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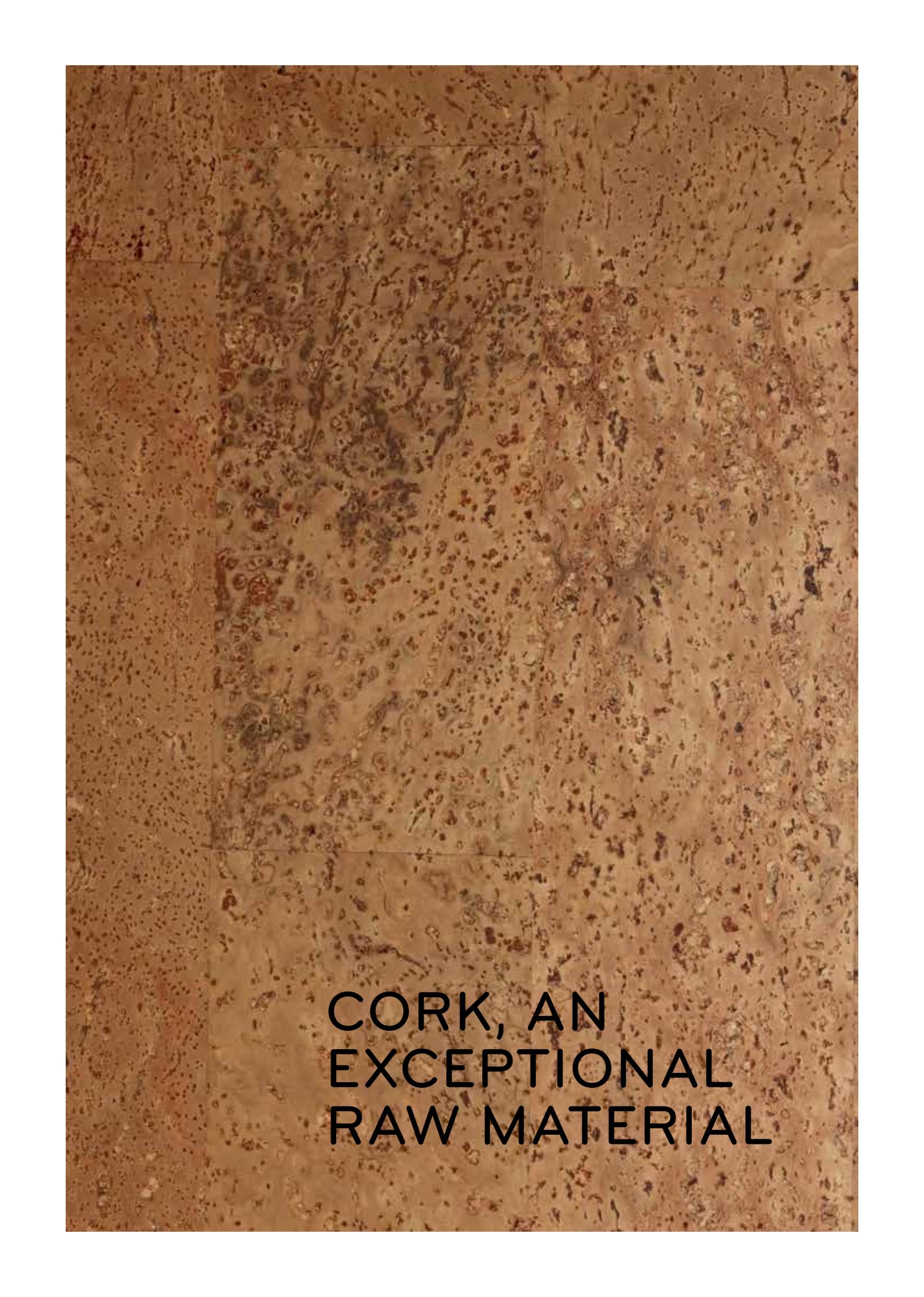
# THE ART OF CORK

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CORK, AN  
EXCEPTIONAL  
RAW MATERIAL

# CORK THROUGHOUT HISTORY

## 60 MILLION YEARS AGO...

There are studies that indicate the cork oak originated in the Tertiary period (between the Oligocene and Miocene periods). Some theories point to its existence since the formation of the Mediterranean basin, about 60 million years ago.



## MORE THAN 25 MILLION YEARS AGO...

Several species succumbed to the Glacial period. The cork oak resisted, however, thanks to the thermal protection of its bark - the cork.



## MORE THAN 10 MILLION YEARS AGO...

A fossil fragment of cork was recently found deposited in the Tagus basin, attesting to the ancient presence of cork oaks in Portugal.

THE CORK OAK FOREST IS NATIONAL HERITAGE, LEGALLY PROTECTED SINCE THE MIDDLE AGES.

## 3<sup>RD</sup> CENTURY B.C., IN FRANCE

Several amphorae were discovered containing wine considered to be still today in good condition.



Cork stopper of ancient amphora



## 13<sup>TH</sup> CENTURY, IN PORTUGAL

Charters are published in the reign of D. Dinis creating game reserves meant to protect the cork oak and holm oak, granting benefits to those who would protect new cork oaks. The cork oak has been the object of various laws in the reigns of several kings since that time, covering the production of cork oaks to the trade in cork.





### 1300 B.C., IN ANCIENT EGYPT

Cork was used for household tools, for fishing and for sealing vessels.



A fresco from the tomb of Rameses, showing scenes of the grape harvest and winemaking.

### 5<sup>TH</sup> CENTURY B.C., IN GREECE

Amphorae were sealed with cork stoppers.



### 4<sup>TH</sup> CENTURY B.C., IN ROMAN TIMES

Cork was used as thermal insulation in roofs, to seal amphorae and as soles for footwear.



Soles from the Roman era (395 to 30 AD), about 14.5 cm long.

### 15<sup>TH</sup> AND 16<sup>TH</sup> CENTURY, IN PORTUGAL

Cork was used in the boats that took Portuguese navigators to discover the world.

Cork is still used today, as it was thousands of years ago, as buoys and floats for fishing nets.



Window of the Convent of Christ. 15<sup>th</sup> century, Tomar, Portugal

### 16<sup>TH</sup> CENTURY, IN PORTUGAL

All the cells and chambers of the friars of the Capuchin Convent, built in 1560, were lined with cork to provide extra comfort.



### 17<sup>TH</sup> CENTURY, IN FRANCE

Dom Pierre Pérignon found cork to be the ideal solution for sealing his wines from the famous Champagne region in northern France. This will have been the moment in history that started the path to the industrialization of cork, since this had a decisive role in the affirmation of the qualities of this well-known wine.





The cork stopper was initially made from rectangular blocks of cork.

## 19<sup>TH</sup> CENTURY, IN EUROPE AND IN THE USA

The cork stopper industry is developing greatly with new equipments which give new impetus to its manufacture. In the United States new applications for cork arose, such as simple agglomerates or white cork for parquet flooring.



Garlopa, beginning of 20<sup>th</sup> century. It is the first industrial cork stopper manufacturing machine.

## THE INDUSTRIALIZATION OF CORK STOPPERS

The cork stopper was initially made from rectangular blocks of cork with the desired final length. This was the method used until the appearance of the Garlopa machine in the twentieth century, the first industrial cork stopper production machine. The rectangular cork block was placed in a clamp which, upon applying light pressure, activated a worm screw which in turn rotated the block against a blade, producing cylindrical corks.



## CORK STOPPERS PRESERVE 200 YEAR OLD CHAMPAGNE

More than 160 bottles of champagne aged about 200 years were discovered in the Baltic Sea after the boat on which they were travelling sunk around 1800. The magnificent state of preservation of this historic champagne attests to the exceptional performance of the cork stopper. Corticeira Amorim was asked to replace the original cork for a new natural cork stopper developed in accordance with the specificities of these old bottles, thus ensuring the quality of the champagne.



**IT IS IN THE TWENTIETH CENTURY THAT CORK OAK LEGISLATION GAINS ITS CURRENT SHAPE AS REGARDS PRESERVATION AND MANAGEMENT.**

## 20<sup>TH</sup> CENTURY

Cork is used for various military purposes in World War II.

In the 1950s the first agglomerated cork tiles with vinyl film appear on the market.

In the 1990s patents are registered for the use of cork in transmission belts and tyres.

In recent decades Confédération Européenne du Liège is created as well as the International Code for Cork Stopper Manufacturing Practices (quality control for cork stopper production).



## 21<sup>ST</sup> CENTURY

Cork has won over the most demanding industries - such as the motor vehicle industry and the latest generation transports from aeronautics to aerospace travel - with highly efficient and versatile solutions in response to very high technical requirements.

One of the major goals of cork for the 21<sup>st</sup> century is to strengthen the field of innovation in high value-added applications for the market.



Corticeira Amorim launches in the market, in partnership with O-I, a revolutionary concept for wine packaging! Helix combines an ergonomically designed cork stopper and a glass bottle with an internal thread in the neck, creating a sophisticated solution of superior technical performance. Thus, Helix combines all the benefits of cork and glass - quality, sustainability and premium image - which is now boosted by the advantages of an easy to open (no corkscrew required) and easy to close wine bottle (the cork stopper can easily be reinserted).



# THE CORK OAK

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Commemorative coin of the Portuguese Presidency of the European Union, minted with a cork oak (2007).



The Portuguese Post Office and Portuguese Parliament launched a stamp on self-adhesive cork paper designed by João Machado (2008).

The cork oak was officially and unanimously instated as the "National Tree", by the Portuguese Parliament (2011).



# QUERQUS SUBER L.

Carl Linnaeus created the binary taxonomy species identification system, which classifies genus and species and thus designated the botanical nomenclature of the cork oak – *Quercus Suber L.*

The cork oak belongs to a small sub-group of European and Asian species whose closest relatives are the oaks of the eastern Mediterranean Basin (*Quercus cerris*, *Quercus trojana*, *Quercus macrolepis*).

## TIME TO GROW

The cork oak is native to the Western Mediterranean Basin, where there are ideal growing conditions:

- Sandy, chalk-free soils with low nitrogen and phosphorus content, high potassium level and pH from 4.8 to 7.0;
- Rainfall from 400-800 mm per year;
- Temperature from -5° C to 40° C;
- Altitude of 100-300 m.

## 20 METRES IN HEIGHT | 200 YEARS



The world's largest cork oak is Portuguese and is registered in the Guinness Book of Records. It weighs about 102 tons, and it produces enough cork every nine years to make 10,000 stoppers.



### FLOWERS

The male flowers have 4 to 6 greenish yellow petals with a rosy tinge at the edge. The females are protected by a scaly dome.



### THE LEAF

It is dark green, denticular and 5 to 8 pairs of secondary ribs branch off its winding midrib.

It measures 2.5 to 10 cm x 1.2 to 6.5 cm.



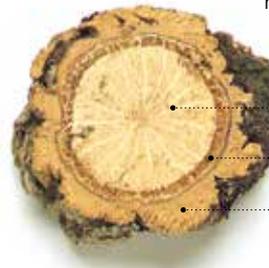
### THE ACORN

It is the fruit of the cork oak and the seed for new cork oaks. It is the basic food of the Black Alentejo Pig, a native breed for which the Alentejo cork oak forest is the natural habitat, where it roams freely. It eats 10 kg of acorns per day and gains 60 kg in weight in just three months.



### THE BARK

It is a covering formed by the microcells that goes by the name of cork.



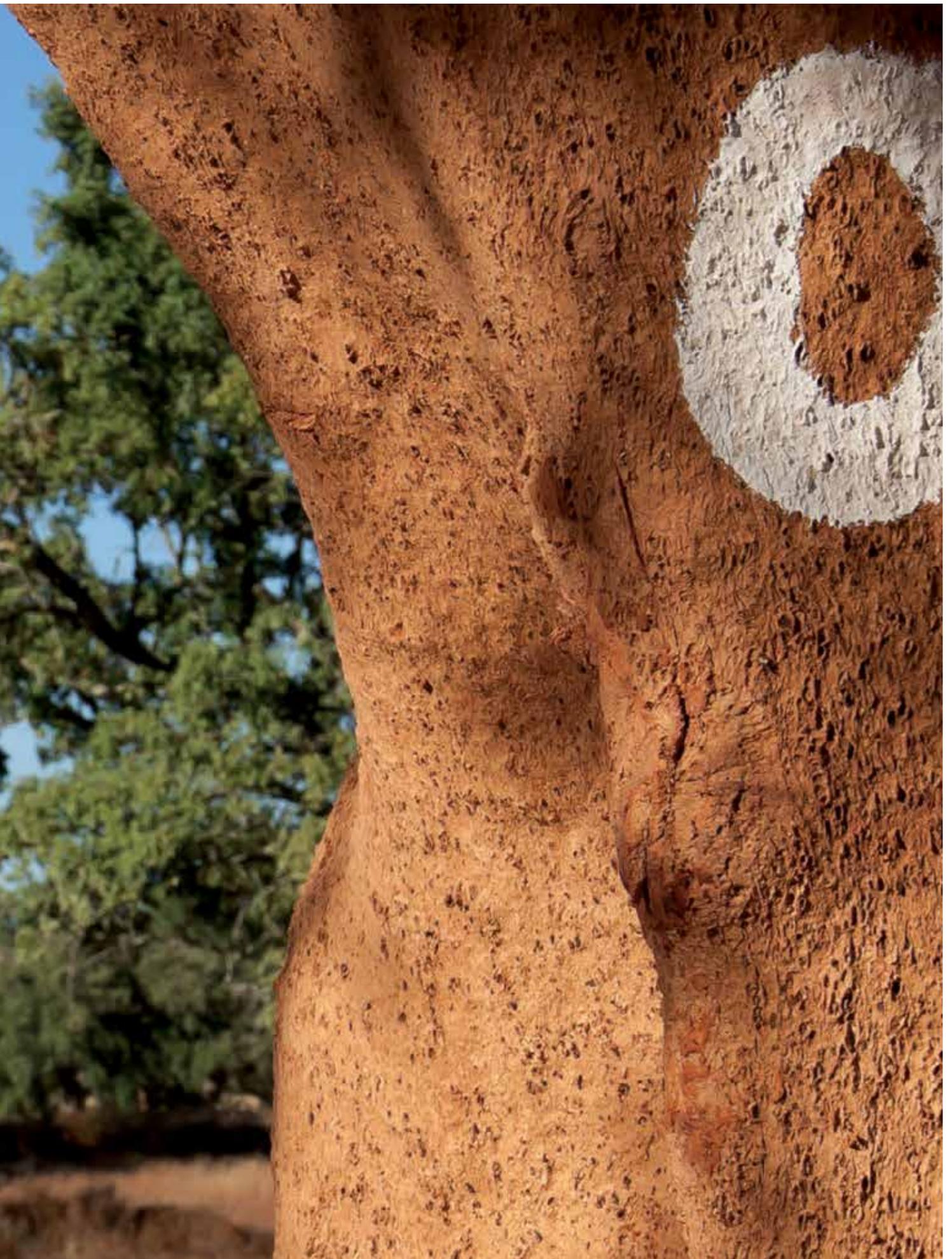
Lignum

Bast

Cork

### THE WOOD

It is a good fuel for open fires and making charcoal.



# HARVEST TIME

The life cycle of cork as a raw material begins when it is stripped: when the tree is 25 years old and the trunk circumference reaches 70 cm when measured 1.3 metres from the ground. Subsequent strippings take place at intervals of at least nine years, between the months of May and August.



## THE KNOW-HOW AND MANUAL SKILL OF THE CORK STRIPPER

Stripping the cork oak is an ancient and manual process that requires very careful and experienced hands to prevent damage to the bark or the tree.

## THE 5 STAGES OF STRIPPING THE CORK OAK

- 1. Open** - the cork is cut with the axe vertically along its most marked groove, separating the cork plank from the bast.
- 2. Separate** - the plank is separated by introducing the edge of the axe between the plank and the bast in a twisting motion of the axe.
- 3. Scribe** - the size of the cork plank being pulled off the trunk is defined by a horizontal cut or scribing.
- 4. Extract** - the plank is harvested from the tree very carefully to avoid it breaking. (The larger the plank, the greater its commercial value).
- 5. Remove Waste** - some fragments of cork are left at the base of the trunk and these are hammered several times to remove any parasites that may appear.

After the stripping, each cork oak is marked with the last digit of the year in which the cork was harvested.



## A NEW HARVEST EVERY NINE YEARS

The cork oak can be stripped 15-18 times throughout its life, at intervals of nine years.

**Aged 25 years** - The cork is stripped for the first time, obtaining virgin cork. The irregular structure and extreme hardness of this corks means it doesn't yet have the ideal quality for the production of cork stoppers. This cork is used for other applications, such as flooring or insulation.

**Aged 34 years** - 2<sup>nd</sup> stripping provides secondary cork, which has a more regular structure and is less hard. This is also transformed into agglomerates for construction and other materials.

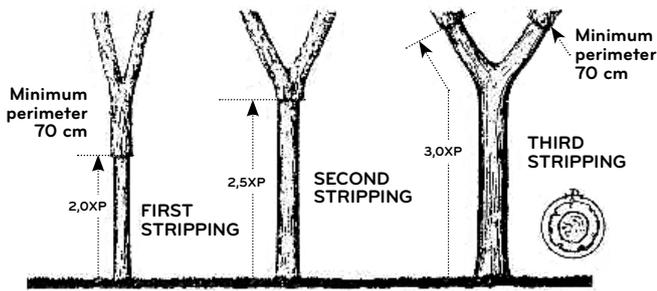
**Aged 43 years** - 3<sup>rd</sup> stripping provides amadia or reproduction cork, which has the ideal properties for the production of quality stoppers. From this point onwards, and for about one century and a half, the cork oak will offer cork of excellence every nine years.



## STABILISATION OF CORK PLANKS

It is essential after stripping to leave the cork outdoors in order to obtain its perfect maturation and stabilisation.

The International Code of Cork Stopper Practices (CIPR) established strict rules for this phase, such as the stacking of planks under materials that will not contaminate the cork and for a period never less than six months.



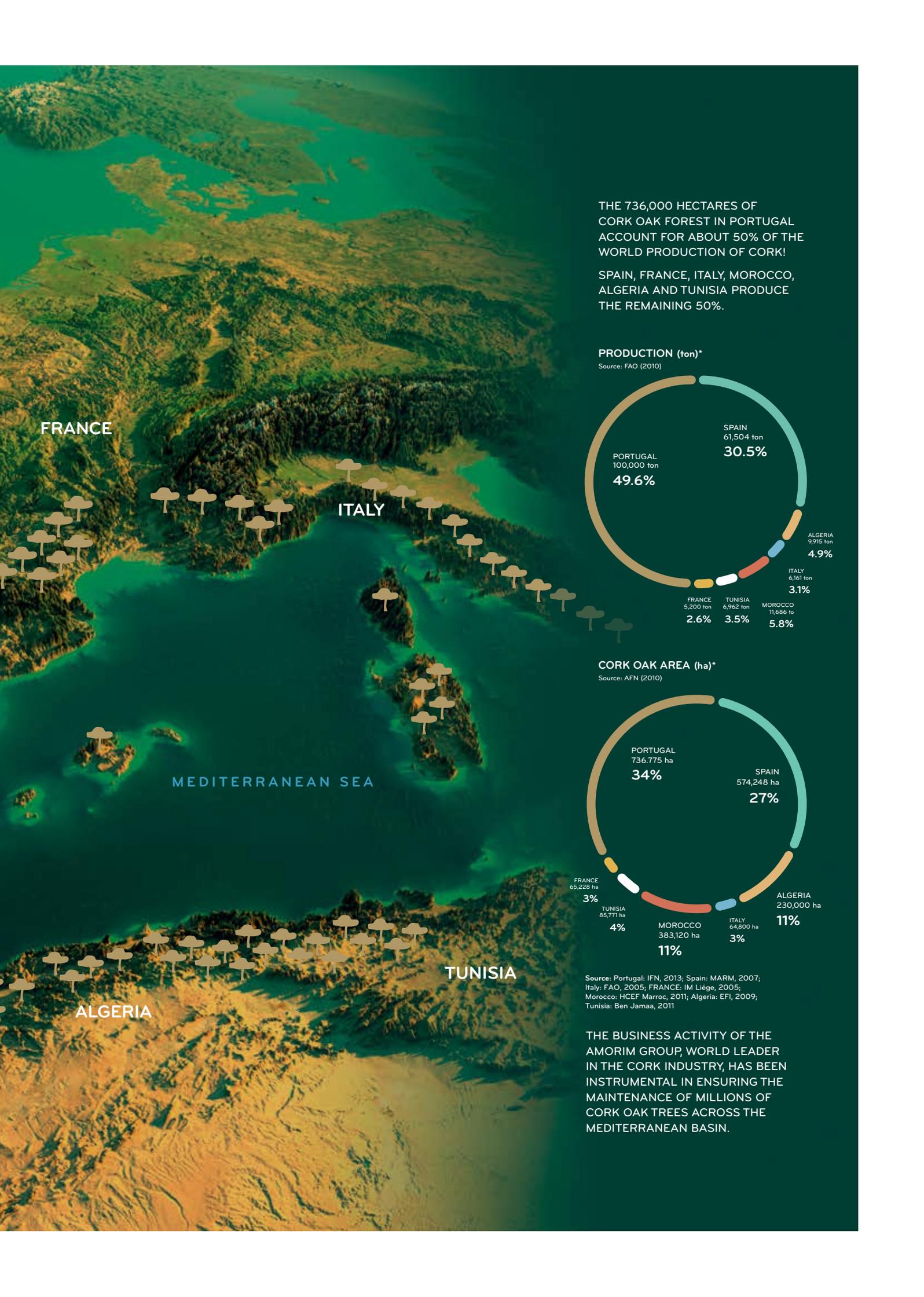
Schematic of the 3 stripping phases of the life of a cork oak.



# CORK OAK FOREST IN THE MEDITERRANEAN

2.1 MILLION HECTARES OF CORK OAK FOREST  
15,000 TO 25,000 PLANT SPECIES

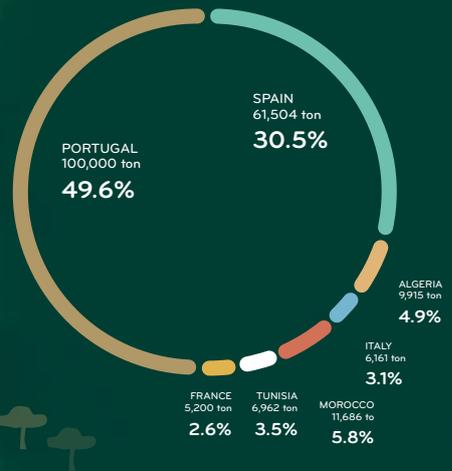




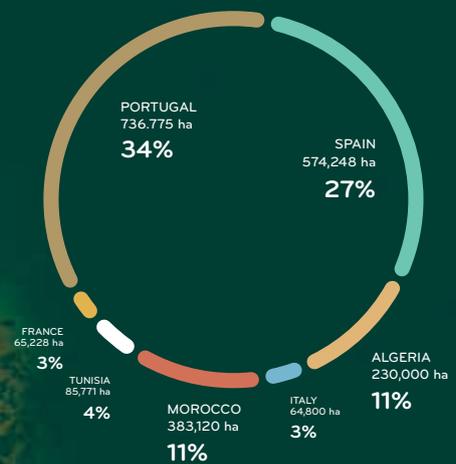
THE 736,000 HECTARES OF CORK OAK FOREST IN PORTUGAL ACCOUNT FOR ABOUT 50% OF THE WORLD PRODUCTION OF CORK!

SPAIN, FRANCE, ITALY, MOROCCO, ALGERIA AND TUNISIA PRODUCE THE REMAINING 50%.

**PRODUCTION (ton)\***  
Source: FAO (2010)



**CORK OAK AREA (ha)\***  
Source: AFN (2010)



Source: Portugal: IFN, 2013; Spain: MARM, 2007; Italy: FAO, 2005; France: IM Liège, 2005; Morocco: HCEF Maroc, 2011; Algeria: EFI, 2009; Tunisia: Ben Jamaa, 2011

THE BUSINESS ACTIVITY OF THE AMORIM GROUP, WORLD LEADER IN THE CORK INDUSTRY, HAS BEEN INSTRUMENTAL IN ENSURING THE MAINTENANCE OF MILLIONS OF CORK OAK TREES ACROSS THE MEDITERRANEAN BASIN.

FRANCE

ITALY

MEDITERRANEAN SEA

TUNISIA

ALGERIA

# SUSTAINABILITY

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The Mediterranean cork oak forest is a precious jewel in terms of renewable natural resources, a biological crown of invaluable worth.





# A VERY SPECIAL ECOSYSTEM

The cork oak is perhaps the most remarkable tree in the world! It is also one of the greatest assets of the Alentejo region. It is not only highly capable of preventing soil degradation but it is also a generator of high levels of biodiversity.

When seeking nutrients in the subsoil and by returning them to the soil through falling leaves and branches, cork oaks improve the organic matter of soils making them more productive.

They are also responsible for regulating the water cycle, since by stimulating organic matter levels they drive better water retention, facilitating its infiltration into the soil.

## QUALITIES OF THE CORK OAK

- > PREVENTS SOIL DEGRADATION
- > MAKES SOILS MORE PRODUCTIVE
- > REGULATES THE WATER CYCLE
- > FIGHTS DESERTIFICATION
- > PROVIDES RETENTION AND STORAGE OF CARBON FOR VERY LONG PERIODS OF TIME
- > GENERATES HIGH RATES OF BIODIVERSITY
- > COMBATS CLIMATE CHANGE
- > CREATES EMPLOYMENT AND WEALTH IN THE COUNTRY





# A TRUE LUNG FOR THE WORLD

## CARBON RETENTION

The worldwide scientific community now accepts that emissions of greenhouse gases are responsible for the phenomenon of global warming.

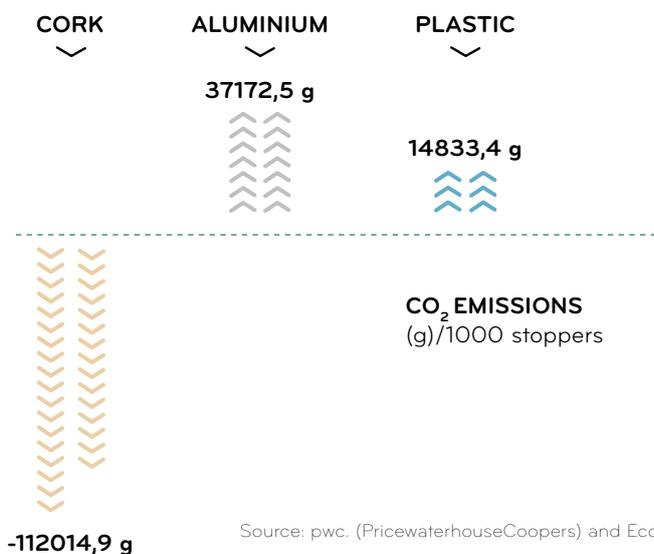
The forests are a major partner in this fight, since through photosynthesis trees absorb carbon dioxide which is converted into organic tissue. The carbon is captured and stored in the trunk, branches and roots of trees and in the forest soil.

Since the cork oak has a long life span, it promotes the storage of carbon like no other over very long periods of time.



## CORK STOPPERS: CARBON FOOTPRINT LEADERSHIP

According to a study conducted by PricewaterhouseCoopers and Ecobilan (in accordance with the ISO 14020 and 14044 standards) on the life cycle of cork stoppers versus alternative closures (aluminium and plastic), cork stoppers are the only environment-friendly choice. In other words, cork is the best closure for wine producers who want to minimize their carbon footprint and adopt the best environmental performance practices.





THE CORK OAK FOREST HAS THE CAPACITY TO ABSORB 14.7 TONS OF CO<sub>2</sub> PER HECTARE\*



**14.7 tons of CO<sub>2</sub>**

EXTRAPOLATING TO THE GLOBAL AREA OF CORK OAK FORESTS, THE WESTERN MEDITERRANEAN HAS A RETAINING CAPACITY OF ABOUT 30.66 MILLION TONS OF CO<sub>2</sub>



**30.66 million tons of CO<sub>2</sub>**

The carbon fixed by the cork oak is stored in the cork, remaining there for the entire lifetime of the product.

(\*) Source: Instituto Superior de Agronomia (Portuguese School of Agriculture), 2014

# A PARTNER IN CLIMATE EQUILIBRIUM

Man and nature have coexisted for millennia in the cork oak forest, an important biodiversity refuge and source of natural resources.

But the climate threats that the world faces today, make it urgent to take action and, in the case of the Mediterranean, only sustainable forest management where the cork activity has considerable weight will maintain the continuity of cultivating cork oaks.

Cork oak cultivation will always be associated with a key role in maintaining the atmospheric environment. As the cork oak forest is responsible for fixing a significant percentage of carbon dioxide (thanks to the unique cellular structure of cork) and also responsible for the regulation of the water cycle (by retaining rainwater and promoting its infiltration into the ground), the preservation of these forests is crucial to the climate balance.

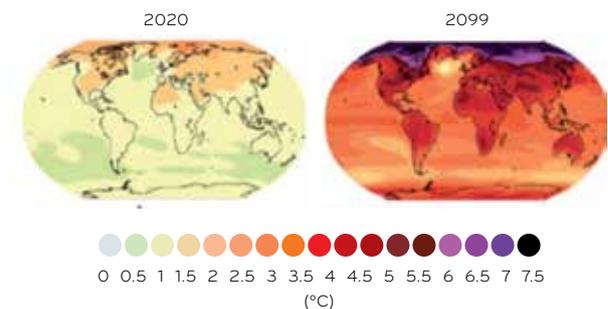


## MEDITERRANEAN BASIN, THE EUROPEAN REGION MOST VULNERABLE TO GLOBAL WARMING

Mediterranean ecosystems occupy only 1.2% of the Earth's surface. The largest of these regions is the Mediterranean Basin, which in Portugal is concentrated in the Alentejo and Algarve regions.

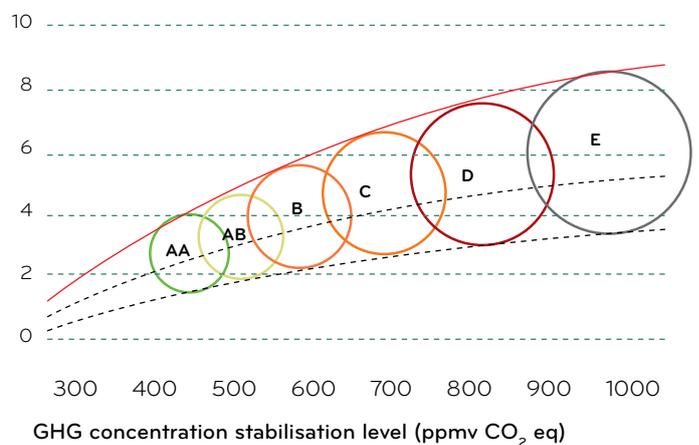
Although this region was not seriously affected by the last ice age in Europe, several European studies on climate change state that of all the European regions, the Mediterranean basin seems to be the most vulnerable to global warming during the 21<sup>st</sup> century. Rising temperatures and scarce rainfall make drought and forest fires more frequent. The EU measures are based on the implementation of the Kyoto Protocol to reduce pollutant emissions and minimise greenhouse gas emissions. In this scenario, the cork oak is the most significant plant in the fight against climate change that threatens this zone of the planet.

## PREDICTED GLOBAL TEMPERATURE INCREASE



Source: UN Report - Intergovernmental Panel on Climate Change (IPCC)

## AVERAGE GLOBAL TEMPERATURE INCREASES OVER THE LAST CENTURY



Global warming is a real threat. And if it is true that the predicted temperature increases vary across world regions, it is also true that the Mediterranean is one of the regions that will most suffer at the physical and biological level in a scenario of not complying with the recommended measures.





# A BARRIER AGAINST DESERTIFICATION

17 June marks the World Day to Combat Desertification and Drought, a day that is intended to warn and raise the world's awareness of a worrying fact of today's world: the advance of desertification in various geographical areas of the planet, including the desert of North Africa and Algeria.

The cork oak is the only natural element capable of preventing this scenario, as shown by the joint study by WWF (World Wide Fund for Nature) and CEABN / ISA, Professor Baeta Neves Centre for Applied Ecology (Lisbon Agricultural University). The study "The cork oak, a barrier against desertification" indicates that desertification advance in 2020 will reach a rate of more than 1,000 m/year if the cork oak forest is inadequately managed.

## **2020: DESERTIFICATION COULD ADVANCE 1000 METRES/YEAR.**

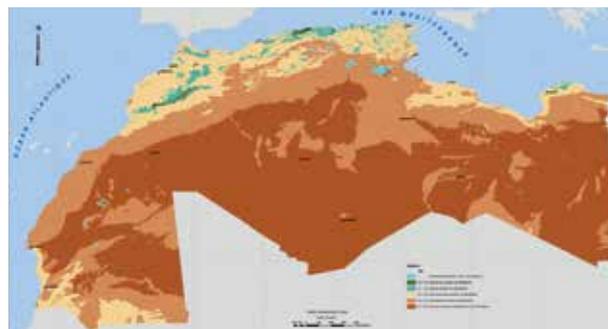


Chart of desertification sensitivity in the countries of North Africa

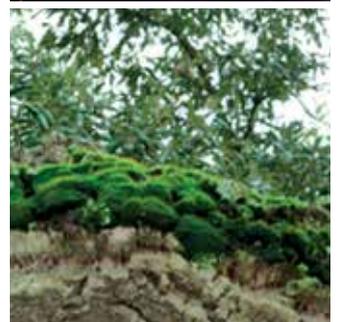
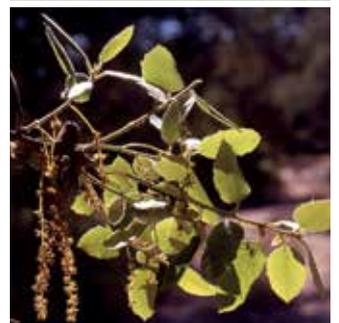
Source: Observatoire du Sahara et du Sahel (OSS) – international and intergovernmental organisation acting in the dry arid, semi-arid and sub-humid African areas.

# A BIODIVERSITY TEMPLE

The cork oak forest is one of 35 global biodiversity hotspots, as it is home to more than 160 species of birds, 37 species of mammals and 24 of reptiles and amphibians, some of them endangered species. It is considered one of the richest ecosystems in the world. In the cork oak forest there are about 135 plant species per 1000 sq.m., which can be used for aromatic, culinary and medicinal purposes. The crown of the cork oak forest is the perfect shelter during nesting seasons. The imperial eagle (*Aquila adalberti*), the short-toed eagle (*Circaettus gallicus*), the booted eagle (*Hierattus pennatus*) and Bonelli's eagle (*Hierattus fasciatus*), all of them endangered, nest in cork oak forests.

The cork oak forest is the preferred habitat of the Iberian lynx (*Lynx pardinus*), the most endangered feline worldwide, and the wildcat (*Felis sylvestris*).





# AN INVITATION TO LIVE FROM THE LAND

According to the WWF, more than 100,000 people living in the Mediterranean basin are economically dependent on the cork oak forest and cork-related business activities.

## JOB CREATION AND ENCOURAGING THE SETTLEMENT OF PEOPLE

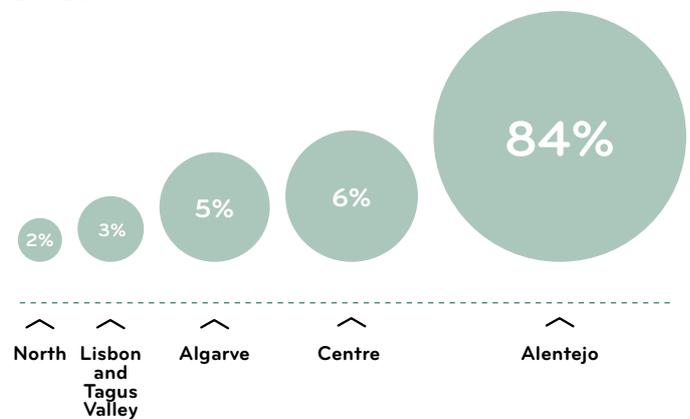
More than 50% of world cork production occurs in only 8% of the Portuguese territory.

The cork activity as well as related activities fuelled by this industry create jobs in many rural areas of the country, encouraging people to settle there and thus halting the depopulation of those areas.

The cork oak forest is thus an economically viable agroforestry system. Besides cork harvesting, the livestock industry also plays a significant role in these areas as well as beekeeping and the production of aromatic and medicinal plants and mushrooms.

Rural tourism and ecotourism are also growing and becoming increasingly popular in the Alentejo cork oak regions, with a significant weight in the creation of local jobs.

CONCENTRATION OF THE PORTUGUESE CORK OAK FOREST BY REGION



Source: Forest Resources General-Directorate (DGRF - Portugal) Year: 2006

The cork oak forests create 9,000 direct jobs in the cork industry in Portugal and 6,500 in the area of forest maintenance. And there are thousands who indirectly depend on activities related to the cork oak forests.





# CHARACTERISTICS OF CORK

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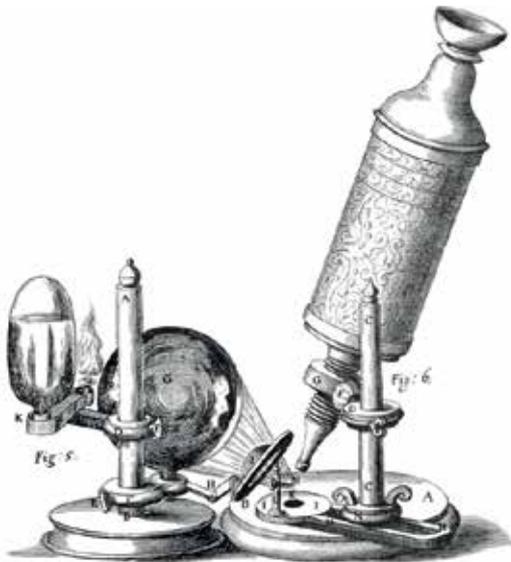




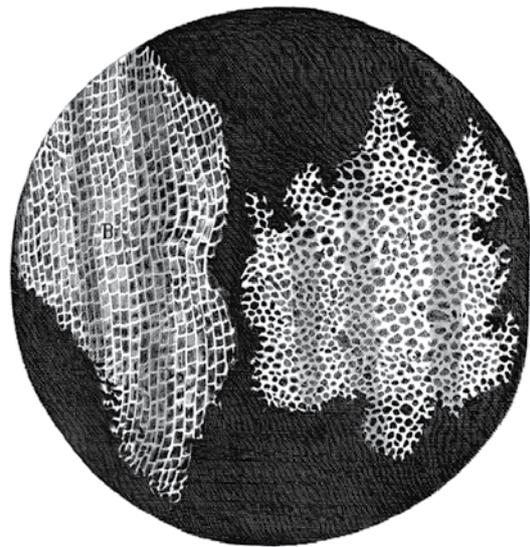
# A SURPRISING "HIVE" OF CELLS

## THE VERY FIRST CELL...

was identified by the English scientist Robert Hooke, who observed tiny pieces of cork under a microscope. Hooke observed small cavities which he named "cells" (from the Latin *cella* = enclosed space, small compartment).

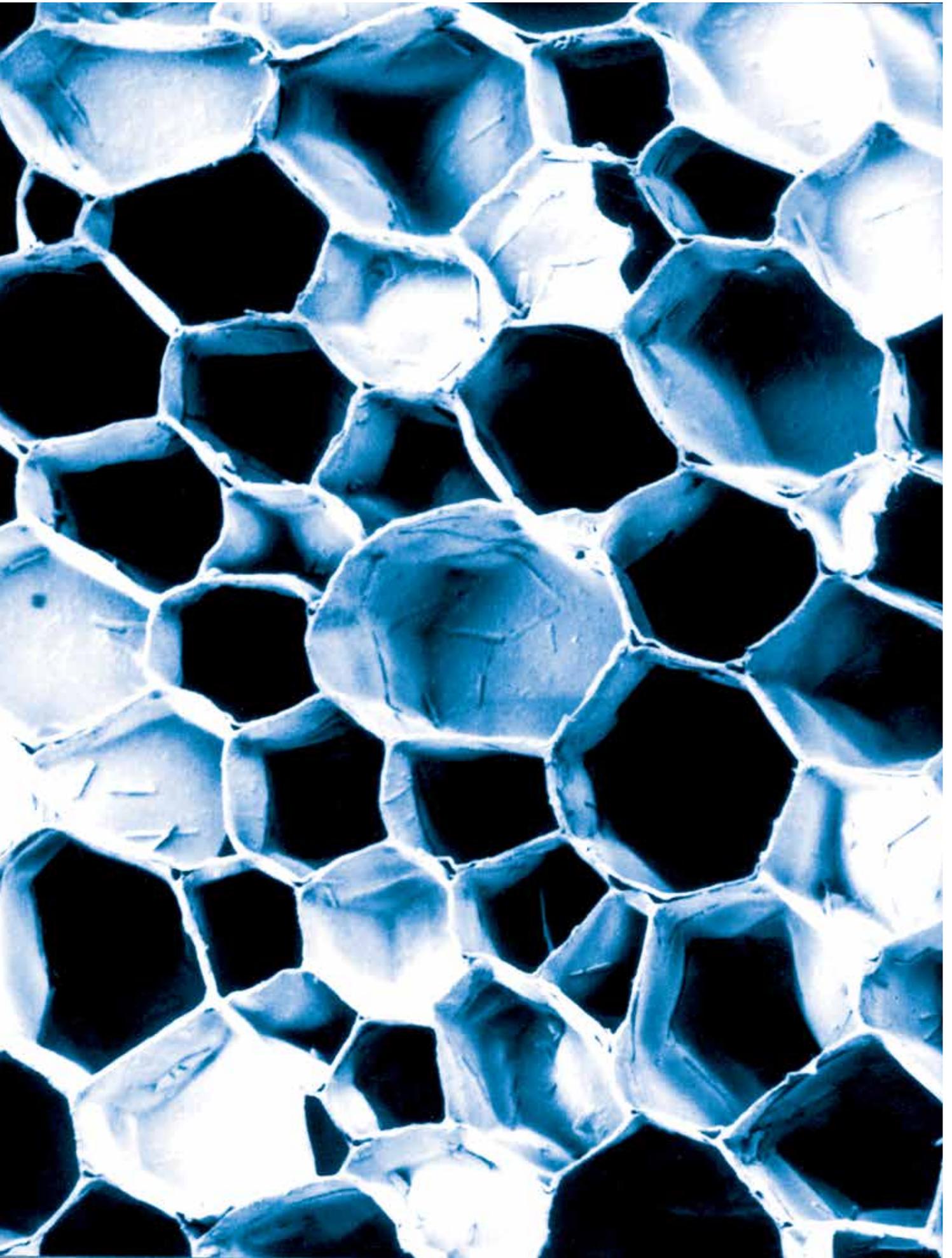


Representation of Hooke's first microscope (from the book "Micrographia" by Robert Hooke).



Drawings of Robert Hooke after observing the cork cells under a microscope ("Micrographia" by Robert Hooke).

The cork cells are grouped into a characteristic honeycomb structure. Each cell has the form of a minute pentagonal or hexagonal prism, that can measure between 10 and 50 thousandths of a millimetre. Each cubic centimetre of cork contains around 40 million cells which are laid out in rows perpendicular to the trunk of the cork oak.



Cork cell observed under the microscope.



Suberin (a kind of natural wax) envelops the walls of each cell and blocks off the air (mixture of gases) giving cork its impermeability and many other features.

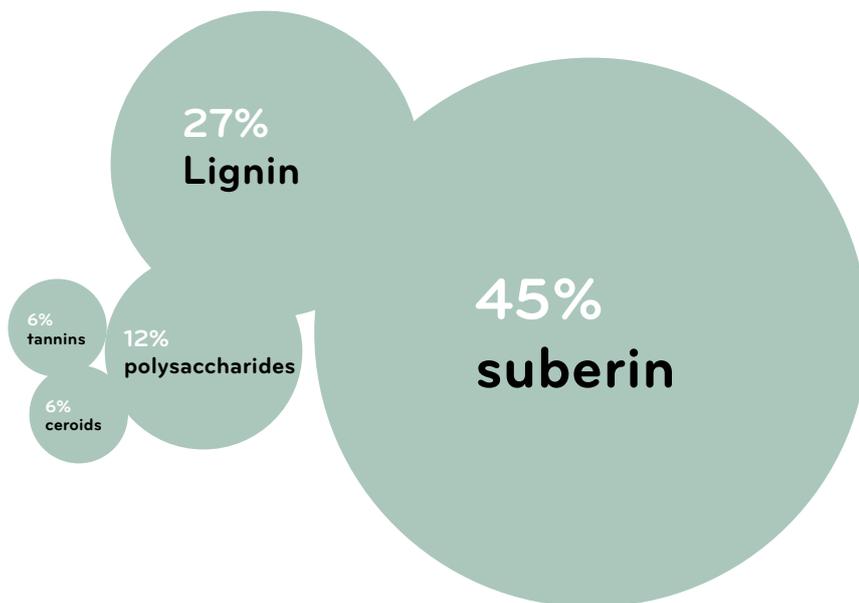
60% of each plank of cork is made up of gases.

## CHEMICAL COMPOSITION OF CORK

The great secret of cork lies in the gas mixture similar to air that fills each cell and the percentage of suberin in the cell walls.

The high percentage of gas of each cell is responsible for the extraordinary lightness of cork, while the association of these cells as if they were small pillows joined together is responsible for its elasticity and compressibility.

Cork can be compressed to half its size without losing any flexibility!



**1 CORK  
STOPPER = 800 MILLION  
CELLS!**



## AN INIMITABLE PERSONALITY!

It is impossible to mimic so many features simultaneously in a single material! There is no material in the world like cork ... none that is able to unite all of these features:

- > Excellent thermal and acoustic insulation
- > Impermeable to liquids and gases
- > Excellent resistance to fire and high temperatures
- > High friction resistance
- > Excellent elasticity and compressibility
- > Good resilience
- > Extremely light and buoyant
- > Hypoallergenic
- > Comfortable
- > Soft to the touch

# CORK AND THE AMORIM GROUP, A SUCCESS STORY

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# CORK AND THE AMORIM GROUP, A SUCCESS STORY

The Amorim Group is currently the undisputed leader in the cork industry worldwide, contributing like no other player to sustainability and innovation in the sector. The Group has focused, guided by a vision of sustained growth, on diversifying its operations by investing in industries and geographical areas with high potential for profitability. It began a process of vertical integration of the cork business and internationalisation of the business activities in the 1960s.

Under the slogan "not a single market, nor a single client, nor a single currency, nor one single product," the Amorim Group crossed risky geographical boundaries and constraints for the time, in order to present cork to the four corners of the world.

More than any other player of the market, the Amorim group has invested unparalleled in research, innovation and design. It has developed a portfolio of products and solutions of high added value, which anticipate market trends and exceed the

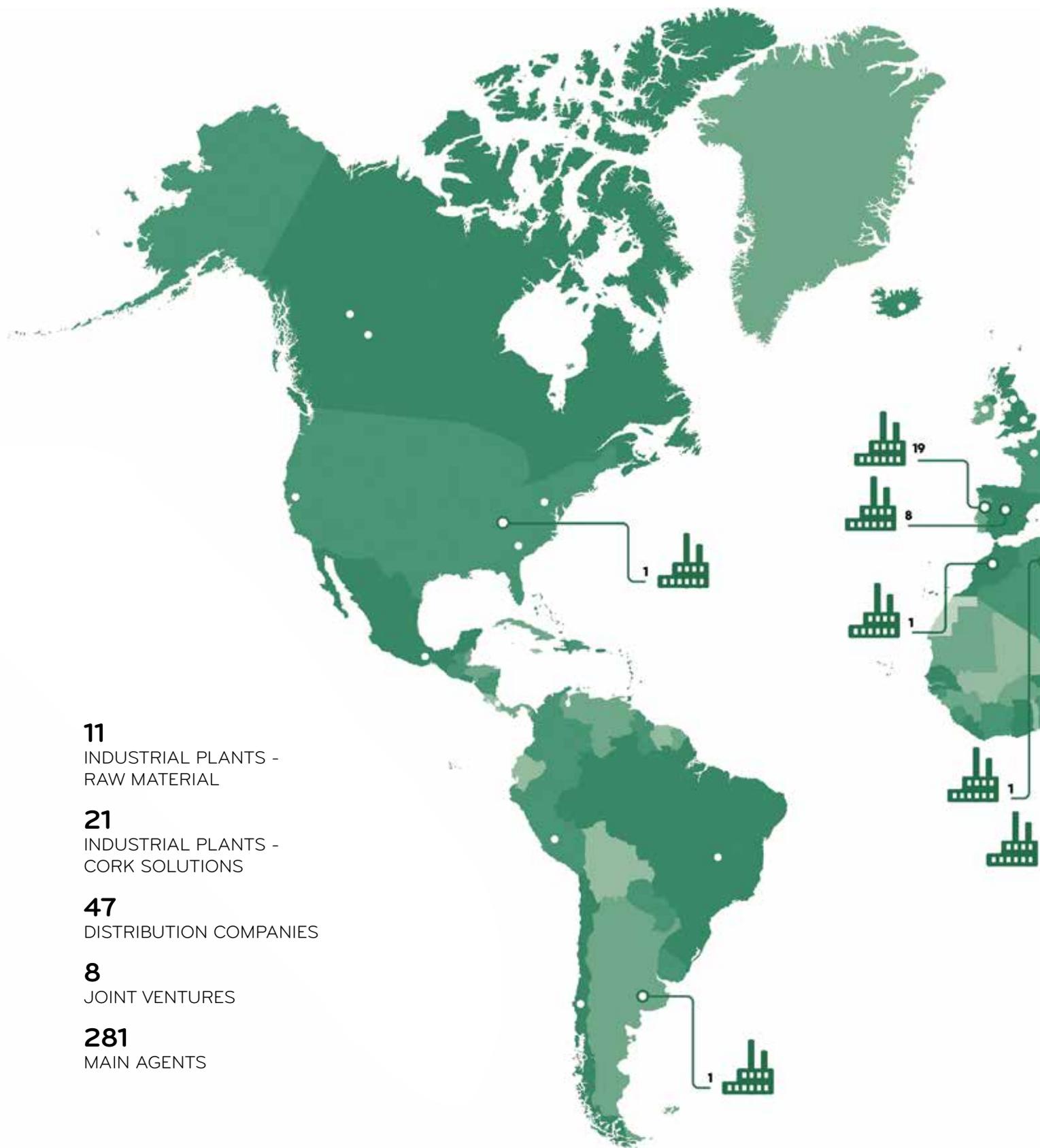
expectations of some of the world's most demanding industries.

Its signature is present in the cork stoppers of the best wines, in the most unlikely of everyday objects, articles used in Olympic sports, absorbents of oils and organic solvents, engineering works that are global references, the latest generation of road and rail projects, spacecraft. In the field of contemporary creativity, designers, scientists and architects are challenged to explore the infinite potentialities of cork and to dazzle the world with it.

The Amorim Group, maintaining always the mission to respect the principles of economic, social and environmental development, continues to build on the foundations on which it is built - business vision, responsibility, diligence, creativity and innovation. And the mission of standing out through excellence, in terms of management, products and services. A will that is contagious and feeds the enthusiasm of the younger generation (the fourth) involved in the family business.



# WORLDWIDE PRESENCE



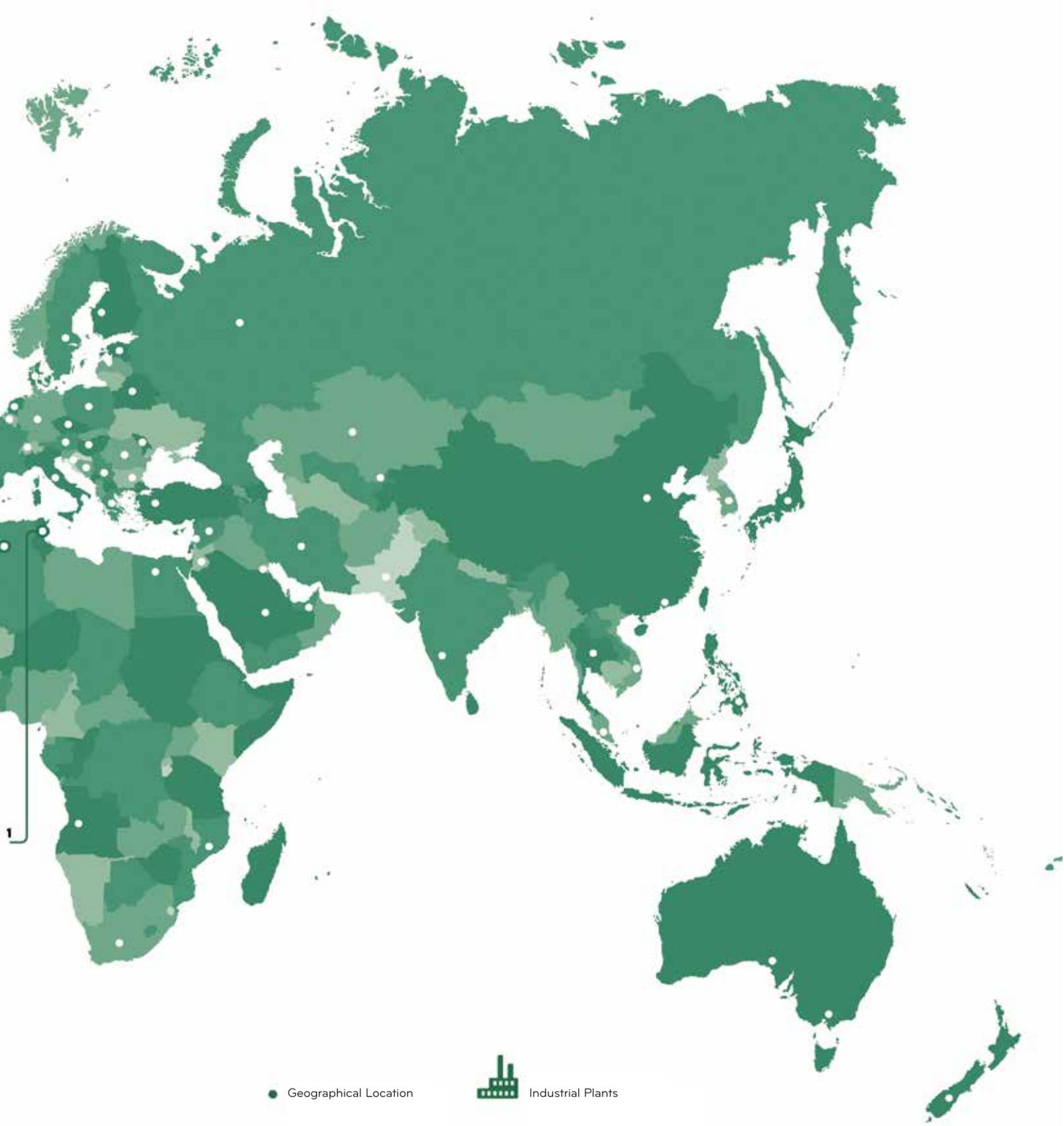
**11**  
INDUSTRIAL PLANTS -  
RAW MATERIAL

**21**  
INDUSTRIAL PLANTS -  
CORK SOLUTIONS

**47**  
DISTRIBUTION COMPANIES

**8**  
JOINT VENTURES

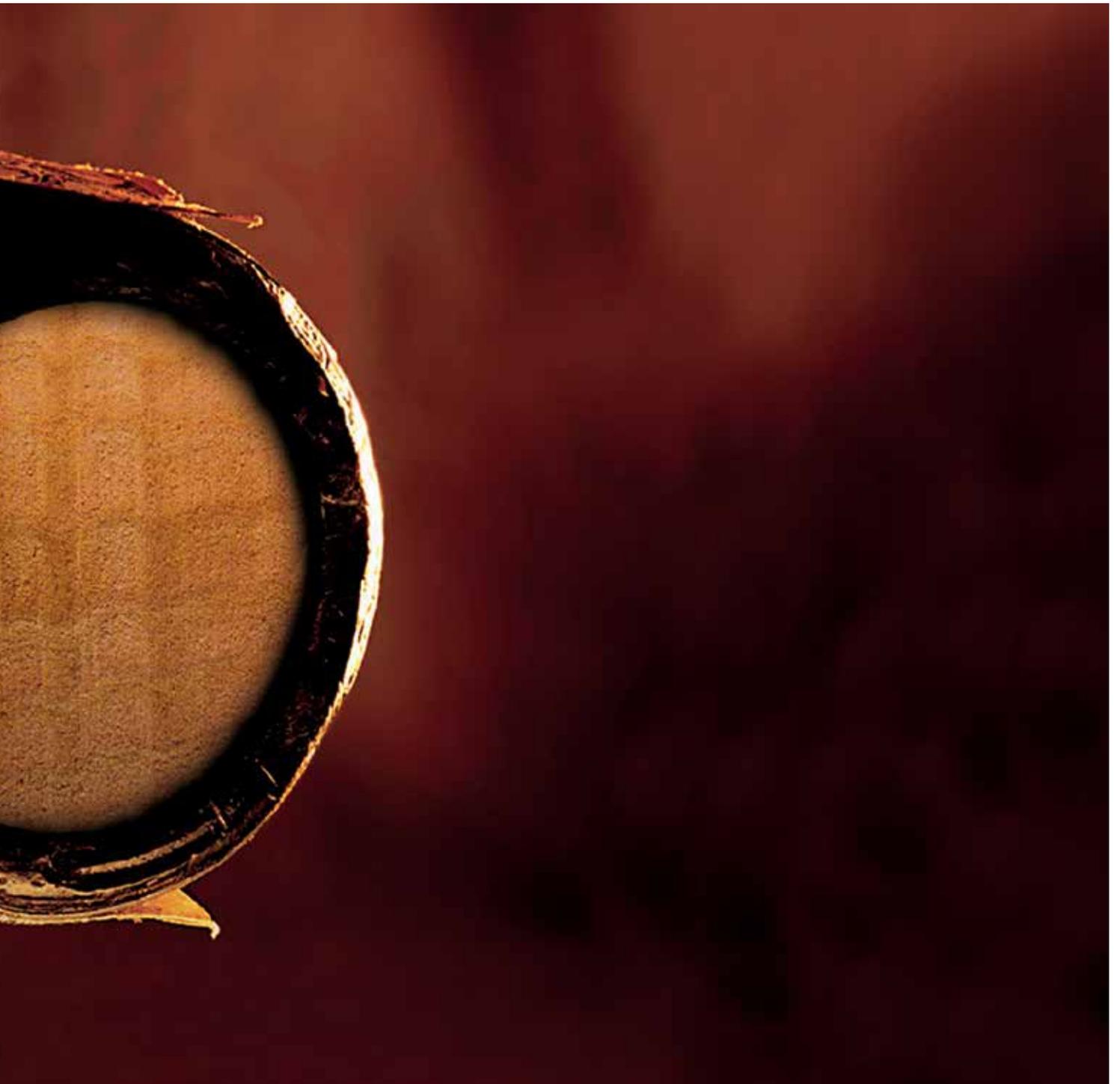
**281**  
MAIN AGENTS



# CORK AND WINE

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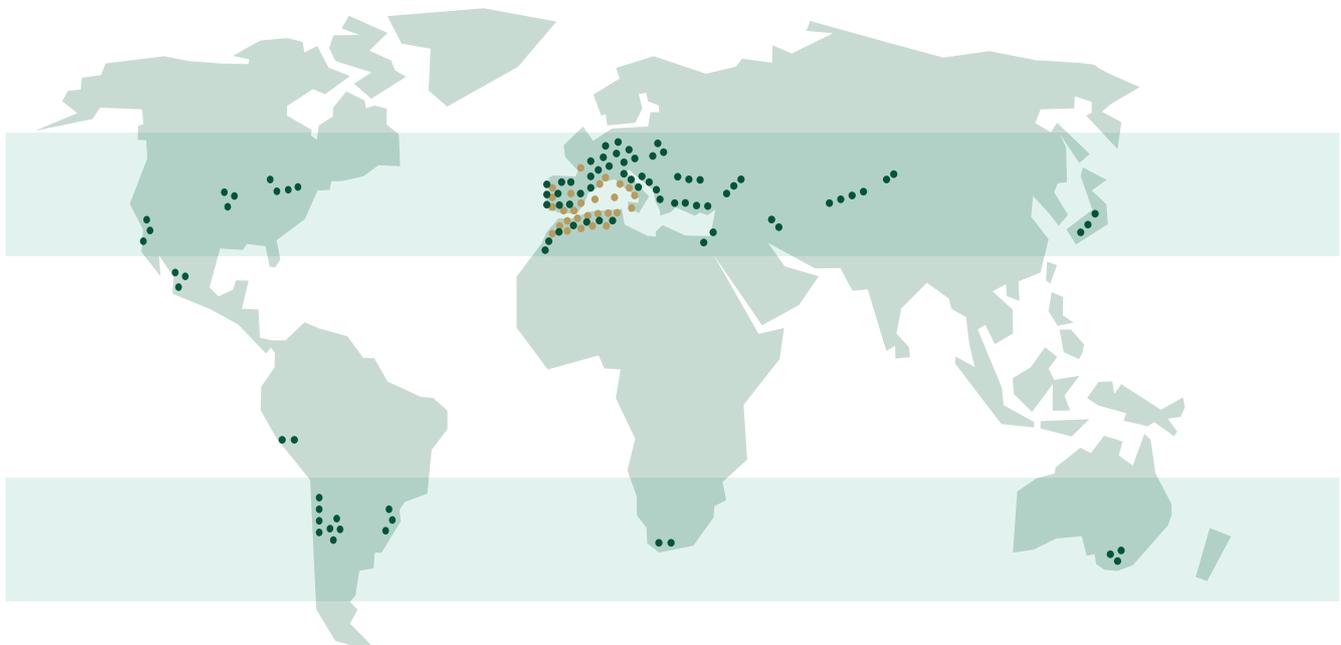
# CORK AND WINE

The cork stopper is the only closure able to respect the evolution of wine and the development of its splendour after bottling. It is also the only one capable of combining tradition, sustainability and high technical expertise, whatever the drink to be preserved.

The Amorim Group has been involved in this communion of Man and Nature, Cork and Wine since 1870, when it started manufacturing cork stoppers for the wine industry. Today, the Amorim brand has its own worldwide distribution network that markets a vast portfolio with the ideal solutions for every wine segment.

Each year, around 12 billion bottles are closed with cork stoppers.

More than 70% of the world's wine producers prefer cork stoppers.



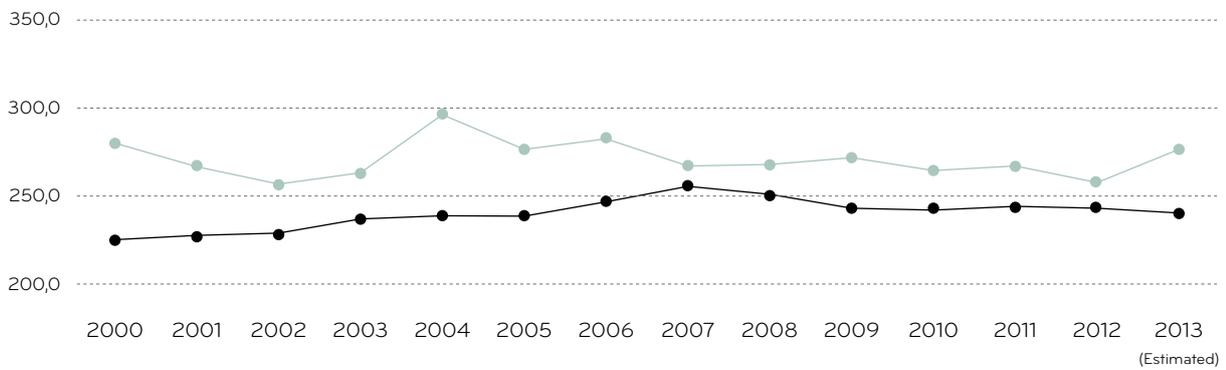
- The world's winemaking regions
- Regions of cork oak forest

## 4 MILLION HECTARES OF VINEYARDS WORLDWIDE

The vineyards are mainly distributed across southern Europe, East Asia and the Americas. In several geographical areas, the growing of grapes coincides with the cork oak forest, i.e. vines and cork cohabiting at their origin!



EVOLUTION OF WORLDWIDE WINE PRODUCTION AND CONSUMPTION (MILLION HL)



OIV - Organisation Internationale de la Vigne et du Vin

— Wine Production  
 — Wine Consumption

# NATURAL CORK STOPPER

100% natural, enhanced by cutting-edge technology, the natural cork stopper is a guarantee that the wine will mature in the best conditions! Its sealing capability is perfect and it will provide the best conditions for the evolution and maturation of the wine.

It is recommended for reserve wines and wines that require ageing in the bottle.





The natural cork stopper is the preferred choice of the most sophisticated connoisseurs and best winemakers of the world.







# CHAMPAGNE AND SPARKLING WINE CORK STOPPER

The champagne cork stopper has evolved into its final form since Dom Pérignon first recognised in it all the virtues he sought for his wines. It comprises a main body of agglomerated cork with two discs of natural cork at either end that remain in contact with the wine.

It is intended for wines that combine extreme pressure with a subtle delicacy, such as champagne and sparkling wines. An undisputed option for the best champagnes in the world.



# TECHNI- CAL CORK STOP- PERS



## TWIN TOP

Based on the technology for production of champagne corks, the Twin Top® is a technical cork stopper developed in response to the highest demands of wine producers. It consists of a natural cork disc on both ends of a body of agglomerated cork, ensuring it retains all the properties of natural cork stoppers. It is ideal for fruity wines and recommended for wines not intended for long bottle ageing.





## NEUTRO CORK

It has been developed using cutting edge technology, and offers great structural stability resulting from its composition: micro cork granules of uniform size.

It is recommended for wines with a certain complexity and intended to be consumed quickly. A new generation of stoppers at an extremely competitive price.

The new Advantec Colours® line is directed at younger consumers and beverages that are consumed quickly. This innovative specialised cork stopper aims to attract the consumer's attention and meet the market's needs, allowing the cork stopper's colour to match that of the rest of the product's packaging.



# TOP SERIES CORK STOPPER

Capsulated natural cork stopper that combines the high technical and environmental performance of natural cork with a distinctive design.

Available for four different market segments, the Top Series® has the most varied range of appearance options. It is recommended for the most prestigious beverages: the Prestige range uses innovative and luxurious materials, the Elegance range is complemented by ceramic, wood and metals, the Premium range can be customized with logos, shapes and materials; the Classic Value range is designed according to the specifications of each client, allowing colours and moulds to be worked separately.







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# HELIX

## **AN INNOVATIVE WINE PACKAGING CONCEPT**

After four years of research and development, Corticeira Amorim and the US company O-I, world leaders in the cork and glass packaging sectors, surprised the market with this innovative concept.

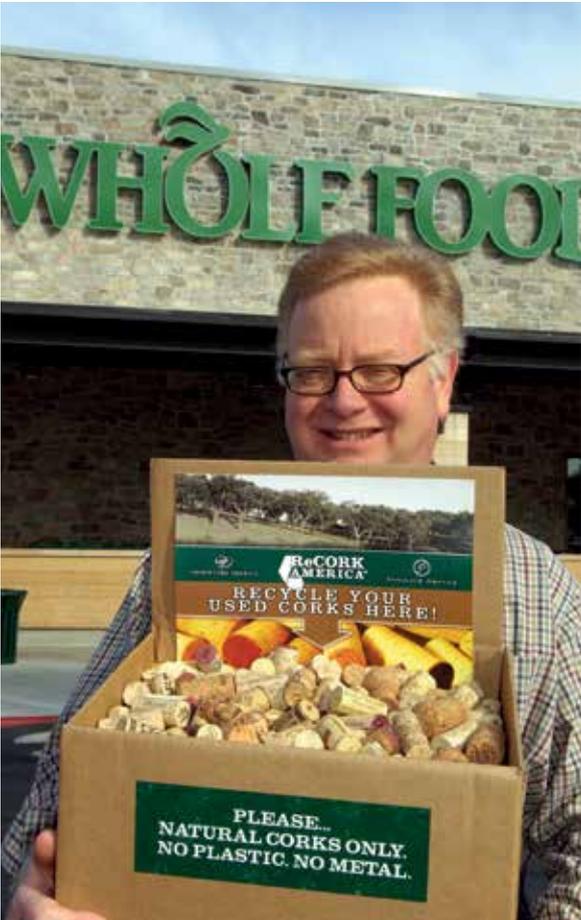
Helix combines an ergonomically designed cork stopper and a glass bottle with an internal thread in the neck, creating a sophisticated solution of superior technical performance.

It combines all the benefits of cork and glass - quality, sustainability and premium image - which are now boosted by the advantages of an easy to open and easy to close wine bottle.



# CORK STOPPER RECYCLING

If cork is already, by nature, a highly ecological material, the possibility of recycling and re-using it in new products ensures it performs excellently in terms of sustainability. The Amorim Group developed a cork stopper recycling programme in various countries. Portugal, United States, France, Italy, UK and South Africa are some of the countries where these programmes run, which rely on the collaboration of several national and international partners.





In Portugal, in partnership with Quercus, the used corks recycling programme is called "Green Cork" and seeks not only to transform used corks into other products but also to support the "Common Forest" programme, which envisages the planting of national native forest trees, such as cork oaks.

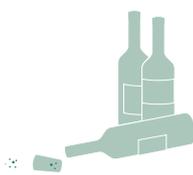
Under this initiative, the used corks are ground down and the resulting granules are incorporated into new applications, ranging from coverings, construction products and consumer goods, to any and all uses, except for that of cork stopper.

## THE LIFE CYCLE OF A RECYCLED CORK STOPPER



### CORK OAKS

Planks of cork are removed from the cork oak without damaging the tree.



### CORK STOPPERS FOR WINE

Cork is made into stoppers for wine and after use they are collected for recycling.



### GRINDING

The corks are ground and transformed into granules in the recycling process.



### OTHER PRODUCTS

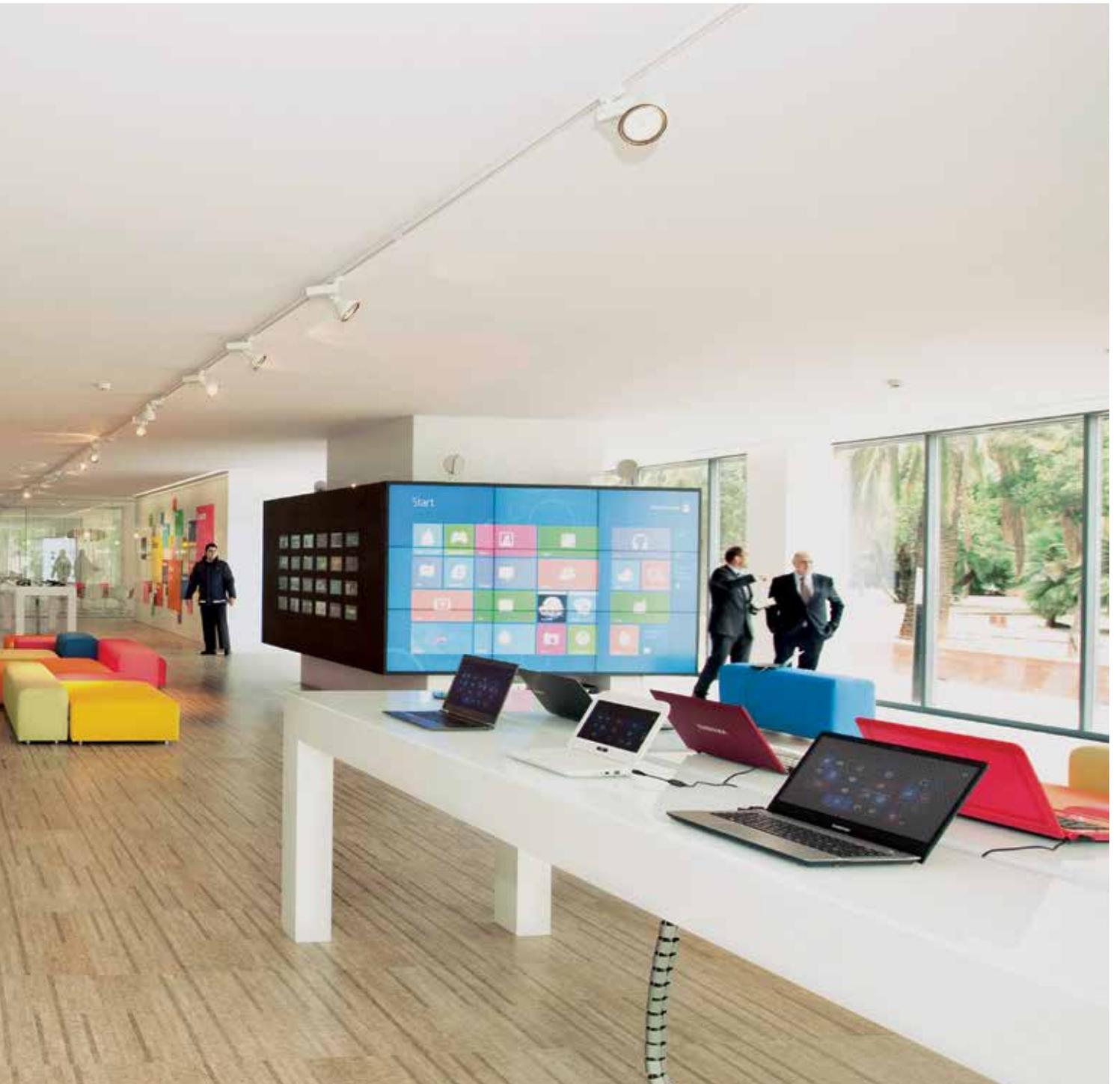
Granulated cork is used to produce other products ranging from the automotive industry to aerospace and civil construction products.

# CORK FLOOR & WALL COVERINGS

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Microsoft head office, Portugal



# A NEW GENERATION OF CORK COVERINGS

The Amorim Group has been in the coverings market for more than 40 years, and is known worldwide for its pioneering and innovation in high quality coverings with cutting edge designs.

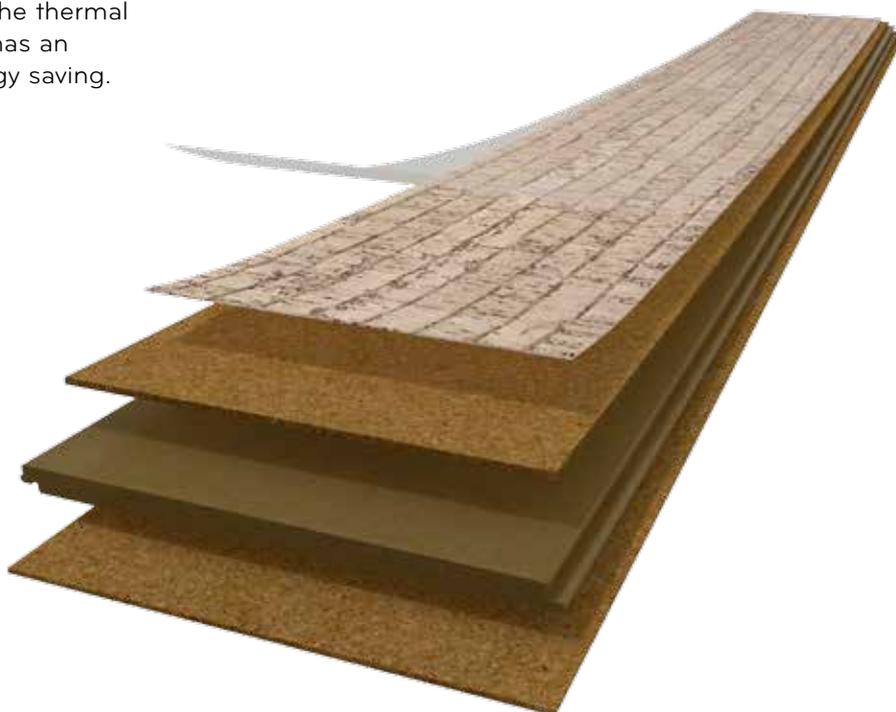
## CORKTECH TECHNOLOGY

The premium brand Wicanders has developed, over several years, floor and wall coverings with unique properties due to the Corktech technology. The combination of the natural and unique properties of cork with the most advanced technology in a single multilayer structure has allowed Wicanders to achieve a superior quality floor.

The excellent performance is based on a structural layer of high density cork - which confers walking comfort, thermal comfort and noise reduction - supported by an integrated cork underlay - which strengthens the thermal and acoustic properties. This floor has an immediate impact in terms of energy saving.

## MUCH MORE THAN JUST A BEAUTIFUL FLOOR

- More silence
- More walking comfort
- More warmth
- More body wellness
- More impact resistance





**WICANDERS  
CORKCOMFORT®**

Different flooring solutions are composed, starting from the appearance of natural cork, which are combined with a colour treatment to create environments full of authenticity and character.

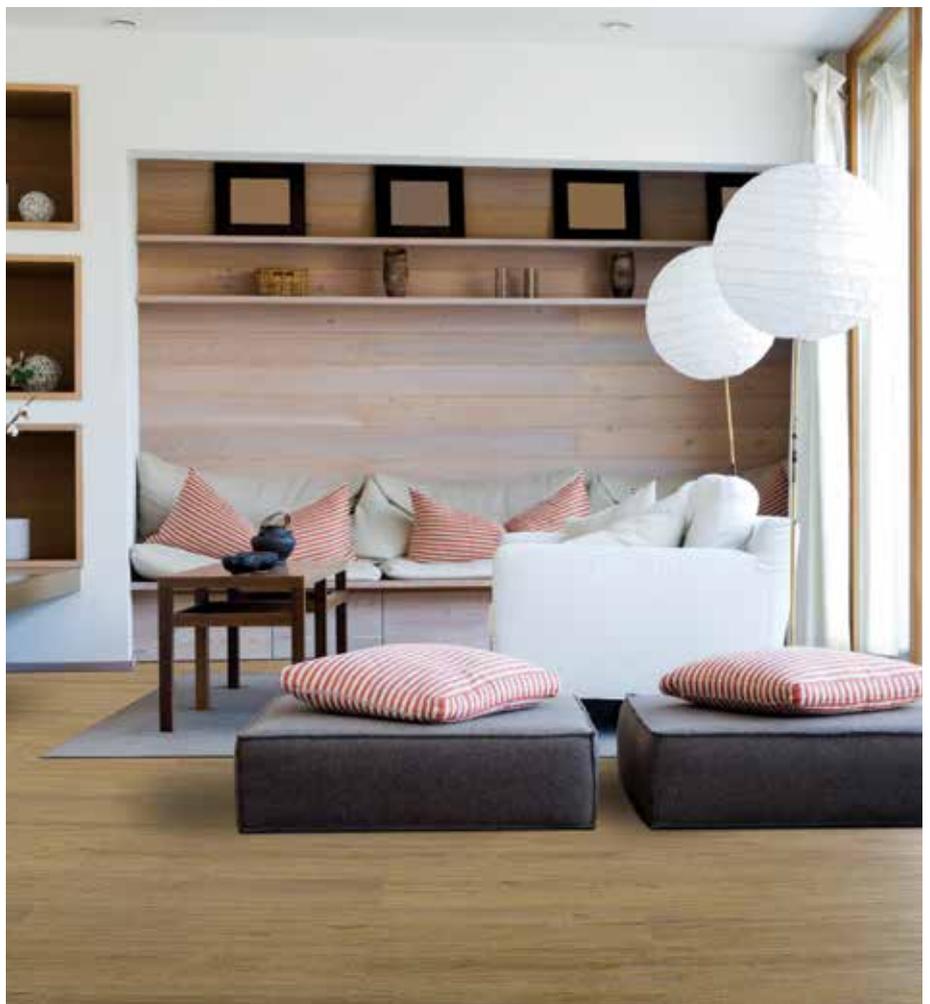
## WICANDERS WOODCOMFORT®

This product line adds a sheet of natural wood, of different types, to the decorative layer obtaining a product that combines the unique appearance of wood with the unrivalled characteristics of cork in terms of acoustics and thermal performance.



## WICANDERS VINYLCOMFORT®

It uses the latest technology to combine the unique comfort of cork with vinyl appearances that reproduce, with the highest quality, the natural textures of various types of wood or stones. This range stands out for its durability, easy maintenance and wear resistance.





## WICANDERS ARTCOMFORT®

In line with the new market trends and supported by the most advanced printing technologies, any kind of design can be replicated on the cork surface with a level of realism and definition never seen before.



## WICANDERS DEKWALL®

This product line represents an alternative to conventional wall coverings. The variety of patterns, textures and colours creates warm and elegant environments with a natural and noble touch, while providing greater acoustic and thermal insulation to the home. These cork-based wall solutions are extremely easy to clean, hypoallergenic and moisture resistant.





## **WICANDERS PARQUET®**

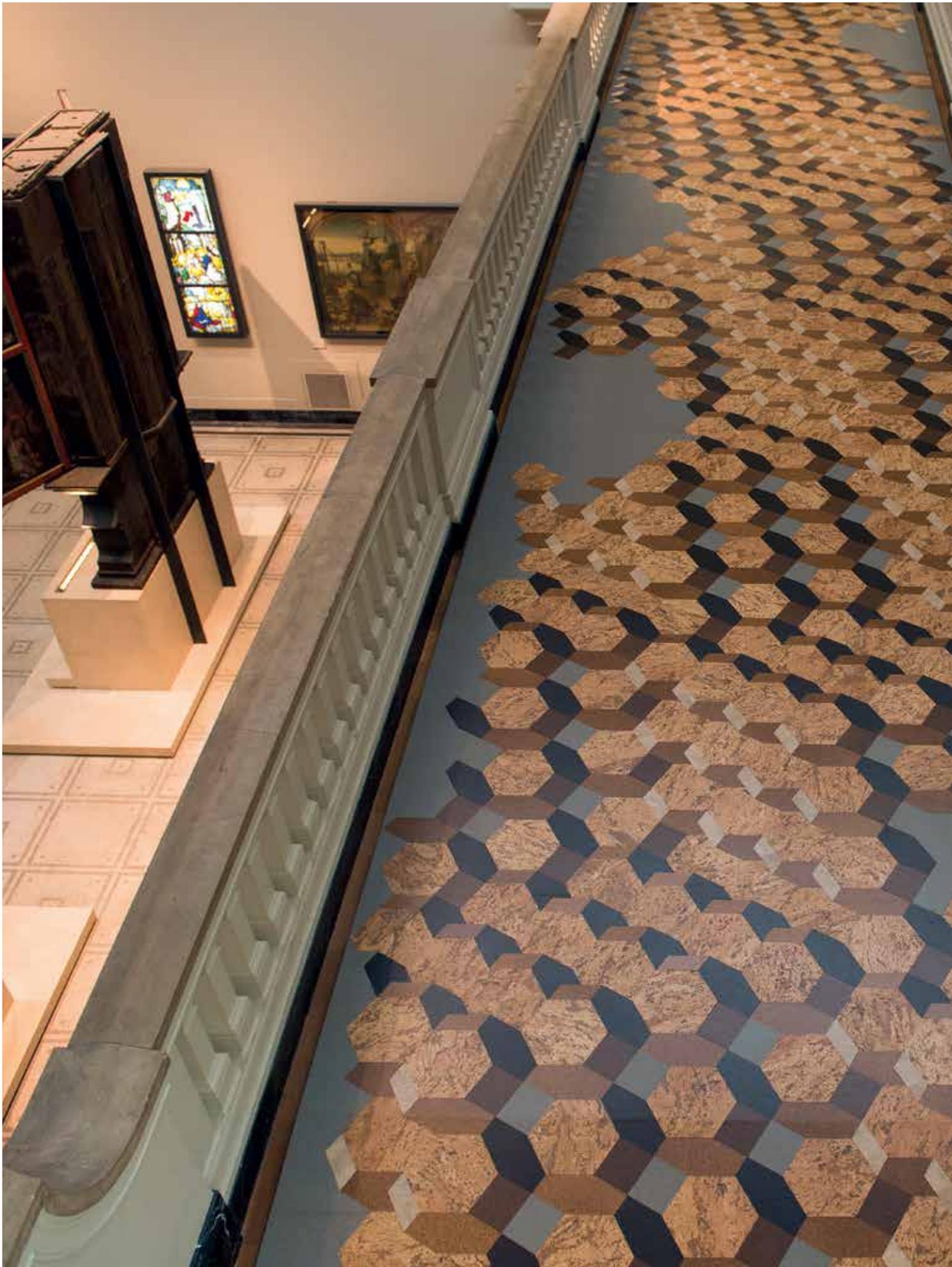
A parquet product made from solid wood or produced by a multilayer process. It is made from a vast range of woods from certified forests and produced fully in respect of nature. The range of types of wood with innovative solutions for surface finishes produce high quality products that are long lasting and easy to install.





## SAGRADA FAMÍLIA

Cork was used as a construction material in one of Barcelona's largest iconic buildings, the Sagrada Família Cathedral, because it is a natural material perfectly harmonized with the philosophy of Gaudí, with so many inimitable virtues and also highly durable and slip-resistant.





## VICTORIA & ALBERT (V&A) MUSEUM

Amorim Revestimentos and the design and architecture studio FAT – Fashion Architecture Taste, presented a project developed from a natural cork flooring in the world's design capital.

"Working with the V&A Museum and FAT design studio has given us the best cork flooring that I have ever seen".

Ben Evans, Director of the London Design Festival

# EXPANDED INSULATION CORKBOARD

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Portugal Pavilion in Shanghai (2010) with MD Façade



# THE WORLD'S MOST SUSTAINABLE INSULATION SOLUTION

Expanded insulation corkboard is fully produced from raw cork. It is 100% natural, with unlimited durability, and renewable, making it the great ally of sustainable construction, whether due to its thermal and acoustic insulation properties or its aesthetic properties, when applied as a covering on exterior façades of large architectural projects.

## LONG LIFE SPAN AND SUSTAINABLE

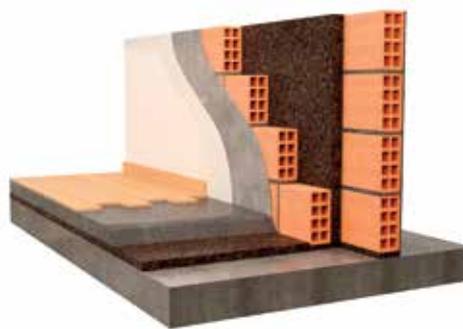
In a comparative analysis of the life cycle of different products, expanded insulation corkboard clearly stands out. It has virtually unlimited durability, and it keeps all its features throughout the product's lifetime.

The process of industrial transformation is done without the use of additives (only cork is used) and it requires reduced energy consumption. Over 93% of the energy needs of the production process are met by using biomass fuel (cork dust), which is a CO<sub>2</sub> neutral source of energy. These factors were crucial to the products being included on the 2013 BuildingGreen Top-10 Product list, the largest US directory of sustainable construction products.

ETICS



Floating floor with wood covering and Unattached to Wall



Traditional Heated Floor



Traditional Flat Roof



The Ecorkhotel (MD Façade) is in the city of Évora, surrounded by a unique and welcoming environment of centuries-old cork oaks, holm oaks and olive trees.



Quinta do Portal (MD Façade), by Álvaro Siza Vieira | Douro Architecture Prize

# COMPOSITE CORK

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Cork is a highly capable material able to work in environments of large temperature fluctuations, with the contractions and dilations of materials. It is commonly used, for this reason, in large-scale public works, such as in light concrete and expansion joints for roads, bridges, dams, railways and airports.



Cork expansion joints are already a mandatory presence in the most complex engineering projects.

## HIGH PERFORMANCE

The by-products generated from the production of cork stoppers and the recycling of other materials are processed into pellets and then into pure and mixed composites, which can be used in a multitude of applications.



## ACOUSTICORK® UNDERLAYS

Cork underlays can be applied in any type of final flooring, including tiled, wood, carpet, linoleum, screed mortar floors, etc.

The AcoustiCORK® range offers high performance in noise reduction and durability, ensuring the same performance throughout the lifetime of the product.

# REVOLUTIONISING THE MOST RECENT GENERATION OF TRANSPORTS

Cork makes an important contribution to the lightness and consequent reduction of energy consumption, the durability of structures, resistance to fire and to high temperatures and its use results in increased comfort. When the requirement is ecodesign it is an asset to the concept, thanks to the versatility of its shaping and the environmental benefits associated with it. In short, cork effectively meets the technical and environmental objectives that constitute the paradigm of transport of the future.



## IN THE SEALING OF MATERIALS

Cork and rubber gaskets can be used in joints for valves, oil pans or water deposits, solving the distortion problem.

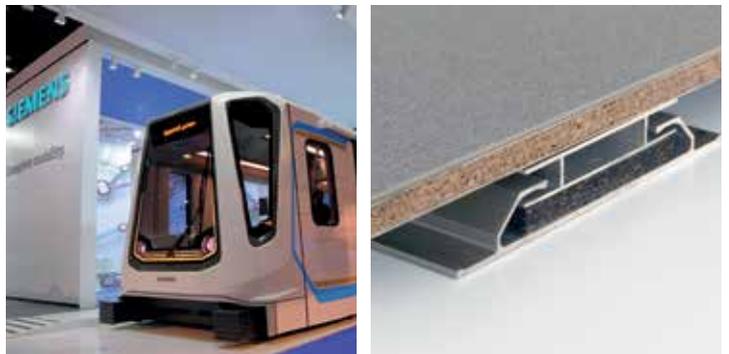
In the energy distribution and processing field, cork rubber gaskets ensure the maintenance of performance, even when subjected to extreme cold or heat.

### TechSeal® Gaskets

The TechSeal® gaskets of the Amorim Group were developed in close harmony with the environmental standards applied to products that necessarily come into contact with motor oils, gear oils and diesel or biodiesel fuel.

## PROTOTYPES FOR THE FUTURE

The LIFE project, winner of the international "Crystal Cabin Awards 2012" prize in the "Visionary Concepts" category, focuses on business aviation of the future. Design, engineering, solutions and cutting edge technology are combined with natural and sustainable materials, such as leather and cork, to create an innovative, comfortable and sophisticated aircraft cabin. The thermal and acoustic comfort is provided by CORECORK sandwich panels, coated with natural leather and corkleather. Cork was applied on the roof, side panels and the seats, along with advanced composite materials.



## CORECORK AND ALUCORK

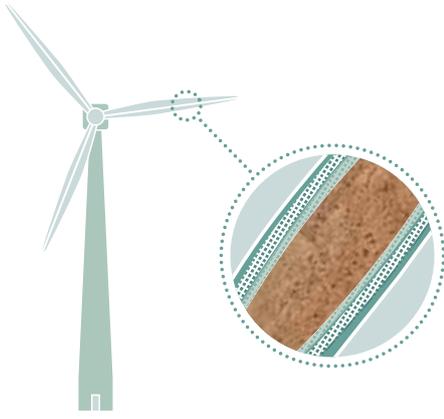
The lightness and acoustic and thermal insulation properties of cork are harnessed to create innovative interior systems for the floor, side walls and ceiling panels. The main advantages of these solutions are the reduced carbon footprint, with consequent reduced environmental impact, reduced weight and remarkable acoustic and thermal insulation improvements.

# CORK, IRREPROACHABLE PARTNER OF THE ENVIRONMENT

## IN THE FIGHT AGAINST POLLUTION

Cork recently surprised the world by proving to be extremely efficient in absorbing spills of oils, hydrocarbons and organic solvents, either in aquatic or terrestrial environments. The cells have the ability to absorb the oil by capillary action, keeping it inside them. The great innovation of this range of absorbents is that they are hydrophobic – cork absorbs oils and solvents almost instantly, but does not absorb water.





### **IN POWER GENERATION**

The smallest particles of cork can serve as fuel for cogeneration of energy. Cork is also used in the blades of wind energy turbines.

### **IN BUILDING MAINTENANCE**

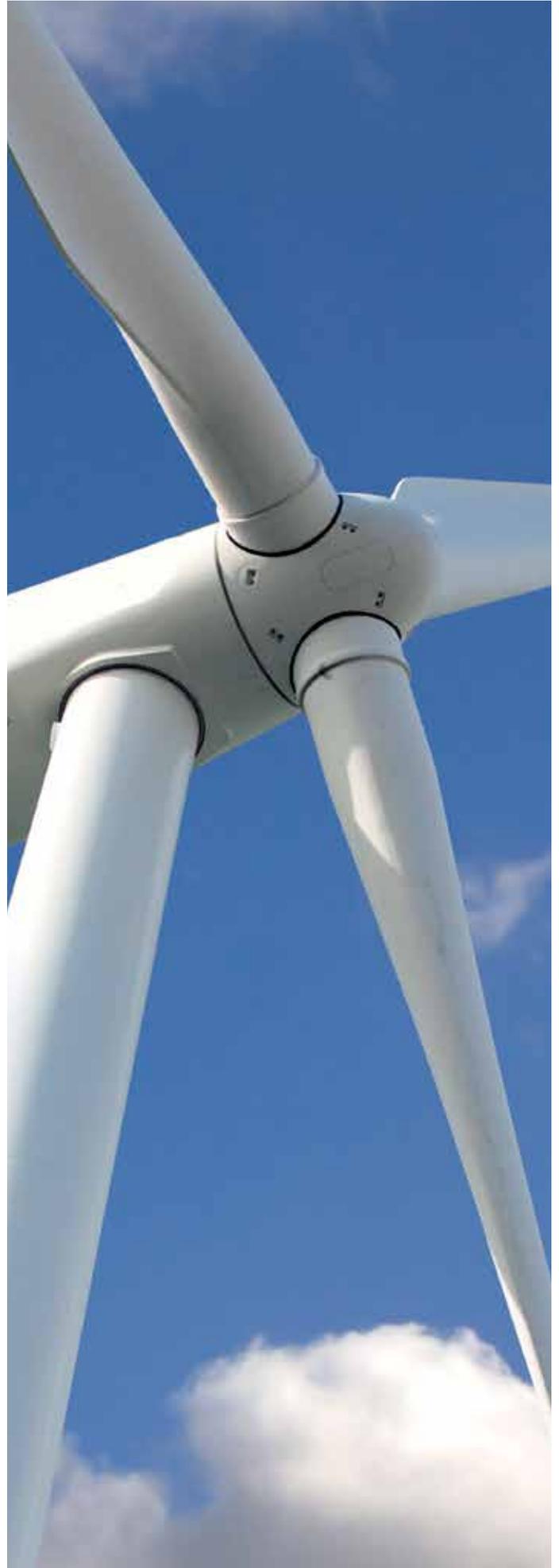
Cork granules, when sprayed in compressed air, are an excellent material for the rehabilitation of building façades, combining insulation and finishing functions in the same product.

### **AND MUCH MORE...**

Reflecting on centuries of discoveries of the applicability of cork and considering the field of technology and innovation existing today in various areas, there seem to be no limit to this natural and exciting material.

Cork, combined with other materials, gives rise to new composites, which allow an endless range of new applications to be integrated and new business areas to develop.

Cork is the irreplaceable ally in preserving the environment, a perfect natural substitute of various plastics, the material of choice for a sustainable future.



# CORK AND SPORTS

Besides being increasingly used in sports floors worldwide, cork is widely applied in many sporting materials, enhancing their performance. It is used in the manufacture of balls for football, hockey, golf, and baseball, it is the base of badminton shuttles, table tennis rackets, targets for darts, kayaks and surfboards, etc..

Cork won 20 medals at the 2008 Olympic Games through its use in Nelo canoes.

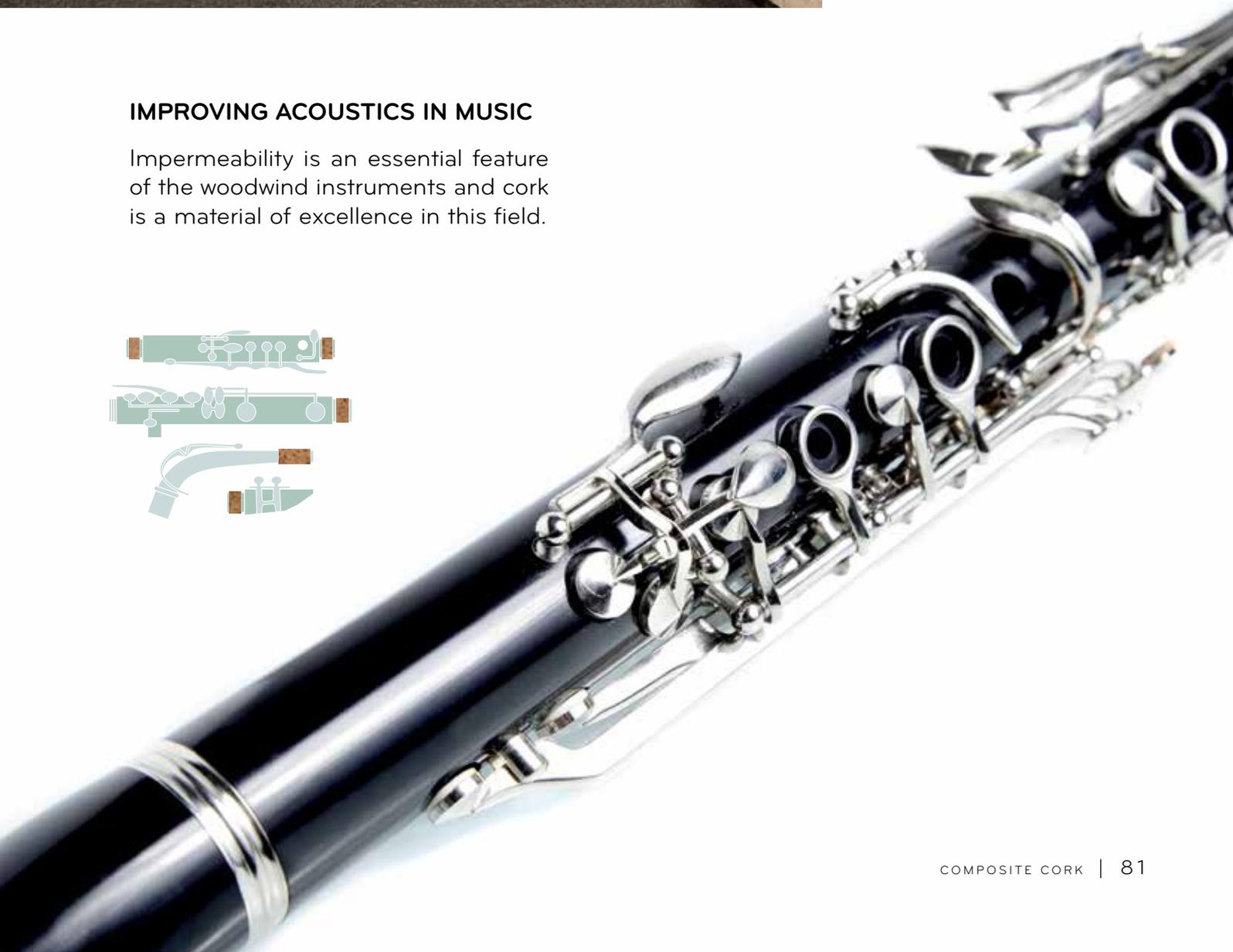
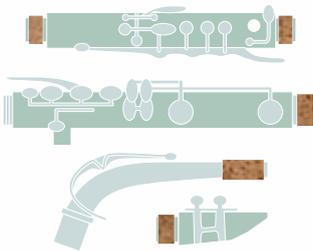




Sports Floor is the official world floor for the Reebok CrossFits model, already installed in more than 10 countries.

## IMPROVING ACOUSTICS IN MUSIC

Impermeability is an essential feature of the woodwind instruments and cork is a material of excellence in this field.



# CORK, THE CHOICE OF WORLD DESIGN

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Serpentine Gallery Pavilion 2012, designed by Herzog & de Meuron and Ai Weiwei, with Amorim cork.



# CORK AND DESIGN

**MATERIA®** it consists of peerless objects for everyday use made of cork. Taking advantage of the unique properties of this raw material with endless potential, the collection was designed by six Portuguese and four foreign designers and studios. BIG-GAME (CH), Daniel Caramelo (PT), Fernando Brízio (PT), Filipe Alarcão (PT), Inga Sempé (FR), Marco Sousa Santos (PT), Miguel Vieira Baptista (PT), Nendo (JP), Pedrita (PT), Raw Edges (IL/UK) are the designers of the MATERIA objects, impressing their own distinctive creativity on their designs.





Cork chaise longue, by Daniel Michalik (USA)

# CORK AND FASHION

Cork is a natural, comfortable, lightweight and attractive material. It gives a touch of distinction and originality to the items into which it is incorporated, since it is a natural product, cork has its own digital fingerprint, which makes each object of cork unique. Maybe that's why it's the choice of an impressive list of luxury brands, such as:

CHRISTIAN LOUBOUTIN  
DIANE VON FURSTENBERG  
STELLA McCARTNEY  
PRADA  
CHLOÉ



Corkwear, by the designer Todd Bracher for Handmade, an exhibition by Wallpaper



Suzan Heinz, Mercedes Benz Fashion Week



### FOOTCORK®

Footcork® is the Amorim Group's brand of cork components for the footwear industry. It has a vast range of visual appearance and technical options from which designers and the footwear industry can choose. Cork skin can, for example, be used with its natural look or it can have patterns printed onto it, following the trends of the season or whatever appeals to the designer.



# METAMORPHOSIS OF CORK

METAMORPHOSIS was designed with the aim of motivating innovative, creative and cutting-edge uses of cork as a unique raw material. The curatorial concept was based on the goal of expanding the boundaries of this material rooted in the Portuguese subconscious.

Metamorphosis was, curated by Experimentadesign, one of the core exhibitions of the EXD'13 "No Borders" Biennale.



Alejandro Aravena



Amanda Levet



Herzog & De Meuron



Eduardo Souto de Moura



James Irvine

To participate in this project Pritzker Prize winner architects Álvaro Siza, Eduardo Souto de Moura and Herzog & de Meuron were invited, along with celebrated architects Alejandro Aravena, Amanda Levete, João Luís Carrilho da Graça and Manuel Aires Mateus as well as three top product designers, James Irvine, Jasper Morrison and Naoto Fukasawa.



Jasper Morrison



Manuel Aires Mateus



Álvaro Siza



João Luís Carrilho da Graça



Naoto Fukasawa

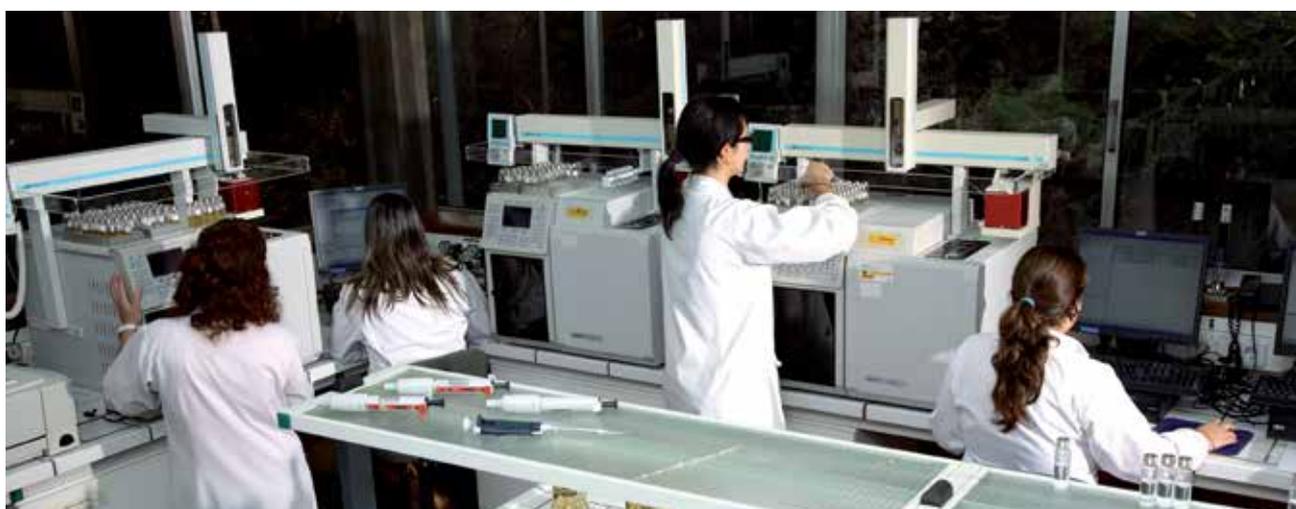
# RESEARCH, DEVELOP, INNOVATE FOR THE FUTURE!

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The Amorim Group has known how to enhance the technical and environmental characteristics of cork like no other industry player. It has done this through heavy and continuous investment in Research & Development and Innovation (R&D+I), which is a strategic pillar for its leadership of various segments of its business.

The company continuously invests, with an absolute focus on quality improvement, in an upgrade of its product portfolio, the optimisation of manufacturing processes and harnessing the latest technology. The innovation strategy of the Group is, therefore, intimately linked to the quality, product reliability and its consistency, following paths such as certification as a guarantee of process efficiency and competitiveness.

Nevertheless, driven by the characteristics of cork and its natural potential, the challenge of being different through quality has led to the discovery of new and unexpected applications for cork and a business portfolio unparalleled in the industry. The challenge of innovation today also involves the development of cork solutions that combined with other materials effectively meet market needs in technical, environmental and social terms. Beauty products or medicines with cork, components for spacecraft to travel to Mars, completely disruptive applications or stoppers with the great advantage of being easy to open, maintaining the quality expected by the market, are some examples of current R&D+I projects of the Amorim Group.





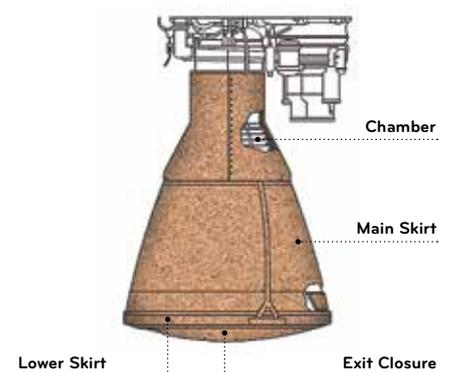
CORK,  
HOW FAR CAN  
IT STILL GO?





Corticeira Amorim is the main technology partner of NASA and the European Space Agency (ESA) for the provision of insulation solutions, since the beginning of space exploration.

The successful testing of the use of cork in space exploration fuels new expectations for the future, which include the use of composite cork in an interplanetary programme.



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