Revestimientos Técnicos Sopstenibles S.L.

DATA SHEET

REVECORK PROYECT PROFESIONAL

(Projected Cork)

DESCRIPTION

ReveCork Proyect Profesional is a climate **control** coating (interior energy savings), **thermal** (reduces heat or cold flow), **acoustic** (reduces airborne noise, impact noise, echo and reverberation), **elastic** (withstands contractions and dilations), **multi-stick** (adheres to all construction materials, including iron, galvanised steel or aluminium) and **ecological**, based on particles of natural vaporised cork, aerogel and UV, elastic, breathable and waterproof emulsions. (Withstands substrates rainwater, seawater or salt spray, and protections against the contamination produced by fungi, algae and bacteria).

ReveCork Proyect Profesional, may be applied using blasting machines (suitable for dense materials) or using a gravity spray gun and a continuous air compressor of not less than 3kg. (In these cases, it is recommended to use a specific spray gun).

Once applied, the result is a continuous and seamless substrate. On horizontal substrates, the result is a walkable, non-slip surface which is highly resistant to atmospheric agents.

ReveCork colour charts or **NCS** or **NOVA** chart are available upon request.

Ready-to-use product, for interior or exterior application.

Thermally recommended for medium cold climates and hot climates in light colours

TECHNICAL CHARACTERISTICS OF THE PRODUCT

- **Finish:** Matte texture
- **Density:** Between 0.7 y 0.8± 0.05 g/cm³. Depending on cork granulometry.
- **Application temperature:** Between 1ºC and 50ºC.
- **Yield:** 1.8 - 2 Kg./m².
- **Available granulometries:**
    - **Fine particle:** 0.2-0.5 mm.
    - **Average particle:** 0.5-1 mm.
    - **Coarse particle:** 1-2 mm.
- **Dilution and preparation:** 5-10% dilution water and stir mechanically 3-4 minutes.
- **Waterproofing works:** It is only recommended to use the fine particle.

TECHNICAL CHARACTERISTICS OF THE PRODUCT

- **Pot life:** After the water has been added, 7 days.
- **Dry to touch:** approximately 180 minutes for temperatures between 18-20ºC (depending on layer thickness).
- **Total drying:** From 72 to 96 hours for substrates with absorption.
- **Application nozzles according to particle:**
    - **Fine particle F/P:** Use a 4.5 mm nozzle.
    - **Medium particle P/M:** Use a 5 mm nozzle.
    - **Coarse particle C/P:** Use a 6 mm nozzle.

TECHNICAL CHARACTERISTICS

- **Temperature resistance:** -20º to 300ºC.
- **Thermal conductivity coefficient of natural cork**: 0.036 W/m K
- **Specific heat:** 1880 KJ/Kg*K
- **Thermodynamic solar opening or absorption:** 0.22
- **Lambda equivalent:** 0.0021 W/m k
- **Thermal resistance:** 0.952 m²k/W
- **Surface temperatures under radiation as per UNE-EN ISO 12543-4: 2011 (fibre-cement sheeting) Standard**
    - -4.4 Degrees (Each degree is equivalent to 6% energy savings)
- **Reaction to fire as per UNE-EN ISO 11925-2: 2011/UNE EN 13823: 2012 Standard:** B-S1.d0 Fire-retardant.
- **Marine environment and saline resistant:** UNE-EN ISO 9227:2006 Standard compliant.
- **Accelerated ageing UNE-EN 11507 Standard:** Type 1, very slight change, barely noticeable.
- **Impact and shock resistant:** resistant, without breakage.
- **Weighted sound absorption coefficient, as per UN ISO 3542.2004 Standard:** aw = 0.10
- **Direct traction adhesion as per UNE-EN 1542: 2000 Standard**
    - Average 1.12 N/mm²
- **Liquid water permeability as per UNE-EN 1062-3: 2008 Standard:**
    - $6.54 \cdot 10^{-3}$ kg//m².h$^{0.5}$

TECHNICAL CHARACTERISTICS

- **Water vapour transmission as per UNE-EN ISO 7783: 2012: Standard:**
  - 23.5458 V(g/m²x day) and 0.88 S_D(m)
- **Carbon dioxide permeability as per UNE-EN 1062-6: 2003 (Anticarbonation) Standard**
  - S_D (m)=178±4
- **Volatile organic compounds:** Classification Group A, as per Directive 2004/42/EC, maximum VOC content 30g/l.
- **CO^2 fixation:** 9.15 kg. CO^2/m^2
- **Anti-condensation system:** product which eliminates the thermal bridge by increasing the substrate temperature, preventing condensation.
- **Anti-saltpetre system:** Retains and prevents the occurrence of saltpetre in substrates.

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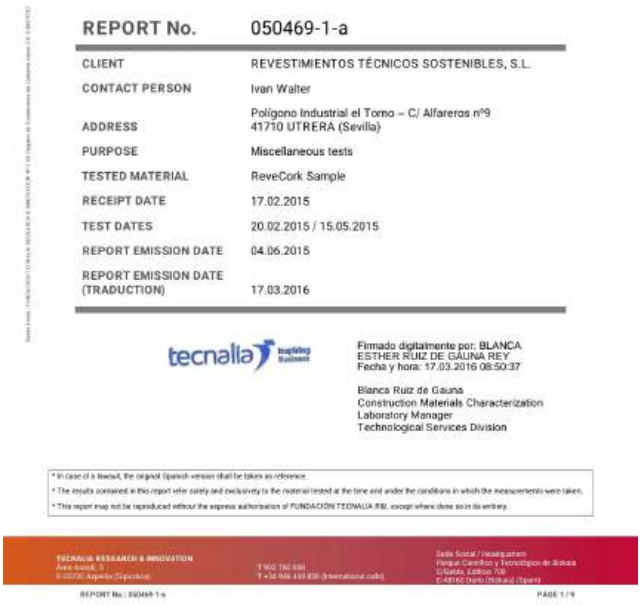

REPORT No.	050469-1-a
CLIENT	REVESTIMIENTOS TÉCNICOS SOSTENIBLES, S.L.
CONTACT PERSON	Ivan Walter
ADDRESS	Polígono Industrial el Torno – C/ Alfareros nº9 41710 UTRERA (Sevilla)
PURPOSE	Miscellaneous tests
TESTED MATERIAL	ReveCork Sample
RECEIPT DATE	17.02.2015
TEST DATES	20.02.2015 / 15.05.2015
REPORT EMISSION DATE	04.06.2015
REPORT EMISSION DATE (TRADUCTION)	17.03.2016

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Fecha y hora: 17.03.2016 08:50:37

Blanca Ruiz de Gauna
Construction Materials Characterization
Laboratory Manager
Technological Services Division

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* The results contained in this report refer solely and exclusively to the material tested at the time and under the conditions in which the measurements were taken.
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TECNALIA RESEARCH & INNOVATION
Parque Científico y Tecnológico de Bizkaia
Edificio 700

REPORT No.: 050469-1-a PAGE 1/9

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4. RESULTS

- **Determination and classification of the water-vapour transmission rate (permeability) according to UNE-EN ISO 7783:2012**

The results obtained are shown in the following table:

Table I

Reference	Measurement	Water vapour transmission rate V (g/m^2 x day)	Thickness of equivalent air layer s_D (m)	Specification according to UNE-EN 1504-2:2005
ReveCork	1	26.2531	0.78	Class I: s_D<5 m (permeable to water vapour)
	2	20.84845	0.98	
	3	23.5360	0.87	
	Average	23.5458	0.88	
	Standard deviation	2.7023	0.10	

- **Determination of liquid water permeability according to UNE-EN 1062-3:2008**

The results obtained are shown in the following table:

Table II

Reference	Test specimen	w $kg/(m^2.h^{0,5})$	Specification according to UNE-EN 1504-2:2005
ReveCork	1	$7.07 \cdot 10^{-3}$	$w < 0.1\ Kg/m^2 . h^{0,5}$
	2	$6.28 \cdot 10^{-3}$	
	3	$6.28 \cdot 10^{-3}$	
	Average	$6.54 \cdot 10^{-3}$	
	Standard deviation	$4.56 \cdot 10^{-4}$	

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- **Measurement of bond strength by pull-off according to UNE-EN 1542:2000**

The results obtained are shown in the following table:

Table III

Reference	Measurement	σ (N/mm^2)	Breakage type	Specification according to UNE-EN 1504-2:2005
ReveCork	1	1.05	100% A	Rigid Systems ≥1.0 (0.7)^b N/mm^2. (Without traffic loads) and: ≥2.0 (1.5)^b N/mm^2 (With traffic loads) Flexible Systems: ≥0.8 (0.5)^b N/mm^2(Without traffic loads) and ≥1.5(1.0)^b N/mm^2 (With traffic loads)
	2	0.96	100% A	
	3	1.36	100% A	
	Average	1.12		
	Standard deviation	0.21		

^{b}: The value in brackets is the lowest accepted value in any reading.
A: Cohesive breakage of the coating.

- **Determination of carbon dioxide permeability according to UNE-EN 1062-6:2003**

The results obtained are shown in the following table:

Table IV

Reference	Result	Specification according to UNE-EN 1504-2:2005
ReveCork	i (g/m^{2}d) = 1.3845 ± 0.0195 S_D (m) = 178 ± 4 $\mu = 2.87 \cdot 10^5 \pm 0.07 \cdot 10^5$	S_D>50 m

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REPORT No.	050469-1-a
CUSTOMER	REVESTIMIENTOS TECNICOS SOSTENIBLES, S.L.
CONTACT PERSON	IVÁN WALTER
ADDRESS	POL. INDUSTRIAL EL TORNO C/ ALFAREROS 9 41710 UTRERA (SEVILLA)
PURPOSE	MEASUREMENT OF SURFACE AND AMBIENT TEMPERATURES UNDER RADIATION
TESTED SAMPLE	WHITE COATING REF. «ReveCork»
DATE OF RECEIPT	17.02.2015
TEST DATES	08.04.2015
DATE OF ISSUE	12.05.2015
DATE OF TRANSLATION	10.03.2016

Firmado digitalmente por: SUSANA SANTAMARIA FERNANDEZ
Fecha y hora: 10.03.2016 16:54:20

Susana Santamaría
Technical Manager
Construction - Services

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REPORT No.: 050469-1-a

PAGE 1 / 11

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SAMPLE CHARACTERISTICS

On 17 February 2015 TECNALIA received from the REVESTIMIENTOS TECNICOS SOSTENIBLES S.L. two tile-shaped fibre cement test specimens measuring (500 x 250) mm, one without coating and the other with white coating referenced as:

«ReveCork»

According to information provided by the customer, the performance of the reference test item **«ReveCork»** was 880 g/m2.

The product technical data sheet provided by the manufacturer is included in the Annex.

TEST REQUESTED

The test requested was for the **comparative analysis** of the **surface temperature** of the unexposed side to the radiation of two pieces of fibre cement, one without coating and the other with white coating when subjected to simulated solar radiation.

TEST CONDUCTED

The two fibre cement panels were placed on a vertical frame.

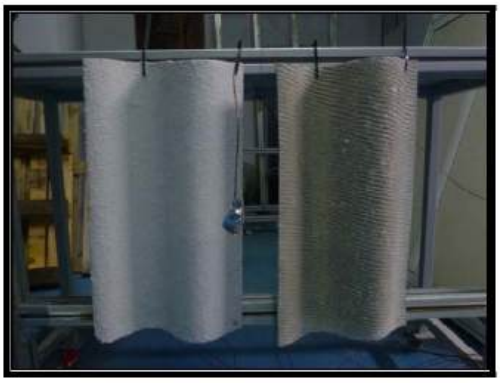

Figure 1: Photograph of the layout of the test specimens

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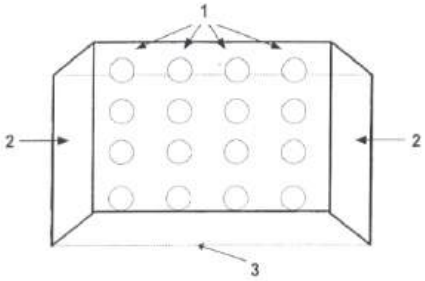
The test specimens were exposed to the radiation of a 16 lamp ULTRAVITALUX panel laid out as shown in Annex A of Standard UNE-EN ISO 12543-4:2011. The lampheads are framed using two aluminium leafs around the mirror surface.



1- Lamps
2- Aluminium leaf
3- Samples

Figure. 2: Photograph of the simulated solar radiation lamps

With this arrangement of lamps the radiation onto a surface perpendicular to the latter, at a distance of 1,100 mm, is (900±100) W/m^2. This radiation has affected the outer side of the test specimens.

Surface temperatures are recorded on the unexposed side and ambient temperatures over a one hour period, once the steady state has been achieved.

RESULTS

The following graph shows the evolution of temperatures during the test, from the heating of the test specimens to their cooling, once the radiation source has been switched off.

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The vertical axis of the graph corresponds to the switching off of the radiation source.

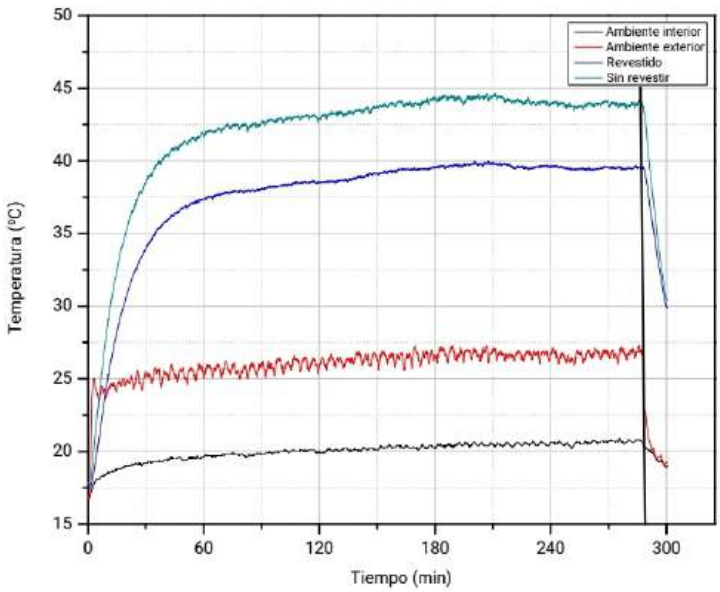

Figure. 3: Graph showing the evolution of temperatures throughout the test

The following table lists the average ambient temperature of the unexposed area (interior) and in the exposed area (exterior) over a one hour period once the steady state has been achieved.

	Inner area	Outer area
Ambient temperature (ºC)	20.6	26.6
Standard deviation (ºC)	0.1	0.3

Table 1: Ambient temperatures

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Table 2 lists the average surface temperatures on the unexposed side in the test specimens during the same period.

Reference	Surface temperature (°C)	Standard deviation (°C)
Without coating	43.9	0.1
«ReveCork»	39.5	0.1

Table 2. Results of surface temperature on the unexposed side.

CONCLUSIONS

Once the steady state has been achieved the temperature of the unexposed side of the test specimen referenced as **«ReveCork»** was 4.4 °C lower than the temperature of the uncoated test specimen.

Revestimientos Tecnicos Sostenibles S.L.
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EUSKO JAURLARITZA GOBIERNO VASCO

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Etxebizitza Saileburuordetza
Etxebizitza Zuzendaritza

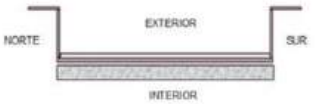
DEPARTAMENTO DE MEDIO AMBIENTE, PLANIFICACION TERRITORIAL Y VIVIENDA
Viceconsejería de Vivienda
Dirección de Vivienda

Universidad del País Vasco Euskal Herriko Unibertsitatea

7. RESULTADOS.

Cliente: Revestimientos Técnicos Sostenibles S.L.

Descripción de la muestra:
Revestimiento a base de partículas de corcho natural y emulsiones elásticas, ReveCorck®, aplicado sobre una cubierta plana en sucesivas capas hasta obtener un espesor medio de producto de 3 mm.



1 – Losa de hormigón armado de 10 cm de espesor medio
2 – Tela asfáltica de ≈0,5 cm de espesor + pintura blanca
3 – Revestimiento elástico Revecork de 3 mm de espesor medio

Con los datos obtenidos el valor de la conductividad y absorción solar son los siguientes:

	Revestimiento ReveCorck
Conductividad Térmica W/(m.k)	0,051 ± 0,02
Apertura o absorción solar [-]	0,22 ± 0,02

* La incertidumbre de las medidas se encuentra dentro del rango fijado por la normativa del ensayo PASLINK.

EUSKAL HERRIKO UNIBERTSITATEA
MAKINA ETA MOTOR TERMIKOAK SAILA
UNIVERSIDAD DEL PAIS VASCO
DEPARTAMENTO DE MAQUINAS Y MOTORES TERMICOS

En Vitoria-Gasteiz,
a 23 de mayo de 2018

César Escudero
Técnico de ensayos

Iván Flores
Director Técnico

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GARANTÍA CÁMARA

CERTIFICACIÓN
CO2-compensación

DESCRIPCIÓN

La huella de carbono permite cuantificar las emisiones de gases de efecto invernadero que son liberados a la atmósfera como consecuencia de una actividad determinada, bien sea la actividad necesaria para la fabricación de un producto, para la prestación de un servicio, o para el funcionamiento de una organización.

Aportar proyectos que fomenten la reducción de gases de efecto invernadero es uno de los objetivos que GARANTÍA CÁMARA desea trasladar al tejido empresarial, por lo que ha elaborado el REFERENCIAL CO2-mpensación®, con la pretensión de que sea incorporado en los planes estratégicos de las organizaciones para garantizar la ejecución de acciones de reducción y compensación de emisiones de CO2.

Esta cuantificación permite ser conscientes del impacto que genera la actividad empresarial en el calentamiento global, convirtiendo de esta manera la huella de carbono en una herramienta de sensibilización de gran valor.

Este referencial se alinea con el conjunto de actuaciones que la Unión Europea lleva a cabo para garantizar la sostenibilidad del mundo global en el que la sociedad actual se encuentra inmersa.

BENEFICIOS PARA SU EMPRESA

Es crucial por otro lado, entender la huella de carbono no sólo como un mero elemento de cálculo, sino como un primer paso en el camino de la mejora y el compromiso de reducción de emisiones de gases de efecto invernadero. En ello reside, sin duda, su gran contribución a la lucha contra el cambio climático.

Establecer planes de acción que favorezcan las 3 erres de la sostenibilidad (Reducir, Reutilizar y Reciclar).

Puede incorporarse como prueba del cumplimiento de los objetivos establecidos en la Responsabilidad Social Corporativa del organismo público o privado.

Hoy en día, ya se perfila como un elemento diferenciador de las organizaciones que deciden comprometerse con el medio ambiente y apuestan por el desarrollo de una actividad sostenible.
Definir estrategias que mantengan (o mejoren) los valores obtenidos en dicha evaluación.
Finalmente, permite comunicar ante la opinión pública, el compromiso con la cultura de la Sostenibilidad del Medio Ambiente.

For each degree of temperature that it is insulated, this is equivalent to a 6% energy savings

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Medi Acústic. Ingeniería en Acústica, Ruido y Vibraciones

MEDIACUSTIC

INFORME DE ENSAYO Test Report

NÚMERO *Number*	**ME-190021-01**	FECHA DE EMISIÓN *Date of Issue*	**06/08/2019**
ENSAYO *Test*	**MEDICIÓN DE LA ABSORCIÓ ACÚSTICA SEGÚN CRITERIOS DE LA UNE-EN ISO-354:2004 MEDIANTE UNA ALPHA CABIN** Sound absorption measurement according to UNE-EN ISO-350:2004 using an Alpha Cabin		
SOLICITANTE *Applicant*	**CARLES CANAL**		
REFERENCIA *Reference*	ReveCork sobre plancha metálica		
DESCRIPCIÓN *Description*	**Medición: ReveCork sobre plancha metálica**		

ESPECIFICACIONES TÉCNICAS *Technical specifications:*

VOLUMEN ALPHA CABIN *Volume*	**1,26**	**m3**
SUPERFICIE TOTAL ALPHA CABIN *Total Surface:*	**7,11**	**m2**
SUPERFICIE DE LA MUESTRA *Sample surface area:*	**0,25**	**m2**
RANGO FRECUENCIAL *Frequency range:*	**400 -5.000**	**Hz**
Nº DE MEDICIONES *Nº mesurements*	**16, con 8 posiciones de micrófono distintas**	
NORMA DE REFERENCIA *Standards:*	**UNE-EN ISO-354**	

MUESTRAS DE ENSAYO *Test Specimen*

DIMENSIONES GENERALES *General dimensions*	**500x500**	**mm**
MATERIAL BASE *Raw material*	**ReveCork sobre plancha metálica**	
PLENUM *Plenum*		
DESCRIPCIÓN *Description*	**ReveCork sobre plancha metálica**	

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Medi Acústic. Ingeniería en Acústica, Ruido y Vibraciones

MEDIACUSTIC

ENSAYO
Measurement

FOTO MUESTRA
Sample's picture

RESULTADOS
Results

Coeficiente de absorción acústica práctico, αp

Freq. (HZ)	αp
125	-
250	0,02
500	0,03
1000	0,06
2000	0,10
4000	0,13

Coeficiente de absorción sonora ponderado, αw = 0,10 *Sound absorption coeficient , αw*	**Clase de absorción: -** *Absorption class*

Los resultados del presente ensayo se refieren exclusivamente a las mediciones realizadas con la muestra, producto o material entregado a Medi Acústic el día señalado y medido en las condiciones indicadas en este documento.

The result of this test only refers to the object tested.

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PACKAGING AND YIELD

ReveCork Proyect Profesional, is available in 12 kg drums. For colours and 11 kg. in natural. With approximate consumption as per application, 6-7 m² per drum.

APPLICATIONS

ReveCork Proyect Profesional, is a cork-based coating, with unprecedented properties for vertical facings, (thermal insulation, acoustic insulation, anti-condensation, saltpetre protection...) due to the natural chemical composition of cork.

The cork is composed of dead cells, whose interior becomes filled with a gas similar to air, this gas constitutes approximately 90% of the cork, hence, its minimal weight and compression. The walls of these cells, which are like tiny watertight compartments, are mainly composed of suberin and cerin, substances which make it fireproof, very flexible and virtually rot-proof.

Modern technology has not been able to match or surpass it

As a result of all this, **ReveCork Proyect Profesional** may be used in a wide variety of applications such as:

- Thermal and acoustic insulation in the external casing.
- Prevents micro cracks in façades. As it is an elastic coating, it can withstand the dilations and contractions of the substrate.
- Sealing of small and medium size cracks.
- Protection from saltpetre, salt spray and sea breeze when applied on new substrates.
- In substrates contaminated by saltpetre, the substrates are stabilised and does not progress further.
- Eliminate moisture condensation.
- Metal structures rust protection.
- Beam and column coatings.
- Refurbishment and decoration of façades.
- Thermal insulation of industrial tanks, to prevent temperature losses

If in doubt, please contact our technical department

DIRECTIONS FOR USE

SURFACE PREPARATION

- On new substrates or painted substrates in good condition and state of repair, the surfaces must be cleaned or the facings blasted to eliminate any dust residue, contamination or other anomaly. Only if the facings are made from concrete, these will have to be set using a fine particle acrylic fixative, type **FIXATIVE-100**.

  If there are cracks of chipping pathologies, these must be sealed using an exterior putty, called **ReveCork Exterior Thermal Putty.**

  Once the substrate has been repaired, the **ReveCork Proyect Profesional** will be applied, until the necessary thickness is obtained for each pathology.

- In defective or very damaged substrates, the substrate must be blasted with pressurised water (150 bar), and once dry it will be repaired using R2 or R4 structural mortars (for thicknesses of more than 5mm), **ReveCork C/G Mortar** (for 3-6mm applications).

  Once the substrate has been repaired, a solvent-based fixative type **FIXATIVE-250** will be applied**.**

  Then, the **ReveCork Proyect Profesional** will be applied, until the necessary thickness is obtained for the pathologies to be sealed.

In both cases, drying times must be adhered to

WARRANTY

ReveCork Proyect Profesional has a 10-year warranty depending on the substrate and geographic location.

The **ReveCork Proyect Profesional** warranty only applies to the product, in order to request a product warranty it shall be necessary to apply for a work requirement or refurbishment in situ and always accompanied by the application company and the proprietor

PRECAUTIONS

ReveCork Proyect Profesional must not be stored for longer than 1 year, provided that it has been correctly handled, avoiding direct exposure to sun, frost, humidity …

Empty containers must be deposited at clean points or those prepared for waste. European environmental regulations must be complied with.