AMORIM CORK SOLUTIONS

OUR WORLD IS CORK

CORK HAS A SOUL

100% Natural

Expanded cork stands out as a 100% natural, bio-based material, composed exclusively of cork, with no added glues, additives, or synthetic components. During the production process, the granules are bonded solely through suberin - the natural resin inherent to cork - resulting in a pure, healthy, and fully recyclable product . This material simplicity not only reduces environmental impacts but also ensures an insulation solution aligned with the principles of sustainable construction and the circular economy.

AMORIM CORK SOLUTIONS

The Company

At Amorim Cork Solutions, we develop solutions that incorporate high-performance cork composites, combining innovation and sustainability.

We reuse cork - a 100% natural, renewable and recyclable raw material - to develop ground-breaking solutions for various industries such as aerospace, maritime, mobility, sealing, energy, construction, flooring, sports surfaces, playgrounds, toys, home, office and leisure.

Each product we create represents a strategic response to current market needs and our commitment to sustainability.

Why should we use cork in construction

The origin of the material

As early as 1891, U.S. Imports of cork were substantial. The cork was used for the manufacture of many materials: cork stoppers, buoys, life jackets, and other materials. One day in New York a discovery was made in the buoys and life jacket factory of John T. Smith. At that time, the filling of life jackets was done using a metal cylinder to keep the life jacket open while the worker filled the cylinder with granulated cork. One of the cylinders was clogged and was set aside and inadvertently rolled over a hot brazier. It went unnoticed until the next morning.

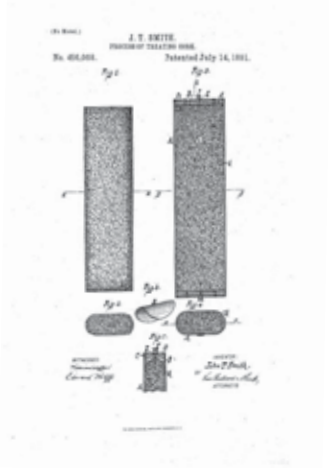
The next day, Smith with the help of a worker while cleaning the ash from the brazier noticed that the cork inside the cylinder had not been burned, and the heat was sufficient to bind the entire mass in a single form-brown chocolate.

The original process was repeated intentionally to be able to prove that the material could bind without any additive or foreign substance and thus registering a patent on the manufacturing process.

UNITED STATES PATENT OFFICE.

JOHN T. SMITH, OF NEW YORK, N. Y.

PROCESS OF TREATING CORK.



Cork is the outer bark of Quercus Suber L. (cork oak tree)

A noble tree that can live up to 200 years, during which time it may be harvested 15 to 18 times. The process of natural cork extraction is called harvesting, a highly specialized process that does not harm the tree. The bark renews itself.

Favourable impact on cork forests

• Total area 2.1 million hectares (5.2 million acres) of cork oak forests.
• The cork tree produces cork every nine years (a renewable raw material).
• Cork forests improve soil's organic matter and help regulate the hydrological cycle
• Provides local employment in the forestry sector hence prevent population desertification.
• Important in maintaining biodiversity (unique in Europe) - One of the 36 Biodiversity Hotspots.
• Cork oak forests are natural CO2 retainers (Up to 14 million tons of CO2/year), the major cause of global warming.

100% natural industrial process

• Only cork as a raw material.
• No additives, agglomeration with its own resins (suberin).
• 93% of energy consumption is biomass (waste of its own industrial process).
• The waste from the industrial process is 100% reusable (expanded cork granules + powder).

Natural Sustainability

• Practically unchanging thermal conductivity on temperature variations.
• Compared to other insulation products with declining performance values, maintains a steady insulation value overtime.

In General

• 100% natural product
• Negative Carbon Footprint
• Promotes thermal Lag
• High level of stability, coping with major thermal variations.
• In case of fire, cork does not release toxic gases.
• Unlimited durability, maintaining its technical characteristics (official tests demonstrate between 45 and 50 years).

Manufacturing process 100% natural

Expanded insulation corkboard is derived from falca cork, a unique type of cork that is periodically harvested from the upper branches of the cork oak tree. Once removed, the falca cork is stored at the factory yard.

It is industrially produced without use of any additives. The process begins by grinding the cork into smaller cork granules.

Once placed into an autoclave and exposed to super-heated steam at 350 ºC (662F) the cork granules expand and release their own suberin, a natural binder within the cork. No binders or chemicals are added, since the cork is agglomerated into blocks using its own resin.

The blocks are then removed and subjected to a stabilization period.

The blocks are sawn-cut into expanded insulation corkboard, packed and shipped.

Any waste produced during the industrial process is 100% reusable. In fact, over 90% of energy consumption is obtained from biomass – as a by-product of the industrial process itself – which makes expanded insulation corkboard a very low-embodied energy material.

Quest for excellence and innovation

Amorim Cork Solutions is recognized by the constant search of excellence and innovation and has the support of and accreditation by the relevant authorities.

Certificate. ISO 9001 – APCER / IQNET

FSC Certificate

Sustainable Habitat Cluster . Gold Seal of Sustainability

Cluster Habitat Sustentável

Product quality control according to EN 13170 and consequent CE marking CE

By Centrohabitat. Associação Plataforma para a Construção Sustentável - Environmental Product Declaration.

Natureplus. The International Association for Future - Oriented Building and Accommodation (Germany) - The label identifies the best products for sustainable building.

Acermi. Association Pour La Certification Des Matériaux Isolants (France) - certifies specific insulation materials, assessing their technical performance.

LQAI. Laboratory of Indoor Air Quality (Portugal) Certifies the non-emissions of VOCs, formaldehyde and other compounds for the product.

LBC. International Living Future Institute's Living Building Challenge (USA) - the label certifies Living Building Challenge Red List Free products.

PCS. Portuguese Platform for Sustainable Construction (Portugal) – Certificate of Product Sustainability.

Photography: Daniel Cavazos and Casey Woods

Products

Expanded insulation corkboard. Solution with high performance in thermal, acoustic and anti-vibration insulation, especially suitable for use in external, internal and cavity walls, slabs and floors, roofs and ceilings

Amorim MD Facade®. Special range of Expanded Insulation Corkboard with high technical performance for exterior wall cladding. Interior walls and ceilings – cork at sight.

Lambourdé. Quick application system designed for low thickness insulation solutions and buildings renovations. For mechanical fixing to the floor or wall, ensuring excellent thermal and acoustic insulation and subsequent a wood finish or plasterboard.

Expanded cork granules. Solution of lightweight filling with acoustic insulation properties for use in screeds, flooring and interior cavity walls.

VC Expanded. Solution for vibration control. The expanded cork, besides being a 100% natural product, has a higher wear resistance, low Poisson coeficient, higher energy dissipation capacity (in vibrations) and higher energy absorption capacity (impact).

Technical characteristics

EXPANDED CORKBOARD

	Unit	Value
Density	Kg/m³	110 ± 10
Size	mm	1000x500
Thicknesses	mm	10–300

Technical characterization	Specific test standard	Performance
Thermal Conductivity	EN 12667	0,039 W/m·K
Specific Heat	EN ISO 10456	1560 J/(kg·K)
Reaction to fire (Euroclass characteristics)	EN13501-1	Class E
Flexural strength	EN12089	Thicknesses up to 50 mm: ≥140 kPa
		Thicknesses above 50 mm: ≥110 kPa
Compressive strength (10% deformation)	EN 826	CS(10)100: ≥100 kPa
Tensile strength perpendicular to surface	EN1607	TR40: ≥40 kPa
Water absorption	EN1609	WS: < 0.5kg/m²
Water vapour transmission	EN ISO 12086	MU20 (60mm)

AMORIM MD FACADE®

	Unit	Value
Density	kg/m³	140 ± 10
Sizes	mm	1000x500
Thicknesses	mm	10-200

Essential features	Performance	Result
Reaction to fire	Fire reaction	Euroclass E
Thermal resistance	Thermal Conductivity	0,043 W/m.K
Compressive strength	Compressive strength at 10% deformation	220 kPa
Water permeability	Water Absorption	0,17 kg/m²

LAMBOURDÉ

	Unit	Value
Density	Kg/m³	110 ± 10
Sizes	mm	1000x500
Thicknesses	mm	40-100

Essential features	Performance	Result
Reaction to fire	Fire reaction	Euroclass E
Thermal resistance	Thermal Conductivity	0,041 W/m.K

VC EXPANDED

	Unit	Value
Density	kg/m³	140-160/170-190
Sizes	mm	1000x500 or 915x610
Thicknesses	mm	10-220

Essential features	Performance	Result
Reaction to fire	Fire reaction	Euroclass E
Thermal resistance	Thermal Conductivity	0,043 W/m.K/0,045 W/m.K
Compressive strength	Compressive strength at 10% deformation	223 Kpa/332 kPa
Compressive strength	Compression modulus of elasticity	3506 Kpa/6747 kPa

EXPANDED CORK GRANULES

Granule size	Unit	Density
0–1 mm	kg/m³	65–85
1–3 mm		
2–4 mm	kg/m³	60–70
3–5 mm		
3–10 mm		
5–10 mm		
3–15 mm	kg/m³	60–80
5–15 mm		

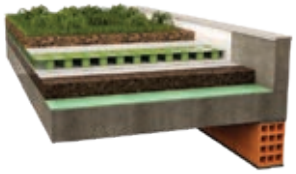
Essential features	Performance	Result
Reaction to fire	Fire reaction	Euroclass E
Thermal resistance	Thermal Conductivity	0,041 W/m.K

Roofs Applications

Thermal insulation
Anti-vibration insulation
Acoustic insulation

100% natural choice. Expanded insulation corkboard is a sustainable material for construction.

Roofs Green roof



Roofs Traditional flat roof

Roofs Pitched roof with corrugated roofing system

Roofs Pitched roof with roof membrane

Roofs Pitched roof with rigid insulation over slab

Roofs Pitched roof with loose fill insulation between joists

Roofs Pitched roof with internal insulation between rafters

Roofs Pitched roof with above rafter insulation

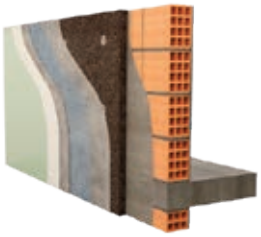
Roofs Flat tapered roof

External walls Applications

Thermal insulation
Anti-vibration insulation
Acoustic insulation

100% natural choice. Expanded insulation corkboard is a sustainable material for construction.

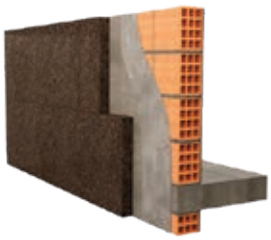
External walls ETICS / EIFS



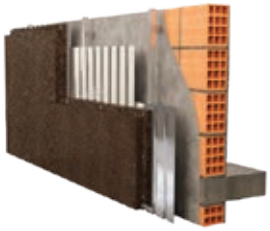
External walls Double wall with insulation partially filling the cavity

External walls Ventilated facade

External walls Exterior cladding - cork at sight

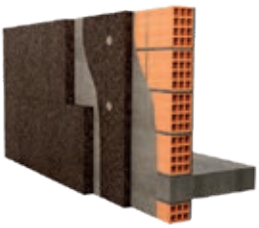


External walls Exterior cladding with shiplap system - cork at sight



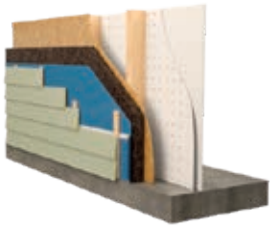
External walls Exterior cladding - cork at sight wave facade s1

External walls External cladding over insulation – cork at sight



External walls Exterior cladding over wooden substrate – cork at sight

External walls Standard lap siding with exterior rigid insulation



External walls Standard lap siding with cavity insulation

Interior solutions for exterior walls Support for gypsum board

Interior solutions for exterior walls Support for wooden wainscot

Interior solutions for exterior walls Internal insulation for external walls

Internal partitions
Applications

Thermal insulation
Anti-vibration insulation
Acoustic insulation

100% natural choice. Expanded insulation corkboard is a sustainable material for construction.

Internal partitions Internal partitions with insulation lined on both sides

Internal partitions Double wall with insulation fully filling the cavity

Internal partitions Metal stud over masonry wall with insulation

Internal partitions Metal stud partition wall with insulation

Internal partitions Filling the internal double walls with expanded cork granules

Internal partitions Metal-stud wall and slab discontinuity

Internal partitions Masonry wall and slab discontinuity

Decorative Solutions Applications

Thermal insulation
Anti-vibration insulation
Acoustic insulation

100% natural choice. Expanded insulation corkboard is a sustainable material for construction.

Decorative Solutions
Decorative board cork at sight

Decorative Solutions
Decorative cork at sight taper

Decorative Solutions
Decorative cork at sight wave S1

Decorative Solutions
Decorative cork at sight wave L1

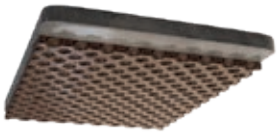
Decorative Solutions
Decorative cork at sight wave L2

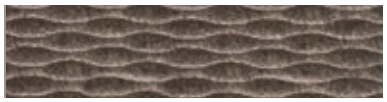
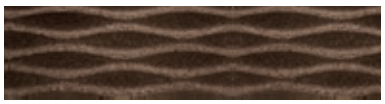
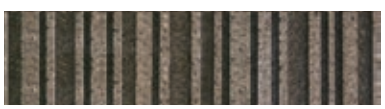
Decorative Solutions
Decorative cork at sight circle

Decorative Solutions
Decorative cork at sight barcode

Decorative Solutions
Decorative cork at sight point cloud

Decorative Solutions
Decorative ceiling

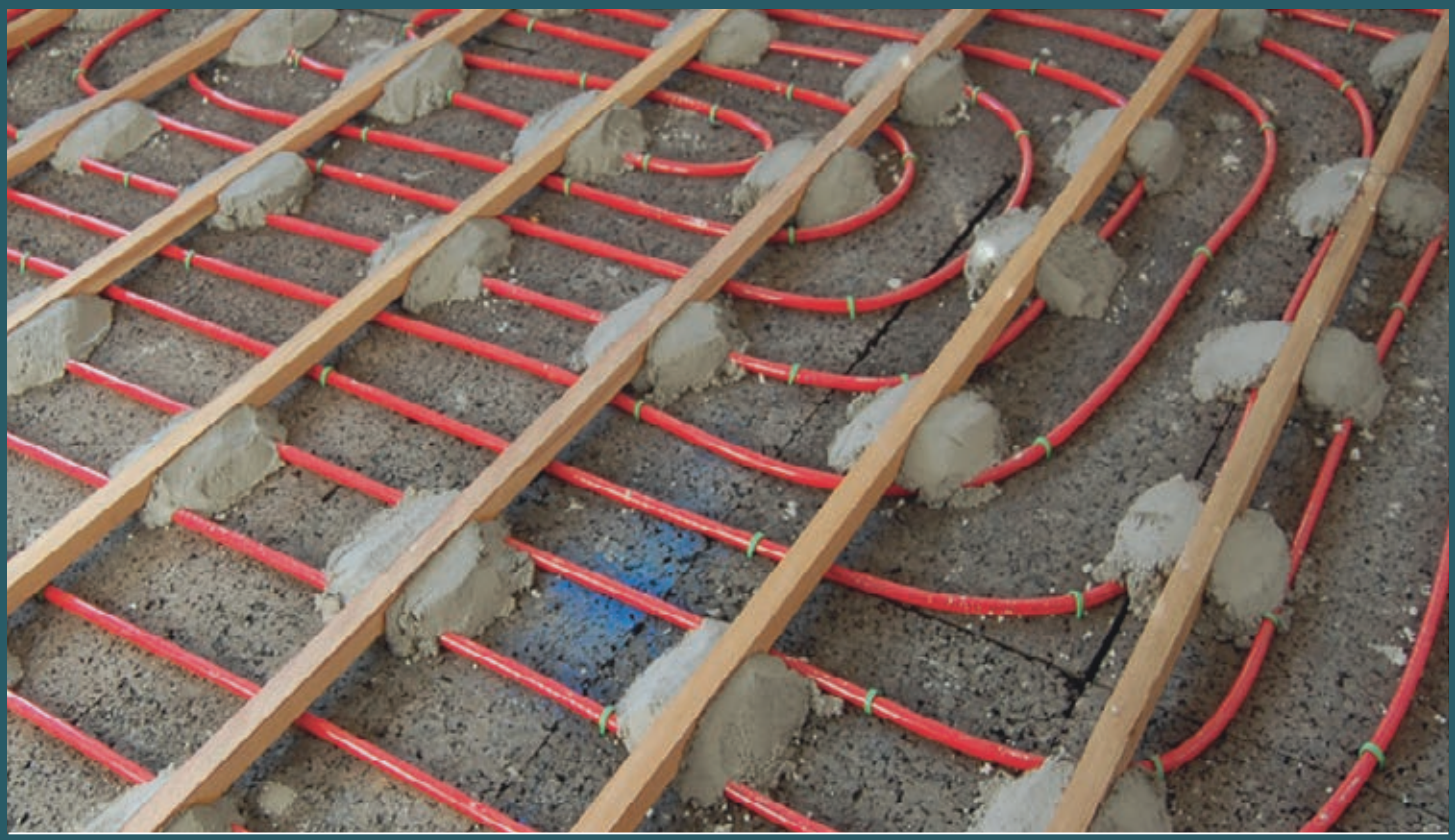


Product	Reference	Dimension	Boards	Packing (m^2)	Packing (m^3)
	**Wave S1** 40mm	1.000x500mm x40mm Min.Thickness	8	4	0,16
	**Wave L1** 50mm	1.000x500mm x50mm Min.Thickness	6	3	0,15
	**Wave L2** 70mm	1.000x500mm x70mm Min.Thickness	4	2	0,14
	**Pointcloud** 50mm	1.000x500mm x50mm Min.Thickness	6	3	0,15
	**Circle** 40mm	1.000x500mm x40mm Min.Thickness	8	4	0,16
	**Barcode** 50mm	1.000x500mm x50mm Min.Thickness	6	3	0,15

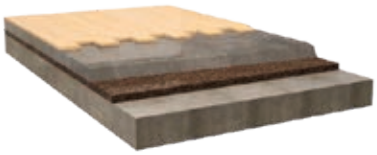
Slab and Floors Applications

Thermal insulation
Anti-vibration insulation
Acoustic insulation

100% natural choice. Expanded insulation corkboard is a sustainable material for construction.



Slab and Floors Floating slab with wood flooring



Slab and Floors Floating slab with mosaic flooring

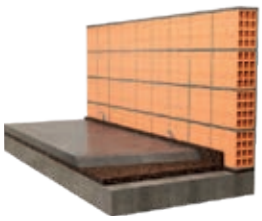
Slab and Floors Support for nailed flooring

Slab and Floors Flooring joists cavity filling

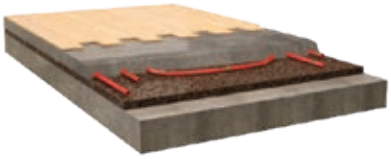
Slab and Floors Between joists loose fill

Slab and Floors Lightweight concrete - screed filling

Slab and Floors Unlinking screed filler to the wall



Slab and Floors Traditional underfloor heating



Slab and Floors Electric underfloor heating

Slab and Floors Rustic decorative floor

Ceilings + Others Applications

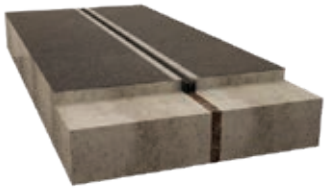
Thermal insulation
Anti-vibration insulation
Acoustic insulation

100% natural choice. Expanded insulation corkboard is a sustainable material for construction.

Ceilings
Formwork insulation

Ceilings
Acoustic false ceiling

Ceilings
Expansion joints



Other Applications
Pipe section

Other Applications
Heavy machinery vibration control

Other Applications
HVAC Vibration control

Other Applications
Door core insulation

Other Applications
Decoupling layer for window frames and core

Amorim Cork Solutions
R. Comendador Américo Ferreira Amorim, 260
4535-186, Mozelos VFR, Portugal
T. +351 22 747 5300 **E.**mail.acs@amorim.com
F. +351 22 747 5301

www.amorimcorksolutions.com

AMORIM CORK SOLUTIONS