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# Specification Document

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## Project: 52874

Project Name: Great Cliff- Dawlish  
Project Address: Great Cliff  
Marine Parade  
Dawlish  
Devon  
EX7 9EX

## Client:

Client Details: Great Cliff (Dawlish) Ltd

## Specification written by:

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## Great Cliff- Dawlish

### Roofing Specification

Roof areas covered by this specification: Great Cliff- Dawlish.



### Outline Description

This specification has been produced for Great Cliff (Dawlish) Ltd for the express use in the construction of the designated roof areas of the property stated above.

Core Samples: These are taken for guidance purposes and indicate the construction only at the sample location/s. Condition/levels of degradation affecting the coverings are only applicable at the time of inspection. Both construction and condition may vary throughout the roof area.

## Preliminaries and General Conditions

1. Before tendering, the contractor should examine the drawings and specification documents, visit the site and ascertain all local conditions and restrictions, accessibility, the full extent and nature of the work, the supply and conditions affecting labour and the execution of the contract generally. No claims arising from failure to do so will be considered.
2. The contractor shall provide, erect and maintain all necessary hoists, scaffolding, mechanical equipment, plant etc of all descriptions required for the satisfactory completion of the works and remove all, as and when required, or when directed by the Contract Administrator.
3. The contractor shall not display any advertisements on the scaffolding other than the firm's name board and contact details; neither shall he permit any other advertisements to be displayed without the written authority of the Contracts Administrator.
4. The contractor shall provide all necessary containers and storage facilities for materials and for workshops that may be required, maintain them and clear them away on completion.
5. The contractor shall provide all necessary latrines and other facilities for the use of operatives as required by the Construction (Design & Management) Regulations 2015 (CDM 2015), maintain them in decent condition and clear them away on completion.
6. All roofing materials are to be supplied by Langley Waterproofing Systems Ltd and to be fit for purpose and of the type and quality described herein. Any sub-standard materials will be rejected. No alternatives are to be substituted.
7. The contractor shall employ none but fully qualified, competent tradesmen and the whole of the work shall be carried out and completed in accordance with "Best Practice".
8. The contractor shall carry out the works without undue inconvenience and nuisance and without danger to occupants and users.

### Note

These preliminaries and general conditions will apply in all situations, except where the specifying client inserts a more comprehensive section of preliminaries and conditions, encompassing the complete project.

## Great Cliff- Dawlish

Detailed Specification: 1

## Great Cliff- Dawlish

| No. | Item   | Unit | Qty | Rate | Total |
|-----|--|------|-----|------|-------|
| 1   | <b>SPECIFICATION REQUIREMENTS</b>  |      |     |      |       |
| 1.1 | <b>Guarantee:</b><br>The following <b>TA-25-W</b> specification is to be covered by the Langley Waterproofing Systems Ltd, single-premium, pre-paid independently-insured workmanship and materials guarantee for a period of <b>25 years</b> from the date of practical completion. In order to meet this requirement only roofing contractors that participate in this guarantee scheme may be used. The eligibility of proposed roofing contractors should be confirmed with Langley Waterproofing Systems Ltd, Tel: 01327 704778 prior to inviting tenders.  |      |     |      |       |
| 1.2 | <b>Projects Under CDM:</b><br>The Construction (Design and Management) Regulations 2015 (CDM 2015) apply to all construction projects. It is the Client's responsibility to ensure that all required duty holders are appointed as necessary.<br>The Principal Designer must advise the Client on health and safety issues during the design and planning phases of construction work, using their expertise in health and safety, planning, management, construction, and communications to mitigate any health and safety risks.<br>As part of our specification service, Langley may prepare or modify drawings, specifications, or design calculations. Under CDM 2015, Langley's role falls under the responsibilities of a Designer, working under the Principal Designer.<br>When undertaking samples or inspecting works, Langley's role under CDM 2015 becomes that of a Worker, where we have a duty to cooperate and report any identified risks that may endanger the health and safety of ourselves or others.<br>Since the roof area will require maintenance in accordance with BS 6229:2018, the Client should ensure that safe access to and from the roof area is considered under CDM 2015. This may include installing free-standing guardrails around potential hazards, such as rooflights, or implementing other appropriate fall prevention methods.<br>A summary of duties can be found here: <a href="https://www.hse.gov.uk/construction/cdm/2015/summary.htm">https://www.hse.gov.uk/construction/cdm/2015/summary.htm</a> |      |     |      |       |

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| 1.3 | <b>Items Not Supplied by Langley - Guarantee:</b><br>Only products supplied by Langley are included in our guarantee.<br>Products others supply are not included in our guarantee and are advised in good faith only to ensure compatibility and performance.<br>Where existing items are reused (rainwater outlets etc.) their suitability and functionality are to be confirmed prior to works commencing and these items will be excluded from the guarantee. The waterproofing to these items will be included unless stated otherwise.  |      |     |      |       |
| 1.4 | <b>Maintenance Item - Mastic Sealant:</b><br>Please note that the Langley Gap Seal Mastic, like other mastic sealants, will degrade when exposed to ultraviolet (UV) and has a maximum life expectancy of 5 years under these conditions. This expected degradation can lead to potential failure and subsequent leaks in the waterproofing detail if remedial works are not undertaken promptly.<br>As part of the scheduled maintenance program, it is recommended that all sealants be visually inspected and their elasticity checked twice yearly. Cracked and hard mastic, or evidence of moisture present, likely results in deteriorating sealant integrity and should be replaced.<br>First, remove the aged/failed sealant, clear the substrate of loose material and any contamination that could cause adhesion issues, and then apply new Langley Gap Seal Mastic. It is essential to document areas where the sealant has been replaced as evidence against any future warranty or guarantee claims. |      |     |      |       |
| 1.5 | <b>Rooflights - Guarantee:</b><br>The Langley Rooflights specified in the following document will be covered by the same insurance-backed guarantee (IBG) provided by Langley Waterproofing Systems Ltd. It will be effective for the same duration as the waterproofing system guarantee from the date of practical completion. Certain industry standard term limitations may apply to the individual components of specialist, bespoke, and structural units. Please ask for more details   |      |     |      |       |
| 1.6 | <b>Rooflights - Fragility Class:</b><br>The default rooflight specification is for a non-fragile unit rated to Class B or higher in accordance with ACR[M]001:2019. If the client opts for a Class C rooflight, they <u>must confirm in writing</u> that they accept responsibility for ensuring that appropriate risk mitigation measures are in place, such as physical barriers, restricted access, or other safety provisions to protect individuals accessing the roof over its lifetime.   |      |     |      |       |
| 1.7 | <b>Design Note - Warm Roof:</b><br>This specification is based on a warm roof construction. The principal thermal insulation is above the structural deck.   |      |     |      |       |

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| 1.8  | <p><b>Design Note: Ponding Water on Flat Roofs:</b><br/>Flat roofing systems should be designed to drain effectively, ensuring rainwater reaches designated drainage points per the roof's design. However, minor, and infrequent water pooling can occur in practice due to natural tolerances in construction, materials, and building movement over time. These temporary pools, where water collects after rainfall but dissipates without worsening, are generally not a cause for concern and are an expected characteristic of flat roofing.</p> <p>Clients seeking to minimise ponding can incorporate additional design considerations, such as increased falls. However, these may affect the roof's overall design, buildability, and cost.</p> <p>Where excessive or persistent ponding occurs, whether due to insufficient falls, a lack of maintenance, or failure to address drainage risks during design, there may be long-term consequences, including potential deflection of the deck or impacts on the waterproofing system. If a roof was not explicitly engineered to retain water, with appropriate structural calculations, any resulting issues from excessive ponding would not be covered under standard terms.</p> <p>We work closely with clients to ensure that drainage strategies are appropriate for their project needs and that practical, commercially viable solutions are considered during design. Regular maintenance is also essential to ensure ongoing drainage performance.</p> |      |     |      |       |
| 1.9  | <p><b>Design Note - Existing Falls:</b><br/>Overlay of any existing roof system or deck. The new system will follow the existing falls and any deviations will be replicated. As a result, some areas of standing water may occur. Please refer to the Design Note - Ponding/Standing Water clause above for further details.</p>  |      |     |      |       |
| 1.10 | <p><b>Design Note - Changes &amp; Adjustments:</b><br/><b>Variations 'A' (general):</b><br/>Any variations must be agreed in writing by both the contract administrator and Langley Waterproofing Systems Ltd. These must be costed and authorised by the client but not be implemented until instructed by the client.</p> <p><b>Variations 'B' (minor):</b><br/>During work in progress, Langley Waterproofing Systems Ltd must be informed immediately of any proposed change/s and operatives must not implement any change/s until agreed by Langley (minor changes are deemed to be any item not falling within the scope of section A).</p> <p><b>Unauthorised Changes 'C' (general):</b><br/>Langley Waterproofing Systems Ltd will not be responsible for any changes of which they are unaware or have not authorised, nor will they accept any liability or associated costs due to system failure, i.e. labour, materials, design or programme delays, etc., resulting from said changes.</p>  |      |     |      |       |

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| 1.11 | <p><b>Design Note - Approved Document Part B Building Regulations - Compartmented Walls:</b></p> <p><b>Removal of Existing Structural Deck and/or Waterproofing:</b><br/>Where the Langley Waterproofing system bridges a compartmented wall, it is expected that the existing underlying system is laid on a substrate or deck rated class A2-s3, D2 or better (non-combustible) to BS EN 13501-1.<br/>Some buildings (Hotels, boarding houses, residential colleges, residence halls, hostels, offices, assembly and recreation buildings) no taller than 15m are permitted to have a roof deck classified as Euroclass B-s3, D2 or worse (combustible). However, to comply with Approved Document Part B, additional fire stopping will be required underneath the roof deck. Because of the reduced resilience to fire, thermoplastic insulation materials (XPS, EPS) can only be used within the 1500mm zone on either side, and over the compartment wall when the deck is rated class A2-s3, D2 or better (non-combustible) to BS EN 13501-1.<br/>Double-skinned insulated roof sheeting, such as standing seam or profile metal sheet roofing, should incorporate a band of material rated class A2-s3, D2 or better, a minimum of 300mm in width, centred over the wall.</p> <p><b>Note:</b> Proposed specification and design will be subject to LABC (Local Authority Building Control) or assigned AI (Approved Inspector) approval before works can commence on-site. Where appropriate, Langley Waterproofing can offer support and guidance to assist application.</p> |      |     |      |       |
| 1.12 | <p><b>Roof Structure - Disclaimer:</b><br/>It is deemed the responsibility of the Client Representative, Contractor and/or Property Owner to give due consideration towards the ability of the existing roof structure accepting any additional loadings imposed by the application of the new waterproofing system proposed within this specification. Langley Waterproofing Systems Ltd will not be held responsible or accept any liability or associated costs should structural defects or structural failure occur.</p>   |      |     |      |       |
| 1.13 | <p><b>Electronic Roof Integrity Test &amp; Root Protection (Compulsory For Buried Systems) - Disclaimer:</b><br/>Should the roof waterproofing system receive any subsequent coverings such as an inverted roof system, living roof system, paving slabs, ballast, decking, or similar, an electronic leak detection (ELD) test must be carried out by a qualified expert to confirm the waterproofing system integrity.<br/>You must also ensure an ELD is completed if the roof will receive a PV panel installation.<br/>You must ensure a record of this ELD test, and any repairs completed, is shared with Langley.<br/>Where appropriate, a root resistant membrane must be installed to protect the Langley waterproofing system from root penetration.</p>   |      |     |      |       |



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| 1.14 | <b>Fire Risks:</b><br>This specification has been formulated with due regard to the inherent risks of fire when using hot work flat roof waterproofing systems and application methods. To the best of our knowledge any potential hazards have been identified and the specification tailored to minimise the risk of accidental ignition occurring. Notwithstanding the foregoing, the contractor / installer is reminded that they have a duty of care and responsibility to carry out their own assessment of the proposed works with regard to the potential fire risk, and introduce working practices that takes any such risks into account. Should the contractor / installer have any reservations about any aspect of the specification proposal, or if during the course of the works any unforeseen items are discovered that present an actual or potential fire risk, they should contact Langley Waterproofing Systems Ltd immediately so that safer methods can be agreed and implemented which do not compromise the integrity of the specification and or its guarantees. |      |     |      |       |
| 1.15 | <b>Survey Not Undertaken - No Access (Roof Area 2 Only):</b><br>Due to access issues at the time, no survey has been undertaken by Langley and therefore aspects of this specification have been based on assumptions. Before ordering any materials, Langley are required to visit site to confirm the suitability of this specification. Should any changes then be deemed necessary, either to materials and/or scope of works, any liability for costs due to these changes cannot be accepted by Langley Waterproofing. At this point, if any required changes to the scope of works are not possible, it may have implications for the guarantee, including exclusions where necessary.  |      |     |      |       |
| 1.16 | <b>Fire Risk - Drying Out:</b><br>In the event of the roof being/becoming wet and drying out is necessary, the use of gas torches is not recommended and should be avoided. In all cases Safe2Torch guidelines should be followed. Standing water should be swept to the nearest outlets with a broom or squeegee (care must be taken to avoid debris blocking outlets). The remaining moisture should be soaked up using mops or dry rags and the surface left to dry out naturally. To speed up the process, specialist equipment is commercially available, see 'General Guidance & Requirements' in the appendices of this specification.  |      |     |      |       |
| 1.17 | <b>Safe2Torch - Flame-free Zones:</b><br>This specification has been compiled in accordance with the NFRC Safe2Torch guidance and includes areas that have been identified as presenting a risk of fire if gas torches are used. This requires the substitution of membranes in these areas.   |      |     |      |       |
| 1.18 | <b>Flame-free Zones - Definition:</b><br>A Flame-free Zone is defined as being within 900mm of a combustible substrate / material.<br><br><b>Note:</b> If combustible material forms part of an overhang then the Flame-free Zone starts from the extremity of the overhang.   |      |     |      |       |

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| 1.19 | <b>Risk Assessment - Fire - Installing Contractor:</b><br>In line with their own Risk Assessment and Method Statement, the installing contractor is to identify any areas where the use of a naked flame is deemed too great a risk. This matter should be raised at the pre-start / pre-commencement meeting or stated in writing to Langley in order that an alternative flame free method can be adopted and specified.   |      |     |      |       |
| 1.20 | <b>Flame-free Zones - Identified Risk Areas:</b><br>In accordance with Safe2Torch guidance the following area/s have been designated as 'flame-free' zone/s:<br>Detail Noted: Exposed Timber, Kerbs & Hard Edges - SA AVCL Only<br>Detail Noted: Rooflight Opening/s - Full SA<br>Detail Noted: Skirting to Pitched Roof Abutment - Full SA<br>Detail Noted: Vent Openings - Full SA<br>Whilst these area/s have been identified, they may not be definitive. Due allowance must be made so that at any stage of this project, should any additional areas be designated a fire risk by any of the parties involved, they must be logged, all parties informed, and the appropriate measures employed. |      |     |      |       |
| 1.21 | <b>Fire Accreditation:</b><br>Unless otherwise stated, the full waterproofing system and/or products contained within this specification have been tested for external fire exposure (both with and without insulation) in accordance with BS EN 13501-5: 2005 (European Test) and are accredited as Broof(t4).  |      |     |      |       |
| 1.22 | <b>Langley Detailed Drawings:</b><br>This specification is to be read in conjunction with detailed drawings issued and supplied by Langley Waterproofing. Should the contractor at any point find discrepancies between the issued specification and issued drawings, it is required that the specification takes precedence in all cases, unless otherwise notified and approved. No additional costs or liability arising from failure to follow specification or notifying Langley Waterproofing Systems Ltd of any discrepancies found in good time prior to commencement of works will be considered.   |      |     |      |       |
| 1.23 | <b>Guarantee Requirement - Torch-on &amp; Hot Air Applied Membranes:</b><br>Applicable to all layers. A 5-10mm bead of bitumen must be exuded from all laps.   |      |     |      |       |
| 2    | <b>SCOPE OF APPLICATION</b>  |      |     |      |       |
| 2.1  | <b>Existing Waterproofing System - Removal:</b><br>This specification is based on a full strip-up of the existing waterproofing system.  |      |     |      |       |
| 2.2  | <b>Deck and Substrates - Plywood:</b><br>This specification is suitable for application to a plywood roof deck not exceeding 5° from the horizontal.   |      |     |      |       |
| 2.3  | <b>Removal of Existing Waterproofing System:</b><br>Existing coverings must not be stripped at a rate greater than can be safely re-waterproofed during that working day so as to reduce risk of water ingress to the property.  |      |     |      |       |

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| 2.4 | <b>Day/Night Joints:</b><br>The contractor must ensure at the end of each working day or period, that any exposed membranes or substrates that are susceptible to damage through water ingress are sealed with a Langley system compatible membrane to ensure complete water tightness. No loose laid membranes or other such covers are permitted.   |      |     |      |       |
| 2.5 | <b>U-value - Flat Board Insulation:</b><br>To comply with Part L of the current Building Regulations, the flat board insulation included in this specification will achieve an overall U-value of 0.16W/m²K.  |      |     |      |       |
| 3   | <b>PREPARATION</b>  |      |     |      |       |
| 3.1 | <b>Contractor Preparation Note:</b><br>The contractor must take his own roof core samples to satisfy himself with regard to the existing roof build-up and ascertain the extent of the work involved in stripping up the existing roof coverings. No claims arising from failure to do so will be considered by Langley Waterproofing Systems Ltd.  |      |     |      |       |
| 3.2 | <b>Damp-proof Courses / Cavity Trays - Requirement:</b><br>Where tops of new waterproof skirtings will be above the line of the existing damp-proof course or cavity tray, it is a requirement that the contractor makes suitable provision to renew and raise these to a higher level. The contractor must liaise with, and seek separate instruction from the client contract administrator as to the method of raising these details. Claims arising from failure to seek client instruction prior to commencement of works or provide suitable cost provision for this item will not be entertained by Langley Waterproofing Systems Ltd. |      |     |      |       |
| 3.3 | <b>TV Aerials and/or Satellite Dish Arrays - Temporarily Remove:</b><br>Any TV aerials and/or satellite dish arrays that will impede roofing works are to be temporarily removed, raised, etc. to facilitate the works. The contractor must liaise with the client contract administrator directly in relation to how best serve the property so that minimal disturbance of services is achieved throughout the contract period.   |      |     |      |       |
| 3.4 | <b>Cables - Temporarily Remove:</b><br>All cables must be carefully raised and/or temporarily supported clear of the roof surface to facilitate the works.  |      |     |      |       |
| 3.5 | <b>Rooflight/s - Discard:</b><br>Remove and dispose of existing rooflight/s to suitable waste facilities.   |      |     |      |       |
| 3.6 | <b>Rooflight Kerb/s - Discard:</b><br>Remove and dispose of existing rooflight kerbs to suitable waste facilities.  |      |     |      |       |
| 3.7 | <b>Existing Waterproofing System - Remove:</b><br>Strip and remove to suitable waste containers all component layers of the existing waterproofing system including any insulation and or vapour control layers that may be found, back to but not including the original deck / substrate.   |      |     |      |       |

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| 3.8  | <b>Deck/Substrate - Major Exposed Defects:</b><br>Investigate any structural defects or cracks found in the deck/substrate upon exposure and immediately inform Langley Waterproofing and/or the Client CA of findings for further instruction before proceeding to install the new waterproofing system. Any arisings from failing to report defects will not be considered by Langley Waterproofing.  |      |     |      |       |
| 3.9  | <b>Perimeter Draining Edge - Existing - Raise Level:</b><br>Raise existing perimeter edges to facilitate the new thickness of insulation. Perimeter edges are to be the same thickness or slightly less than the specified insulation thickness.<br><br><b>Important Note:</b> Should the roof height exceed 18m from ground level, Langley Waterproofing would recommend that a non-combustible material is used to raise the perimeter edges accordingly. Any deviation from this proposal must be approved by the client and/or local authority building control before works proceed.   |      |     |      |       |
| 3.10 | <b>Perimeters - Raising - Cover of External Faces:</b><br>Where the height of external faces are to be increased, for whatever reason, any exposed hard edge material or voids must be covered with new fascia boards or cladding. This must align with the top of the perimeter hard edge prior to fixing any drip batten or edge trims. The contractor must liaise with, and seek separate instruction from, the contract administrator as to the method, type and colour of materials, etc. to cover these external raised details. Claims arising from failure to seek client instruction prior to commencement of works or provide suitable cost provision for this item will not be entertained by Langley Waterproofing Systems Ltd. |      |     |      |       |
| 3.11 | <b>Redundant Chases - Make Good:</b><br>Rake out and prepare any redundant chase lines. In-fill with sand and cement mortar, flush with wall face.  |      |     |      |       |
| 3.12 | <b>Upstands - New Chase:</b><br>In preparation of a new cover flashing the contractor is to cut a new chase to a minimum 25mm depth and at a minimum height of 150mm above the intended finished roof level surface. Brush clean and prime with appropriate primer to seal substrate.   |      |     |      |       |
| 3.13 | <b>Parapet Coping Stones - Temporary Removal:</b><br>Carefully remove copings, clean and set aside for re-use. Clearly identify each coping and log its position to ensure their correct relocation on completion. Make good wall top surface to a flat smooth finish. Prime with the specified primer, ready to receive the new waterproofing.   |      |     |      |       |

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| No.  | Item   | Unit | Qty | Rate | Total |
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| 3.14 | <p><b>Parapet Upstands - Existing - Raise:</b><br/>Raise parapet upstands as necessary to accommodate any presented increased height of the new waterproofing system.</p> <p><b>Important Note:</b> Should the roof height exceed 18m from ground level, Langley Waterproofing would recommend that a non-combustible material is used to raise the perimeter edges accordingly. Any deviation from this proposal must be approved by the client and/or local authority building control before works proceed.</p>   |      |     |      |       |
| 3.15 | <p><b>Redundant Penetrations - Remove:</b><br/>The contractor must identify all redundant penetrations and carefully remove and dispose to suitable waste container. Make good holes in deck / substrate surface. The contractor must liaise with, and seek separate instruction from, the client contract administrator as to which items are deemed redundant and safe for removal. Claims arising from failure to seek client instruction prior to commencement of works or provide suitable cost provision for this item will not be entertained by Langley Waterproofing Systems Ltd.</p> |      |     |      |       |
| 3.16 | <p><b>Soil Vent Pipe/s - Extend:</b><br/>Extend where necessary. Collar or pipe sleeve/s must be a minimum of 150mm above the finished roof surface.</p> <p><b>Note:</b> Extension pipe/s must be fixed inside the existing pipe/s.</p>  |      |     |      |       |
| 3.17 | <p><b>Priming - Detail Substrates Only:</b><br/>Substrates for details must be primed with Langley Spray-on (synthetic rubber) Primer or Langley SA Primer (roller applied) and allow to dry.</p>  |      |     |      |       |
| 3.18 | <p><b>Flame-free Zones - Priming Requirement - All Surfaces (Inc Insulation Where Present):</b><br/>Prime all flame-free zone surfaces with Langley Spray-on (synthetic rubber) Primer or Langley SA Primer (roller applied) and allow to dry. (bituminous primer must not be used).</p>   |      |     |      |       |
| 3.19 | <p><b>Flame-free Zones - Self-adhesive Membranes - Additional Priming:</b><br/>Adhesion issues may arise when applying membranes with a hot-air gun. Langley SA Primer or Langley Spray-on Primer can be applied to the surface of the Paradiene SA underlay to enhance adhesion of the Parafor Solo SA cap sheet. This 'additional priming' is also recommended when the Langley SA Membrane Detailing System is specified as the primary roof covering or over large areas. This will ensure a consistent bond across larger roof areas and improve application times</p>                    |      |     |      |       |

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| 4   | <b>AIR AND VAPOUR CONTROL</b>  |  |  |  |  |
| 4.1 | <p><b>Attachment Layer - Nailed:</b><br/>Install Langley HT 180 polyester reinforced attachment membrane, nailed in accordance with BS 8217:2005. Loose lay and nail at maximum 150mm cross centres over the field area and at 50mm centres around the roof perimeters and at all side and end laps.<br/>Side and end laps: 100mm.<br/><u>Important note: When using HT 180 with self-adhesive membranes the surface of the HT 180 must be thoroughly swept to remove all sand; without this there will be adhesion issues. The surface of the HT 180 must be suitably primed with Langley Spray-on (synthetic rubber) Primer before the application of the self-adhesive membranes.</u></p>   |  |  |  |  |
| 4.2 | <p><b>Air and Vapour Control Layer - Torch-on - Field Area:</b><br/>Install Parevapo SBS metal-lined, double reinforced, elastomeric air and vapour control layer. Top Face: Sanded. Underside: Macro perforated fusible film. Fully bond to prepared surface by torch-on method. Side and end laps to overlap by a minimum of 75mm and must be fully sealed by torch-on method.</p>   |  |  |  |  |
| 4.3 | <p><b>Flame-free Zones - Air and Vapour Control Layer - Change of Membrane - Flat Exclusion Area:</b><br/>Install Parevapo SA, double reinforced, metal-lined, self-adhesive SBS elastomeric bitumen air and vapour control layer. Fully bond to a prepared and primed substrate by means of the heat activated, self-adhesive face, applying pressure with a weighted roller. Side laps, minimum 75mm, end laps, 100mm, fully bond by heat welding with a hot-air gun and applying pressure with a seam roller. Priming of substrate must be with Langley Spray-on (synthetic rubber) Primer (bituminous primer must not be used). All heat activation and welding within the flame-free zone must be carried out with a hot-air gun.<br/><br/><b>Note:</b> All laps with main area AVCL, (outside the flame-free zone) must be minimum 150mm and torch bonded.</p> |  |  |  |  |
| 4.4 | <p><b>Air and Vapour Control Layer - Non-combustible Detail Skirtings:</b><br/>Extend the air and vapour control layer as a separate flashing piece cut from full width of roll to the skirting. Fully bond by torch-on method to a fully prepared surface to a minimum height of 100mm past the finished proposed line of the new insulation level. A minimum of 100mm lap must be achieved to main field return. Side laps to be a minimum of 75mm and must be fully sealed by torch-on method.</p>  |  |  |  |  |

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| 4.5 | <b>Flame-free Zones - Air and Vapour Control Layer - All Upstands, Skirtings &amp; Details Generally:</b><br>Extend Parevapo SA air and vapour control layer to the skirting / details as a separate flashing piece, cut from the width of a roll. Fully bond to a prepared and primed substrate by means of the heat activated self-adhesive face. Minimum height, 100mm above the finished height of the new insulation (or the full girth of details). Priming of substrate must be with Langley Spray-on (synthetic rubber) Primer, (bituminous primer must not be used). Lap to main field return, minimum 100mm, side laps minimum 75mm. Application method as per the main area. Detailing arrangements all as main specification. |  |  |  |  |
| 5   | <b>INSULATION</b>   |  |  |  |  |
| 5.1 | <b>Parafoam Ultra Flat Board Insulation - Field Area - Required Thickness 140mm:</b><br>Install Parafoam Ultra 140mm thick Polyisocyanurate (PIR) roof insulation boards. CFC/HCFC-free with zero ODP. Boards to be close butted with staggered joints.   |  |  |  |  |
| 5.2 | <b>Parafoam Ultra Flat Board Insulation - Sumps to Outlets - Required Thickness 90mm:</b><br>Sumps to be a minimum of 500mm x 500mm square around outlet position. Form with Parafoam Ultra 90mm thick Polyisocyanurate (PIR) roof insulation boards. A Langley Metal Hard Edge to be fixed to all exposed insulation edges. Bond to insulation with either low foaming PU adhesive or strapping with suitable fully bonded underlay membrane.  |  |  |  |  |
| 5.3 | <b>Parafoam Ultra Insulation - PU Attachment:</b><br>To prepared surface. Bond insulation with LangStik Solvent Free PU Adhesive. Surface of substrate must be swept clear of all dirt, debris and loose material, prior to application of the adhesive. Boards to be laid close butted with staggered joints.<br><br><b>Note:</b> For further information, please refer to 'Fixing Instructions' section of this specification.  |  |  |  |  |
| 5.4 | <b>Insulation - PU Attachment - Flame-free Zones:</b><br>When using Parevapo SA, in designated flame-free zones, the insulation to these areas must be bonded with LangStik Solvent Free PU Adhesive. Surface substrate must be swept clear of all dirt, debris and loose material, prior to application of the PU adhesive.  |  |  |  |  |
| 5.5 | <b>Insulation - Changes of Levels - Metal Hard Edge:</b><br>Langley Metal Hard Edge to be fixed to all exposed insulation edges. Bond to insulation with either low foaming PU adhesive or strapping with suitable fully bonded underlay membrane.  |  |  |  |  |
| 5.6 | <b>Priming - Hard Edges to Insulation:</b><br>All hard edges, metal and/or timber, must be primed with Langley Spray-on (synthetic rubber) Primer and allow to dry.   |  |  |  |  |



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| 5.7 | <p><b>Surface Condensation/Moisture - Application Warning:</b><br/>Contractor to ensure that the surface of the insulation is free of surface condensation/moisture prior to the application of the waterproofing system.</p> <p><b>Important Note:</b> Surface condensation/moisture is particularly prevalent during cold months and during extreme hot weather.</p>   |  |  |  |  |
| 6   | <b>WATERPROOFING - UNDERLAYS</b>   |  |  |  |  |
| 6.1 | <p><b>Detail Reinforcing Strip - Requirement in Lieu of Angle Fillets:</b><br/>Paradiene M3 S detail reinforcing strips must be fixed at the base of all upstands, prior to subsequent membranes being installed. At a minimum of 250mm width cut from roll, apply 125mm to the horizontal and 125mm to vertical prepared surfaces. Fully bond by torch-on method.</p>   |  |  |  |  |
| 6.2 | <p><b>Flame-free Zone - Detail Reinforcing Strip - Change of Membrane:</b><br/>Paradiene SA detail reinforcing strips must be installed at the base of all upstands, prior to subsequent membranes being installed. Strips to be minimum 250mm wide in pieces cut from roll, applied 125mm to the horizontal and 125mm to vertical surfaces. Fully bond to a prepared (and primed if applicable) substrate by means of the heat activated self-adhesive face, applying pressure with a seam roller. Where priming is required, it must be with Langley Spray-on (synthetic rubber) Primer, (bituminous primer must not be used).</p>   |  |  |  |  |
| 6.3 | <p><b>Underlay - Self-Adhesive - Field Area:</b><br/>Adepar JS VV glass fibre reinforced, SBS elastomeric bitumen membrane. Top Face: fusible film. Underside: sanded between self-adhesive strips with siliconised peel-off film over self-adhesive selvedge. Fixing: by means of factory-applied self-adhesive strips. Perimeters and Openings: 500mm wide, fully bond by torching. Side Lap: 80mm determined by selvedge. End Lap: minimum 120mm.</p> <p><b>Note:</b> The siliconised film is not fusible. Fixing Method: See Fixing Instructions.</p> <p><b>Note:</b> 5-10mm bead of bitumen must be exuded from all laps.</p>   |  |  |  |  |
| 6.4 | <p><b>Flame-free Zone - Underlay - Change of Membrane - Flat Exclusion Area:</b><br/>Install Paradiene SA, polyester reinforced, self-adhesive SBS elastomeric bitumen membrane. Fully bond to a prepared and primed substrate by means of the heat activated self-adhesive face, applying pressure with a weighted roller. Side laps, minimum 75mm; end laps, minimum 100mm; fully bonded by heat welding with a hot-air gun and applying pressure with a seam roller. Priming of substrate (including insulation if applicable) must be with Langley Spray-on (synthetic rubber) Primer (bituminous primer must not be used). All heat activation and welding within the flame-free zone must be carried out with a hot-air gun.</p> <p><b>Note:</b> All laps with main area underlay, (outside the flame-free zone) must be minimum 150mm and torch bonded.</p> |  |  |  |  |



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| 6.5 | <b>Underlay - Upstands &amp; Skirtings:</b><br>To be formed separately using Paradiene M3 S underlay. Cut from the width of the roll and fully bond by torching to base membrane with a minimum 100mm lap. Both surfaces being bonded must be heated and a bead (5-10mm) of bitumen extruded from all head and side laps.  |  |  |  |  |
| 6.6 | <b>Flame-free Zone - Underlay - Upstands &amp; Skirtings - Change of Membrane:</b><br>To be formed separately with Paradiene SA underlay, in pieces cut from the width of a roll. Fully bond to a prepared and primed substrate (or AVCL if applicable) by means of the heat activated self-adhesive face, applying pressure with a roller. Minimum height, 150mm above the finished height of the new insulation (or the full girth of details). Where applicable, priming of substrate must be with Langley Spray-on (synthetic rubber) Primer (bituminous primer must not be used). Lap to main field return, minimum 100mm; Side laps, minimum 75mm. Application method as per the main area. Detailing arrangements all as main specification.                                      |  |  |  |  |
| 6.7 | <b>Underlay to Outlet Sumps &amp; Internal/Integral Gutters:</b><br>Paradiene M3 S underlay (fully bonded) must be used (detailed elsewhere). Extend onto main field area by minimum 150mm.  |  |  |  |  |
| 7   | <b>WATERPROOFING CAP SHEETS</b>  |  |  |  |  |
| 7.1 | <b>Cap Sheet - Torch-on - Field Area:</b><br>Install Elastoflex GS cap sheet. Elastoflex GS is a torch-on polyester-reinforced, SBS-modified elastomeric bitumen membrane. The surface has a Dark Grey granulated surface with a grooved thermofusible film underside. Lay: Fully bonded by torching with 90mm minimum side lap width as determined by the selvedge. Minimum end laps must be 150mm. This layer is to be laid parallel to the under layer, breaking joints by at least 300mm. Both surfaces being bonded must be heated and a bead of bitumen exuded from all laps.  |  |  |  |  |
| 7.2 | <b>Flame-free Zone - Cap Sheet - Change of Membrane - Flat Exclusion Area:</b><br>Install Parafor Solo SA, polyester reinforced, self-adhesive, SBS elastomeric bitumen, dark grey granule faced cap sheet. Fully bond to the underlay by means of the heat activated self-adhesive face, applying pressure with a weighted roller. Side laps to suit selvedge (minimum 75mm); end laps, minimum 150mm; fully bond by heat welding with a hot-air gun and applying pressure with a seam roller. A 5-10mm bead of bitumen must be extruded from all laps. All heat activation and welding within the flame-free zone must be carried out with a hot-air gun.<br><br><b>Note:</b> All laps with main area cap sheet, (outside the flame-free zone) must be minimum 150mm and torch bonded. |  |  |  |  |

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| 8   | <b>DETAILS</b>   |  |  |  |  |
| 8.1 | <p><b>Detail Skirtings &amp; Upstands - Requirement:</b><br/>All detail skirtings and upstands must be a minimum of 150mm above the finished horizontal roof surface level, including any paving, ballast, living roof coverings etc.</p> <p><b>Important Note:</b> If the required height cannot be achieved for any reason, then the details below 150mm will not be covered by the Langley Waterproofing guarantee</p>  |  |  |  |  |
| 8.2 | <p><b>Cap Sheet - General Detailing:</b><br/>Detail flashings. Form separately with Elastoflex GS Cap Sheet cut from width of roll. Colour to match main field membrane. Fully bond by torching to the specified detail underlay membrane. Both surfaces being bonded must be heated and a 5-10mm bead of bitumen extruded from all head and side laps. Cap sheet detail must extend to a minimum of 150mm onto the main field area. Upstand heights must be a minimum of 150mm above the finished roof level.</p>   |  |  |  |  |
| 8.3 | <p><b>Flame-free Zone - Cap Sheet - General Detailing - Change of Membrane:</b><br/>Detail flashings to be formed separately using matching colour Parafor Solo SA Cap Sheet, in pieces cut from width of roll. Fully bond to the specified detail underlay by means of the heat activated self-adhesive face, applying pressure with a roller. Minimum height, 150mm above the finished height of the new system (or the full girth of details). Side laps to suit selvage; end laps, minimum 150mm, bond by heat welding with a hot-air gun and applying pressure with a seam roller. A 5-10mm bead of bitumen is to be extruded from all laps. Lap to main field return, minimum 150mm.</p> |  |  |  |  |
| 8.4 | <p><b>Counter Flashing - ParaFlash B3:</b><br/>Install and protect detail abutment skirtings with ParaFlash B3 lead-free counter flashings 150mm wide. Dress into prepared chase and wedge at 450mm centres with stainless steel clips provided. Point with Langley Gap-Seal Mastic. Side laps to be a minimum of 100mm and sealed with Langley Gap-Seal Mastic.</p>   |  |  |  |  |

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| 8.5 | <p><b>Parapets - To Receive Coping Stones:</b><br/>Base layer and detail cap sheet layer of new waterproofing system must be carried up the vertical inner face and across the top of the parapet detail, which must be, in all cases, fully supported. Terminate to leading edge with 5mm overhang. Where required, at the ends of the parapet meeting vertical abutments, the waterproofing must be turned up and to the side, to allow weathering with new horizontal and vertical cover flashings.</p> <p><b>Note:</b> Where waterproofing is to be installed vertically to an upstand greater than 400mm in height, then the waterproofing system is to be secured by concealed screw and pressure plate fixings. Laps must be a minimum of 160mm. Screws: Maximum 200mm centres with 5 No. minimum per sheet width. On cold roof systems it may be possible to secure membranes with nails (where substrate is appropriate). Nailing: Large headed galvanised steel clout nails set at 75mm centres in two rows 50mm apart. All fixings are to be protected from the elements by covering with waterproofing membrane.</p> <p><b>Note:</b> Exposed costal locations require the use of stainless steel fasteners and securement at more frequent centres maximum 150mm.</p> |  |  |  |  |
| 8.6 | <p><b>Mansard Head - Weltd Drip - ParaFlash B3:</b><br/>At the head of mansard slopes install new 25mm x 50mm treated timber drip battens. Screw fix at a maximum of 300mm centres over new ParaFlash B3 lead-free apron flashings. ParaFlash B3 must be dressed and adhered with LangleyGap-Seal Mastic over the top row of tiles or slates. Weltd Drips to be formed from detailing cap sheet (detailed elsewhere).</p>   |  |  |  |  |
| 8.7 | <p><b>Weltd Drips:</b><br/>Form from detailing cap sheet membrane cut from the width of the roll. Form over 6mm exterior grade plywood (or alternatively 3mm hardboard) formers, mechanically fixed at 150mm centres to new treated timber drip battens. Fixings to be large headed galvanised clout nails set at 50mm centres, staggered vertically between 20-30mm. These must penetrate the drip batten by minimum 15mm. Membrane surfaces must be heated and a 5-10mm bead of bitumen must be extruded from all laps. Where required, at abutment junctions, the system must be turned up and to the side abutment, to allow weathering with new horizontal and vertical cover flashings.</p> <p><b>Note:</b> Hardboard formers must be primed and allowed to dry prior to forming the drip detail.</p>   |  |  |  |  |

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| 8.8  | <p><b>Rooflight Kerbs - ParaKerb:</b><br/>Flashings to be formed separately. Must be minimum 150mm above the finished roof surface. To a primed surface, fully bond underlayer and detailing cap sheet to the full height of the kerb. Secure top edge with the retaining trim provided.</p> <p><b>Please Note</b> - Contractor must ensure the detailed rooflight schedule has been duly checked with particular regard to the type of unit and fixing instructions. No claims arising from preparation/installation error by contractor will be entertained by Langley Waterproofing Systems Ltd.</p>  |  |  |  |  |
| 8.9  | <p><b>Penetrations - Soil Vent Pipes:</b><br/>Soil vent pipes must be a minimum of 150mm high from the finished level of waterproofing. Install new Code 5 Lead pipe sleeves with integral lead flange. Sleeves must be a minimum of 30mm higher than pipe. Flange must be a minimum of 100mm wide. Prime both surfaces of the flange. Fully bond to the underlay or soaker, prior to fully bonding the cap sheet membrane. Sleeves to be turned into top of pipe by 25mm. Colour: Black.</p> <p><b>Note:</b> Soil vent pipes greater than 300mm require a Code 5 Lead sleeve finishing a minimum of 150mm high above the finished level of the new waterproofing system and terminated with a weathering collar. Finish base of vertical sleeve as previously stated.</p> |  |  |  |  |
| 8.10 | <p><b>Vent Pipes - LangVent (Not Suitable For Flues):</b><br/>Install LangVent vent pipe sleeves. Select correct size to suit the diameter of the existing pipe. Fix in accordance with Langley Fixing Instructions with flexible flange fully bonded between underlay or soaker and cap sheet membranes. Base of vertical sleeve, seal with a fillet of Langley Gap-Seal Mastic against the cap sheet membrane and the sleeve base. Colour: Black.</p> <p><b>Note: LangVent is <u>not</u> to be used on flues</b></p>   |  |  |  |  |
| 9    | <b>ROOFLIGHTS &amp; OPENINGS IN DECK</b>   |  |  |  |  |
| 9.1  | <p><b>ParaRange Modular Rooflights - Requirement:</b><br/>All Langley Waterproofing Systems Ltd Rooflights and ParaKerb Upstands are BBA accredited. Any deviation from the specification detailed below and or accompanying rooflight schedule can only be made with the approval of Langley Waterproofing Systems Ltd.</p>   |  |  |  |  |
| 9.2  | <p><b>ParaRange Modular Rooflights - Installation:</b><br/>All must be installed by the contractor strictly in accordance with BS 8217 and the fixing instructions provided in Detail Sheets of Agrément Certificate. When supplied as part of a total roofing package, ParaRange Rooflights are covered by all warranties and guarantees issued by Langley Waterproofing System Ltd Guarantee.</p> <p><b>Note:</b> Installation must be carried out by an approved Langley installer in order to meet the requirements of the guarantee. See attached schedule for details.</p>   |  |  |  |  |

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| 9.3 | <p><b>ParaKerb - Installation:</b><br/>All ParaKerbs kerbs must be installed strictly in accordance with BS8217 and BS8218 and as per fixing instructions provided in Agrément Certificate. When supplied as part of a total roofing package, ParaKerbs are covered by all warranties and guarantees issued by Langley Waterproofing System Ltd Guarantee.</p> <p><b>Note:</b> Installation must be carried out by an approved Langley installer in order to meet the requirements of the guarantee. See attached schedule for details.</p>   |  |  |  |  |
| 9.4 | <p><b>ParaRange Modular Rooflights - Schedule:</b><br/>A detailed Rooflight Schedule by Langley Waterproofing Systems Ltd will be issued at tender stage to support this specification.</p>   |  |  |  |  |
| 9.5 | <p><b>ParaKerbs - Fixing to Deck (Where Applicable):</b><br/>Screw-fix ParaKerb to roof deck. Fixings at maximum 300mm centres.</p>   |  |  |  |  |
| 9.6 | <p><b>ParaKerbs - Fixing to Timber Grounds (Where Applicable):</b><br/>Screw-fix ParaKerb into timber grounds. Fixings at maximum 300mm centres. Timber grounds must be minimum 100mm wide and the same thickness as the insulation.</p>  |  |  |  |  |
| 9.7 | <p><b>ParaRange Triple Skin Modular Rooflights - Installation:</b><br/>Triple skinned polycarbonate. Clear outer skin, clear middle skin with inner skin diffused. Installed to ParaKerb / Adaptor Kerb as required with the security fixings supplied. Upon completion of fixing install aluminium snap-on security frame. Wipe unit clean. This item must be read in conjunction with the Langley issued Rooflight Schedule.</p> <p><b>Note:</b> Should the Schedule show a differing skin colour format to that shown above then the Schedule takes precedence over the specification.</p>   |  |  |  |  |
| 9.8 | <p><b>Aperture Linings:</b><br/>Internal linings must be installed/ made good as necessary and decorated in accordance with the client contract administrator's detailed instruction or specification. Claims arising from failure to seek client instruction prior to commencement of works or provide suitable cost provision for this item will not be entertained by Langley Waterproofing Systems Ltd.</p>   |  |  |  |  |
| 9.9 | <p><b>Aperture Linings - Existing - Unchecked:</b><br/><b>Existing lining construction is unknown at this time. If confirmed to be an ACM item, under no circumstances are the internal linings to be disturbed.</b> Any opening mechanisms/furniture etc. that are fixed through the linings are to be disconnected from the rooflight and left in-situ. The contractor must liaise with, and seek separate instruction from the client contract administrator as to the method of specialist testing and or handling of this item should a requirement for removal be necessary. Claims arising from failure to seek client instruction prior to commencement of works or provide suitable cost provision for this item will not be entertained by Langley Waterproofing Systems Ltd.</p> |  |  |  |  |

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| 10   | <b>COMPLETION</b>  |  |  |  |  |
| 10.1 | <b>Guarantee Requirement - Final Inspection:</b><br>In accordance with our guarantee requirements, Langley Waterproofing Systems Ltd are to be notified once all works are complete. A final inspection will then be undertaken by us and the contractor must ensure that safe working access is provided.                   |  |  |  |  |
| 10.2 | <b>Existing Parapet / Kerb Coping Stones - Reinstate:</b><br>Prepared clean, re-bed to original locations in sand and cement mortar and point joints. The contractor must ensure that suitable provision has been made to replace any damaged copings with new to match existing.  |  |  |  |  |
| 10.3 | <b>TV Aerials and/or Satellite Dish Arrays - Reinstate:</b><br>Reinstate to original locations or new positions as instructed by the client contract administrator all TV aerials and/or satellite dish arrays.  |  |  |  |  |
| 10.4 | <b>Sacrificial Layers - Free-standing Plant / Handrails etc:</b><br>All freestanding items. Install a sacrificial layer of cap sheet (granule surface down) under all load spreading supports / pads.  |  |  |  |  |
| 10.5 | <b>Cables - Reinstate:</b><br>Collate and support on cable trays if necessary. Secure cables to tray or to original locations and secure with plastic cable ties. If cable trays are used then they are to be rested on load-spreading bases on sacrificial pieces of cap sheet. Securely fasten trays to bases as required. |  |  |  |  |
| 10.6 | <b>Completed Roof Surface - General:</b><br>Ensure visual inspection of all laps is undertaken to confirm integrity of system prior to final guarantee inspection. Sweep, clean and remove debris to suitable waste container.   |  |  |  |  |
| 10.7 | <b>Arisings from Works:</b><br>Remove from site all arisings for return to contractor storage or safe disposal.  |  |  |  |  |

## Schedule of Products

### Langley Spray-on Primer - Canister

Synthetic rubber primer. Supplied as a canister (450mm x 330mm). Packaged in a cardboard carry box.

Canister content: 18.5 kg. Gross canister weight: 24.5 kg

Coverage Rates: Self-adhered systems – up to 150m<sup>2</sup> (0.12m<sup>2</sup>/kg) Torch-on system – up to 250m<sup>2</sup> (13.5m<sup>2</sup>/kg). Other components required and supplied separately include: Applicator gun and 3m hose (re-usable). Spray-tip and Spray Cleaner

### Langley SA Primer

Synthetic rubber primer. Supplied by the pail (5 or 15 litre).

Coverage Rates: 4 - 8m<sup>2</sup> per litre dependent upon substrate porosity.

Other components required: Applicator roller or brush

### Parevapo SBS Metal Lined Vapour Barrier - Roll Size: 10m x 1m

Metal-lined, double-reinforced, SBS-modified, elastomeric bitumen vapour barrier. Top Face: Sanded.

Underside: Macro-perforated fusible film. Nominal Weight: 38kg/roll.

### Parevapo SA Self-Adhesive Metal Lined Air and Vapour Control Layer - Roll Size: 15m x 1M

Double-reinforced, metal-lined, SBS elastomeric bitumen vapour barrier. Top Face: resin coating, colour Blue.

Selvedge: Self-adhesive with a peel-off polyethylene film; Nominal Width 100mm. Underside: Heat activated self-adhesive bitumen with a siliconised peel-off release film. Nominal Weight: 25kg/roll (1.6kg/m<sup>2</sup>).

### LangStik SF Can - Solvent-free PU Insulation Adhesive

Single component moisture curing solvent free polyurethane adhesive. Packaging: 6.5kg can. Nominal Coverage: 35m<sup>2</sup>/can.

### LangStik SF Canister - Solvent-free PU Insulation Adhesive

Single component moisture curing solvent free polyurethane adhesive. Container: 18.5 kg / metal canister.

Labelling: LangStik SF Canister. Nominal coverage, up to 350 m<sup>2</sup> / canister.

### Parafoam Ultra Flat Board Insulation

Parafoam Ultra Flat Polyisocyanurate (PIR) roof insulation boards. CFC/HCFC-free with zero ODP. Both Faces: Perforated mineral coated glass fibre tissue.

Board Size: 1200mm x 600mm. Available Thicknesses: 25mm / 30mm / 40mm / 50mm / 60mm / 70mm / 80mm / 90mm / 100mm / 120mm / 130mm / 140mm / 150mm.

### Paradiene M3 S Underlayer - Roll Size: 10m x 1m

Polyester-reinforced, torch-applied SBS-modified elastomeric bitumen underlay. Top Face: Sanded. Underside: Thermo-fusible film. Nominal Weight: 36.5 kg/roll (3.6 kg/m<sup>2</sup>)

### Adepar JS VV Underlayer - Roll Size: 10m x 1m

Self-adhesive, partially bonded, glass fibre reinforced, SBS-modified, elastomeric bitumen underlay. Top surface: Macro-perforated fusible film with siliconised peel-off film over self-adhesive selvedge. Underside: Sanded between self-adhesive strips, protected with siliconised peel-off film. Nominal Weight: 27kg/roll.

### Paradiene SA Self-Adhesive Underlayer - Roll Size: 10m x 1m

Polyester reinforced, SBS elastomeric bitumen membrane. Top Face: resin coating, colour Red. Selvedge: Self-adhesive with a polyethylene peel-off film. Nominal Width 100mm. Underside: heat activated self-adhesive bitumen with a siliconised peel-off release film. Nominal Weight: 30kg/roll (3kg/m<sup>2</sup>).

### Langley HT180 Attachment Layer - Roll Size: 20m x 1m

Polyester-reinforced bituminous membrane. Both faces: Sanded. Thickness 1.8 mm. Nominal Weight: 36kg/roll. (1.87 kg/m<sup>2</sup>).



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### **Elastoflex GS (30 - Dark Grey) Cap Sheet - Roll Size: 8m x 1m**

Polyester-reinforced, SBS-modified, elastomeric bitumen cap sheet with granule surface finish. Colour: Dark Grey. Selvedge: Nominal 90mm with fusible film. Underside: Grooved with continuous fusible film. Nominal Weight: 47.7kg/roll.

### **Parafor Solo SA (Dark Grey) Self-Adhesive Cap Sheet - Roll Size: 7.5m x 1m**

Polyester reinforced, SBS elastomeric bitumen cap sheet with granule surface finish. Colour: Dark Grey. Selvedge: Self-adhesive with a polyethylene peel-off film. Nominal width 100mm. Underside: heat activated, self-adhesive bitumen with a siliconised peel-off release film. Nominal Weight: 38kg/roll (5kg/m<sup>2</sup>).

### **Langley Metal Hard Edge**

Galvanised Steel Angle. 3m lengths x 50mm x 50mm. Thickness 0.7mm.

### **ParaRange Modular Rooflights and Kerbs**

All Langley Waterproofing Systems Ltd Rooflights and ParaKerb Upstands are BBA accredited. Accompanying Rooflight Schedule will be supplied by Langley Waterproofing Systems Ltd.

### **ParaFlash B3**

Non-lead Flashing System. SBS elastomeric bitumen reinforced with a core of flattened, expanded aluminium mesh. Top Face: charcoal coloured granules. Underside: polypropylene film. Roll Size: 12m (length) x 150mm (width). Nominal Thickness: 3.5mm. Nominal Weight per Roll: 7.2Kg. Nominal Weight per m<sup>2</sup>: 4Kg. Each roll is supplied with 25 No. stainless steel chase retaining clips. Chase mastic sealant (Langley Gap-Seal Mastic supplied separately.

### **LangVent - Refurbishment Vent Pipe**

Stainless steel spigot with vent cowl. SBS elastomeric bitumen membrane flange. Spigots to suit diameters of existing vent pipe. Nominal diameters, 75mm, 100mm and 150mm. See Langley 'Technical Data Sheet' for details.

### **Pre-treated Timber**

As recommended in BS 5268: Part 5. The treatment should be compatible with the use of bitumen-based products. To be sourced direct from supplier.

### **Langley Gap-Seal Mastic**

For use with ParaFlash B3, termination bars and lead counter flashings to close joints. Low modulus neutral cure silicone mastic sealant. Approximately 6Lm for 10mm x 10mm bead. Supplied in 310ml tube cartridges. Colour: Black.

### **Code 5 (red) Rolled Lead Sheet**

For use to create chutes, pipe sleeves, outlets, saddles and where specified. To be sourced direct from supplier and conform to BS EN 12588: 2006.

### **Clout Nails - Extra Large Headed**

Minimum 20mm long galvanised steel to BS 1202: Part 1. To be sourced direct from supplier.

### **Clout Nails - Extra Large Headed**

For installation of attachment layer and welted drips where required. Minimum 25mm long galvanised steel to BS 1202: Part 1. To be sourced direct from supplier.



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## Fixing Instructions

### Bitumen Membranes Generally

Waterproofing membranes must be installed in accordance with BS 8217: 2005, BS 8000: Part 4: 1989 and the Langley Fixing Instructions.

### Membranes Generally

Lay in direction of fall. Lay parallel to the preceding layer, breaking joints by at least 300mm. Stagger end laps by minimum 300mm. In gutters, membranes to be laid lengthways to minimise laps.

**Note:** When lifting membrane roll weights in excess of 25kg, a two person or mechanical lift is required.

### Requirement when Torching & Hot Air Applying Bitumen Membranes

Surfaces being bonded must be heated and a required 5mm-10mm bead of bitumen must be extruded from all laps and is applicable to all layers. End laps, or as details require when bonding onto granule surfaced membranes, must first be heated and the granules removed to ensure a bitumen-to-bitumen bond.

### Hot Air Welding Bitumen Membranes

Both surfaces being bonded must be heated and a narrow bead of bitumen 5mm-10mm must be exuded from all laps. Laps onto granule surfaces, end laps etc must first be heated and the granules removed to ensure a bitumen-to-bitumen bond.

### Spot Bonding Bitumen Membranes by Torching

Torch top of roll in a staggered spot formation as the roll is pushed forward. Side and end laps to be fully bonded by torching. Both surfaces being bonded must be heated and a 5mm-10mm bead of bitumen exuded from all laps.

### Bonding Bitumen

Bitumen must not be heated to a temperature in excess of 260°C, or above its flash point minus 15°C (whichever is the lower), and should not exceed 240°C at the time of laying. **Please note** that Langley Waterproofing Systems Ltd do not advocate the use of bonding bitumen unless other means of attachment are not possible.

### Adepar Self Adhesive Bitumen Membranes

Fix in dry conditions at an ambient temperature greater than 15°C. At lower temperatures, but never less than 5°C, warm the self-adhesive compound with a torch. Unroll sheet and position. Re-roll and remove siliconised release film as the sheet is fixed in position with applied pressure. Side lap is self-adhesive. Apply pressure to lap with roller if required. End lap, seal by torching: Perimeters and Opening, 500mm wide, fully bond by torching. When torching, re-roll sheet and torch as it is unrolled, whilst simultaneously removing the siliconised film. Surfaces being bonded must be heated and a narrow bead of bitumen, 5mm-10mm, must be exuded from all laps.

### Flame-free Self-Adhesive Bitumen Membranes

Fix in dry, frost-free conditions and (where required) to a primed substrate. Note, primer must be Langley Spray-on (synthetic rubber) Primer (bituminous primer must not be used). Unroll membrane and set out. Re-roll and remove siliconised release film as the sheet is rolled into position, gently heating the underside with a hot air gun and applying pressure with a weighted roller. Side lap is self-adhesive (AVCL & underlay only), however in certain conditions heat may be required. End lap, bond by heat welding with a hot-air gun. Lap must be sealed and checked for security as work proceeds. Cap sheet: All laps must be heat welded and a 5 - 10mm bead of bitumen exuded. For detailed information, refer to Langley Installation Guide IG5-0917 - SA-20 Flame Free Detailing System.

### Fixings Generally - Pull-Out Tests and Fixing Types

Fixing Pull-out Tests to be carried out by; and all fasteners to be obtained from:  
Fixfast Ltd, Merlin House, Seven Mile Lane, Borough Green, Sevenoaks. Kent TN15 8QY.  
Phone: 01732 882 387  
Email: sales@fixfast.com

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### Bonding PIR Insulation with LangStik SF PU Adhesive

#### LangStik SF PU Adhesive - Canister (18.5 kg).

**Guidelines for Use:** Please note: A spray-tip is not required.

1. Ensure the insulation board or other roof substrate is dry and clean from grease, dirt and other contaminants before applying adhesive.
2. Set the canister up as described in the Set-Up and Maintenance Guide.
3. Ensure the LangStik SF Canister is applying a bead of adhesive approximately 20-40mm wide.
4. Apply beads at 300mm centres in the field area and 200mm centres in exposed perimeter zones of the roof or in compliance with specific wind uplift calculations.
5. Place the insulation board directly into LangStik SF.
6. Apply pressure to the insulation board to ensure full contact with LangStik SF Canister.
7. Allow to cure before weatherproofing the insulation board.

#### LangStik SF PU Adhesive - Can (6.5 kg).

**Guidelines for Use:** Applied direct from the can. Note. Once opened, contents of can must be used. Do not re-seal.

1. Substrate to be swept clear of all dirt, debris and loose material, prior to application of adhesive.
2. Pierce can to form a 20 mm hole.
3. Apply 20mm beads at 300mm centres in the field area and 200mm centres in exposed perimeter zones of the roof or in compliance with specific wind uplift calculations. Beads to be applied in a serpentine pattern.
4. Set board into the beads within 10-15 minutes and immediately walk-in the board to spread the beads for maximum contact.
5. Repeat walking-in every 5-7 minutes, until the board is firmly attached.
6. Allow to cure before weatherproofing the insulation board.

### LangVent

- Remove telescopic outer sleeve from vent assembly. Ensure rubber "O" ring seal is in place approximately 25mm from the end of the inner spigot.
- Place inner sleeve with the flexible flange over existing vent pipe.
- Temporarily slide telescopic outer sleeve over the inner pipe and into existing vent pipe, ensuring rubber "O" ring is in place to centralise the inner pipe and flange.
- Ensure the s/s supporting flange beneath the flexible membrane flange is in full contact with the underlay / soaker. If necessary, secure in position with suitable fixings and washers through the four holes provided.
- Fully bond the flexible membrane flange to the underlay / soaker.
- Temporarily remove telescopic sleeve and fully bond the system cap sheet to the membrane flange.
- At base of sleeve form a fillet with Langley Gap-Seal mastic.
- Re-fit telescopic outer sleeve over the inner sleeve and push fully home.
- Fix s/s vent cowl to top of assembly with fixings provided.

**Note: Not to be used with hot flues.**

### ParaRange Rooflights, Hatches and Kerbs

To be installed strictly in accordance with BS 8217 / 8218, Langley Rooflight Schedule and the fixing instructions as detailed in accompanying Agrément Certificate.

### Exposed Substrates - General Requirement

All structural deck types and detail substrates must be kept dry at all times during the construction phase.

### Hybrid Roof Construction

Where applicable, in hybrid roof constructions, consideration must be given to ensuring that adequate condensation control is achieved in accordance with BS 6229: 2018 and BS 5250: 2021.

## Great Cliff- Dawlish

### **Damp Proof Course**

Where waterproof skirtings and counter-flashings are being installed at a higher position than an existing damp-proof course, a new cavity tray must be installed above the new proposed finishes, especially in exposed conditions. Any damp-proof courses that are covered by Langley waterproofing membranes or roof coverings are done so purely at client risk and will not be covered by the Langley Guarantee.

## Great Cliff- Dawlish

### General Guidance and Requirements

#### Drying Out - Equipment Suggestions

Commercially available equipment includes the following:

- Leaf Blowers
- Hot Air Blowers
- Roof Pumps (puddle suckers)
- Bowdry Roller

#### Latent Defects

All specifications provided by Langley Waterproofing Systems Ltd are written on the basis that the substrates, roof deck and structure are sound and durable. We cannot accept responsibility for the consequences of latent defects in the roof deck and/or structure.

#### Installation

Waterproofing systems are to be installed in accordance with BS 8217: 2005, BS 8000: Part 4: 1989 and Langley Fixing Instructions.

#### Hybrid Roof Constructions

Consideration should be given to ensuring that adequate condensation control is achieved in accordance with BS 6229: 2018 and BS 5250: 2021.

#### Building Works - Caution Note

Building works adjacent to roofing operations: It is the roofing contractor's responsibility to ensure suitable protection of semi-completed or completed works is provided should any building works be undertaken, either by the roofing contractor or others; such as cutting of chases, re-pointing, new brickwork, rendering, etc.

#### Leadwork

Flashings and other sheet leadwork must be carried out in accordance with the recommendations of the Lead Development Association and the Lead Sheet Association.

#### Protection of Works - Caution Note

Any references within this specification relating to plant, equipment or materials being temporarily removed and/or stored for use / re-use, must not be stored, during the entire course of the works, at any time, on semi-completed or completed areas unless suitable protection measures are provided beneath. No claims arising from failure to protect Langley Waterproofing Systems Ltd installed products will be entertained.

#### Damp-Proof Courses / Cavity Trays

Where there is no existing damp-proof course, or where the skirtings and/or counter-flashings are being installed at a higher level than the existing D.P.C., a new cavity tray should be installed, especially in exposed conditions. Where tops of new waterproof skirtings will be above the line of the existing damp-proof course or cavity tray, it is a requirement that the contractor makes suitable provision to renew and raise these to a higher level. The contractor must liaise with, and seek separate instruction from the client contract administrator as to the method of raising these details. Any damp-proof courses that are covered by Langley waterproofing membranes or roof coverings are done so purely at client risk and will not be covered by the Langley Guarantee. Claims arising from failure to seek client instruction prior to commencement of works or provide suitable cost provision for this item will not be entertained by Langley Waterproofing Systems Ltd.

#### Exposed Openings - Caution Note

It is solely the contractor's responsibility that any exposed openings created during the construction phase; removal of rooflights / structural glazing, ducting, replacement of deck substrates, etc. must be temporarily and fully protected at all times to protect workforce and building occupants. Furthermore, any and all openings must be made watertight at the end of each working period.

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### Langley Felt Membrane Systems - Storage

Rolls of Langley waterproofing are to be stored under cover, on end, on a flat firm surface and, if outside, clear of the ground or supporting surface and sheet covered.

### Unforeseen - Deleterious Materials

During the construction phase, any exposed or discovered unforeseen deleterious materials must be notified immediately upon finding to the client contract administrator and Langley Waterproofing Systems Ltd to await further instruction before works proceed. No claims arising will be considered through failure to report such findings.

### Prepared Surfaces - Requirement

Prepared surfaces and substrates to receive new waterproof coverings must be prepared all in accordance with detailed specification notes contained herein and must be swept clean of all dirt, debris and loose material. In addition, all surfaces must be dry.

### Upstand Skirtings - Requirement

For guarantee purposes, all upstand and skirting details must be a minimum height of 150mm above the finished roof surface level.

### Upstand Skirtings - Requirement

It is the contractor's responsibility to ensure that any and all details found to be below the required 150mm requirement are raised to accommodate the extra thickness created by the new waterproofing system. No claims arising from failure to do so will be entertained by Langley Waterproofing Systems Ltd.

### Perimeter Kerbs - Requirement

It is the contractor's responsibility to ensure that any perimeter non-watershed check kerb details meet the 50mm height requirement. The contractor must raise any perimeter kerbs where necessary to accommodate the new finished levels created by the new waterproofing system. No claims arising from failure to do so will be entertained by Langley Waterproofing Systems Ltd.

### Langley Insulation Products - Storage

All insulation materials **must be** stored under cover. Plastic wrappings should not be considered to be sufficient protection for storage outside. If stored outside, insulation materials should be adequately protected with tarpaulins / sheeting and also be clear of the ground or supporting surfaces.

### Completed Works Protection

Each layer of the installed Langley waterproofing system **must be** protected from any following trades, foot traffic, or other sources of damage during installation and other construction work. Where necessary, appropriate protection, such as new plywood sheets, must be provided.

### Fire Safety

The Roofing Contractor is to provide adequate fire extinguishers and fire safety measures throughout the duration of the contract period.

### Protection of Internal Outlet Positions - Requirement

All outlets must be temporarily covered throughout the contract period to prevent debris entering the outlet / drainage system. Covering to be such, that water run off is not impeded at any time.

### Safe Working

All works are to be carried out in accordance with current Health and Safety Legislation.

### Inclement Weather Protection

All necessary measures and allowances **must be** made for protecting the works from damage due to inclement weather. The contractor must ensure at the end of each working day or period, that any exposed membranes or substrates that are susceptible to damage through water ingress are sealed with a Langley system compatible membrane to ensure complete water tightness. No loose laid membranes or other such covers are permitted.

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### **House Keeping**

The Roofing Contractor is to maintain and keep the site tidy at all times. All debris, wrappers and surplus materials, etc. to be removed from the site each day or deposited in secure storage.

### **Gas Cylinders**

Remove from roof levels at the end of each working day and store in a secure compound designed for the purpose.

### **Temporary Removal - General**

Roof mounted plant and equipment to be temporarily removed and set aside for re-fixing upon completion. No plant and equipment is to be stored on semi-completed or completed areas of new works during the course of the contract unless suitable protection has been provided beneath.