2DF
For the attention of:	Sue Wilton
Site:	Shire House, Mount Folly Square Bodmin Cornwall PL31 2DQ
Project:	Lower Flat Roof Sections
System:	StressPly Flex – Bituminous Waterproofing System
Prepared by: **Telephone:** **E-Mail:**	Justyn Irons 07903 637728 jirons@garlandind.com
Customer Services Contact: **Telephone:** **Fax:** **E-Mail:**	Mrs Stacey Jeffries 01452 330646 01452 330657 sjeffries@garlandind.com
Date:	January 2019

PRELIMINARIES

INTRODUCTION

This document has been compiled for **Sue Wilton of RTP Surveyors by Justyn Irons of The Garland Company (UK) Limited**. It provides specific bespoke details to the waterproofing solution specified for the custody suite at Newquay Police Station

Please see the full Garland Report for further Information.

It is the intension of the below specification to upgrade each roof with a new High Performance StressPly Flex Warm Roof System, including new insulation to raise the U-Value to at least .18, the current value for refurbishment, whilst upgrading all detail areas.

The roof is to be stripped to expose the deck beneath to remove all wet and defective waterproofing prior to installing the new warm roof system.

Size approximately – Flat Roof Sections – **250 Sq. Metres**

Square metre areas given are approximate only and should only be used as a guide. For accurate tendering purposes the contractor should confirm exact areas.

When the project is underway your Garland Representative will be readily available for onsite consultations when required, whilst providing inspections as described below.

On satisfactory completion of the work and Garland invoices paid in full, all Garland (UK) guarantees and relative documentation will be sent directly to the supervising officer with the guarantees also being published as a PDF File to the clients RAMP database to act as a permanent future record.

We would respectfully request that all relevant parties be in attendance on the day of final inspection to ensure that the roofing works undertaken is to the complete satisfaction of the client.

All works are to be undertaken using The Garland Company (UK) Limited specification and approved contractors. All materials used in this specification/application must be supplied by The Garland Company (UK) Ltd unless otherwise agreed to.

IMPORTANT: Copyright Notice

This Specification and all documents produced by Garland in connection with the project (“Documents”) are subject to copyright laws. Garland retains the copyright in all Documents and will grant a license to the client and the roofing contractor to use the same solely for the purpose for which the Documents were prepared in connection with the project and subject expressly to Garland receiving payment in full for all its products mentioned in this Specification. For the avoidance of doubt, neither the client, its contractors nor representatives shall be entitled to copy or otherwise pass the Documents to any competitor of Garland or otherwise utilise the same to carry out the project using products which have not been supplied by Garland.

For the avoidance of doubt Garland owns all intellectual property rights (including copyright) relating to the Documents it produces, the above provision is lawful and falls within the provisions of the Copyright, Designs and Patents Act 1988. Disregard for this provision constitutes an infringement of our lawful statutory rights.

Any breach whatsoever of the legislation, including copying, communicating, lending, or issuing copies of the copyright work to others or making an adaptation of a copyright work or doing any of the acts listed above in relation to an adaptation is subject to both criminal prosecution and civil liability.

By requesting, receiving and using the information contained within this proposal you agree to be bound by the copyright terms.

Any questions regarding specification content or application should be directed to your Garland Regional Technical Manager.

CDM NOTIFICATION

CDM Regulations 2015 are applicable to any construction project regardless of size and duration.

Pursuant to the Construction Design and Management Regulations 2015, you may have a duty to appoint a Principal Designer and a Principal Contractor (in writing) in connection with this project. Garland does not undertake the duties of either a Principal Designer or a Principal Contractor. We do not have the necessary skills, training or experience to perform either of these roles. We are not undertaking any such duties on your behalf.

We can supply, on request, details of some consultants who act as Principal Designers but the onus remains upon you to satisfy yourself that anyone you appoint has the relevant capabilities, resources, skills and understanding in order to undertake this role.

Unless we hear from you confirming the appointment of a Principal Designer and a Principal Contractor, with contact details for these persons, we will assume that you have decided to take on this role and perform the relevant duties yourself.

ASBESTOS COMPONENTS

An Asbestos Survey, in particular the Refurbishment & Demolition Survey in line with HSG 264 must be carried out. If licenced Asbestos is found within the building then it must be removed by a suitable licenced contractor prior to start of the works.

It shall be the responsibility of the Contractor to ensure that any work carried out on asbestos based or asbestos-cement components complies with the Asbestos (Licensing) Regulations, the Control of Asbestos at Work Regulations and all requirements of the Health and Safety Executive, including Codes of Practice and guidance A0, A9 and A12.

Detailed Health and Safety Procedures, together with method statements, must be submitted as part of the Health and Safety Plan with regard to any works to, clean, remove or dispose of Asbestos based products.

INSPECTIONS

On commencement of roofing works, regular site visits will be made throughout the duration of the contract. Photographs and an inspection report will be produced and uploaded to Garland's online

RAMP database system ready to be viewed by the client. As well as the reports being published to the database, a PDF copy will be emailed to the client after each and every site visit.

On satisfactory completion of the work, all guarantees and relevant documentation will be sent directly to the client as well as a PDF document uploaded to the Garland RAMP database for future record.

For the avoidance of doubt, Garland's inspections will be in addition to any inspections carried out by the Contract Administrator and/or others on behalf of the Client and pursuant to the Client's contract with the roofing contractor. Garland has no responsibility for certification of payments, completion etc. pursuant to the contract with the roofing contractor.

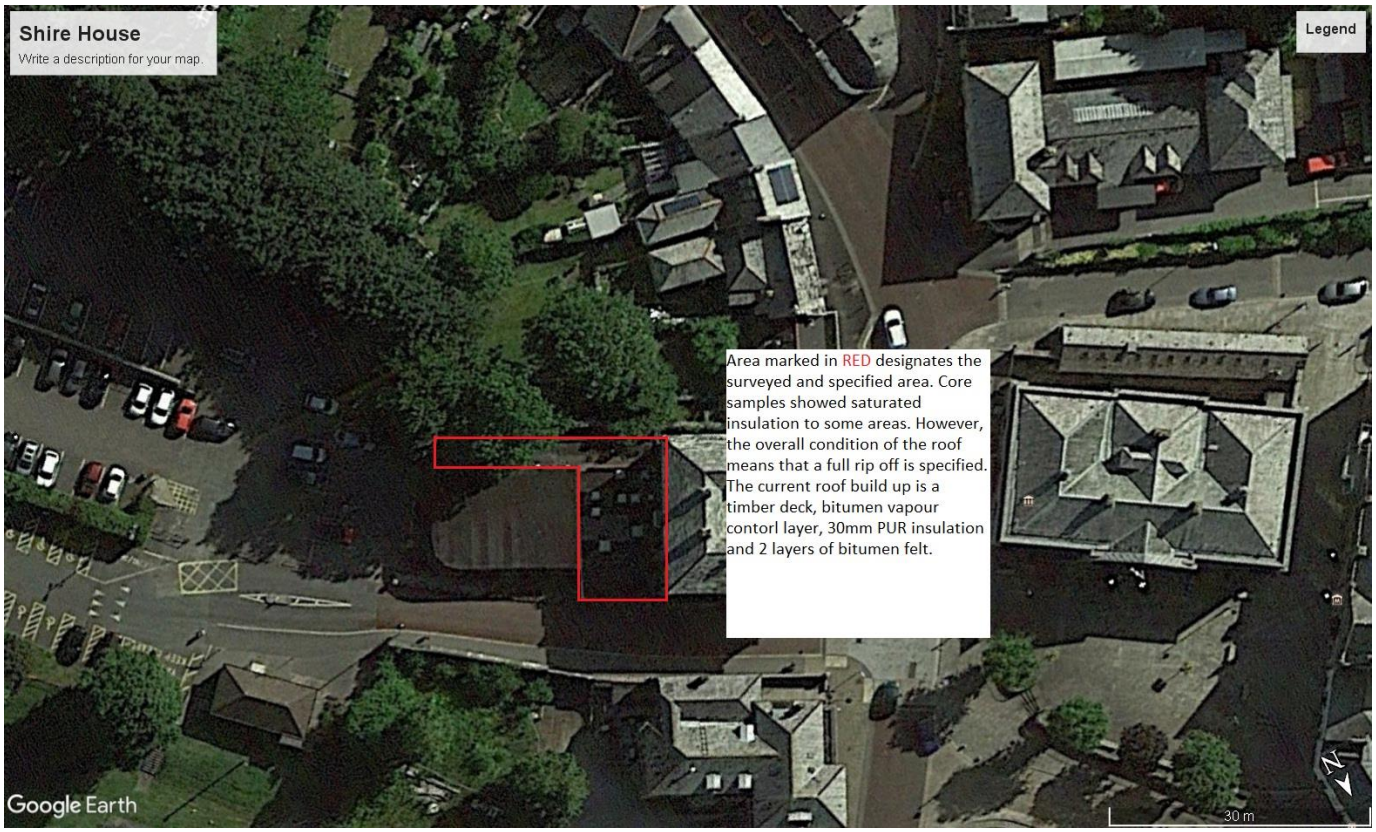
CONTRACTORS REQUIREMENTS

The tendering contractors must confirm the build-up of the roof during tendering.

If the decking is deemed by the HSE to be fragile the tendering contractor must raise this issue with the contract administrator prior to submitting the tender.

The tendering contractors must inspect all drainage and confirm drains are free flowing. If found blocked then a provisional sum must be included within the tender return and itemised clearly.

AERIAL VIEW


Shire House
Write a description for your map.
Legend
Area marked in RED designates the surveyed and specified area. Core samples showed saturated insulation to some areas. However, the overall condition of the roof means that a full rip off is specified. The current roof build up is a timber deck, bitumen vapour contorl layer, 30mm PUR insulation and 2 layers of bitumen felt.
Google Earth
30 m
N

SAFE TO TORCH

GENERAL

An initial survey during the tender stage must be carried out by the roofing contractor to determine any areas of fire risk and to inspect any known areas noted within the designer's risk assessment and this specification.

Attention must be made to fire risk areas which can be but not limited to any combustible materials and substrates, void areas or areas where the substrate is unknown. Any additional risks recognised must be raised with the contract administrator immediately.

All areas of striped waterproofing exposing the deck or substrate must be treated as high risk.

As per the NFRC Responsible Specification Checklist high risk areas for direct torch on applications are:

DECKS AND INSULATION

- **Timber / Other combustible materials**
- **Insulation (Unless designed for torch on membranes)**

DETAILS

- **Expansion joints with voids and/or combustible fillers**
- **Fibreboard, timber or cork fillets**
- **Detail under all abutments to roof tiles, slates and thatch**
- **Detail under cladding / rendering**
- **All abutments with open cavities (open perpends)**
- **All timber substrates**
- **Change in level details with fixed timber fascia and/or all soffits, gutters or restricted spaces**
- **Window sills and frames, door sills, louvered vents, air ducts, intakes and outtakes**
- **Junctions to existing waterproofing with flammable insulation / deck materials**
- **Vulnerable plastic curbs, domes, pipes and the like**
- **Working when in close proximity to potentially flammable coatings**
- **Existing weathering components with concealed flammable materials. These include:**
    - **Timber, DPC or sarking membranes beneath fixed metal capping systems**
    - **Existing kitchen extraction plant coated in oils or fats**
    - **Flammable wrapping to trunking/ducting**
    - **Timber cladding**
    - **Metal or plastic copings/cappings**
- **Metal deck (refurbishment) where old materials may accumulate in the troughs**

DISCLAIMER

It is always the responsibility of the contractor to carry out a risk assessment on all aspects of the contract. The above list is solely to aid in the assessment of the risks where the use of a gas torch is being considered.

FIRE RISK ROOF AREAS

It is <u>NOT</u> safe to use a gas flame in all high risk or unknown areas. These areas MUST be torch free and alternative materials must be used as listed in this specification. The torch free zone must be no less than 900mm from the high-risk area.

IDENTIFED FIRE RISK AREAS

- Timber abutment details
- Rooflight Kerbs
- Timber Deck
- Stripped sections where underlying surface is unknown
- Mansard details

SPECIFICATION

GARLAND SPECIFIED SYSTEM

Garland StressPly Flex

StressPly Flex is an elastomeric modified bitumen waterproofing membrane system. The waterproofing compound made from special grade of modified bitumen with SBS elastomers and fillers. The SBS modifiers boost the thermal, mechanical and aging characteristics of the membrane compound; the non-woven spun-bond polyester carrier reinforcement provides the membrane with its excellent tensile strength, tear/puncture resistance and elongation properties. StressPly Flex upper surface is finished with mineral slate.

MATERIAL/SYSTEM SCHEDULE

DECK:	Existing Decks
SUBSTRATE:	Existing Deck after removal of waterproofing
PRIMER MAIN ROOF:	Garland Quick-Prime
FIRE RISK AREAS:	Garland SA Contact Primer (5l)
VAPOUR CONTROL LAYER:	Garland Torch Evolution VCL (10m x 1m)
FIRE RISK AREAS:	Garland SA Flex Vapour Barrier (10m x 1m)
THERMAL INSULATION:	Bitumen faced PIR Insulation with taper as required
FIRE RISK AREAS:	Foil faced PIR insulation or glass tissue faced
INSULATION ADHESIVE:	Garland Insul-Lock Adhesive (6kg)
UNDERLAY:	Garland Torch Flex Ultra-Vent (8m x 1m)
FIRE RISK AREAS:	Garland SA Flex Base Sheet (10m x 1m)
UNDERLAY AT DETAILS:	Garland Torch Evolution Base Sheet (8m x 1m) (Fully Bonded)
FIRE RISK AREAS:	Garland SA Flex Base Sheet (10m x 1m)
CAP SHEET:	Garland StressPly Flex (7.5m x 1m)
FIRE RISK AREAS:	Garland StressPly Flex SA (10m x 1m)
CAP SHEET AT DETAILS:	Garland StressPly Flex (7.5m x 1m)
FIRE RISK AREAS:	Garland StressPly Flex SA (10m x 1m)
SURFACE FINISH:	Mineral
BONDING METHOD:	Propane Gas Torch
FIRE RISK AREAS:	Self-Adhesive (hot air welding if necessary)

INSTALLATION

PREPARATION:

Fixed Items: Any fixed item which is not to be included in the waterproofing schedule, including wires, vents, cables, lightning conductors etc., must either be totally removed or in order to allow access, be suspended/temporarily loosened from the surfaces to be treated. Such items should not be removed without proper authority or deference to safety. The waterproofing should be allowed to sufficiently cool before replacement of these fixtures.

Lightning Conductors: Any existing lightning conductor strips are be temporarily removed/relocated from the roof/wall surfaces in order for new waterproofing works to take place. A specialist contractor to be engaged throughout works including reinstatement and testing upon completion. The lightning strip to be secured back on the surface via small cap sheet patches cut to suit or purpose made pads.

Drain Ware: Inspect all rainwater outlets (down pipes) to ensure free flowing water. If any blockages or defects are discovered they should be brought to the client's attention as soon as possible to allow remedial action to be agreed and action to be taken as soon as practical so that the application may proceed.

N.B All drainage points will be as directed in the accompanying tapered drawings - locations indicative on the drawing, where exact position to be confirmed on site.

Vent Units: Existing SVP's to be replaced with a new Garland Cowled Telescopic Vent as noted later in the specification.

Existing flue pipes to be waterproofed as per the detail specification. Any cowls to be newly sealed with an appropriate mastic.

Kitchen extraction vent is expected to be renewed as part of this project. The roofing contractor must liaise with the appointed contractors to ensure that a suitable curb, 150mm above the roof height, is installed and waterproofed prior to the new unit being installed. The proposed detail must be agreed with your Garland Regional Technical Manager prior to installation.

Protrusions: Inspect any roof and/or upstands, i.e. vents, pipes, etc., to ensure water tightness. Repair or replace defective materials as necessary and prepare each protrusion and/or upstand as required in order to accept the waterproofing.

Rooflights: The existing rooflights are to be replaced with new, this as per the details provided by a Garland approved manufacturer. Any existing rooflight supports or new that are to be installed will need to be of adequate height to accommodate the new insulation, whilst maintaining a minimum upstand height. This to be done with suitable timber supports. The rooflights to be waterproofed in accordance with the detail specification below.

Mansard Roof Details: Mansard roof slates are to be removed to a height to allow waterproofing to terminate a minimum of 150mm above the finished roof surface. The slates are then to be reinstalled to create a suitable cover flashing of the felt termination point.

The external edge mansard sections are to be removed in full including the ridge tile. The upstand is to have mineral wool insulation installed into the void prior to plywood being installed to allow felt membrane encapsulation up and over the ridge point prior to the ridge tile being re installed.

Roof Removal: The existing roof membranes, including all underlying insulation are to be stripped from the deck surface.

Carefully remove all the existing roof coverings, including the existing insulation to expose the timber deck below.

This including careful removal of the existing waterproofing to nearby details such as upstand details, perimeter edges and gutter courses.

Dispose of all waterproofing into skips and remove from site.

When stripped inspect the deck surface for any damage repairing all items as deemed necessary, the deck must be checked to ensure its integrity and any damaged areas must be replaced.

N.B The existing roof deck MUST be inspected by your Garland Regional Technical Manager prior to the deck installation.

Any peculiarities or details discovered, following the stripping of the existing waterproofing, which might affect the performance of the Garland system, should be reported immediately to your Garland Regional Technical Manager in order that we may assist in overcoming the problem.

Once the roof has been approved and the new deck surfaces are clear of any remaining debris the below waterproofing specification should be applied.

Final Cleaning: Remove all dust, debris and superfluous materials from the roof and leave in a dry and clean condition.

Once the roof has been approved, the following waterproofing specification should be applied.

MAIN ROOF PRIMER:

Prime directly onto the existing roof surface prior to the installation of the new waterproofing using Garland Garla-Prime primer at a rate of 0.1 – 0.3 litres per m^2 and allow to dry thoroughly.

FIRE RISK AREAS AND SELF-ADHESIVE PRIMERS:

Main Roof Primer:
Prime directly onto the existing roof surface prior to the installation of the new waterproofing using Garland Quick Prime primer at a rate of 0.1 – 0.3 litres per m^2 and allow to dry thoroughly.

Roof Detail Primer:
Apply Garland SA Contact Primer to all details and upstands for additional adhesion.

After approx. 1 hour and while the primer is still a bit tacky but does not come away on your fingers, apply the self-adhesive membrane. DO NOT leave the primer overnight as it will become contaminated.

N.B. Garland SA Contact Primer must be used on all upstands and details.

Alternatively, where odour is of particular concern the Garland Garla Prime can be substituted for the Garland Quick Prime – application and coverage rates to be in accordance with the Data Sheet.

VAPOUR CONTROL LAYER:
Garland Torch Evolution VCL:

Install a layer of Garland Torch Evolution VCL membrane (10.0m x 1.0m roll) direct to the primed surface. The Torch Evolution membrane should only be torch applied to the surface. The plastic film on the underside must be completely melted as work proceeds; this is to ensure a full torch-bond is achieved.

A minimum 100mm side laps and 150mm end laps must be obtained in order to ensure a full watertight seal. To ensure total security, all laps must extrude a minimum 5mm of bitumen bleed which should be checked thoroughly as work proceeds.

N.B. the vapour control layer must be taken back on to the main roof area a minimum 100mm ensuring all end laps are fully sealed.

FIRE RISK AREAS AND ALL STRIPPED WATERPROOFING:
Garland SA Flex Vapour Barrier:

Any areas of stripped waterproofing back to a combustible substrate must be installed with self-adhesive vapour control layer.

Any roofs with stripped detailing only must have the self-adhesive installed 1m into the roofs field

Install a layer of Garland SA Flex Vapour Barrier (10.0 x 1.0m roll) in accordance with current instructions. The substrate should be clean, dry, and free of debris, dust and primed.

Starting at the low point of the roof, unroll the SA Flex Vapour Barrier in the desired position. Fold the membrane length- wise back onto itself, remove the split back release film from the exposed side and gradually push the membrane into place. Apply even pressure along the entire length of the membrane from the centre to outer edges to avoid air pockets or wrinkles. Repeat for the other side. Firmly apply pressure with a suitable weighted roller to ensure 100% adhesion.

Finally apply pressure with a suitable weighted roller over the entire area to ensure 100% positive adhesion. End laps should be sealed using a hot-air gun with a flat nozzle and seam roller for 100% positive adhesion. Heat weld the membrane laps ensuring a 50mm gap is maintained between the heat gun nozzle and seam roller for a consistent weld. Excess pressure should not be required to create a bleed. A minimum of 100mm end laps must be obtained to ensure a watertight seal has been achieved.

N.B. Apply when the ambient air temperature, roll temperature and substrate temperature are all 10°C or above. Application in cool temperatures will negatively affect adhesion.

N.B. The vapour control layer must be installed a minimum 100mm above the insulation height at all roof details (upstands, water check curbs, timber battens, rooflight curbs, vent curbs, parapet walls etc.), this ensures continuity in the VCL and that roof system is protected from damaging effects of condensation.

INSULATION

Insulation to be installed to the roof areas fully bonded with **Garland Insul-Lock LR Adhesive** all laid in accordance with the Manufacturers current instructions. Once the boards have been placed on the surface, apply firm and even downward pressure so as to achieve a full adhesion bond.

This all as per the accompanying Tapered Design.

Insulation boards must be laid break-bond pattern in accordance with the current instructions.

Treated timber battens must be installed at all non-supported edges i.e. internal and external gutter edges etc. The treated timber batten must be slightly thinner than the specified insulation in order to allow for the build-up of waterproofing membranes and rainwater runoff.

All timber battens must be mechanically fixed and primed prior to being encapsulated with Garland SA Flex Vapour Barrier or a mechanically fixed bitumen membrane layer prior to a torch application.

Fillets must be installed to all upstands, chase details etc. If using combustible timber fillets, these must be encapsulated with SA Flex Base Sheet or a mechanically fixed bitumen membrane layer prior to a torch application.

N.B Insulation should ideally be stored inside a building or within a site container, however If outside storage is unavoidable the insulation must be off ground level and covered with a waterproof sheet. The packaging of the insulation can by no means whatsoever be relied upon to provide protection from moisture and must be avoided at all times.

All exposed/open edges of insulation must be sealed with fully bonded night joints overnight to ensure no water ingress.

UNDERLAY:
Garland Torch Flex Ultra-Vent:

Install a layer of Garland Torch Flex Ultra-Vent (8.0m x 1.0m roll) direct to the insulation boards and detail surface in accordance with current instructions.

The plastic film on the low melting bituminous venting stripes to the underside of the roll must be completely melted as work proceeds. The underlay must be fully bonded at all details to a width of 400mm. Minimum 100mm side laps and 150mm end laps must be obtained to ensure a watertight seal has been achieved. A minimum 5mm bead of bitumen must extrude at all laps.

FIRE RISK AREAS:
Garland SA Flex Base Sheet:

Install a layer of Garland SA Flex Base Sheet (10.0 x 1.0m roll) in accordance with current instructions. The substrate should be clean, dry, and free of debris and dust. Foil-faced insulation does not need to be primed prior to installation of the SA Flex Base Sheet. However, glass tissue faced insulation must be primed with Garland SA Contact Primer prior to installation of Garland SA Base Sheet.

Starting at the low point of the roof, unroll the SA Flex Base Sheet in the desired position. Fold the membrane length- wise back onto itself, remove the split back release film from the exposed side and gradually push the membrane into place. Apply even pressure along the entire length of the membrane from the centre to outer edges to avoid air pockets or wrinkles. Repeat for the other side. Firmly apply pressure with a suitable weighted roller to ensure 100% adhesion.

Finally apply pressure with a suitable weighted roller over the entire area to ensure 100% positive adhesion. A minimum of 100mm end laps and 80mm side laps must be obtained to ensure a watertight seal has been achieved. Heat weld the membrane laps ensuring a 50mm gap is maintained between the heat gun nozzle and seam roller for a consistent weld. Excess pressure should not be required to create a bleed.

N.B. Apply when the ambient air temperature, roll temperature and substrate temperature are all 10°C or above. Application in cool temperatures will negatively affect adhesion.

UNDERLAYER INSPECTION:

The Approved Contractor must give reasonable notice to his Garland Regional Technical Manager of their intention to commence laying the cap sheet. This will allow a discretionary inspection of the UNDERLAYER to take place, so that any remedial treatment necessary can be carried out prior to installing the cap sheet.

MINERALISED CAP SHEET:
Garland StressPly Flex:

Install a layer of Garland StressPly Flex Cap Sheet (7.5m x 1.0m roll) by torching in accordance with current instructions. Minimum 100mm side laps and 150mm head laps are required. A minimum 5mm bead of bitumen must extrude at all laps to ensure a watertight seal has been achieved.

N.B Your Garland representative will thoroughly check all laps to ensure total security, any laps not found to be beaded will be pointed out to the roofing contractor where he will be required to re-seal this area.

FIRE RISK AREAS:
Garland StressPly Flex SA

Install a layer of Garland StressPly Flex SA (10.0 x 1.0m roll) in accordance with current instructions. The substrate should be clean, dry, and free of debris and dust. The Garland SA Flex Base layer does not need to be primed prior to installation of the StressPly Flex SA Cap Membrane.

Starting at the low point of the roof, unroll the StressPly Flex SA membrane in the desired position. Fold the membrane length- wise back onto itself, remove the split back release film from the exposed side and gradually push the membrane into place. Apply even pressure along the entire length of the membrane from the centre to outer edges to avoid air pockets or wrinkles. Repeat for the other side. Firmly apply pressure with a suitable weighted roller to ensure 100% adhesion.

Finally apply pressure with a suitable weighted roller over the entire area to ensure 100% positive adhesion. End laps and side laps **MUST** be sealed using a hot-air gun with a flat nozzle and seam roller for 100% positive adhesion. Heat weld the membrane laps ensuring a 50mm gap is maintained between the heat gun nozzle and seam roller for a consistent weld. Excess pressure should not be required to create a bleed. A minimum of 100mm end laps and 80mm side laps must be obtained to ensure a watertight seal has been achieved.

N.B. Apply when the ambient air temperature, roll temperature and substrate temperature are all 10°C or above. Application in cool temperatures will negatively affect adhesion.

DETAILING:

All details should be waterproofed using the following membranes.

UNDERLAY AT DETAILS:

Install a layer of Garland Torch Evolution Base (8.0m x 1.0m roll) **fully-bonded** to the insulation boards and details in accordance with current instructions.

Fire risk areas must use Garland SA Flex Base Sheet in accordance with instructions above

CAP SHEET AT DETAILS:

Garland StressPly Flex (7.5m x 1.0m roll) in accordance with current instructions.

Fire risk areas must use Garland StressPly Flex SA Cap Sheet in accordance with instructions above

UPSTAND DETAILS:

All upstand kerb details should be raised to provide a minimum 150mm upstand height from the finished roof level where possible, if this cannot be achieved and might affect the performance of the Garland waterproofing system, it should be reported immediately to your Garland Regional Technical Manager in order that we may assist in overcoming the problem. Garland cannot take responsibility for water ingress over waterproofing details insufficiently high.

Attention should be paid in particular to all details such as rooflight & vent kerbs, window cill's and flashing details. These will need to be raised to comply with the minimum 150mm upstand regulation.

Install angle fillets to all upstand details.

Provision should be made by the installer for mechanically fixing the top leading edge of all upstand details in excess of 225mm in height using appropriate fasteners. **The membranes to the pitched roof sections be mechanically fixed to guard against future slippage.**

Hot air welding equipment:

Hot air welding equipment must be manufactured by either **Leister** or **Sievert**.

Equipment details:

Side laps (one of the following)

- Leister Varimat or Bitumat automatic hot air welder 240V/4600W with an 80mm nozzle.
- Leister Electron hot air hand tool 240V/4500W with an 80mm nozzle.
- Sievert TW5000 automatic hot air welder 240V/5000W with an 80mm nozzle.
- Sievert TH1750 hot air hand tool 240V/2300W with an 80mm nozzle.

Head laps and all detailing (one of the following)

- Leister Electron hot air hand tool 240V/4500W with an 80mm nozzle.
- Sievert TH1750 hot air hand tool 240V/2300W with an 80mm nozzle.

FLASHINGS:

Any existing flashings are to be replaced in accordance with good roofing practice.

Existing Flashings: The existing flashing heights are to be re used but all lead to be replaced with new chases cut. Cut 25mm deep chases in all masonry upstands. These should provide a minimum 150mm upstand above the finished level of the waterproofing.

Install code 4 lead cover flashings dressed in the chases provided. These should be temporarily secured with wedges and then pointed using Garland TS-2136 Urethane Mastic.

Install angle fillets to all upstand details where required.

PIPES, TUBES, VENTS:
Garlands Cowled Telescopic Vent & Treatment of Existing Flues:

Install the Garland Cowled Telescopic Vent where a pipe penetrates the waterproofing system. Place the upstand pipe over the soil vent pipe centrally. Ensure the High Performance membrane flange on the upstand pipe is fully supported and bonded by hot-air welding.

The flange should be incorporated within the built up felt layers in accordance with the current instructions. The telescopic double pipe is then positioned to fit into the soil vent pipe and simultaneously over the upstand pipe. The height of the telescopic double pipe can be altered as required and then fixed with the self-tapping screw included. Compliance for the minimum height must be in accordance with the current Building Regulations. The Cowled Telescopic Vent can be extended 700mm from flange to cowl with a 35mm lap between the telescopic double pipe and the upstand pipe. Fixing the vented cowl finishes the Cowled Telescopic Vent. The vented cowl fits over the telescopic double pipe and is fixed with the self-tapping screw included.

N.B. Where Garland telescopic vent are not usable, lead sleeves must be used, if necessary, these must be made up for the individual vent or pipe.

Where vent pipes and tubes can be removed or redirected so that no penetration through the waterproofing is required, this should be done so at all times.

INTERNAL GUTTER COURSES:

New internal gutters are to be created as per the tapered design plan.

Hard edges must be installed to all edges

The underlay membrane laps should be increased to 150mm in the gutter area to provide additional security to this area.

INTERNAL RAINWATER OUTLETS:
Roof Outlets:

New internal outlets to be installed within the new insulation along the gutters.

Install suitable sized Garland Roof Outlets in accordance with the current instructions. The Roof Outlet has a sponge rubber 'O' ring fitted to its spigot. This 'O' ring provides a seal to the internal diameter of the down pipe. The outlet has a high-performance membrane flange that should be fully supported and bonded by hot-air welding. The flange should be incorporated within the existing perimeter gutter the number of outlets and their positions can be located on the attached plan.

After the waterproofing is complete install the stainless-steel outlet grate. The grate is fastened with an expanding clamp, which grips the outlet spigot internally.

MANSARD ROOF ABUTMENT TO HIGHER ROOF SECTION:

Where the vertical slates meet the flat roof the lower courses of slate are to be removed and set to one side. The felt waterproofing is to be taken up at least 150mm above the completed roof surface. This is to be done by installing an 18mm marine grade plywood layboard prior to reinstating the slates after completion.

Apply the appropriate Garland primer as specified in the main waterproofing specification.

Install the specified Garland Self Adhesive Base Sheet & StressPly Flex Self Adhesive Cap Sheet as specified.

PERIMETER EDGE MANSARD DETAILS:

The slates and ridge tiles are to be removed and disposed of from site. Mineral wool insulation to be installed into the roof void prior to new 18mm marine grade plywood being installed.

Apply the appropriate Garland primer as specified in the main waterproofing specification.

Install the specified Garland Self Adhesive Base Sheet & StressPly Flex Self Adehsive Cap Sheet as specified.

Felt membranes are to go over the ridge and terminate on the other side of the ridge. The membranes are to be mechanically fixed in place.

On completion the ridge tile is to be suitably re fixed in place. If the upstand is less than 150mm above the completed roof height then the felt is to be dressed down on the outside of the exterior mansard roof to ensure integrity.

ROOF LIGHTS:

Remove all existing waterproofing from the roof light upstand and dispose.

Carefully remove the existing roof lights and dispose.

To the remaining rooflight opening install new **"MANUFACTURER TO BE GARLAND APPROVED"** Triple Skinned Polycarbonate Domes on **fully insulated kerbs**.

The new rooflight is to be installed as per the manufacturer's instructions.

N.B upstand flashings to roof light details must be treated as a separate item to main roof area.

Make good internally to match existing decoration.

All rooflight curbs are to be treated as a high risk and torch free zone. The kerb must be primed with appropriate Garland primer and SA Flex Vapour Barrier must be installed 100mm above the insulation height at all roof details. The rooflight must be detailed separately with Garlands SA Flex Base Sheet and Garlands StressPly Flex SA mineral cap sheet.

PLANT, AIR CONDITIONING UNITS, ETC:

Where Plant, Air Conditioning Units or Ventilation Systems require positioning on top of the finished roof surface a loose laid section of Garland Waterproofing membrane should be positioned and on top of this a rubber tile or concrete paver of the correct size should be placed for the system to rest on.

ITEMS TO CONSIDER

STORAGE & HANDLING:

All materials, except bulk deliveries, shall be delivered in the manufacturer's original containers. The containers shall be sealed and display the manufacturer's original label(s).

All liquid materials shall be stored in a cool, dry, shaded area during hot weather or in a dry, heated area during cold weather. Roll goods and granules shall be stored in a clean, temperature controlled area. Any materials exposed to the elements shall be elevated above the ground and covered by a tarpaulin. Materials must not be exposed to excessive heat or direct flame.

Materials shall be handled so as to minimize damage or contamination with moisture or foreign matter. Solvent based materials are combustible. Keep containers closed when the materials are not in use.

SAFETY:

Refer to all applicable data including, but not limited to, Material Safety Data Sheets, Technical Data Sheets, Product Labels and specific instructions for personal protection requirements.

Refer to the Hazard Elimination and Reduction Assessment for particular hazards associated with this design.

JOB CONDITIONS:

Roofing materials shall not be applied during inclement weather and the installation shall not proceed in the event that precipitation is probable during application.

NOTES

The contractor is to ensure water tightness of the roof at all times.
Workmanship that is incorrect and does not meet Codes of Practice will not be permitted, even if the system is watertight. The client will be told that all such faults must be remedied, before the Guarantee is issued.

Any building work which is the responsibility of the roofing contractor and has a bearing on the life of the Garland Waterproofing System must be carried out by properly trained tradesmen.

All reasonable undertakings and inclusions required to complete the works must be allowed for within the Tender price, whether or not specifically identified within the Tender Documentation or Specification. All work to conform to good practice and current British Standards and Regulations.

All the above work will be regularly monitored by your Garland Regional Technical Manager, with all progress reports to be emailed to the supervising officer the following day of the site visit.

For any further information regarding this specification please contact your Garland Regional Technical Manager.

N.B. Core samples are indicative of the roof construction only at the area where the sample was taken. The Roofing Contractor must satisfy himself as to the existing roof construction of all roof areas prior to forwarding his Tender documentation.

If any discrepancies regarding the core samples are noted by the Roofing Contractor, they should be brought to the attention of your Garland Regional Technical Manager prior to forwarding the Tender Documentation. This will allow time for any changes in the specification to be adjusted if required.

The Garland Company (UK) Ltd does not, either itself or through its representatives, provides architectural or engineering advice or designs save in relation to its products. Garland (UK) Ltd offers no opinion on and expressly disclaims any responsibility for the integrity or structural soundness of any roof deck or structure on which its products may be applied. The Owner is advised to seek independent advice from a structural engineer as to the structural soundness and integrity of the roof deck, and its ability to properly support the contemplated roof installation. Garland accepts no responsibility or liability in relation to such matters and no Garland representative is authorised to vary this disclaimer.

It should be noted that this Specification and all documents produced by Garland in connection with the project (“Documents”) are subject to copyright laws. Garland retains the copyright in all Documents and will grant a license to the client and the roofing contractor to use the same solely for the purpose for which the Documents were prepared in connection with the project and subject to Garland receiving payment in full for all its products mentioned in this Specification. For the avoidance of doubt, neither the client not its contractors or representatives shall be entitled to copy or otherwise pass the

Documents to any competitor of Garland or otherwise utilise the same to carry out the project using products which have not been supplied by Garland.

DETAIL DRAWINGS AND CALCULATIONS

Please see the attached detail drawings relevant for the proposed specification.

GARLAND UK GUARANTEE

A 20 Year Independent Single Point Garland (UK) Guarantee is available for the **Flat Roof Sections** for both material performance and labour on this contract subject to this specification being followed and applied by a Garland (UK) approved contractor.

GUARANTEE ISSUE PROCEDURE

On completion of the works, the Garland (UK) Ltd Regional Technical Manager will carry out a final inspection and agree any necessary remedial works prior to signing off the roofing works to ensure that the work has been completed in accordance with the specification.

It is advised this meeting should be attended by a representative of Garland (UK) Ltd, the approved contractor's site manager and a representative for the client. Within due course of this meeting, subject to all parties being satisfied with the work, a guarantee will be issued to the client.

The guarantee will be issued to the client in hard copy and a digital copy will be attached electronically to the client's database.

MAINTENANCE

Twice a year during your annual inspections, the following maintenance and housekeeping activities should be performed:

- Remove unnecessary debris (leaves, branches, paper, etc.) from roof surface, drains and gutters
- Trim any branches or trees that hang over the building and that can clog drains
- Reseal all areas surrounding venting, plumbing or roof top equipment
- Make all necessary repairs to roof membrane and flashings

Please note that if this roof is fragile, it is not to be walked upon without correct and safe access equipment.

CONTRACTORS

The workmanship of our authorised contractor network is approved and guaranteed against failure under the terms and conditions of the subsequent Garland warranty.

In the knowledge that the correct installation of systems is a critical step in ensuring long term performance, Garland will only recommend contracting companies whose attitudes towards site performance and customer care are in line with the same high principles as their own.

Following the design work in partnership with your Garland Regional Technical Manager you will be ready to go out to tender or place an order with a contractor to carry out the required project. The quality

of your planning and specification demands the services of a like-minded contracting organisation. You can rest assured that The Garland Company will provide you with a list of authorised partnered companies who have met the criteria set down in our stringent approval process.

We insist on, competent pricing, proficient site practice and effective contract management. We strive via a training programme to partner with company's who will purvey only the highest standards of workmanship at this critical stage of your project.

Your Garland Regional Technical Manager will monitor the performance of the contractor over the course of the project and ensure that all works are being carried out, in line with the specification, to codes of practise and that they also meet all aesthetic considerations.

On completion of the project your Garland Regional Technical Manager will thoroughly inspect the project and ensure that the contractor has met all the considerations laid down in the original specification and that all works are completed to the full satisfaction of The Garland Company and the specifying client.