



## REVECORK MULTI-SURFACE

### DESCRIPTION

**ReveCork Multi-Surface**, is a multi-stick membrane, specifically designed to address waterproofing issues on the different substrates or facings which may be found on roofing. As **ReveCork Multi-Surface** is also a thermal membrane, it prevents in fairly high percentages, the contractions and dilations of the product, therefore, benefiting from delayed ageing and retaining its properties for longer. Product suitable for the industrial sector.

**ReveCork Multi-Surface** is manufactured from particles of natural vaporised cork, titanium, acrylic emulsions, P.U. waterproof and elastic resins (500%), withstands rainwater, seawater or salt spray.

It may be applied using a brush, roller or airless spray gun. Once applied, the result is a continuous and seamless substrate, simultaneously having a walkable, non-slip surface and highly resistant to atmospheric agents. (For other applications, please consult the technical department)

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

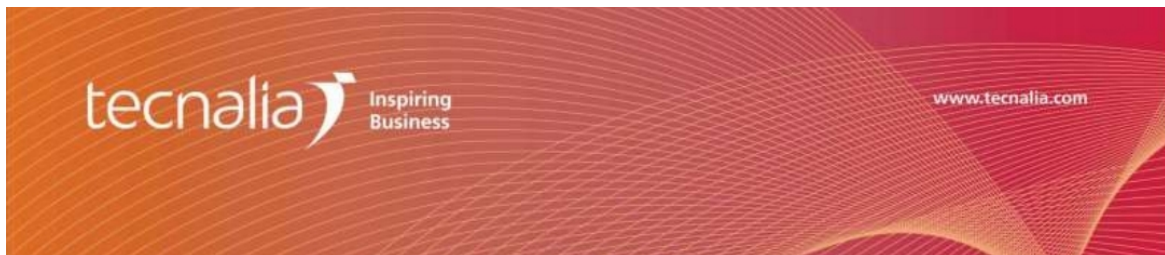
Thermally recommended for medium-high cold climates and hot climates in light colours

### TECHNICAL CHARACTERISTICS OF THE PRODUCT

- **Finish:** Matte texture (such as stippled finish or a finely chopped).
- **Density:**  $0.933 \pm 0.05 \text{ g/cm}^3$ . For colours the density may vary according to colour.
- **Application temperature:** Between  $1^{\circ}\text{C}$  and  $50^{\circ}\text{C}$ .
- **Yield:** From  $0.85 \text{ Kg./m}^2$ .
- **Cork granulometry:** 0.2-0.5 mm.
- **Dilution and preparation:** 5-10% dilution water and stir mechanically 3-4 minutes.
- **Pot life:** After the water has been added, 7 days.
- **Dry to touch:** approximately 180 minutes for temperatures between  $18\text{-}20^{\circ}\text{C}$  (depending on layer thickness).
- **Total drying:** From 72 to 96 hours for substrates with absorption.
- **Methods of application:**
  - **Airless spray gun:** Use conduit nozzle 431 onwards (remove filters from the machine and spray gun).
  - **Manual:** 2 or 3 pore foam roller or brush

## TECHNICAL CHARACTERISTICS

- **Temperature resistance:** -20° to 200°C.
- **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 m<sup>2</sup>k/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:**  $a_w = 0.10$
- **Direct traction adhesion as per UNE-EN 1542: 2000 Standard**
  - Average 1.12 N/mm<sup>2</sup>
- **Liquid water permeability as per UNE-EN 1062-3: 2008 Standard:**
  - $6.54 \cdot 10^{-3} \text{ kg//m}^2 \cdot \text{h}^{0.5}$
- **Water vapour transmission as per UNE-EN ISO 7783: 2012 Standard:**
  - 23.5458 V(g/m<sup>2</sup>x day) and 0.88 S<sub>D</sub>(m)
- **Carbon dioxide permeability as per UNE-EN 1062-6: 2003 (Anticarbonation) Standard:**
  - S<sub>D</sub>(m)=178±4
- **Ecological and sustainable:** Low VOC content, 60 kg./m<sup>2</sup> of CO<sup>2</sup> fixation
- **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.
- **Waterproof:** 100% waterproof and watertight product.
- **Traversability:** Walkable and semi-transversable.

**CERTIFICATES**

Razón Social / FUNDACIÓN TECNALIA RESEARCH &amp; INNOVATION Nº F-49 Registro de Fundaciones del Gobierno Vasco CIF: G48975767

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



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

- \* In case of a lawsuit, the original Spanish version shall be taken as reference.
- \* 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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**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 <sup>2</sup> x day)	Thickness of equivalent air layer s <sub>D</sub> (m)	Specification according to UNE-EN 1504-2:2005
ReveCork	1	26.2531	0.78	Class I: s <sub>D</sub> < 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 <sup>2</sup> .h <sup>0,5</sup> )	Specification according to UNE-EN 1504-2:2005
ReveCork	1	7.07 · 10 <sup>-3</sup>	w < 0.1 Kg/m <sup>2</sup> · h <sup>0,5</sup>
	2	6.28 · 10 <sup>-3</sup>	
	3	6.28 · 10 <sup>-3</sup>	
	Average	6.54 · 10 <sup>-3</sup>	
	Standard deviation	4.56 · 10 <sup>-4</sup>	

◆ **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	$\sigma$ (N/mm <sup>2</sup> )	Breakage type	Specification according to UNE-EN 1504-2:2005
ReveCork	1	1.05	100% A	Rigid Systems $\geq 1.0$ (0.7) <sup>b</sup> N/mm <sup>2</sup> . (Without traffic loads) and: $\geq 2.0$ (1.5) <sup>b</sup> N/mm <sup>2</sup> (With traffic loads)
	2	0.96	100% A	
	3	1.36	100% A	
	Average	1.12		Flexible Systems: $\geq 0.8$ (0.5) <sup>b</sup> N/mm <sup>2</sup> (Without traffic loads) and $\geq 1.5$ (1.0) <sup>b</sup> N/mm <sup>2</sup> (With traffic loads)
	Standard deviation	0.21		

<sup>b</sup>: 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 <sup>2</sup> d) = $1.3845 \pm 0.0195$ $S_D$ (m) = $178 \pm 4$ $\mu$ = $2.87 \cdot 10^5 \pm 0.07 \cdot 10^5$	$S_D > 50$ m

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

Base Social / FUNDACIÓN TECNALIA RESEARCH &amp; INNOVATION N.º P-49 Registro de Producción del Gobierno Vasco CTF 64875707

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Susana Santamaría  
Technical Manager  
Construction - Services

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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/m<sup>2</sup>.

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.

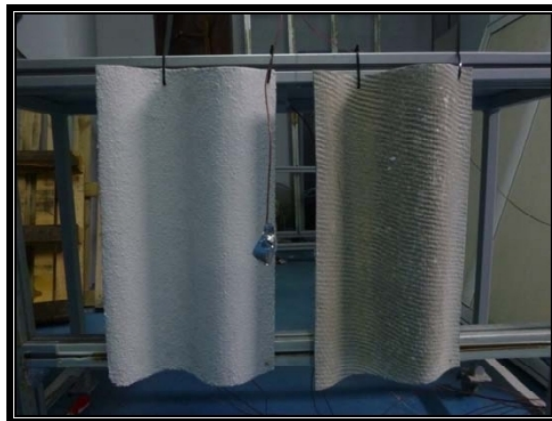


Figure 1: Photograph of the layout of the test specimens

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 leaves around the mirror surface.

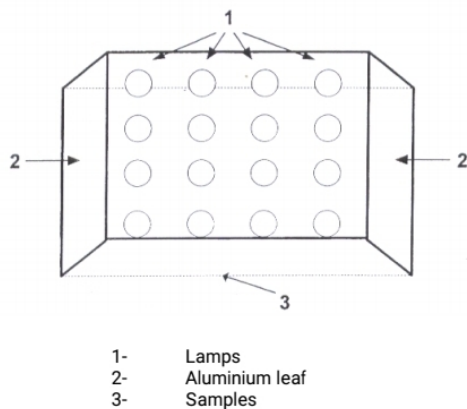


Figure. 2: Photograph of the simulated solar radiation lamps

With this arrangement of lamps the radiation onto a surface perpendicular to the latter, at a distance of 1,100 mm, is  $(900 \pm 100)$  W/m<sup>2</sup>. 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.



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

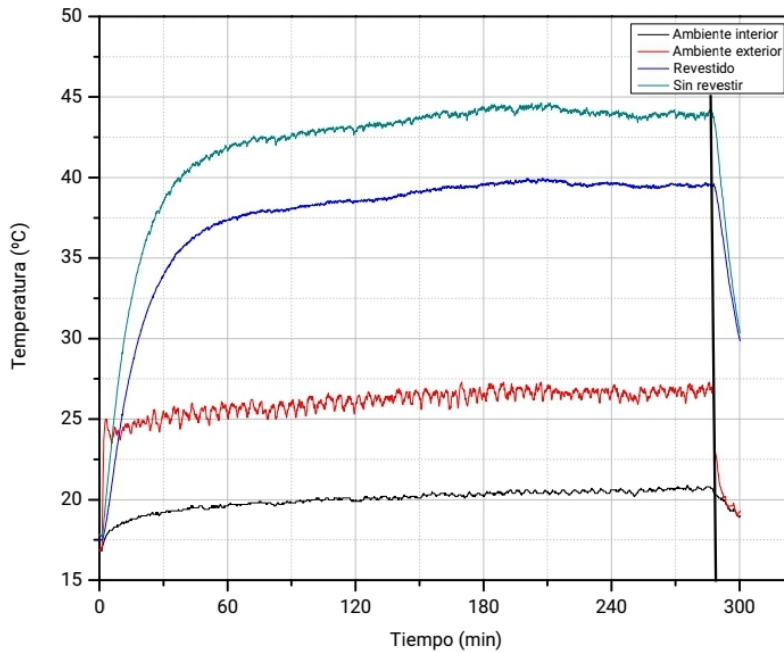


Figure 3: Graph showing the evolution of temperatures throughout the test

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 (°C)	20.6	26.6
Standard deviation (°C)	0.1	0.3

Table 1: Ambient temperatures

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.

**CERTIFICATES**

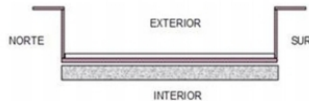
<p><b>EUSKO JAURLARITZA</b> INGURUMEN, LURRALDE PLAINGINTZA ETA ETXEBIZITZA SAILA Etxebizitza Saiburordetza Etxebizitza Zuzendaritza</p>	<p><b>GOBIERNO VASCO</b> DEPARTAMENTO DE MEDIOAMBIENTE, PLANIFICACIÓN TERRITORIAL Y VIVIENDA Viceconsejería de Vivienda Dirección de Vivienda</p>	<p>emeri la eabai eku <b>Universidad del País Vasco</b> Euskal Herriko Unibertsitatea</p>
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**7. RESULTADOS.**

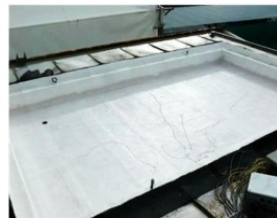
**Ciente:** Revestimientos Técnicos Sostenibles S.L.

**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:

	<b>Revestimiento ReveCorck</b>
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.

<p>César Escudero Técnico de ensayos</p>	<p>EUSKAL HERRIKO UNIBERTSITATEA MAKINA-ETA MOTOR TERMIKOAK SAILA UNIVERSIDAD DEL PAIS VASCO DEPARTAMENTO DE MAQUINAS Y MOTORES TERMICOS</p>	<p>Iván Flores Director Técnico</p>
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En Vitoria-Gasteiz,  
a 23 de mayo de 2018

El presente Informe no debe reproducirse total o parcialmente sin la aprobación por escrito del Laboratorio.



## CERTIFICATES



### 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**

**CERTIFICATES**

Medi Acústic. Ingeniería en Acústica, Ruido y Vibraciones

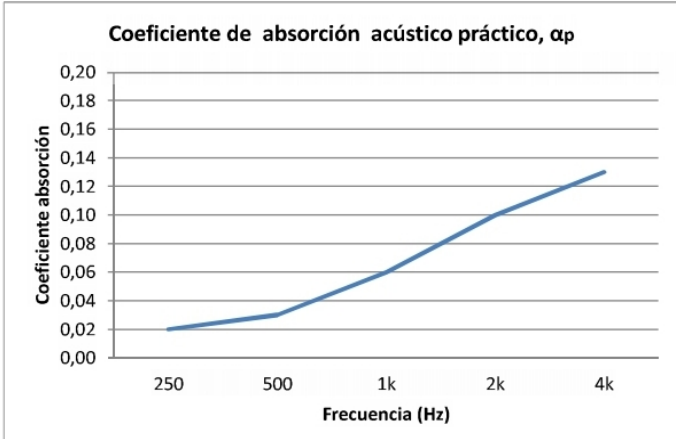


**INFORME DE ENSAYO** Test Report

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

ESPECIFICACIONES TÉCNICAS <i>Technical specifications:</i>	VOLUMEN ALPHA CABIN <i>Volume</i>	<b>1,26</b>	<b>m3</b>
	SUPERFICIE TOTAL ALPHA CABIN <i>Total Surface:</i>	<b>7,11</b>	<b>m2</b>
	SUPERFICIE DE LA MUESTRA <i>Sample surface area:</i>	<b>0,25</b>	<b>m2</b>
	RANGO FRECUENCIAL <i>Frequency range:</i>	<b>400 -5.000</b>	<b>Hz</b>
	Nº DE MEDICIONES <i>Nº measurements</i>	<b>16, con 8 posiciones de micrófono distintas</b>	
	NORMA DE REFERENCIA <i>Standards:</i>	<b>UNE-EN ISO-354</b>	
	MUESTRAS DE ENSAYO <i>Test Specimen</i>	DIMENSIONES GENERALES <i>General dimensions</i>	<b>500x500</b>
MATERIAL BASE <i>Raw material</i>		<b>ReveCork sobre plancha metálica</b>	
PLENUM <i>Plenum</i>			
DESCRIPCIÓN <i>Description</i>		<b>ReveCork sobre plancha metálica</b>	

<b>ENSAYO</b> <i>Measurement</i>	<b>FOTO MUESTRA</b> <i>Sample's picture</i>
	

<b>RESULTADOS</b> <i>Results</i>	<p style="text-align: center;"><b>Coefficiente de absorción acústico práctico, <math>\alpha_p</math></b></p> 	<p style="text-align: center;"><b>Coefficiente de absorción acústica práctico, <math>\alpha_p</math></b></p> <table border="1"> <thead> <tr> <th>Freq. (HZ)</th> <th><math>\alpha_p</math></th> </tr> </thead> <tbody> <tr> <td>125</td> <td>-</td> </tr> <tr> <td>250</td> <td>0,02</td> </tr> <tr> <td>500</td> <td>0,03</td> </tr> <tr> <td>1000</td> <td>0,06</td> </tr> <tr> <td>2000</td> <td>0,10</td> </tr> <tr> <td>4000</td> <td>0,13</td> </tr> </tbody> </table>	Freq. (HZ)	$\alpha_p$	125	-	250	0,02	500	0,03	1000	0,06	2000	0,10	4000	0,13
Freq. (HZ)	$\alpha_p$															
125	-															
250	0,02															
500	0,03															
1000	0,06															
2000	0,10															
4000	0,13															

<b>Coefficiente de absorción sonora ponderado, <math>\alpha_w</math> =</b> <b>0,10</b> <i>Sound absorption coefficient, <math>\alpha_w</math></i>	<b>Clase de absorción:</b> - <i>Absorption class</i>
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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.*





## PACKAGING AND YIELD

**ReveCork Multi-Surface** is available in 15l. (14kg) and 4l. (3.8 kg.) packs. With approximate yields according to application:

- **Thermal insulation metallic cladding:** 0.85 kg./m<sup>2</sup>
- **Thermal insulation on Fibre Cement (Uralite):** 1.5 kg./m<sup>2</sup>
- **Thermal waterproofing on stoneware and concrete flooring:** 1.5-1.8 kg./m<sup>2</sup>
- **Thermal insulation in industry:** 1-2 kg./m<sup>2</sup> (depending on the substrate and pathology)

## APPLICATIONS

**ReveCork Multi-Surface**, is a waterproof, multi-stick cork-based membrane, with unprecedented properties for horizontal surfaces, (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**

**ReveCork Multi-Surface** may be used in a wide variety of applications such as:

- Thermal waterproofing of roofs, terraces, roof tops ...
- Anti-condensation thermal insulation, for pipes, boilers, furnaces, tanks ...
- Metal-asphalt sheet bonding
- Synthetic metal sheet bonding
- Metal-polycarbonate/methacrylate bonding
- Metal-metal bonding



## APPLICATIONS

- Sealing of screws and fixtures
- High durability
- Prevents micro cracks in covers. As it is an elastic coating, it can withstand the dilations and contractions of the substrate
- Metal structures rust protection
- Sealing of small and medium size cracks

**If in doubt, please contact our technical department**

## DIRECTIONS FOR USE

### SURFACE PREPARATION

The facings must be cleaned or 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**. For synthetic, methacrylate, polycarbonate or thermoplastic substrates in general, a non-residual primer called **Fixative P.U.** for metal substrates, a primer called **Fixative 250** will be used. On substrates where there is rust, a passivator or an oxide converter will have to be applied before applying the **ReveCork Multi-Surface**

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

## WARRANTY

**ReveCork Multi-Surface** has a 10-year warranty depending on substrate and geographic location.

The **ReveCork Multi-Surface** 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 Multi-Surface** 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.