



KARNAK ELASTO-KOTE

Elasto-Kote Installation Guide





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ABOUT LRS SEAMLESS WATERPROOFING SYSTEMS.

LRS Seamless Waterproofing Systems have been manufacturing cold liquid applied waterproofing membranes in the UK for over 12 years.

With sales in over 50 countries of the 5 continents, and an extensive R&D activity, the company designs and produces its own Polyurethane, Polyurea, PMMA, and Liquid Rubber systems through several technologies:

Single and two component cold applied Polyurethane membranes.

Two component hot spray applied Polyurethanes, PolyUreas (both pure and hybrid) and Polyaspartics.

Two component waterborne Polyurethane and Epoxy resins for indoor (VOC Free) applications.

Rapid Curing two component PMMA resin systems for waterproofing roofs, terraces, balconies, gutters and cut edge lap treatment.

LRS supports its customers all the way, from designing the right solution for every project, to accreditation and certification of each system by recognized laboratories, and finally with on-site presence during project execution and quality control at the end of it to ensure customers' satisfaction and peace of mind.



SUMMARY OF STANDARD LIQUID COLD-APPLIED WATERPROOFING SYSTEMS IN THE UK

The following steps are needed for a correct implementation of a liquid cold applied waterproofing system:

Treatment of the surface. Should be clean, repaired (cracks, loose materials...) even and dry.

Once the surface has been prepared there is no need for primer as Elasto-Kote is self-priming.

Detailing KarnaFlex and KarnaFlex Tape.

Application of the main liquid waterproofing membrane.

1.2Ltrs/m² always applied in two layers.

Elasto-Kote is self-priming.

Suitable for Metal, Concrete and Asbestos.

Elasto-Kote supplied in 18ltrs

Karna-Flex Supplied in 10.5ltr and 3.4ltr.

Designed for pitched roof waterproofing, Cut edge lap treatment, Metal including Pre-Coated i.e. Plastisol, Asbestos, Concrete and Spray Foam.

Key Features:

- FM Approved
- Built in Rust Inhibitor
- 10-year Guarantee
- 650% Elongation
- Self-Priming
- 2 Coat Application
- Light Grey
- 85% Solar Reflection



INSTALLATION MANUAL: STANDARD ELASTO-KOTE SYSTEM

3.1) Installation overview

Elasto-Kote is an FM Approved, highly elastic waterproof roofing system specifically designed for waterproofing pitched metal, coated metal*, concrete and asbestos roofs and meets most budgets and performance requirements, with a 10-year product guarantee.

Main liquids applied in the system are:

Elasto-Kote, the main part of the waterproofing system, used for all areas other than detailing. Applied by brush or roller.

Karna-Flex, is an elastomeric, thermoplastic-rubber sealant formulated for use on prepared metal, concrete and asbestos. Karna-Flex is used in junction with Elasto-Kote for doing all detail work. Karna-Flex is applied in 1 coat at 1ltr per m² reinforced using Karna-Flex Tape. KarnaFlex is also used for sealing fixing heads, due to the thicker consistency.

Prior to the Elasto-Kote installation the roof must be fully prepared, cleaned in accordance with LRS recommendations.

Once all detailing has been complete and fully cured using Karna-Flex, Elasto-Kote first coat is applied at the required coverage rate (0.6ltrs / m²). Elasto-Kote second coat is then applied over the cured first coat @ 0.6ltrs / m² leaving the finished system at 1.2ltrs per m² overall.

Cleaning:

The main pre-requisite is to ensure the surface that is to be coated remains free from grease, natural growth, loose / friable materials, dirt and dust.

The cleaning of the surface is critical to the successful bond of the membrane to the current roof surface.

Allow the roof to dry out before commencing with the application of the Elasto-Kote.

Its advised that a 3000psi power washer or something similar is used to clean the surface.



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Detailing:

Once the surface has been fully prepared all detailing will need to be done using KarnaFlex and KarnaFlex Tape.

All joints and fixing / bolt heads will need to be detailed in using KarnaFlex.

KarnaFlex is applied at 1ltr per m² in 1 coat.

Apply 1ltr of KarnaFlex to all joints and immediately lay the KarnaFlex Tape into the wet coatings and ensure the tape is fully saturated. Make sure the edges of the tape is lying flat and has no creases.

Waterproofing:

Once all detailing has been complete and fully cured then checked by the contractor the main waterproof will need to be applied.

Applying the Elasto-Kote can be done using a brush, roller or airless sprayer Greco 7900 machine in 2 coats.

Both coats are applied @ 0.6ltrs per m² giving an overall coverage of 1.2ltr per m².



Typical Coverage Rate Table.

| | | |
|-------------------------|---|---|
| | Standard Elasto-Kote system 10-year product guarantee as standard. | |
| Main certificates | FM Approved, CRRC, Energy Star | |
| Container Size | 18ltrs | |
| Colours Available | Light Grey | |
| Substrate condition | Smooth | Rough |
| Primer | Self-Priming | |
| Elasto-Kote First coat | 0.6ltrs/m ² (smooth surface) | 0.85ltrs/m ² (rough surface) |
| Cure Time | Please allow 24hrs before applying second coat. | Please allow 24hrs before applying second coat. |
| Second coat Elasto-Kote | 0.6ltrs/m ² | 0.6ltrs/m ² |



Standard Elasto-Kote system

- 10 Year Guarantee
- Main certificates; FM, CRRC, Energy Star
- Colours Available; Light grey
- Self-priming
- First Coat – Light Grey 0.6ltrs per m²
- Second Coat – Light Grey 0.6ltrs per m²

All coverage rates stated are quoted as a minimum. Coverage rates adequate to meet product certificates.

3.2) Pre-Installation Notes;

Before works commence, the installing roofing contractor should ensure that the surfaces to receive the new roofing system are acceptable and comply with LRS Seamless Waterproofing Systems recommendations and that the application of the specified coating conforms to the requirements of the specification.

Retained components from the existing structure must be sound and capable of accepting the imposed loading of the new roofing system and associated installation procedures. Surfaces must be clean and dry, free from any organics, dust and any other loose materials. New concrete must be well-cured. Defects and sharp projections should be removed or made good and the entire surface must be compatible with the proposed coating system.

Works are to be organised to maintain the waterproofing integrity of the roofing system and to ensure that the finished roof areas are adequately protected from damage by subsequent building operations.

Do not undertake work in wet conditions, the temperature must be 3° degrees higher than the dew point. The installer must assess the temperature on the system application day. Application of the system should not take place when wet conditions prevail, or when condensation is present or will be present on the substrate during application. Unless effective temporary covering is provided, suspend work in severe or continuous wet weather or where wind speeds exceed 7m/s. Temperature should always be above 5°C and rising.

LRS recommend the contractor instructs a suitable & qualified professional to ensure the roof is structurally sound, stable & will accept the liquid coating specified.



3.3) Main components

3.3.1) Elasto-Kote First Coat, Light Grey

Elasto-Kote is a highly elastic waterproof roofing system specifically designed for waterproofing pitched metal, coated metal*, concrete and asbestos roofs. Elasto-Kote is self-priming FM approved system with built in rust inhibitors.

Thoroughly mix Elasto-Kote using a paddle mixer at a low rpm. Ensure the product is completely homogenous and then leave to rest allowing excess air to disperse before application. This can be checked by waiting until surface bubbles disappear in the drum. This will reduce the likelihood of pinhole formation in the membrane.

Elasto-Kote should be applied by brush, short pile roller or airless Greco 7900 spray machine at a typical coverage rate of 0.6ltrs/m² on smooth roof surfaces and rising to 0.85ltrs/m² on rough roof surfaces.

Cure times stated below are approximate. Specific onsite conditions including relative humidity in the air, direct sun on the roof etc. May cause variations with cure times.

| Elasto-Kote First Coat, Light Grey | | |
|---|---|---------------------------------|
| Container Size | 18ltrs | |
| Coverage rates (typical) | 0.6ltrs/m ² (smooth surface) | 30 m ² / 18ltr. drum |
| | 0.85ltrs/m ² (rough surface) | 21 m ² / 18ltr. drum |
| Typical Drying Times at 15°C | Touch Dry | 2-4 hours |
| | Minimum over coating | 24 hours |
| | Full Cure | 7 Days |
| | Shower Proof | Immediately |



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Above: Metal cladded roof has been prepared ready for the Detailing and first coat of Elasto-Kote.

Below: Finished roof has had two coats of Elasto-Kote at 1.2ltrs per m²





Elasto-Kote should only be applied to structurally sound areas. Areas that do not meet this requirement must be treated accordingly to leave the substrate suitable for liquid application. Dirt, dust, organics and any other loose materials must be removed by scraping or brushing with a stiff bristle brush and 3000psi power washing with a biocide wash or degreaser before application of the first coat and detailing (for further information on recommended Biocide contact LRS Technical Support).

Project detailing is to be completed prior to the application of the Elasto-Kote first coat. Please refer to section 3.7 for an overview of how to accurately dress areas of detailing. Use a short pile mohair roller or brush to apply and embed the Karna-Flex Tape into the specified coverage of Karna-Flex.

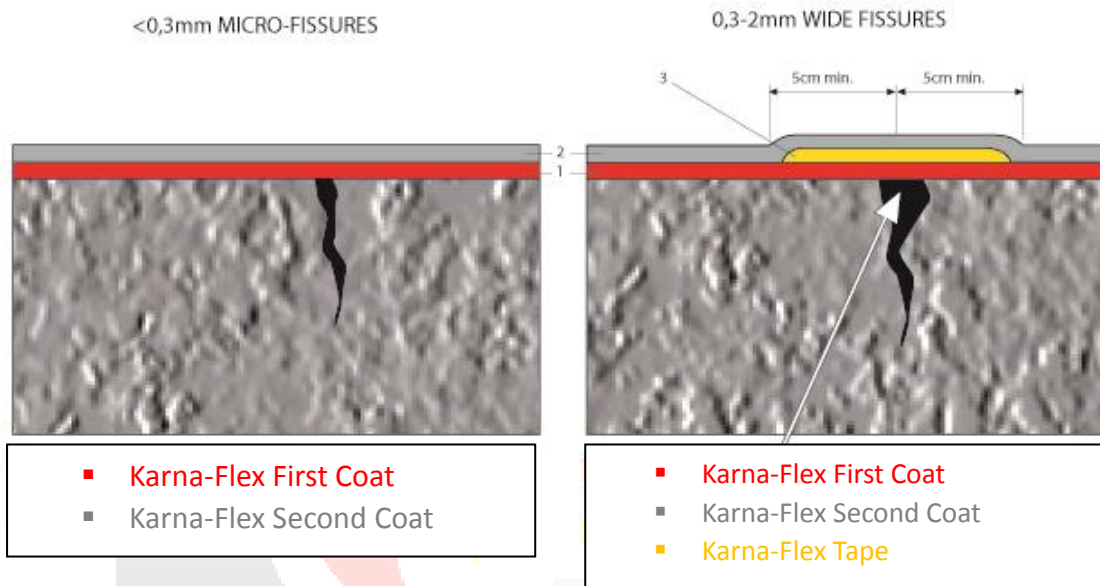
Ensure full coverage of the surfaces and monitor by taking wet and dry film thickness readings. The coating must maintain its thickness across all details including penetrations and abutments.

The Karna-Flex Tape must be applied to follow the contours of the substrate making sure the tape does not tent. If tenting does occur, realign the tape if possible to remove the crease or cut the length of the crease and allow the tape to fold over itself. Apply additional Karna-Flex ensuring full saturation of the tape.

Once cured, inspect the membrane for bubbles or fish mouths and any pinholes. If such areas are found, ensure they are cut back and lightly abraded to give a smooth finish. Pinholes should be treated with additional product and left to cure before application of the second coat.



Fissure / Cracks / Split Detail;



3.3.2) Elasto-Kote - Second Coat, Light Grey

Thoroughly mix Elasto-Kote using a paddle mixer at a low rpm. Ensure the product is completely homogenous and then leave to rest to let excess air disperse before application. This can be checked by waiting until surface bubbles disappear in the drum. This will reduce the likelihood of pinhole formation in the membrane.

Apply the Elasto-Kote (second coat) when the first coat has fully cured, typically between 12 and 24hrs depending on weather conditions. Elasto-Kote (second coat) should be applied by brush, short pile mohair roller or airless Greco 7900 spray machine at a typical coverage rate of 0.6ltrs/m². Ensure that the total roof area and first coat have been over coated with the second coat in accordance with the LRS Seamless Waterproofing Systems recommendations.

Cure times stated below are approximate. Specific onsite conditions may cause variations with cure times.



| Elasto-Kote (second coat) Light Grey | | |
|---|------------------------|---------------------------------|
| Container Size | 18ltrs | |
| Coverage Rates (typical) | 0.6ltrs/m ² | 30m ² / 18ltrs. drum |
| Typical Drying Times at 15°C | Touch Dry | 2-4 hours |
| | Rain Proof | 1 hour |
| | Minimum over coating | 24 hours |
| | Full Cure | 7 Days |

Visually inspect the wet coating checking for defects such as pinholes, discontinuity and exposed tape. Undertake corrective measures as required.

Once cured, inspect the membrane for gapping or fish mouths and any pinholes. Wicking and proud fibres should be cut back and lightly abraded to give a smooth finish. Pinholes should be treated with additional product and left to cure.

Image: Elasto-Kote Light Grey



Allow the first coat to fully cure typically around 24hrs depending on the weather conditions before Applying Elasto-Kote second coat at a coverage rate of 0.6ltrs per m².



3.4.2.3) Karna-Flex Tape

Karna-Flex tape is used with Karna-Flex to bridge all gaps, joints, weak points etc. where movement is likely to occur. Apply 1ltr per m² of Karna-Flex then immediately lay the Karna-Flex Tape in to the wet coatings and ensure the tape is fully saturated and check for pinholes, fish mouths or creases within the tape. Please rectify this area immediately or cut these areas cut once the Karna-Flex has fully cured and reapply Karna-Flex and Karna-Flex Tape to specification.

| Karna-Flex Tape | | |
|-----------------|--------------|--|
| Roll Size | 100mm x 7.5m | |
| Coverage rates | Varies | |

Apply onto clean dirt-free substrates that are dry.

3.5) Installation of the waterproofing system

Ensure that all surfaces have been suitably prepared and are clean and dry. Form all detail areas before applying Elasto-Kote on the main area.

3.5.1) Karna-Flex

Cut the Karna-Flex Tape to the required length and width for the proposed detail about to be completed. Only use manageable lengths of KarnaFlex Tape in windy conditions.



Detailing –



Apply Karna-Flex to the detail area ensuring works are progressed to the point of egress. Immediately lay the Karna-Flex Tape into the wet coating and begin to embed with a suitable roller.

Use a loaded roller to ensure full saturation of the Karna-Flex Tape. Coverage rates are governed by the substrate. Refer to the specification and/or LRS Seamless Waterproofing Systems technical department for more details.



Overlaps between strips of Karna-Flex Tape must be at least 50mm. Ensure there is sufficient material to saturate these overlap areas.

Keeping the container warm at room temperature will assist with the application and coverage rates of the embedment coat. Cold containers will make the product thicker and more difficult to apply and therefore a reduction in coverage rate will occur.

Once the detail areas are complete, begin installation on to the main roof area. Ensure overlaps onto the existing reinforced Karna-Flex sections are by at least 50mm. Apply the first coat of Elasto-Kote at a coverage rate of 0.6ltrs per m².



Insufficient coverage of the Karna-Flex material may make it difficult to embed the Karna-Flex Tape. Flooding of the area may cause the tape to tent.



Monitor application and check for fish mouths or pinholing and apply more product where required. Allow to cure in accordance with LRS Seamless Waterproofing Systems Technical Services recommendations prior to application of the Elasto-Kote. Once the membrane has cured, check for pinholes and any surface defects. Fish mouths should be trimmed back and lightly abraded to provide an even surface prior to application of the Elasto-Kote.

Fish mouths and Creases

Fish mouths and creases occur through over rolling of the Karna-Flex Tape with the Karna-Flex. On application, if these areas seem to appear, please rectify immediately or leave to fully cure and cut out affected areas and overcoat accordingly with suitable product.

If an area has cured, the area must be cut out and repaired with additional material. Individual fish mouths can just be trimmed back and gently abraded to leave a smooth surface prior to the application of the Elasto-Kote.

3.7) HEALTH & SAFETY;

Material Safety Data Sheets are available upon request; please contact LRS Seamless Waterproofing Systems UK Ltd.



3.8) TECHNICAL SUPPORT;

Technical advice is available from the LRS Seamless Waterproofing Systems UK Technical Service at:

Telephone: 01948 841 877

Email: technical@lrs-systems.co.uk

Installation manual is subject to change; please apply to LRS Seamless Waterproofing Systems UK for the updated version prior to commencement of the project.

LRS Seamless Waterproofing Systems undertakes continual product development and therefore all product data and information is subject to change without notice. Customers are responsible for ensuring and checking that the product is suitable for the proposed application and conditions for use are appropriate and meet the required standards. Please refer to the LRS Seamless Waterproofing Systems Terms and Conditions.

Storage

All materials must be stored undercover and storage areas must be kept between 5°C and 25°C. Materials should never be exposed to freezing conditions or excessive temperature changes.

Rainfall

If it begins to rain at any stage during application or if rainfall is imminent, stop work immediately. Reseal any open containers and store all equipment adequately to keep them dry.

Work should not be resumed until it has completely stopped raining and the surface to be coated is completely dry and free from any sitting water. Preferably, works should be discontinued in advance of possible rainfall to allow the product to cure and be rainproof.

A curing membrane subject to rainfall is only aesthetically damaged. Rainfall can cause pits in the membrane but the quality of the membrane is not affected. These pitted areas should be overcoated accordingly to satisfy the aesthetics of the whole system.