

AcoustiCORK®
by Amorim

BUILDING COMFORT WITH SUSTAINABILITY

FLOORING SOLUTIONS

AMORIM CORK COMPOSITES



CORK, AN EXCEPTIONAL RAW MATERIAL

Cork is the outer bark of the cork oak tree (*Quercus Suber L.*), the 100% natural plant tissue covering the trunk and branches.

It consists of a honeycomb-like structure of microscopic cells filled with an air-like gas and composed mainly with suberin, lignin, and polysaccharides. One cubic centimetre of cork contains about 40 million cells.

Cork is also known as "nature's foam" due to its alveolar cellular structure. It has a closed-cell structure making it lightweight.

It is sustainably harvested by specialised professionals without damaging the trunk, thus enabling the tree to grow another layer of outer bark that, in time, will be re-harvested. Over the course of the cork oak tree's life, that lasts 200 years on average, the cork may be stripped around 17 times. This means that cork is not only a natural raw material, it is also renewable and recyclable.

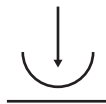
KEY FEATURES



Excellent
acoustic insulator



Excellent
thermal insulator



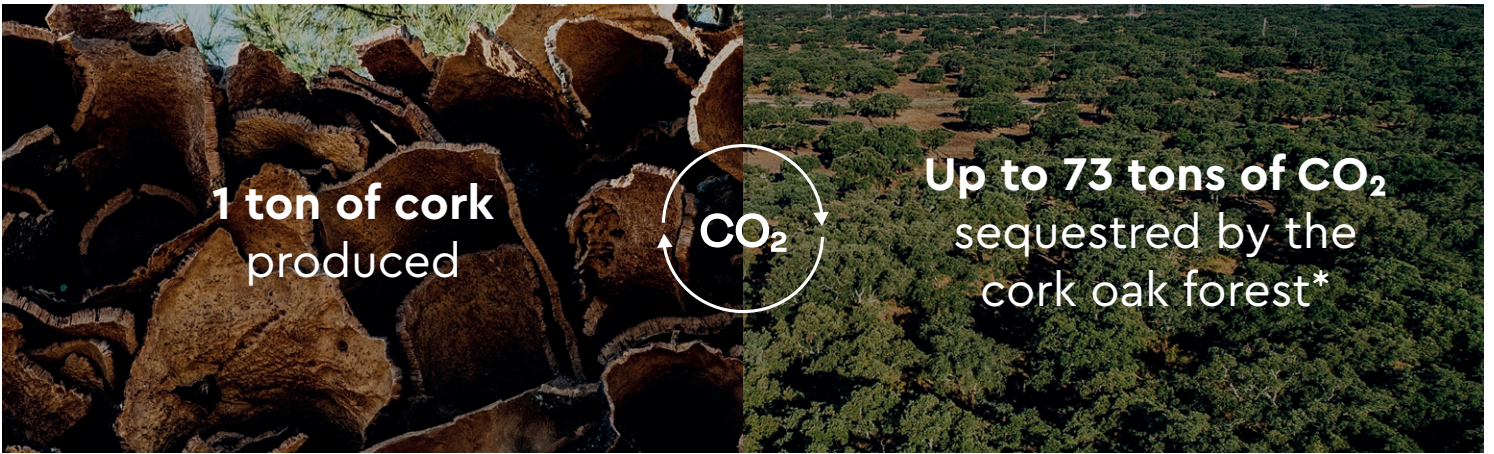
Good resilience
Excellent compressibility
and recovery



Extremely light



Natural, reusable
and recyclable

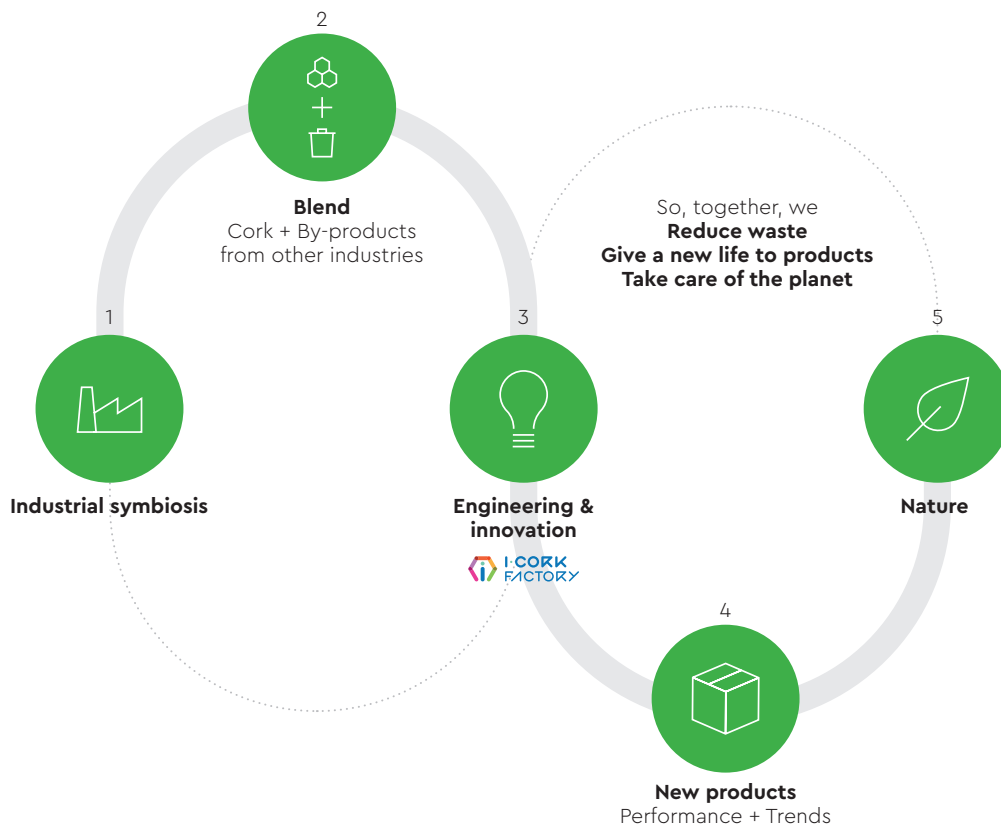


THE COMMITMENT TO CREATE A POSITIVE IMPACT ON THE PLANET

Cork products maintain the CO₂ storage capacity throughout their life cycle, which makes it possible to reduce the carbon footprint of various cork-based products.

With cork at the core, blended with other materials that are by-products from other industries (industrial symbiosis), we give materials a new life by creating new products leveraging cork's attributes while taking care of the planet.

At the i.cork factory, our innovation hub, we achieve the perfect match between performance and sustainability. New, innovative and high performance products from circular economy are arising.



* Source: Instituto Superior de Agronomia (ISA), 2016 (<http://uaonline.ua.pt/pub/detail.asp?lg=pt&c=45245>)

BUILDING COMFORT WITH SUSTAINABILITY

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WHY ACOUSTICORK?

Ensuring peace and quiet isn't a mere luxury. It's already a human need - to guarantee quality of life and work in our fast-moving era.

FAST-MOVING TIMES REQUIRE ACOUSTIC COMFORT

Growing urbanization and rising populations in urban areas are leading to more stringent noise and vibration standards and norms. As a result, is higher demand for high-quality and efficient sound insulation and vibration isolation (from internal or external sources in each building).

Every day, new buildings are being erected on plots of land subject to vibrations, in areas with dense infrastructures. Sources of disturbance are often located near railway lines, roads or industrial complexes. Unless appropriate action is taken, buildings are defenceless against such vibrations.

Many apartments blocks also have underground car parks, commercial establishments on the ground floor (such as a shopping mall) or even a gym on an intermediate floor. In these situations, various factors may subject buildings to shocks, which have an impact on their structure and are perceived by residents as noticeable vibrations or secondary airborne noise.

CORK INSIDE

When cork isn't so visible, this seal assures that cork is present in the optimal amount - guaranteeing the performance of the material.

Cork Inside formulations combine cork with other materials from other industries and are developed and rigorously tested by Amorim Cork Composite's innovation, quality and engineering teams. Cork Inside responds to stringent requirements and guarantees the needed performance required for the application.

ACOUSTICORK NATURAL BASE MATERIALS FOR DEMANDING APPLICATIONS

Amorim Cork Composites develops specific compound formulations, which offer highly insulation or damping materials in compliance with a wide range of environmental conditions.

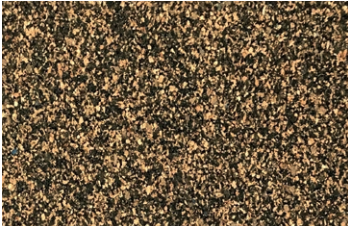
Cork absorbs energy due to its unique compressibility and recovery characteristics, yielding higher loss factors that are essential for the damping function. Cork's extremely low Poisson Ratio improves the behaviour of such materials in dynamic loading applications. Cork also brings durability to the applied solution.



FLOORING SOLUTIONS

Sustainable and highly durable and performing solutions made of agglomerated cork to assure sound insulation, improve thermal comfort and protect the floor of any space. Cork is a common denominator used in all our underlayments.

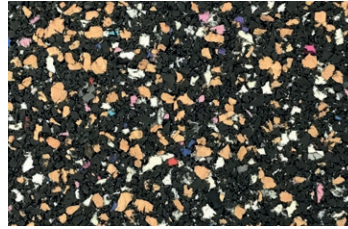
When applied beneath a flooring system, a cork-based underlayment provides greater comfort, protection and longevity to the final floor.



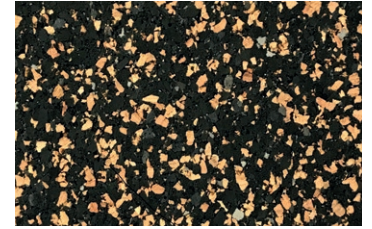
T66 Performance



T61 Balance



T04 Maximum



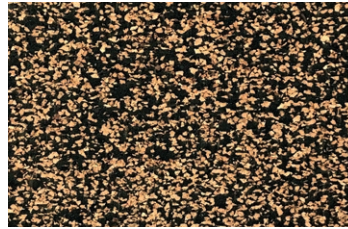
T85 Comfort



T27 Force



T10 Essence



T47 Versatile



T92 Selection

T66 PERFORMANCE

- ▶ Agglomerated cork and recycled rubber underlayment for impact, noise and thermal insulation.
- ▶ Ceramic/Natural stone tiles and wood floor.



		Ceramic/Natural Stone		Wood	
		4.5 mm	3.0 mm	3.0 mm	2.0 mm
Density	kg/m ³ lb/ft ³	560-650 35-40	560-650 35-40	560-650 35-40	560-650 35-40
Tensile Strength	kPa	> 600	> 600	> 600	> 600
Acoustic Performance					
Impact Sound (IS) ^①	db (ISO)	18	16	16	18
Impact Insulation IIC ΔIIC ^②	dB (ASTM)	— —	— —	— —	50 22
Sound Transmission (STC) ^③	dB (ASTM)	—	—	—	—
Thermal Performance					
Thermal Resistance (TR)	m ² ·°C/W	0.037	0.024	0.024	0.016
Floor Durability					
Punctual Conformability (PC)	mm	NA	NA	NA	NA
Compressive Strength (CS)	kPa	NA	NA	—	—
Compressive Creep (CC)	kPa	—	—	—	> 140
Water Vapor Resistance (SD)	m	NA	NA	—	> 75
Vapor Barrier		NA	NA	○	●

T61 BALANCE

- ▶ Agglomerated cork underlayment for impact noise and thermal insulation designed to be a 100% natural solution.
- ▶ Wood floor and ceramic/natural stone tiles.

		Ceramic/Natural Stone		Wood			
		6.0 mm	6.0 mm	3.0 mm	2.5/1.5 mm profile	3 mm perforated	2.0 mm
Density	kg/m ³ lb/ft ³	150–220 9–14	150–220 9–14	150–220 9–14	150–220 9–14	150–220 9–14	150–220 9–14
Tensile Strength	kPa	> 200	> 200	> 200	> 200	> 200	> 200
Acoustic Performance							
Impact Sound (IS) ^①	db (ISO)	—	—	16	20	18	20
Impact Insulation IIC ΔIIC ^②	dB (ASTM)	78 (ceiling) —	76 (ceiling) —	— —	— —	— —	— —
Sound Transmission (STC) ^③	dB (ASTM)	74	75	—	—	—	—
Thermal Performance							
Thermal Resistance (TR)	m ² ·°C/W	0.137	0.137	0.069	—	—	0.046
Floor Durability							
Punctual Conformability (PC)	mm	> 1.0	> 1.0	> 0.5	—	NA	> 0.5
Compressive Strength (CS)	kPa	NA	> 60	> 200	NA	NA	> 200
Compressive Creep (CC)	kPa	—	—	—	—	—	—
Water Vapor Resistance (SD)	m	NA	NA	NA	NA	NA	> 75
Vapor Barrier		○	○	○	○	○	●

T04 MAXIMUM

- ▶ Agglomerated cork and recycled rubber underlayment for impact noise reduction, crack suppression and easy installation.
- ▶ Ceramic and natural stone tiles.



		Ceramic/Natural Stone	
		10 mm	5 mm
Density	kg/m ³ lb/ft ³	490–570 30–36	490–570 30–36
Tensile Strength	kPa	> 250	> 250
Acoustic Performance			
Impact Sound (IS) ^①	db (ISO)	—	—
Impact Insulation IIC ΔIIC ^②	dB (ASTM)	76 —	51 —
Sound Transmission (STC) ^③	dB (ASTM)	71	55
Thermal Performance			
Thermal Resistance (TR)	m ² ·°C/W	0.099	0.050
Floor Durability			
Punctual Conformability (PC)	mm	NA	NA
Compressive Strength (CS)	kPa	NA	NA
Compressive Creep (CC)	kPa	—	—
Water Vapor Resistance (SD)	m	NA	NA
Vapor Barrier		○	○

T27 FORCE

- ▶ Agglomerated cork underlayment for high impact noise reduction and thermal insulation. Designed to be a 100% natural solution.
- ▶ Ceramic and natural stone tiles.

		Ceramic/Natural Stone	
		12.7 mm	
Density	kg/m ³ lb/ft ³	160–220 10–14	
Tensile Strength	kPa	> 400	
Acoustic Performance			
Impact Sound (IS) ^①	db (ISO)	—	
Impact Insulation IIC ΔIIC ^②	dB (ASTM)	78 —	
Sound Transmission (STC) ^③	dB (ASTM)	74	
Thermal Performance			
Thermal Resistance (TR)	m ² ·°C/W	0.261	
Floor Durability			
Punctual Conformability (PC)	mm	NA	
Compressive Strength (CS)	kPa	NA	
Compressive Creep (CC)	kPa	—	
Water Vapor Resistance (SD)	m	NA	
Vapor Barrier		○	

T85 COMFORT

- ▶ Agglomerated cork and recycled PU foam underlayment for impact.
- ▶ Laminate floor.



		Laminates	
		2.0 mm	2.0 mm
Density	kg/m ³ lb/ft ³	240–340 15–22	240–340 15–22
Tensile Strength	kPa	> 150	> 550
Acoustic Performance			
Impact Sound (IS) ^①	db (ISO)	20	20
Impact Insulation IIC ΔIIC ^②	dB (ASTM)	54 —	54 —
Sound Transmission (STC) ^③	dB (ASTM)	53	53
Thermal Performance			
Thermal Resistance (TR)	m ² .°C/W	0.038	0.038
Floor Durability			
Punctual Conformability (PC)	mm	> 1	> 1
Compressive Strength (CS)	kPa	> 200	> 200
Compressive Creep (CC)	kPa	> 20	> 20
Water Vapor Resistance (SD)	m	—	> 75
Vapor Barrier		○	●

T47 VERSATILE

- ▶ Agglomerated cork and recycled PU foam underlayment for impact noise.
- ▶ LVT floor.



		LVT
		1.9 mm
Density	kg/m ³ lb/ft ³	320–420 20–26
Tensile Strength	kPa	> 350
Acoustic Performance		
Impact Sound (IS) ^①	db (ISO)	18
Impact Insulation IIC ΔIIC ^②	dB (ASTM)	50 21
Sound Transmission (STC) ^③	dB (ASTM)	—
Thermal Performance		
Thermal Resistance (TR)	m ² .°C/W	—
Floor Durability		
Punctual Conformability (PC)	mm	> 0.5
Compressive Strength (CS)	kPa	> 200
Compressive Creep (CC)	kPa	—
Water Vapor Resistance (SD)	m	NA
Vapor Barrier		○

T10 ESSENCE

- ▶ Agglomerated cork underlayment for impact noise and thermal insulation.
- ▶ Laminate floor.

		Laminates	
		2.0 mm	2.0 mm
Density	kg/m ³ lb/ft ³	160–280 10–18	160–280 10–18
Tensile Strength	kPa	> 200	> 550
Acoustic Performance			
Impact Sound (IS) ^①	db (ISO)	17	17
Impact Insulation IIC ΔIIC ^②	dB (ASTM)	— —	— —
Sound Transmission (STC) ^③	dB (ASTM)	—	—
Thermal Performance			
Thermal Resistance (TR)	m ² .°C/W	0.039	0.039
Floor Durability			
Punctual Conformability (PC)	mm	> 1	> 1
Compressive Strength (CS)	kPa	> 200	> 200
Compressive Creep (CC)	kPa	> 100	> 100
Water Vapor Resistance (SD)	m	—	> 75
Vapor Barrier		○	●

T92 SELECTION

- ▶ Agglomerated cork for impact, noise and thermal insulation.
- ▶ LVT floor.

		Laminates	
		1.6 mm	1.6 mm
Density	kg/m ³ lb/ft ³	250–350 15–22	250–350 15–22
Tensile Strength	kPa	> 500	> 550
Acoustic Performance			
Impact Sound (IS) ^①	db (ISO)	17	17
Impact Insulation IIC ΔIIC ^②	dB (ASTM)	— —	— —
Sound Transmission (STC) ^③	dB (ASTM)	—	—
Thermal Performance			
Thermal Resistance (TR)	m ² .°C/W	—	—
Floor Durability			
Punctual Conformability (PC)	mm	< 0.5	< 0.5
Compressive Strength (CS)	kPa	> 400	> 400
Compressive Creep (CC)	kPa	—	—
Water Vapor Resistance (SD)	m	—	> 75
Vapor Barrier		○	●

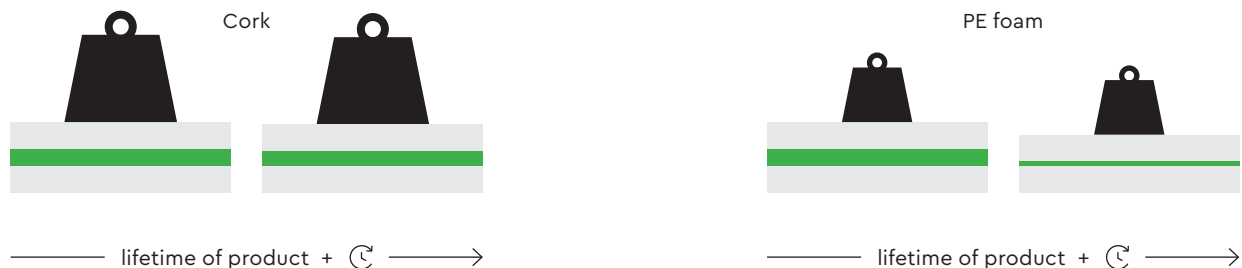


DURABILITY AND PERFORMANCE FOR A LONG TIME

Our underlayments are a great solution for new construction applications and for renovations of existing spaces.

- ▶ Compressive creep and performance over time, due to constant thickness preserved
- ▶ Acoustic performance in accordance with the International Building Code (Division 9)
- ▶ Protect the click of LVT's floor, due to proper compressibility
- ▶ Technical properties in accordance with MMFA and EPLF recommendations
- ▶ Suitable for floors with pre-attached underlayment
- ▶ Protect wood based floor from humidity
- ▶ Made of natural and recycled raw materials
- ▶ Thermal and walking comfort
- ▶ Absorbs high imperfections of the concrete substrate
- ▶ Avoids telegraphy of the concrete sub-floor or previous floor (in refurbishment situations)

LIFETIME OF PRODUCT CORK VS PE FOAM



OUR CERTIFICATIONS



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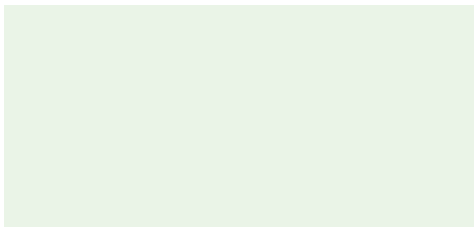
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Representative



Acousticcork solutions are tested at highly qualified laboratories.

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