# FOOTCORK

Footwear

# Reinventing footwear

## Fashion, comfort and orthopaedic

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.

**Walking comfort**

**Excellent ground insulation**

**Good resilience and mouldability**

**Lightness**

**Extremely light and buoyant**

**Hypoallergenic**

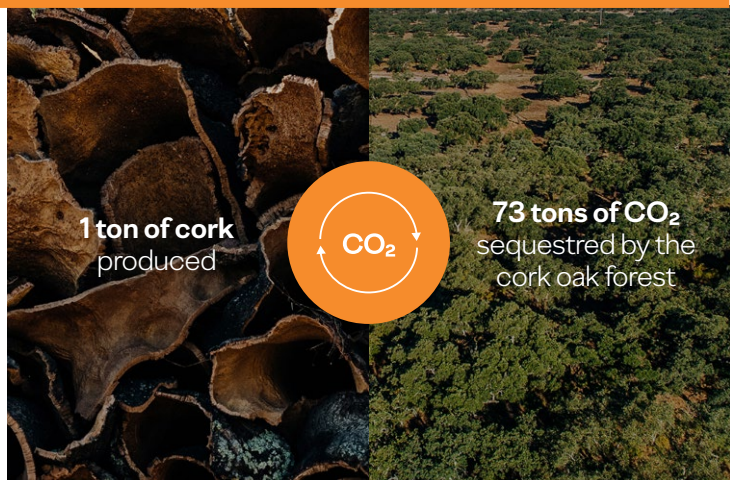
**100% natural, reusable and recyclable**

**Shock absorption**

# Cork, sustainable by nature

Cork forests are important natural carbon sinks. It is estimated that for each ton of cork produced, the cork oak forest sequesters up to 73 tons of $CO_2$*.

These forests, which have a recognised protection status, contribute to climate regulation, are the driving force of sustainable development and play a central role in the ecological balance of the planet. In this way, cork is a naturally sustainable raw material, like no other.

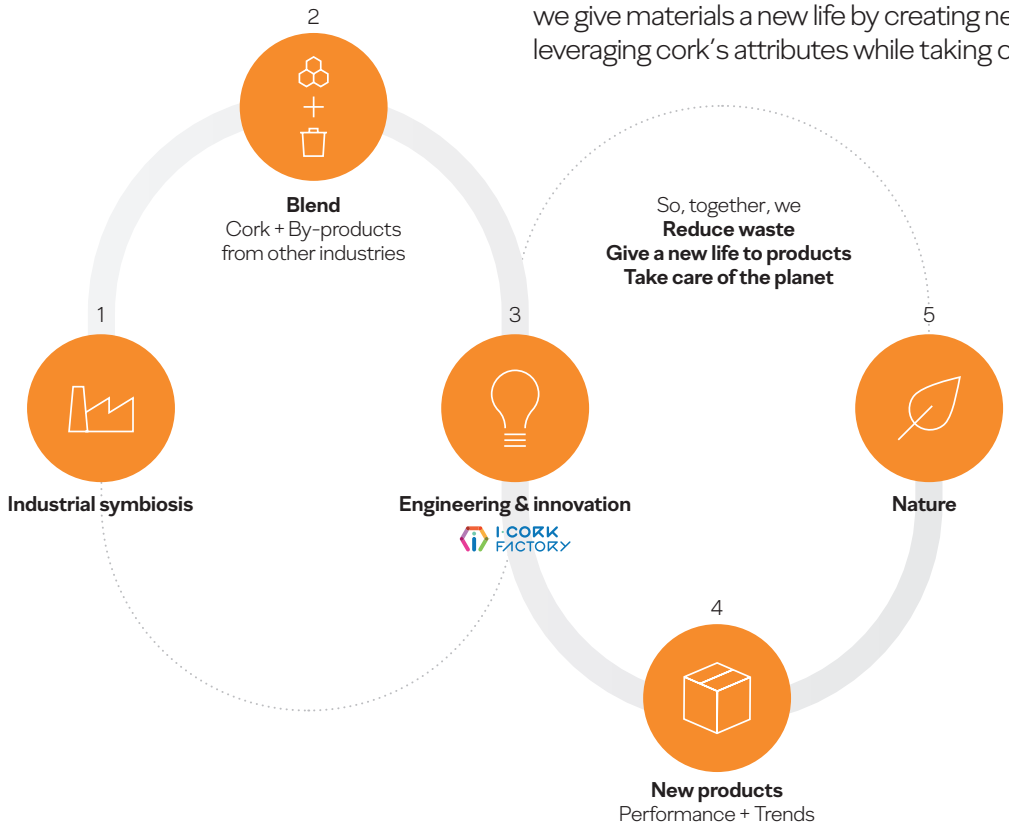



* Source: Instituto Superior de Agronomia (ISA), 2016

# 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 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.




CORK INSIDE®

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.

# The Footcork brand is divided into three product lines

**Fashion**
Heels & components cover

**Comfort**
Insoles, footbeds and bottom fillers

**Orthopaedic**
Orthotics & podiatry

# Solutions for the shoe manufacturing industry

Footcork® is Amorim Cork Composites' brand exclusively dedicated to the development and supply of solutions and materials for the footwear industry. With three product lines - fashion, comfort and orthopaedic - it focuses on the research and application of the benefits of cork to maximize foot comfort. Amorim Cork Composites' extensive experience in the footwear industry, in partnership with its customers and partners, has resulted in the high technical competence of its products and has positioned the footwear industry as a strategic sector for the company.

Footcork® materials are available in sheets and rolls, which consist of carefully selected raw materials that enable simple and straightforward usability and thermoforming. The different compositions and the diversity of the granulometry of the carefully selected raw materials make it possible to model simple and comfortable products that will satisfy customers' most demanding requirements.

Manufacturers have recognized the advantages of using cork in the production of footwear for many years. From specialist orthopaedic models to up-to-date visuals, cork offers a wide range of applications for footwear, guaranteeing high performance in terms of comfort, lightness, distribution of body weight, impact absorption, compression recovery and excellent thermal insulation. Cork ensures a user-friendly process that makes manufacturing components an easy and economical task.

Amorim Cork Composites' approach is based on the knowledge that the design of the product, across its lifecycle, can have a high environmental impact. We are committed to ensuring that the design of our products extends their functionality as far as possible. This is our philosophy and the main message that we aim to convey.

# Nature at the core of innovative shoes

Cork is a natural material with an attractive appearance that brings innovation to shoe design. Cork garments and agglomerated cork components are currently being developed by several renowned brands to introduce innovative products made from this lightweight and comfortable material. Always following the latest fashion trends, we have developed our own cork materials for upper and quarter heel covers.

In addition to the natural cork look, it is also possible to have it printed with all types of motifs, and to customise it according to each customer's style and need.

As we believe the future of fashion is circular, we are dedicated to improving innovative technologies and delivering timeless footwear materials.

## Helping build a more balanced and sustainable world

Our main raw material – cork - is one of the world's most sustainable natural resources, in environmental, economic and social terms. 100% natural and recyclable, cork is one of nature's most extraordinary products. Extraction of the bark of the cork oak tree does not require any tree to be felled. It's even beneficial - because on average, each cork oak tree captures five times more carbon dioxide during the natural regeneration process than a cork oak tree which hasn't been harvested.

Cork oak forests are natural retainers of $CO_2$, the biggest cause of global warming, and regulate the hydrological cycle, protect against erosion and fires, and promote biodiversity. Cork is also an important social and economic development factor for Western Mediterranean countries, enabling thousands of people to continue to live and work in arid and semi-arid areas.

# Cork is nature´s gift for a better quality of life

Cork has proven its remarkable performance in terms of comfort for several decades. Our range is carefully divided, enabling you to choose the material that is most suitable for the final application. From simple insoles to totally personalised orthopaedic applications, our wide range is constructed to cover your needs.

The intrinsic characteristics of cork enhances pressure distribution, thus producing a cushioning effect while simultaneously allowing the foot to breathe and controlling foot temperature.

Footcork® protects your feet at critical anatomical points.

Cork is widely used in orthotics and podiatry applications. It has proven to reduce and prevent foot illnesses, thereby contributing to a better quality of life. Orthopaedic soles and other similar components are intended to correct, relieve and better distribute pressure in the interface between shoes and feet. Cork is a process-friendly (machining, moulding, etc.) material, which makes manufacturing cork components an easy and cost-effective task. The different granularity of the carefully selected raw materials makes it possible to develop simple and comfortable moulded forms, in order to meet the most demanding needs of patients in orthopaedic care.

## Thermoformable solutions

A practical and simple manufacturing process has been developed – thermoforming. This process is widely used in the footwear industry, mainly in orthopaedic components. The material is heated to a pliable forming temperature, and then formed to a specific shape in a mould and trimmed to create a customised component.

Our thermoformable materials are incredibly soft and resilient, yet still maintain their shape. After processing, they are extremely soft and resilient. The closed cell structure prevents wound secretion and sweat, and thus germs, bacteria and fungi, from penetrating the material. EVA CORK thermoforming materials combine 100% natural features and the lightness of cork with the higher flexibility of EVA, to ensure extra walking comfort.

Natural cork slabs have been used to make shoe platforms and orthopaedic components, the "star" performer in the field of foot orthopaedic and comfort. For many decades, cork has been the simplest, best quality and most lightweight option, in comparison with other natural options and enables customised solutions to be designed for patients.

# Negative Carbon Balance

Footcork®Evolution has a negative carbon balance of -8,2 kg $CO_2/m^2$*, when considering the $CO_2$ sequestration of the cork oak forest and the $CO_2$ emissions associated with the industrial process.

· Emits up to **6 times less GHG** than average PU foams
· Consumes up to **3 times less energy** than average PVC materials
· Consumes up to **8 times less resources** than average EVA foams

* According to EY 5154 Evolution Carbon Footprint Analysis, 2020


# Product Range

## Fashion


F007


F008


F011

## Comfort

| | | | | | | | | Cork Materials | |
|---|---|---|---|---|---|---|---|---|---|
| Reference | Material | | | Customized solutions | Shore A | Density | Tensile strength | Compressibility 100psi | Recovery 100psi |
| C002 | 100% Cork | | | Sheets | | 250–290 | | 15–25 | ≥ 80 |
| C004 | 100% Cork | | | Sheets | | 200–260 | ≥ 500 | 25–35 | ≥ 75 |
| C005 | 100% Cork | | | Sheets | | 170–240 | ≥ 400 | 30–50 | ≥ 75 |
| C016 | Cork & Rubber | | √ | Sheets | (40–50) | 450–560 | ≥ 600 | | |
| EVOLUTION* | Cork / EVA´s | √ | √ | Sheets | (25–50) | 250–320 | ≥ 200 | 35–55 | ≥ 75 |
| | | | | Rolls | | 250–350 | ≥ 90 | 30–60 | ≥ 75 |

* Thermoformable

## Orthopaedic

| | | | | | | | Cork Materials | | Cork & Rubber materials | |
|---|---|---|---|---|---|---|---|---|---|---|
| Reference | Material | | Customized solutions | Shore A | Density | Tensile strength | Compressibility 100psi | Recovery 100psi | Compressibility 400psi | Recovery 400psi |
| H002 | 100% Cork | | Sheets | | 300–400 | ≥ 1500 | (10–20) | ≥ 75 | | |
| H014 | Cork & Rubber | √ | Sheets | | 700–900 | ≥ 1500 | | | 15–35 (400psi) | ≥ 80 |
| H015 | 100% Cork | | Sheets | | ≥ 220 | ≥ 600 | 20–40 | ≥ 75 | | |
| H016 | 100% Cork | | Sheets | | ≥ 220 | ≥ 450 | 25–45 | ≥ 75 | | |
| H017 | Cork & Rubber | √ | Sheets | (45–65) | ≥ 480 | ≥ 690 | | | 40–60 (400psi) | ≥ 75 |
| | | | Rolls | (50–70) | ≥ 480 | ≥ 690 | | | 30–50 (400psi) | ≥ 80 |
| H018 | Cork & Rubber | | Sheets | (55–75) | 560–720 | ≥ 1500 | | | 35–50 (400psi) | ≥ 80 |
| FUTURE* | Cork /EVA´s | √ | Sheets & rolls | (55–75) | 320–430 | ≥ 500 | (10–30) | ≥ 75 | | |

* Thermoformable

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