

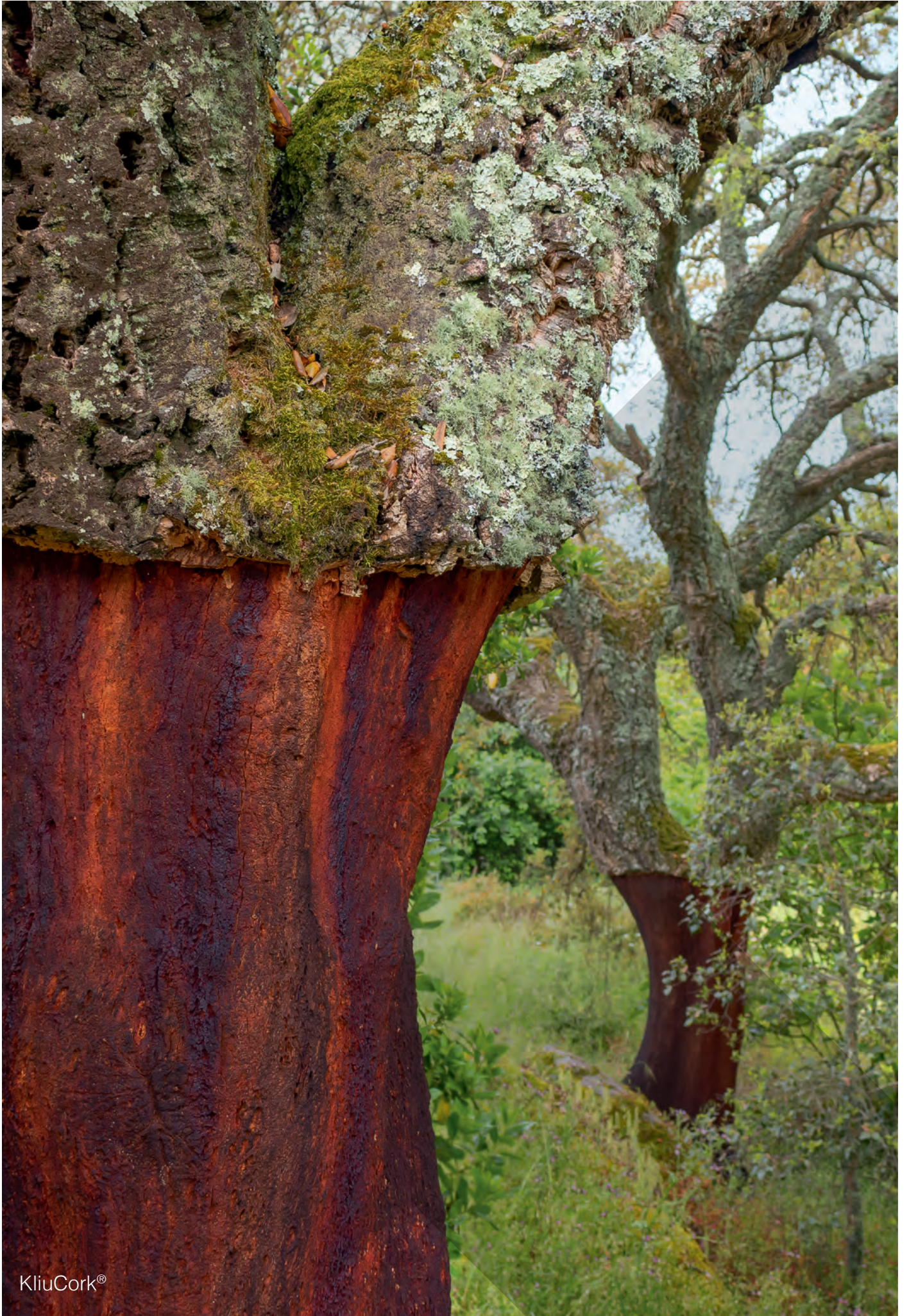
PRESENTATION, DATA SHEET & COLOUR CATALOGUE

KliuCork®



The warmth of natural cork in your home.

KLIUCORK®
WWW.KLIUSOLUTIONS.COM



PRESENTATION

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WHAT IS SPRAYED CORK?

Projected cork **is a noble and ecological material based on natural cork** from the cork oak (*Quercus suber*).

Thanks to the exclusive formula developed by Kliu Solutions, in our factory we combine natural cork in 0.5 to 1 mm grain with acrylic resins and copolymers, emulsified in water. The result is **an environmentally friendly technical coating material that provides waterproofing, thermal and acoustic insulation and long durability, which is applied by spray gun.**

MAIN ADVANTAGES OF KLIUCORK®

Thermal Insulation

KliuCork® contributes to improved thermal insulation, which translates into energy savings, whether in interior or exterior applications.

The use of KliuCork® helps to interrupt thermal bridges, thus contributing to energy efficiency.

Sound Insulation

KliuCork® offers solutions for noise problems in homes, schools, industrial buildings, communal areas, residential complexes, offices, restaurants, hotels, etc.

It provides a high level of acoustic insulation against noise generated by vibrations, resonance and footsteps.

Waterproof

After the application of KliuCork®, the treated vertical and sloping surfaces become completely waterproof, preventing leaks and the build-up of moisture.

Flat, watertight surfaces are treated with a combination of KliuCork® (sprayed cork) and Waterproof® (waterproof base) to ensure total waterproofing.

Fire Behaviour

Its application on various surfaces prevents the rapid spread of flames and heat in these areas.

When the fire source is removed, the flame is self-extinguishing and does not drip, preventing the fire from spreading.



MAIN APPLICATIONS OF KLIUCORK®



Facades

As a cladding material, KliuCork® offers protection and aesthetics for facades, walls and other architectural elements.

It offers solutions for both new constructions and the rehabilitation of existing structures.



Roofs

KliuCork® is optimal for the waterproofing of all types of trafficable and non-trafficable roofs, including inverted roofs, terraces, etc.

It offers solutions for both new constructions and the rehabilitation of existing structures.



Industry

KliuCork® offers multiple applications in the industrial field. Our sprayed cork is ideal for insulating pipes, silos, stainless steel tanks and much more, providing excellent acoustic and thermal insulation.

In addition, it can be applied in warehouses, industrial building roofs and machinery, improving energy efficiency and increasing durability.



Asbestos encapsulation

By encapsulating asbestos with KliuCork®, carcinogenic fibres can be completely isolated from the environment.

This is one of the most effective solutions in terms of time and cost. There is no need to remove the surface, so no handling of the fibre cement is required.

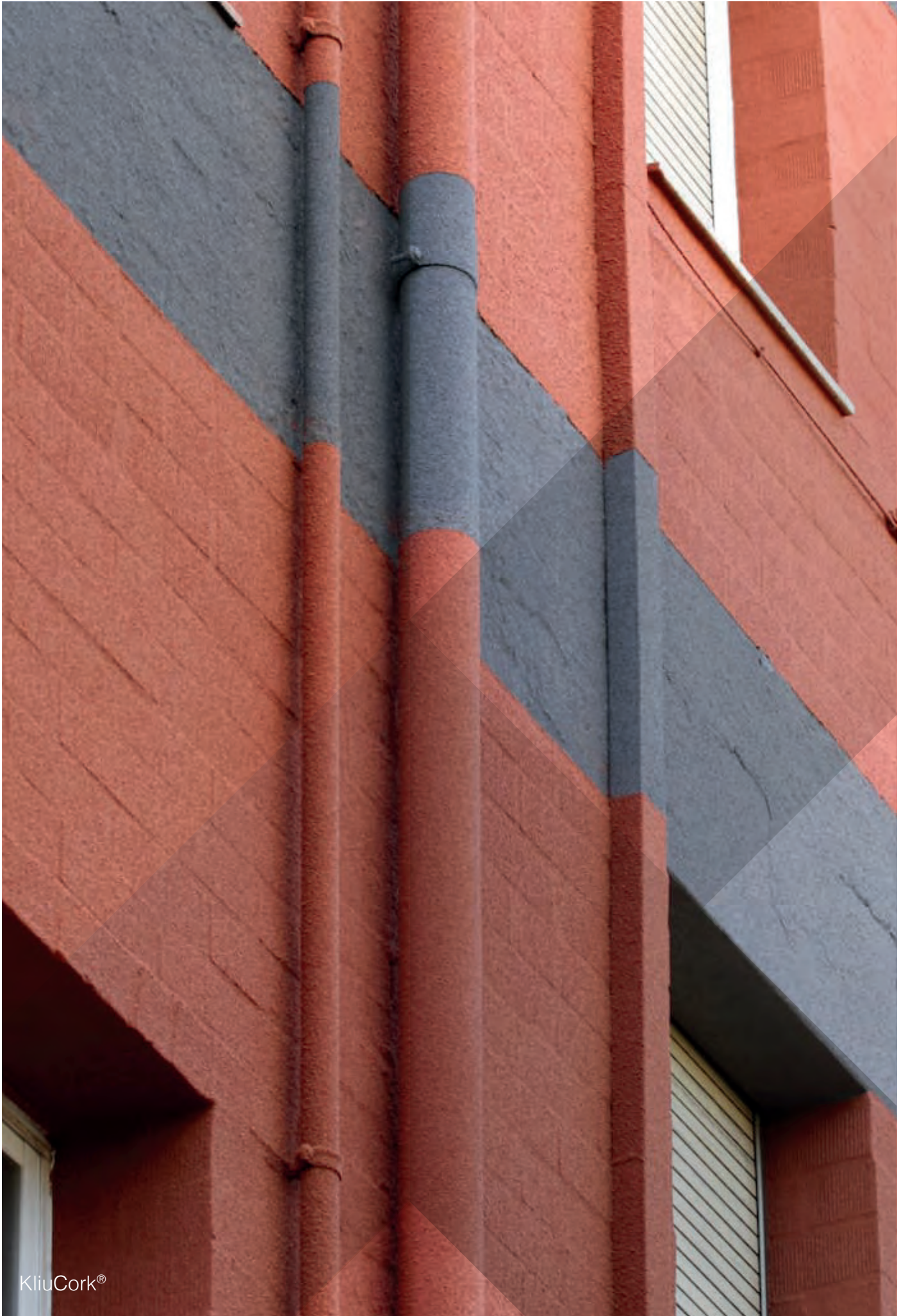


Special works

KliuCork® proves its versatility with successful applications on boats, cars, wooden domes and much more.

It adheres without pre-treatment to almost any surface. Our cork coatings offer optimal protection and sustainability for a variety of projects and challenges.





WHY DO FACADES DETERIORATE?

Building facades deteriorate due to a combination of environmental factors.

The main ones are:

Rain and moisture: Water is one of the main agents of deterioration. Water infiltration into joints or cracks can cause dampness in walls, leading to fungus, mould and structural weakening. In addition, in cold climates, infiltrated water can freeze and expand, causing cracks.

Sun and UV radiation: Prolonged exposure to the sun's ultraviolet rays degrades materials, causing discolouration, loss of elasticity and cracking in coatings and paints.

Wind: Air currents can carry dust, sand and particles that slowly erode the surface of facades. In areas with strong winds, they can cause detachment of surface parts, such as coatings or paints.

WHY RENOVATE FACADES WITH KLIUCORK SPRAYED CORK® ?

KliuCork® is the perfect solution for facade renovation, offering a unique combination of sustainability, efficiency and aesthetics. This innovative cladding not only protects surfaces, but also significantly improves the thermal and acoustic comfort of buildings and dwellings.

Sprayed cork is a natural and ecological material. Cork bark is extracted responsibly from the cork oak tree without damaging the tree, making it a sustainable and environmentally friendly option. In addition, its application on facades helps reduce energy consumption by providing exceptional thermal insulation, maintaining the ideal indoor temperature, whether in cold or hot climates.

Thanks to its resistance to water, mould and sudden changes in temperature, KliuCork® ensures long-lasting protection against moisture and weathering, prolonging the life of facades and minimising maintenance costs.

From an aesthetic perspective, KliuCork® is available in a wide range of natural colours, allowing for a modern and harmonious renovation, without sacrificing functionality. All this makes it an ideal choice for those seeking to combine efficiency, design and commitment to the environment in their renovation projects.

Thus, KliuCork® not only protects and beautifies facades, but also transforms buildings and homes into more efficient, comfortable and silent spaces, with a positive impact on energy savings, daily comfort and the impact on the environment.



Facades



3 BENEFITS IN 1 APPLICATION

KliuCork® Projected Cork is an innovative and efficient option for facade repair, with three main benefits: durability and decoration, thermal insulation and acoustic insulation.

Each of these aspects contributes to improving both the functionality and aesthetics of buildings and dwellings, providing sustainable, long-term solutions.



1. DURABILITY AND DECORATION

One of the major attractions of KliuCork® is its exceptional durability combined with a high decorative capacity. This sprayed material offers superior weather protection, being resistant to moisture, temperature changes and UV radiation. This ensures that facades treated with KliuCork® maintain their integrity and beauty over the years, with minimal maintenance.

On an aesthetic level, sprayed cork allows facades to be customised with a wide range of 42 natural colours, adapting to any architectural style. Its application generates a uniform, seamless finish that not only embellishes surfaces, but also covers imperfections or small cracks, considerably improving the overall appearance of the building or home. Being a flexible and adaptable material, it can be used on all types of surfaces, whether smooth or irregular, providing a decorative and protective solution in a single application.



Facades



2. THERMAL INSULATION

Projected cork insulates thermally due to its unique cellular structure, which is made up of millions of microscopic air-filled cells. This structure provides several advantages for thermal insulation:

Low thermal conductivity: The air trapped in these cells acts as a natural insulator, as air at rest is one of the best thermal insulators. By preventing air movement within its structure, sprayed cork minimises heat transfer by conduction.

Thermal inertia: Cork has a high capacity to store heat, which means that it absorbs heat slowly and releases it gradually. This helps to dampen outside thermal fluctuations, keeping the indoor environment more stable. In cold climates, sprayed cork retains heat inside the building, and in hot climates, it helps keep the interior cool by preventing heat from the outside from entering easily.

Thermal radiation barrier: In addition to reducing heat transfer by conduction, cork also acts as a thermal radiation barrier, which means that it reflects part of the sun's radiant heat, preventing it from being absorbed into the facades.

This not only improves the energy efficiency of the building, but also reduces heating and cooling costs, contributing to savings and care for the environment.

3. ACOUSTIC INSULATION

The acoustic insulation of sprayed cork is also due to its cellular structure and mechanical properties:

Sound absorption: Projected cork is able to absorb sound waves due to its porous structure and its damping capacity. When sound waves strike the material, the vibrations are absorbed and dispersed by the air cells, which reduces their energy. This reduces the amount of noise that passes through the facades and reaches the interior of the building or dwelling.

Resonance reduction: Cork's elasticity allows it to act as a sound vibration absorber, dissipating the energy that comes from impact noise, such as traffic or machinery. This helps prevent sound waves from resonating through walls or ceilings, improving insulation against low and medium frequency noise.

Sound attenuation: Cork has an excellent ability to attenuate sound, which means that it is able to block the transmission of sound waves from one space to another. This makes it an effective acoustic barrier to external noise, such as urban traffic or nearby industrial activities.



Facades





The ability of KliuCork® to reduce noise impact significantly improves interior comfort, creating a quieter and more pleasant environment for occupants.

In summary, KliuCork® sprayed Cork not only stands out for its durability and decorative capacity in renovations and refurbishments, but also for its excellent thermal and acoustic insulation properties, which makes it a complete solution for the renovation of facades, both functionally and aesthetically.

KLIUCORK® SPRAYED CORK APPLICATION SYSTEM

The preparation and eventual repair of the surface is essential to obtain an adequate and long-lasting application. Our application method is based on 3 essential steps if we want to obtain optimum results:

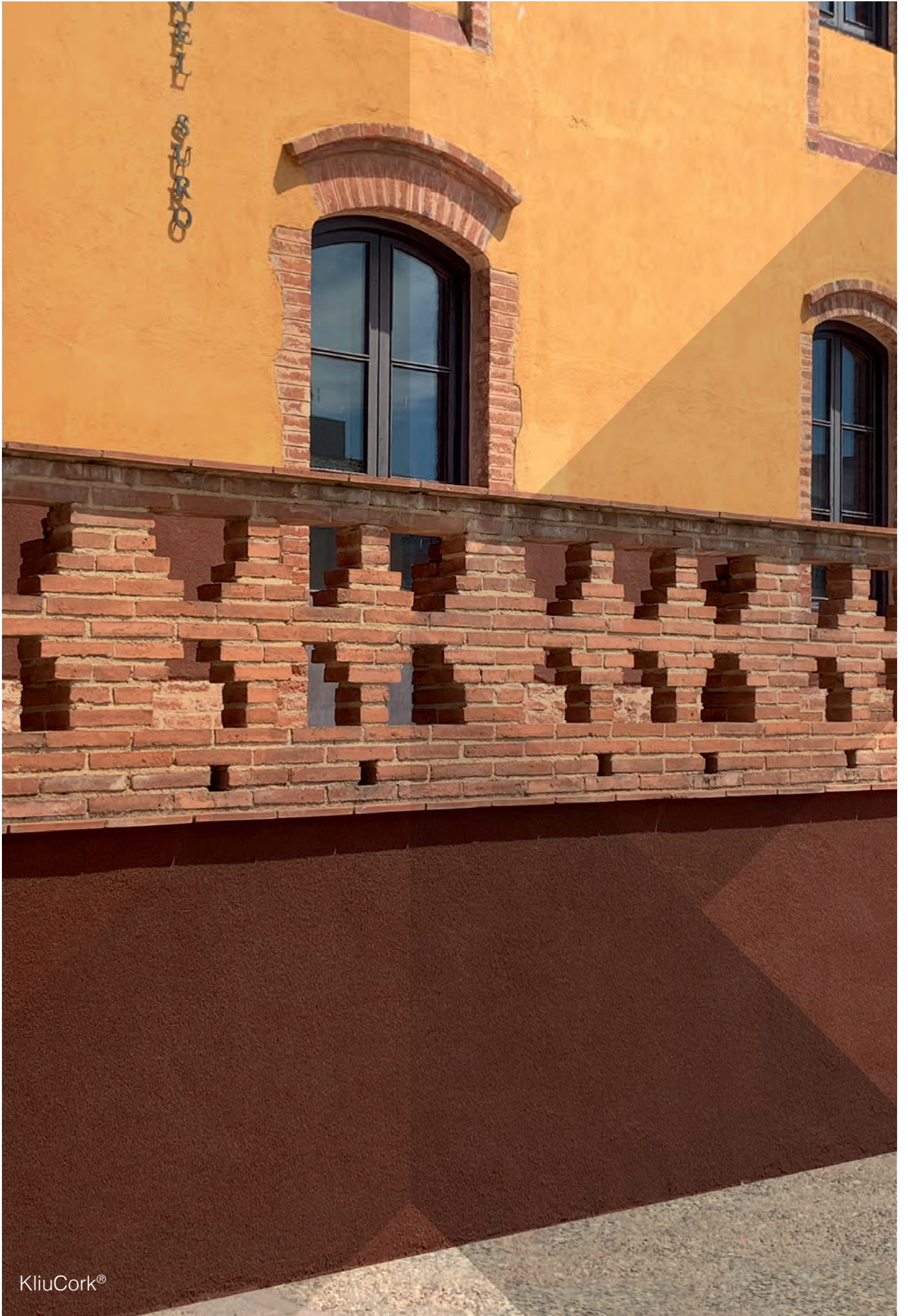
1. Cleaning with a hydro-cleaner to remove dirt, lichen, dust and paint residues in poor condition until a completely clean surface is achieved.
2. Repair of possible cracks and irregularities of the surface to achieve a continuous and smooth base.
3. Application of our KliuCork® sprayed cork system.

The result will be a continuous, seamless, decorative and long-lasting cladding that will also act as a waterproofing for the facade and will provide a great thermal and acoustic gain in the interior, acting as a buffer against the effects of the weather.

All this with an eco-sustainable material that helps to conserve the environment.







WHY DO ROOFS DETERIORATE?

Weather conditions are an important factor in the deterioration of roofs and flat roofs. Constant exposure to the sun's ultraviolet rays can cause premature ageing of certain materials such as asphalt, waterproofing membranes, tiles or shingles, leading to cracks and fissures. This process can be aggravated by temperature changes that expand and contract materials due to thermal variations (hot and cold). Water can then seep into the joints or cracks causing leaks that lead to dampness inside the house.

WHAT ARE THE BENEFITS OF USING KLIUCORK® WATERPROOF FOR WATERPROOFING?

At Kliu Solutions we offer a complete solution for the waterproofing of your roof, deck or terrace under the commercial name of KliuCork® WaterProof. Through our solution based on projected cork we provide the necessary waterproofing to guarantee the watertightness of your home or community of neighbours.

In addition, once the sprayed cork is applied, the roof will be much better protected against inclement weather such as hail, thanks to the damping properties of cork. In this way, the roof or ceiling will remain unaltered for many more years than with other solutions that allow overheating of the structures underneath.

HOW DOES SPRAYED CORK WATERPROOF?

Cork is an excellent waterproofing material thanks to its closed cell structure and its suberin content, which allows it to repel water, resist humidity and prevent the formation of mould and fungus. It is also very durable, ecological and elastic, the latter property preventing the roof from future cracks and maintaining the structure for much longer.



Roofs



3 BENEFITS IN 1 APPLICATION

KliuCork® WaterProof sprayed cork not only protects your building envelope against moisture, leaks and other weather conditions, but also provides unparalleled thermal and acoustic benefits, as well as being walkable and slip-resistant.

Once our projected cork has been applied, you will obtain the desired waterproofing, but you will also obtain a great thermal gain inside the house, as well as a considerable reduction in the noise produced by the impact of rain or hail. The thermal gain achieved leads to lower energy costs in both summer and winter. This circumstance, over time, will translate into considerable economic savings.

KLIUCORK® SPRAYED CORK APPLICATION SYSTEM WATERPROOF

The preparation and eventual repair of the surface is essential to obtain an adequate waterproofing that lasts over time. Our waterproofing method is based on 3 essential steps if we want to obtain optimum results:

1. Cleaning with a hydro-cleaner to remove dirt, lichen and dust until the surface is completely clean.
2. Grouting of ceramic tiles (in case of roofs) to repair and fix any loose pieces.
3. Application of our KliuCork® sprayed cork system WaterProof.

The result will be a continuous, seamless blanket that will act as a watertight waterproofing, which will provide a high thermal and acoustic gain in the interior, and will act as a buffer against the effects of the weather.

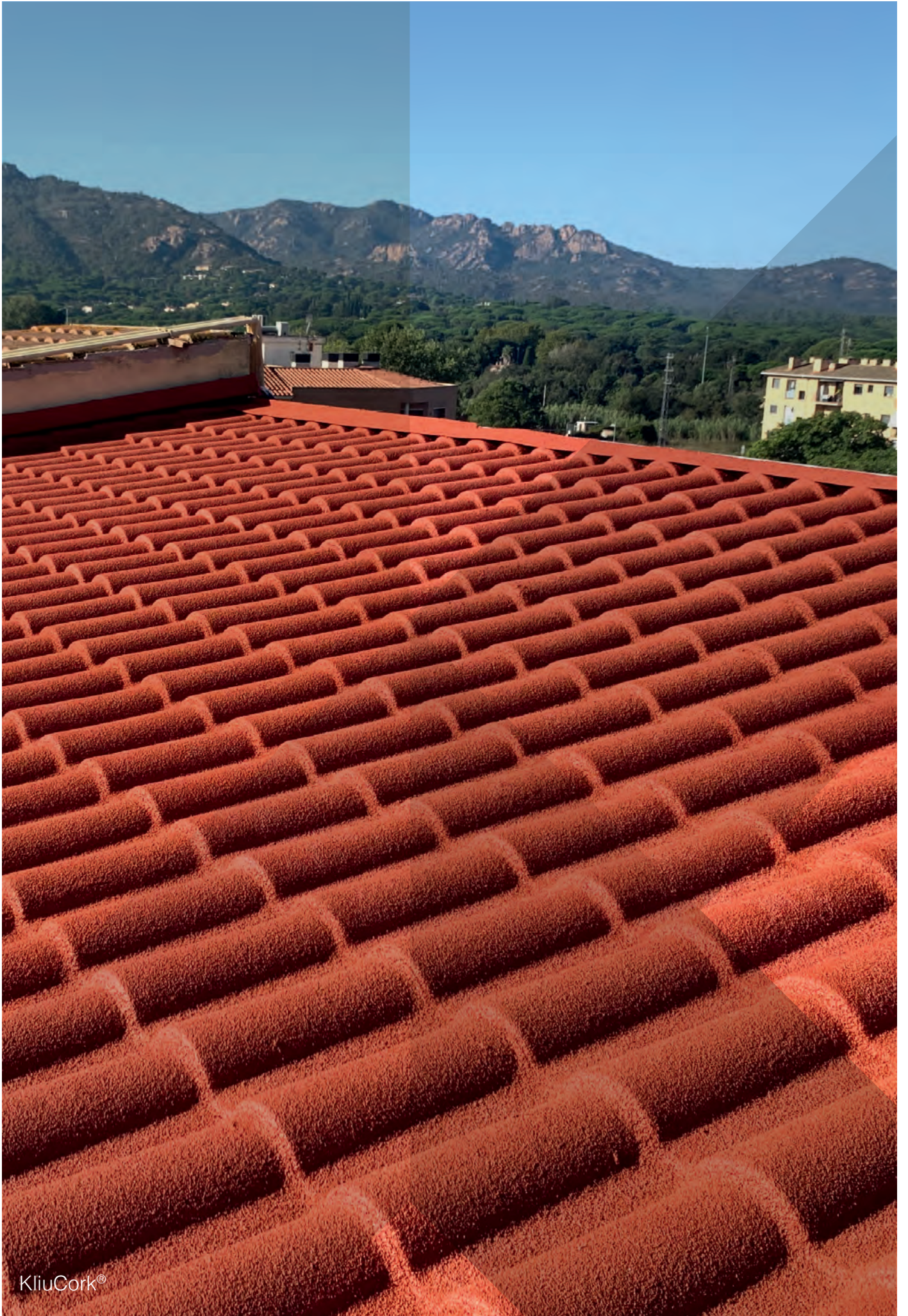
All this with an eco-sustainable material that helps to conserve the environment.



Roofs







KliuCork®

MAIN QUALITIES OF KLIUCORK®

Waterproofing of all types of roofs (metal, fibre cement, etc.) on buildings, passable or not, such as terraces, roofs, inverted roofs or terraces, both in new construction and renovation.

Cladding of facades, walls, basements, pillars and all types of surfaces.

- **Improved thermal insulation**, resulting in energy savings, whether applied to interior or exterior surfaces, i.e. facades and roofs.
- **Improved sound insulation**, both in terms of impact reduction and reverberation control.
- **Natural and high quality decoration** for floors, walls and ceilings.
- **Breaking thermal bridges**, preventing the transfer of heat or cold between different areas of the building, which improves energy efficiency and reduces the appearance of condensation.
- **Protection and decoration of pavements** on paths and areas around swimming pools, as well as in changing rooms, gymnasiums, patios, etc., thanks to its resistance to abrasion and wear, as well as offering a soft, silent and shock-absorbing tread.
- **Encapsulation of fibre cement**, PUR foams, mineral foils and materials containing fibres, asbestos and detached particles, consolidating and waterproofing them.
- **Thermal and acoustic protection on ships**, corrosion-resistant caused by saltpetre.

Sustainability without limits

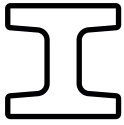
Our growing international presence reflects our commitment to quality and sustainability on a global scale.

We are proud to be present in the following countries: **Austria, Belgium, Canada, Costa Rica, Germany, Spain, France, Israel, Mexico, Netherlands, Portugal, Switzerland, USA.**



SURFACES THAT CAN BE COATED

KliuCork® is usually applied **directly to the surfaces** to be coated, offering high adhesion. **It does not require a primer coat**, which simplifies the application process. The materials to be protected must be stable, clean, dry, free of dust and loose particles, and free of condensation.



Metals

KliuCork® is easily applied on carbon steel, iron, galvanised steel, stainless steel, brass, bronze and aluminium.

Although its adhesion is excellent, it is recommended to apply it on metals previously stabilised and protected against corrosion. On painted metals, if the paint is in good condition, it can be applied directly.



Concrete

Easily applied on concrete, stone, cement, hydraulic tile, Catalan tile, tuff, plastered or rendered surfaces.



Plastics

The most common plastic materials used in construction are PVC and methacrylates, which can be perfectly coated with KliuCork®.

On other plastic materials, an adhesion and compatibility test must be carried out beforehand.



Wood

It is applied directly. The only precaution to be taken is to lightly sand the surface in order to remove the aged wood fibres and to open up the pores of the wood. Dust carefully.

On very porous wood with many exposed fibres, it may be beneficial to apply a pre-coat of a sealer.



Glass

It is applied directly. Check that the windows and glass have not been cleaned with cleaners containing oils or silicones, which would prevent good adhesion.

In case of any uncertainty, it is always preferable to carry out a prior adhesion test in order to confirm the compatibility of the surfaces.



PRE-PREPARATION OF SURFACES

It is necessary to ensure that the material to be coated is perfectly **clean, dry and degreased**, free of any non adherent elements, especially old paint in poor condition, deteriorated or poorly adhered, which must be removed, as well as grout on cement mortar or concrete substrates.

In general, sanding (dry sanding) or surface brushing (wire brush) with subsequent removal of dust and, if necessary, cleaning of grease or dirt will be sufficient.

Where surfaces are affected by organic **plant contaminants**, moulds, mosses, algae or lichens, **they shall be carefully removed** by appropriate mechanical or chemical means.

Surfaces to be coated may not be completely flat (rough, wavy, angled or notched surfaces). In these cases, the actual unfolded surface must be taken into account when calculating the performance of the products.

Small traces of residual moisture are acceptable, as the products to be applied are developed on a water basis.

ENVIRONMENTAL CONDITIONS NECESSARY FOR A GOOD APPLICATION

For the proper formation of the KliuCork® membrane , it is necessary that the environmental conditions are favourable:

- Ambient **temperatures between 5 and 40°C**.
- Relative air **humidity below 95%**.
- **Temperatures** of the surfaces to be protected **between 5 and 40°C**, being the **surface temperature always 3°C higher** than the dew point in the environment, in order to avoid condensation.
- The weather should be suitable, free of rain, frost or any kind of meteorological phenomenon. Applications in **windy** conditions should be **avoided**.

In order to obtain a **thorough hardening** of the applied coating, **15 days at 20°C and 65% RH** should be **allowed to elapse** from the date of the last application, even though 24 hours later the membrane can withstand light rain or light use.

In the case of watertight waterproofing, or walkable pavements, the 15 days must be scrupulously respected.





KliuCork®

CHARACTERISTICS	RESULTS	UNITS OF MEASUREMET	METHOD
Reaction to fire	Euroclase B-s1, d0	-	UNE-EN 13501-1
Ventilation / Breathability	75	%	Experimental method
Waterproof	100	%	Method Edward B. Grunau
Compressive strength	≥15	kPa	MSZ EN 826:1997
Thermal conductivity	0,048	λ (kcal/hm°C)	UNI 7745
Traction	20N/5	cm	UNE 53-112 (98)
Fibre cement / asbestos encapsulation	Suitable	-	UNI 10686 - 10
Elongation at break	11 to 33	%	UNE 53-112 (98)
Resistance to seawater immersion	Stable	-	7 days sea dive and sea fog
Accelerated ageing in salt spray chambers	5	years	UNE 104 242-1 (95)
Slip resistance	Class 3	-	UNE-ENV 12633-2003

KLIUCORK® SPRAYED CORK AND THE ENVIRONMENT

Projected cork is a sustainable option that benefits rural communities near cork oak forests. Cork harvesting does not damage the trees, is carried out every 9-12 years and promotes forest conservation. This generates stable employment in rural areas with few job opportunities. In addition, its thermal efficiency reduces energy consumption and its biodegradable and toxic-free nature helps to preserve the environment by not generating polluting waste.



TECHNICAL FEATURES

- Very good thermal improvement due to heat diffusivity both in facades and interiors.
- Good breathability, ideal for capillary damp and condensation.
- Total impermeabilidad.
- Excellent acoustic insulation capacity:
 - By transmission
 - By resonance
 - By impact
- High flexibility.
- Excellent weather, moisture and UV resistance.
- Anti-saltpetre solution.
- Very good adhesion on concrete, fibre cement, brick, slates, roof tiles, asphalt membrane, tiles, metal, PVC (*) and glass.

On other plastics, it is advisable to carry out adhesion tests beforehand.

STATUS AND PRESENTATION

- Thick, ready-to-use, water-based paste.
- Density, $\geq 820 \text{ Kg/m}^3$.
- Solids content, $35,5 \pm 1 \%$.
- Natural micro rough appearance.
- Choice of 40 shades of colour - *New colours available, depending on quantity.*
- Pleasant odour, not permanent.
- Handy 12 kg containers.

PREPARATION OF SURFACES TO BE PROTECTED

- **Surfaces to be coated shall be clean, firm and dry, free of dust, saltpetre or any other surface contaminants.**

The surface temperature shall be 3°C above the dew point, to avoid micro-condensation.

- **It can be applied directly without prior priming** on the materials, or on firm and sound paints or coatings, which do not need to be removed.



INSTRUCTIONS FOR USE

- Before application, the contents of the container must be thoroughly stirred with a low speed mechanical stirrer to homogenise the product.
DO NOT DILUTE!
- It is preferably applied with a spray gun. Trowel or wool roller can be used for touch-ups only.
- Ambient temperature of application, between 5°C and 40°C.
- The recommended thickness per coat is 1 mm, applying a total of 3 coats to achieve a final thickness of 3 mm.
- It is possible to improve the sound damping capacity by applying more layers, achieving a reduction of approximately -3 dB for every 2.5 kg/m² applied.
- Touch dry, 5 h., at 20°C.
- STotal drying time per layer 12-24 hours.
- Yield: ± 2.5 kg/m² (± 2.5 kg/m²).
- Cleaning of tools, with water only.

GENERAL PRECAUTIONS

Keep containers tightly closed after use. Do not dispose of waste down the drain.

The application must be carried out with abundant air supply or with ventilation systems prepared for this purpose, in order to favour a good drying.

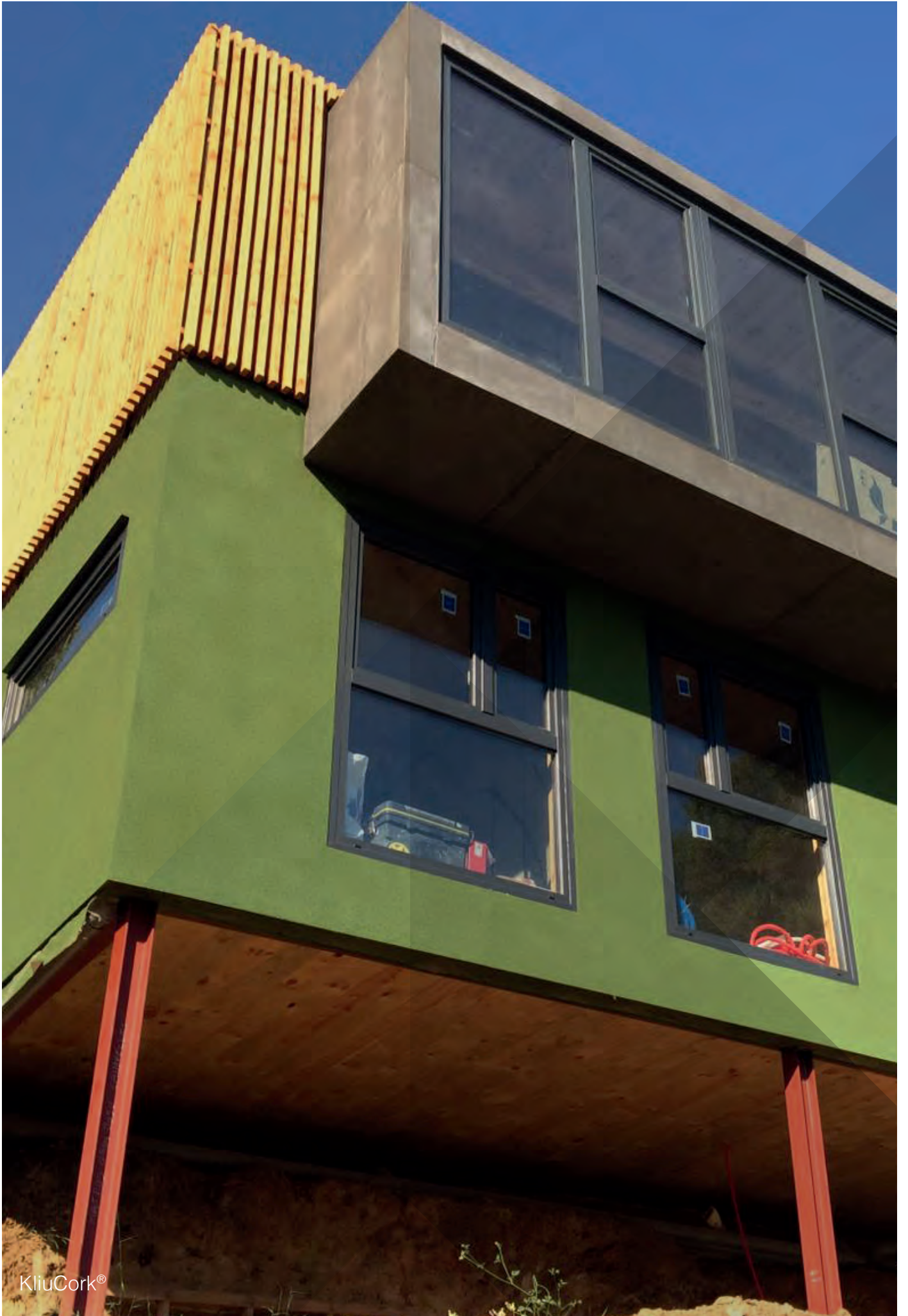
The usual personal protective equipment should be used to avoid ingestion, inhalation or prolonged skin contact. Normal fire precautions should be taken during application.

Storage stability: 8 months, in their original unopened containers, stored indoors at temperatures between 5 and 30°C, protected from sunlight and frost.

REMARKS

The guarantee of the quality of this product is given on the basis of our general conditions of sale and delivery. Our technical advice, verbal or written, is given in accordance with our current knowledge and experience, but should be taken into account as advice that does not engage our responsibility, nor dispense you from the need to check that the products we supply correspond to the required objectives by carrying out your own tests. The application, use and maintenance of the product is not carried out by Kliu Solutions, SL, and therefore we cannot be held responsible for applications and results different from those reported here. Our general safety advice does not release you from the obligation to determine your own measures, adapted to the conditions of your installations. We reserve the right to change the information contained herein without prior notice, depending on technological developments.



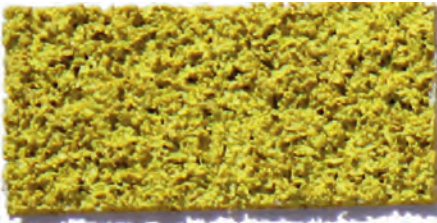




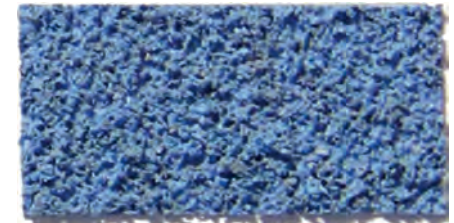
KC 01 Cream



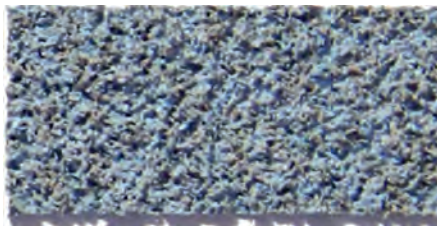
KC 02 Alvero



KC 03 Yellow



KC 04 Blue



KC 05 Light blue



KC 06 Beige



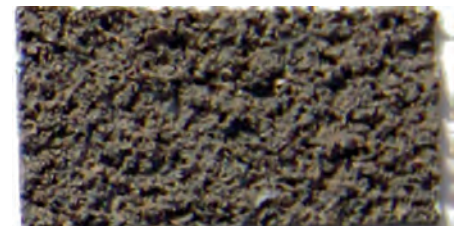
KC 07 Off-white*



KC 08 Corinto



KC 09 Light red



KC 10 Light grey



KC 11 Dark grey



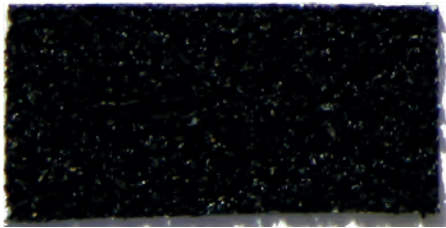
KC 12 Mustard



KC 13 Orange



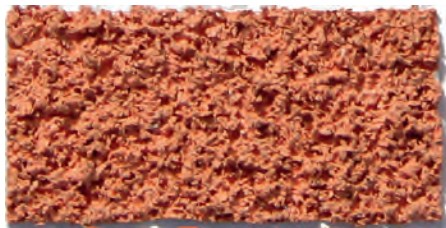
KC 14 Natural



KC 15 Black



KC 16 Pink



KC 17 Salmon



KC 18 Light green



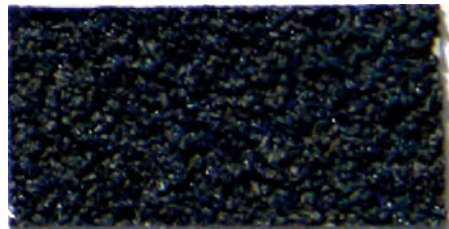
KC 19 Dark green



KC 20 Grass green



KC 21 Jalapeno



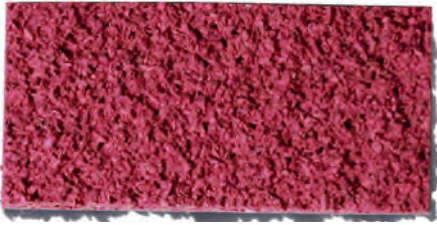
KC 22 Navy



KC 23 Dark Reed



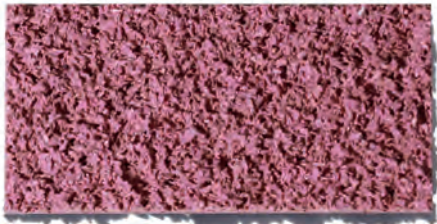
KC 24 Mokka



KC 25 Magenta*



KC 26 Violet*



KC 27 Pale pink*



KC 28 Amber*



KC 29 Cupra orange*



KC 30 Azul eléctrico*



KC 31 Caramelo*



KC 32 Bahia Blue*



KC 33 Bordeaux*



KC 34 Garnet*



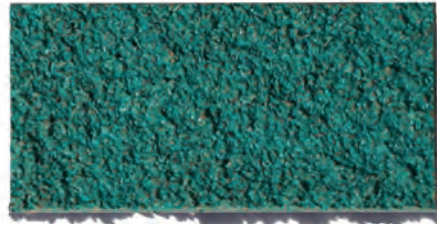
KC 35 Ruby red*



KC 36 Bright red*



KC 37 Lemon yellow*



KC 38 Turquoise**



KC 39 Pearl grey*



KC 40 Charcoal grey*



KC 41 Brown*



KC 42 Chocolate brown*

Notes: All colours marked with an * have an additional cost per kilogram due to the amount of pigments they contain.

Packaging made of a
98% recycled plastic.





KliuCork®

10
YEAR
WARRANTY

Material guarantee



Breathable
*Capillarity /
Condensation*



Waterproof
Facades / Flat roofs



Elastic
Joints / Movements



Thermal insulation
Breaking of thermal bridges



Ecological
Natural cork-based



Acoustic insulation
Damping / Absorption



Adhesive
No primer required

We have certificates from accredited laboratories that guarantee all the properties of KliuCork®.

WE ARE THE ONLY CERTIFIED MANUFACTURER.

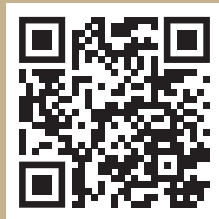
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