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# CORECORK

Panels and Composites



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## Reinventing panels & composites

Multilayer, core  
& decking materials



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AMORIM CORK COMPOSITES



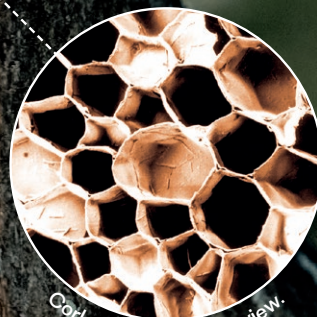
# Cork, an exceptional raw material

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 coated mainly with suberin and lignin. One cubic centimeter 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, airtight and watertight, resistant to acids, fuels and oils, and impervious to rot.

It is sustainably harvested by specialized 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 harvested around 17 times. This means that cork is not only a natural raw material, it is also renewable and recyclable.



Cork cell microscopic view.

Increasing comfort



Fire resistance



Lightweight



Vibration damping



Thermal insulation



Flexibility, installation and process friendly



Acoustic isolation



Sustainable and energy efficient



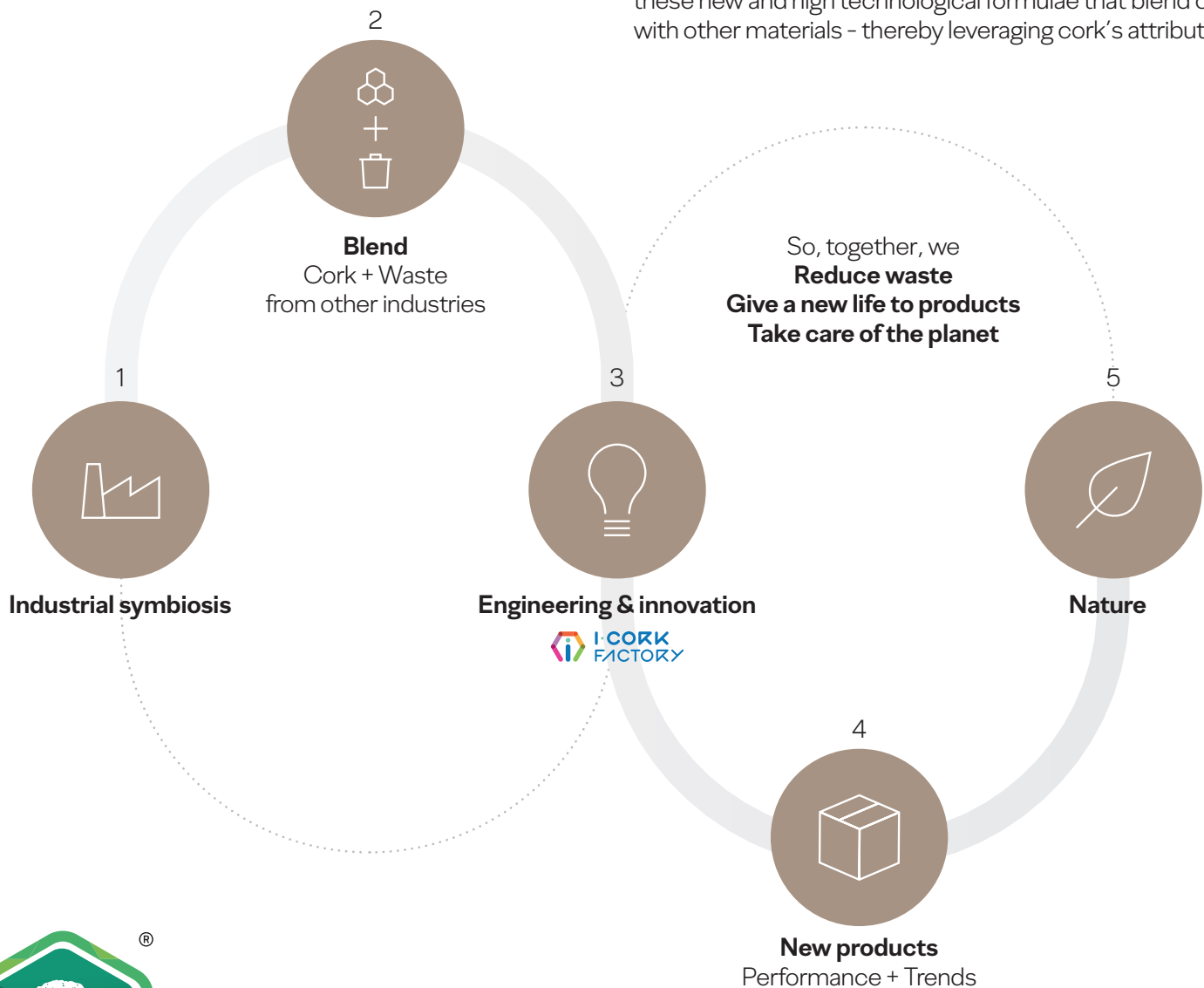


# The circular economy at the heart of innovation

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

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

Over time, our expertise in cork has enabled us to create these new and high technological formulae that blend cork with other materials - thereby leveraging cork's attributes.







When cork isn't so visible, the Cork Inside seal guarantees that the product contains cork in its formulation, a 100% natural and recyclable material with unique technical properties. Cork Inside formulations combine cork with other materials and are developed and rigorously tested by Amorim Cork Composites' innovation and engineering teams. Cork Inside responds to stringent requirements and guarantees the needed performance required for the application.



# Multilayer Panel Materials

Amorim Multilayer Panel Materials were developed through the combination of polymers, cork granules and engineered compounding to achieve acoustic, lightweight or thermal properties, adding comfort and performance to everyday life.

Corecork technology is used in several applications where the need for noise reduction, structural damping, thermal barriers or weight reduction is a requirement; such as massive doors, windows, partitions, outdoor noise barriers, roofs or other metal structures.

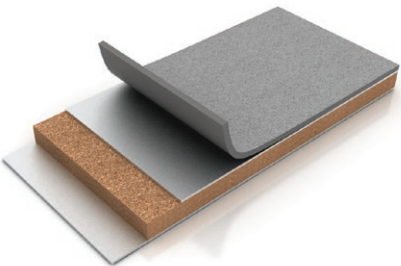
Key benefits*	ACM15 	ACM16 	ACM17 	ACM18 	ACM40
Lightweight	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •
Acoustic performance	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •
Thermal insulation	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •

\* Refer to Material Data Sheet

## Alucork system

Alucork<sup>(1)</sup> system for transportation floor panels where the need for weight reduction, thermal and acoustic insulation, control of costs and CO<sub>2</sub> emisisions are requested.

(1) AluCork® - Cork/Aluminum floating floor system.  
Recommended material: NL20



# Composite Core Materials

The scope of Amorim Composite Core Materials enhances composite structures with unique properties. Its composition delivers features such as noise attenuation and vibration damping as well as thermal insulation.

The benefits go beyond function and into the manufacturing process.

Amorim Composite Core Materials provide low resin consumption, high flexibility with effective print through blocking which leads to a quality surface finish.

Key guidelines*	NL10	NL20
Hand lay-up	• • • • •	• • • • •
Vacuum bagging	• • • • •	• • • • •
Resin infusion	• • • • •	• • • • •
RTM/LITE RTM resin transfer molding	• • • • •	• • • • •
Prepregs pre-impregnated	• • • • •	• • • • •
RFI resin film infusion	• • • • •	• • • • •

\* Refer to Material Data Sheet





# Decking Materials


## Final Decking materials

Amorim final decking materials are a combination of incomparable functionality and luxury aesthetics. The material offers passenger comfort through a soft, cool, under-foot feeling and non slip surface, with a natural aesthetics.

## Primary decking materials

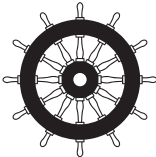
Amorim’s primary decking material for fairing and levelling is certified to maritime industry standards, IMO/MED Wheel mark & USCG certification applicable to flagged ships and sea-going vessels.

Our engineered cork composite primary decking material provides thermal and acoustic benefits, energy savings and contributes for a green construction.

Key benefits*	ACM30 <sup>(1)</sup>	ACM52 <sup>(1)</sup>	ACM49 	ACM94
Lightweight	• • • • •	• • • • •	• • • • •	• • • • •
Acoustic performance	• • • • •	• • • • •	• • • • •	• • • • •
Thermal insulation	• • • • •	• • • • •	• • • • •	• • • • •
Fire performance	Part 5**	Part 5**	–	–
Smoke performance	–	Part 2**	–	–
Main applications	Exterior Primary Decking Material	Interior Primary Decking Material	Final Decking Material	Final Decking Material

(1) IMO Certified \*Refer to Material Data Sheet \*\*Part 5 & Part 2 (2010 FTP Code)

ACM30 / ACM52



0038/19  
USCG-EU MRA







# Product Range



## Multilayer Panel Materials

Core materials for laminated sandwich structures and panels.

Characteristics	ACM15 	ACM16 	ACM17 	ACM18 	ACM40
Density (Kg/m <sup>3</sup> ) <sup>(1)</sup>	580–680	620–740	900–1000	900–1030	200–250
Thermal Conductivity (W/m <sup>2</sup> K) <sup>(2)</sup>	0,089*	0,134*	0,177*	0,181*	0,046*
Loss Factor (20°C @ 1Hz) <sup>(3)</sup>	0,12*	0,13*	0,15*	0,14*	NA

(1) ASTM F1315 (2) ISO 8302 (3) ASTM E756 \* Typical Values



## Composite Core Materials

Core materials for composite structures and panels.


Key properties	NL10	NL20
Density (Kg/m <sup>3</sup> ) <sup>(1)</sup>	120–180	170–235
Thermal Conductivity (W/m <sup>2</sup> K) <sup>(2)</sup>	0,042*	0,044*
Loss Factor (20°C @ 1Hz) <sup>(3)</sup>	0,022*	0,043*

(1) ASTM F1315 (2) ASTM E1530 (3) ASTM E756 \* Typical Values



## Decking Materials

Primary and final decking materials.

Key properties	ACM30	ACM52	ACM49 	ACM94
Density (Kg/m <sup>3</sup> ) <sup>(1)</sup>	320–420	320–420	600–750	> 450
Thermal Conductivity (W/m <sup>2</sup> K) <sup>(2)</sup>	0,065*	0,065*	0,154*	0,079*
Loss Factor (20°C @ 1Hz) <sup>(3)</sup>	0,11*	0,11*	0,19*	0,17*

(1) ASTM F1315 (2) ISO 8302 (3) ASTM E756 \* Typical Values

**CORECORK** adding comfort  
and performance to everyday life.



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