

Product Datasheet CaltechLOW

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Description

CaltechLOW is a one component, cold-applied, solvent and isocyanate-free roof waterproofing membrane based on silane terminated polymers. It cures to form a seamless and durable waterproofing solution for exposed roof areas and structures.

Use

For roof waterproofing solutions in both new construction and refurbishment projects. For roofs displaying complex detail areas, even when accessibility is limited. For cost efficient life cycle extension of failing roofs and application scenarios sensitive to chemical handling and odour concerns.

Characteristics / Advantages

Single component - no mixing, easy and ready to use
Cold applied - requires no heat or flame
Solvent & isocyanate free - non-toxic and VOC compliant
Seamless membrane
Reinforced with polyester fleece to give a tough and durable membrane
Vapour permeable - allows substrate to breathe
Elastic- retains flexibility even at low temperatures
Good adhesion to most substrates - see table
Wet-on-wet application - for fast installation

Certification

Approvals / Standards

ETA - 005 Part 6 - W2 (Pending)
Resistance to fire spread ENV 1187 - B roof (t4) On Build up Roofing System
Euroclass E - EN13501- 1 (Pending)
Fulfil initial solar reflectance requirements acc. Energy Star (0.820)
Conforms to the requirements of LEED EQ Credit 4.2: Low -Emitting Materials:
Paints & Coatings: VOC < 100 g/l
USGBC LEED rating: conforms to LEED SS Credit 7.2- Heat Island Effect-Roof, SRI ≥ 78□
Complies with REACH Regulation (EC) No 1907/2006.

Product Data

Form

Appearance / Colour Liquid / Slate Grey RAL 7015 and RAL 7045
Packaging 5 litres (~ 6.75 kg), 15 litres (~19.5 kg), metal pails

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Storage

Storage Conditions / Shelf Life	12 months from date of production. The product must be stored properly in original, unopened and undamaged sealed packaging in dry conditions at temperatures >0 °C and <+25 °C. Higher storage temperatures may reduce shelf life of product. Reference shall also be made to the storage recommendations within the safety data sheet.
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Technical Data

Chemical Base	One component silane terminated polymer
Density	-1.35 kg/litre (EN ISO 2811-1) All Density values at +20 °C
Solid Content	100 % by weight (+23 °C / 50% r.h.) 100 % by volume (+23 °C / 50% r.h.)
Service Temperature	-30 to + 80 °C (intermittent)
SRI Solar Reflectance Index (Initial)	100* (ASTM E1980) *in white RAL 9016

Mechanical Physical Properties

Tensile Strength	-2.0 N/mm ² (EN ISO 527-3) Unreinforced -6.3 N/mm ² (EN ISO 527-3) Reinforced
Elongation at Break	-200 % (EN ISO 527-3)Unreinforced -82% (EN ISO 527-3)Reinforced

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**System
Information**

System Structure Reinforced Roof Waterproofing
CaltechLOW is applied in one coat reinforced with Caltech F-Mat and sealed with the further coat of CaltechLOW as wet on wet application.

Substrates: Concrete, metals, wood, tiles, asphalt*, felt*, etc
Primer: Please refer to Primer-Cleaner chart below
Total thickness: 2.1 - 2.3 mm
Total consumption: 2 l/m² (2.7kg/m²)

* Test compatibility before use - Bituminous materials may also soften temporarily and could produce a slight stain.

Application Details

Substrate Preparation The surface must be sound, of sufficient strength, clean, dry and free of dirt, oil, grease and other contamination. Depending on the material the substrate must be primed or mechanically cleaned. Grinding may be necessary to level the surface. Suitable substrates are such as: concrete, bituminous felts and coatings, metal, brickwork, asbestos cement, ceramic tiles, wooden substrates.

For detailed information regarding substrate preparation and primer chart please refer to Method Statement

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**Substrate
Priming**

Substrate	Primer	Consumption [ml/m ²]
Cementitious substrates	No primer required	n/a
Brick and Stone	Not normally required - but Caltech Concrete Primer where necessary on porous or dusting substrates.	If used: ≈ 100 - 200
Ceramic tiles (unglazed), and concrete slaps	No primer required	n/a
Bituminous felt	Not normally required. Only required for high reflectivity applications (Caltech Metal Primer)*	If used: ≈ 100 - 200
Bituminous coatings	Not normally required. Only required for high reflectivity applications (Caltech Metal Primer)	If used: ≈ 100 - 200
Metals Ferrous or galvanised metals, lead, copper, aluminium, brass or stainless steel	Caltech Metal Primer	100 - 200
Wooden substrates	Timber based roof decks require a complete layer of Carrier. For small exposed timber sections no priming necessary	n/a
Paints	Subject to adhesion and compatibility tests.	
Existing Caltech System	No primer required	n/a

These figures are theoretical and do not include for any additional material required due to surface porosity, surface profile, variations in level and wastage etc.

For the Waiting Time /Overcoating you should refer to the PDS of the appropriate cleaner and primer. Other substrates must be tested for their compatibility. If in doubt, apply a test area first.

Caltech Metal Primer prevents migration of bituminous volatiles and improves long-term reflectivity.

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**Application Conditions
/ Limitations**

Substrate Temperature +5°C min. / +60°C max.

Ambient Temperature +5°C min. / +40°C max.

Substrate Moisture Content < 6% pbw moisture content.
Test method: Tramex meter, CM - measurement or Oven-dry-method.
No rising moisture according to ASTM (Polyethylene-sheet).

Relative Air Humidity 85% r. h. max.

Dew Point Beware of condensation. The substrate and uncured membrane must be at least 3°C above the dew point to reduce the risk of condensation. Condensation may affect adhesion and could affect appearance.

**Application
Instructions**

- Application Method**
- Application Method
- Prior to the application of CaltechLOW the priming coat if used must have cured tack-free. For the Waiting Time / Overcoating please refer to the PDS of the appropriate primer. Damageable areas (handrails etc.) have to be protected with tape or plastic wrapping.
- Reinforced Roof Waterproofing:** CaltechLOW is applied as wet on wet application combination with Caltech F-Mat Fleece.
- Please note, always begin with details prior to starting with waterproofing the horizontal surface. For details follow steps 1-3.
1. Apply first coat of approximately 1.3 l/m² of CaltechLOW, work only so far in advance that the material stays liquid.
 2. Roll in the Caltech F-Mat and ensure that there are no bubbles or creases. Overlapping of the fleece a minimum 50mm and ensure overlaps are sufficiently wet to bond.
 3. Apply a further coat of approximately 0.7 l/m² of CaltechLOW as a wet on wet application
- Note: If more than 24 hours were left for a day joint, the overlapping must be pre-treated by Cleaner P
- Slip Resistant Walkways:** CaltechLOW is applied after pre-treatment with Cleaner and fully broadcast with mineral grit. For details follow steps 1-5.
1. Pre-treat fully cured CaltechLOW with Cleaner using absorbent cloth or cotton-head mop and leave ~30mins
 2. Stencil designated walkway area using appropriate barrier tape (duct tape recommended)
 3. Apply 0.3 l/m² of CaltechLOW and blind broadcast using Deco Mineralised grit
 4. Remove barrier tape upon completion of broadcasting whilst CaltechLOW is still wet
 5. Sweep excess Deco Mineralised grit upon full cure

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Mixing Prior to application, stir CaltechLOW gently but thoroughly for 1 minute in order to achieve a homogeneous mixture.

Stirring gently will minimise air entrainment.

Cleaning of Tools Clean all tools and application equipment with thinner immediately after use. Hardened and/or cured material can only be removed mechanically.

Curing Details

WaitingTime /Overcoating CaltechLOW is designed for a wet on wet application.

After 24 hours the surface has to be cleaned and pre-treated by Cleaner P

Applied Product ready for use

Substrate Temperature	Relative humidity	Touch dry	Rain resistant	Full cure
+10 °C	50%	~ 4 hour	~ 8 hours	~ 14 days
+20 °C	50%	~ 2 hour	~ 4 hours	~ 7 days
+30 °C	50%	~ 1 hour	~ 2 hours	~ 5 days

Note: Times are approximate and will be affected by changing ambient conditions particularly temperature and relative humidity. Low temperature and high relative air humidity retard curing, while high temperatures and low relative air humidity accelerate curing progression.

Notes on Application/Limitations

- Do not apply CaltechLOW on substrates with rising moisture.
- CaltechLOW is not suitable for permanent water immersion or inverted roof structures.
- Vertical or steeply pitched surfaces may require an additional application to build required thickness.
- On substrates likely to exhibit outgassing, ensure substrate is thoroughly dry and apply during falling ambient and substrate temperatures. If applied during rising temperatures “pinholing” may occur from rising air.
- Do not dilute CaltechLOW with any solvent.
- Do not apply CaltechLOW directly on Insulation boards. Instead use Carrier between Insulation board and CaltechLOW.
- Volatile bituminous materials may stain and or soften below the coating.
- Do not apply cementitious products (e.g. tile mortar) directly onto CaltechLOW.
- CaltechLOW has a limited overcoating window of 24 hours. If more than 24 hours were left between the coats or for a day joint, the area has to be pre-treated using Cleaner P.

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Value Base	All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.
Local Restrictions	Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.
Health and Safety Information	For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data. REACH relevant information is available in the most recent SDS.

Technical Support

- Technical advice is available from Alumasc Technical Services at:

Telephone: +44 (0)1744 648400
Email: roofing@alumasc-exteriors.co.uk

NB: Current versions of Euroroof Caltech Product Datasheets can be downloaded directly from: www.alumascroofing.co.uk

The company pursues a policy of constant product development and information contained in this publication is therefore subject to change without notice. The customer is responsible for ensuring that each product is fit for its intended purpose and that the conditions for use are suitable. All quoted data is nominal and subject to production tolerances.