AMORIM NEWS

YEAR 38 / NUMBER 3

Reduce, reuse and recycle, now

Corticeira Amorim recovered 736 tonnes of cork in 2020 across its various recycling programmes. Around 164 million stoppers have gained a new purpose, extending the life cycle of a versatile natural raw material, increasing the number of its possible applications and extending cork's inherent carbon retention capacity. The recycling projects promoted by the world's largest cork transformation group span the four corners of the world. They generate asignificant community impact and help usstrike the right balance between people, the economy and the planet. The projects include reforestation programmes, environmental education initiatives and social responsibility activities. Awareness of the work produced in little over a decade nonetheless underline a key finding: only 2-3% of all cork stoppers produced annually are recycled. Reduce, reuse and recycle. Now!



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Luís Esteves

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Cork stopper recycling campaigns are generating an amazing worldwide response from consumers and are building increasing momentum.

Recent examples include the United Kingdom's first nationwide stopper recyclinginitiative, launched by UK specialist wine retailer; Majestic, a new project launched across the USA by leading online retailer wine.com; and new initiatives from Amorim Cork Italia and Amorim Cork South Africa. Being sustainable by nature requires tremendous dedication and hard work. It is underpinned by our rigorous production philosophy, which involves 100% use of cork, our commitment to global initiatives such as the Porto Protocol and the Sustainable Wine Roundtable, and our support for ambitious cork stopper recycling campaigns around the world. Cork from Amorim is one of the world's most sustainable products, because cork is harvested without harming the tree, all cork is used in the production process, and all cork products can be recycled. Collecting and recycling cork stoppers is an important part of a growing environmental awareness in society in general. Although recycled cork can never be used to make new cork stoppers, it can be used for a wide array of products, including products for the home, office, fashion, sports, or children's playgrounds. Amorim recycles surplus cork from its own operations, but the drive to recycle cork stoppers assumes fundamental importance because of the direct contact with our end consumers around the world, offering a classic example of circular economy principles! Given that our stoppers unit, Amorim Cork, is the company largest division, and we are the world leader in the stoppers business, we have a special obligation in this field. Our first stopper collection campaign was launched in Portugal in 2008 - the Green Cork recycling project – as a joint initiative between Amorim and environmental organization, Quercus. The US

and Canadian ReCork operation was also launched in 2008, in partnership with the Canadian shoe company, SOLE. It is the largest cork stopper recycling programme in North America. In France, we launched the EcoBouchon programme in 2009. It is now the world's largest contributor to the recycling of cork stoppers and has donated significant funds to various causes such as cancer research and social support projects. Italy's ETICO programme began in 2011. It involves associations and institutions. with around 1.000 volunteers and over 5,000 collection points. It funds different social solidarity projects. Amorim Cork Life was launched in South Africa in 2013. This dynamic programme involves wineries, restaurants, and other hospitality venues. UK wine retailer Majestic is now working with APCOR to recycle over 1 million corks per year, which will be used by the Eden Project, in Cornwall, as mulch for its Mediterranean plants. In total, over 550 million cork stoppers have been collected worldwide for recyclingsince 2008 and over €1.5 M has been donated for social causes and reforestation. This is a magnificent testimony to the desire of consumers around the world to ensure that this precious natural material is suitably safeguarded and recycled, as part of our broader shared commitment to protect the planet.

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Corticeira Amorim distinguished for the third consecutive year running in the World Finance magazine's Sustainability Awards

For the third consecutive year, Corticeira Amorim won first prize in the "Wine products industry" category of the World Finance magazine's Sustainability Awards, thereby further reinforcing international recognition of its sustainable development principles and practices.

The award was granted on the basis of Amorim's implementation of circular economy principles, preservation of the cork oak forest, personnel management, R&D+i investments and ambitious medium- to long-term objectives and commitments, that will foster continuous evolution and sustained economic growth. These premises have resulted in a vast portfolio of products, solutions and technologies that deliver superior technical

performance, always combined with unparalleled sustainability credentials. The jury of the World Finance Magazine's Sustainability Awards also closely assessed the negative carbon balance of Corticeira Amorim stoppers, which make a "relevant $contribution to \, decarbonisation \, of the$ wine industry". Starting with natural cork stoppers, then followed by sparkling wine stoppers, micro-agglomerated stoppers and bar top stoppers, all of the product families of Amorim Cork - our Stoppers Business Unit - have now been certified with a statement of their negative carbon balance. This is a significant competitive advantage over the competition, that reflects the company's commitment to rank as the first choice of all customers

concerned with quality and sustainability. Also, according to World Finance magazine, Corticeira Amorim "was distinguished due to its alignment with the founding principles of the Paris Agreement, $its \, support \, of the \, UN \, Sustainable$ Development Goals, and its resilience during the pandemic period". Moreover, the Sustainability Awards are awarded to companies that express a strong commitment to sustainable development, highlighting those that, as World Finance notes, "made an extra effort to integrate ESG values - environmental, social and governance - in their different areas of business."

Amorim's rebranding project by Studio Eduardo Aires distinguished with an international award

Corticeira Amorim's rebranding project, developed by Studio Eduardo Aires, won the silver prize at the prestigious US design competition, Design Annual 2020 - Graphis. Eduardo Aires, the founder of the Porto design studio, explains that this award has a special meaning for him, "since it is granted by a leading business group, that represents the country on a global scale. The chance to develop this project was already a great honour and professional milestone, and seeing it distinguished internationally further reinforces that feeling." The renewed logo, according to António Rios de Amorim, represents "a new image for the company, that demonstrates the experience accumulated over the past 150 years, during which time new markets have been conquered at the international level. It also reflects the values of a company that is profoundly committed to present-day challenges and is guided by an ambition for the future", concludes Corticeira Amorim's Chairman and CEO.

Eduardo Aires highlights "the sobriety and coherence of the solution, its ability to communicate a cohesive group image effectively and unite various types of behaviour in a functional system, thus reinforcing the corporate identity". Since 1944, Graphis has been promoting the work of leading talent in the fields of Design, Advertising, Photography and Art / Illustration, through the attribution of annual Platinum, Gold and Silver awards. For the Studio Eduardo Aires, this award therefore represents «recognition by an historic international institution that promotes and preserves an important body of work in the field of design».





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The cork industry plays a crucial role in transformation of the forest landscape

Environmentalist Francisco Ferreira is one of the most influential voices in the fight against climate change in Portugal. Professor at the Department of Environmental Science and Engineering of the Faculty of Science and Technology, Universidade Nova de Lisboa (FCT-NOVA) and researcher at CENSE (Environment and Sustainability Research Centre), the current chairman of the non-governmental organisation, ZERO – Association for the Sustainability of the Earth System, is unequivocal: the only way to save the planet is through concerted action, based on international commitments and coherent policies. He states that in the private sector, the cork industry plays a crucial role in transforming the forest landscape and implementing the circular economy.

What is your first memory of cork?

It's a mixed memory. On the one hand, looking at cork oak trees and being curious about the numbers inscribed on their trunks and being told that it is a characteristic tree of Portugal and the origin of cork. On the other hand, wine corks and the art of removing them from every bottle of wine opened at home.

For you, what are cork's main features?

I would like to highlight three characteristics that I consider absolutely crucial: as a material whose origin supports one of the most integrated ecosystems, combining human activity and the surrounding natural wealth (the cork forest); a material that permits a tremendous and easily attained circularity, provided that there are conditions for collecting used cork, that also requires action from each of us, which is also a positive aspect in terms of awareness--raising and participation; and finally cork's role as a material that is capable of effective and permanent carbon retention, which is a fundamental requirement in order to mitigate climate change.

ZERO was set up in 2015 with the aim of defending and promoting sustainable development in Portugal. What have been your main achievements

to date?

There are many worth noting. The most relevant is that ZERO, within this short space of time, is already one of the main credible and influential voices in the field of sustainability for politicians, companies and the general public. ZERO was a pioneer in demanding a roadmap to attain carbon neutrality, including the closure of coal-fired power stations and the promotion of renewable energy sources, and also in providing a critical and consistent vision of the genuine need to promote a circular economy. The promotion of an economy based on people's well-being and quality of life and sufficient and efficient use of resources have been at the forefront of our actions and communication. At the same time, we have had an influence on the promotion of natural capital and the preservation of several important areas in terms of nature conservation.

We are in the midst of a climate emergency. What are the main short-term challenges facing Portugal? In terms of climate change, both in terms of reducing greenhouse gas emissions and adaptation, Portugal's main challenges are simultaneously political and technical. We need much more renewable energies, particularly solar energy, while respecting balances in terms of territorial occupation, landscape, nature conservation, public participation, among other aspects. Cork is a material that permits a tremendous and easily attained circularity, provided that there are conditions for collecting used cork, that also requires

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action from each of us, which is also a positive aspect in terms of awareness-raising and participation.

At the same time, we have to make a major investment in terms of energy efficiency, especially in buildings. There has to be an articulation between the different levels of action, from the European scale to the action of individual citizens, with a special emphasis on the municipal scale, where, in addition to buildings, another key priority should be mobility. But, above all, we have to develop coherent policies that move in the same direction and aren't counter-productive.

In terms of action lines to reverse the climate crisis, what do you think should be the priorities?

Looking at this issue, and believing the biggest and most detailed scientific analysis presented by the Intergovernmental Panel on Climate Change, in early August, regarding the origin and consequences of climate change, we must recognise that maintaining the progressive accumulation of greenhouse gases in the atmosphere will have catastrophic and devastating results, especially for those with the fewest resources to adapt. Over recent months, flooding in Germany, drought in Madagascar or heat waves in Canada are clear signs that must be viewed in the context of climate change. It was by no means frivolous when the UN Secretary General told us that the document is a "red card" for the planet. The key thing are inter-

national commitments, in particular the new emissions reduction targets that will be discussed and approved at the upcoming conference in Glasgow, in November this year. On a European scale, another key element is the 'Fit for 55' package, following approval of the European Climate Law, which sets the target of reducing net greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels. This is nonetheless below the level demanded by various European environmental associations, who advocate a 65% reduction, in order to bring forward achieving climate neutrality from 2050 to 2040. It is also essential to implement legislation on a national scale with some vital axes: in terms of emissions, a focus on renewable energies and sustainable mobility, energy efficiency in buildings and much greater circularity of the economy with a commitment to prevention. In terms of carbon sinks, we need more forestry zones, that are more resilient and resistant to rural fires, and an integrated perspective, wherein key common goals to be pursued include nature conservation and carbon retention.

Specifically in the forestry sector, what is being achieved in Portugal and what still needs to be done?

The Landscape Transformation Programme contains the necessary ingredients for creation of a good public policy for the forestry sector. However, all this depends on correct operation of the Integrated Landscape Management areas, mainly in terms of the way in which funds of Portugal's Recovery and Resilience Programme (PRR) will be spent, and on whether the adopted management models will generate income for the landowners who adhere to the scheme. Up until now, developments seem to be moving in the opposite direction. We don't yet have the Landscape Reorganisation and Management Plans that should plan and programme transformation of the landscape in vulnerable forest territories, defining an overall transition to the medium-long term, supported by a financing model that ensures its implementation. Applications have already been submitted for setting up Integrated Landscape Management areas.

How can the cork oak forest and the cork sector be examples/drivers in the defence of sustainable development? The cork sector must be included within the transformation of the landscape in vulnerable forest territories. The cork oak tree has tremendous potential for expansion, extending its presence in regions that are more favourable in terms of the local climate. As an autochthonous species, with a high potential economic interest for rural landowners, it makes perfect sense for the cork sector to commit itself as soon as possible to a policy aimed at smallholdings. Starting by the creation of incentives for the production of plants in nurseries, and studying aggregate management investment models, which can make the cork oak tree part of the solution when trying to value territories that are more vulnerable to fire.

The principle of circularity is an essential part of sustainable development. What is the role of companies in activating this principle and how can it be articulated with society in general? Businesses can play an absolutely

fundamental role in implementing and attaining the goals of the circular economy. But they have often failed to adopt the correct priorities. The main and most important aspect of circularity is design of the material for its various uses, which must ensure sufficient quantity, durability and capability for reusability and recycling. There is no doubt that further down this path, we must guarantee the ability to reintroduce the materials back into the value chain, with the least possible energy requirements and degradation. But if the priority is placed on recycling rather than prevention, this is a lost opportunity. It has been very difficult to achieve ambitious goals, and even attain those goals specified in the legislation, in particular because there are no incentives and/or economic costs for citizens to recycle materials (from plastics to cork, also including paper, cardboard, glass and many others). Raising awareness is not sufficient to achieve more ambitious goals for management of materials and energy. In this field, the performance of companies has a truly crucial role, from product design to operation of the entire product cycle.

Recycle now!

With various initiatives being implemented worldwide, the cork stopper recycling programmes promoted by Corticeira Amorim are agents of change that aim to strike the right balance between people, the economy and the planet. In addition to reduction and reuse, recycling is a vital instrument to achieve sustainable development goals, which, apply to everyone, and begin with each one of us.



In 2020, through its various recycling programmes in Portugal and around the world, Corticeira Amorim was able to recover 736 tonnes of cork. About 164 million stoppers have thus gained a new life, extending the life cycle of a versatile material that has countless applications and extending cork's inherent carbon retention. This is significant data, especially if we take into account the fact that it reflects an unequivocal growth trend: these programmes enabled 485 tonnes of cork to be recycled in 2019, and 326 tons in 2018. This positive trend – doubling the amount

of recycled cork stoppers in two years – has only been possible due to Corticeira Amorim's ongoing commitment to the recovery of used wine corks, establishing partnerships in the field that have made it possible to collect used cork stoppers, which are then recycled in the group's three industrial units licensed in Portugal. This global commitment began in Portugal in 2008, through the launch of Green Cork - the first structured cork stopper recycling programme, that has been expanded to various territories where Corticeira Amorim operates, thanks to the remarkable commitment of its employees, customers and partners, who make change happen, on a daily basis. Notwithstanding the goals that have already been attained in little over a decade, the biggest challenge and motivation still lies ahead. This is because it is estimated that only between 2-3% of the total used cork stoppers are recovered worldwide, which means that there is tremendous potential for further growth, reinforcing the commitment to recycling. Now!

The strategic importance of circularity

Since 1963, with the creation of an industrial unit dedicated to the production of granulated and agglomerated cork from waste resulting from the manufacture of cork stoppers, Corticeira Amorim has demonstrated a pioneering, attentive and proactive understanding of the strategic importance of circularity. The group has been a forerunner in championing environmental issues and making the most of available resources.

Within this framework of promotion of a unique natural material such as cork, the Green Cork programme was launched in Portugal in 2008, an unprecedented cork stopper recycling initiative that has paved the way for a global cork recycling movement. From Portugal to the world, similar programmes focusing on valorisation of cork through recycling initiatives have been implemented across five continents, generating major enthusiasm and adhesion. In addition to Green Cork, Corticeira Amorim has implemented five other structured programmes to date: Ecobouchon (France), Etico (Italy), Recork (North America), Corklife (South Africa) and Cork2Cork (implemented in partnership with NHhotels, in Belgium, Spain, Italy, France, Germany and the Netherlands). More recently, Majestic, the UK's largest specialist wine retailer, has launched a national campaign to recycle cork stoppers in more than 200 of its stores. The campaign is organised in collaboration with the Portuguese Cork Association (APCOR), of which Corticeira Amorim is an important member, and the goal is to recycle over 1 million cork stoppers per year.

In addition to increasing the reuse of cork, thereby extending the life cycle of the material and its environmental benefits (in particular through the retention of CO_2), and promoting community involvement, these programmes generate a significant social impact, by supporting reforestation programmes and social responsibility initiatives, adapted to the needs of each context and tailored to each country. In addition to these more structured programmes, Corticeira Amorim has established partnerships at a worldwide level, with different partners in the wine







industry, facilitating specific collections of used corks.

736 tonnes of cork stoppers recycled in 2020

In 2020, a total of 736 tonnes of cork stoppers were recycled at Corticeira Amorim's facilities, giving new life to a material that already has so much to give. Cork is born in nature and, as a natural material, it returns to nature, after an impressive journey, which recycling can extend. After being collected at various points around the world, the used stoppers are sent to the three industrial units in Portugal that have been licensed for cork recycling, where Corticeira Amorim treats and crushes cork stoppers and other cork applications, sourced from recycling programmes or that are by-products from the company's other operations. After being transformed into cork granules, the material is once again integrated into the production process, giving a very concrete form to the circularity. It is important to note that this cork is not used to produce new stoppers. But this is more or less the only excluded area.

Gaining a second life, or as many lives as the imagination desires, the recycled cork, the former stopper, is incorporated into new equipment for cars, buses, trains, boats and planes, satellite components, rockets and space vehicles, design pieces, footwear and clothing, sports materials such as table tennis rackets, surfboards or kayaks, playground floors, leisure and recreation spaces, insulation products for private and public residential buildings, or flooring solutions for the construction sector, etc., in an endless multiplicity of uses. A set of solutions that often result from combining cork with waste from other industries, such as the automobile, footwear or bedding sectors. Corticeira Amorim thereby helps lower consumption of the planet's natural resources, reduce the costs associated with their elimination and offers the market a broad range of products with a negative carbon footprint.



France: Ecobouchon

France has a huge winemaking tradition and therefore it is no surprise that the Ecobouchon programmes, launched in 2009, immediately after Green Cork, is one of the world's most successful programme. It has generated the largest proportion of cork stoppers recycled by Corticeira Amorim - about 44 million stoppers per year. Like all the recycling programmes promoted by Amorim, Ecobouchon has a strong social solidarity component, providing financial support to various institutions. Since its launch, the programme has collected hundreds of millions of cork stoppers in the French territory for recycling. The principal contributions include donations to cancer research and social support.

Italy: Etico

Created in 2011, the Italian cork stopper recycling programme, Etico, is currently one of the most active. It recycles around 22 million stoppers in Italy every year. This programme has generated strong adhesion from Italian communities, involving associations and institutions that mobilise around 1,000 volunteers and manage more than 5,000 collection points throughout Italy. The project is called Etico because, for every tonne of cork stoppers collected and delivered to Amorim Cork Italia, the association that collects the stoppers receives a donation in return for its activity. Inspired by this project and Italy's close connection to the worlds of design and architecture, the SUBER collection was launched in 2019, providing a new line of contemporary furniture and objects made from recycled cork. Recycled cork stoppers are transformed into small cork granules and then combined with other materials, thus gaining a new life through objects such as lighting systems, tables, seats, umbrella holders and unique clothes hangers.





North America

In the United States, the cork stopper is considered to be inseparable from the finest wines and is seen as an indicator of quality and premiumisation. According to a recent study conducted by Nielsen for APCOR, 72% of the top 100 premium wine brands in the United States use cork stoppers. The study concludes that sales of cork-sealed wines have grown by 97% over the last decade (2010-2020), and in the premium segment the market share of cork stoppers has soared from 47% to 67.6% over the same period. In a mature market, where consumers are increasingly aware of the importance of making more conscious purchases that will cause the least possible impact on the environment, it is indisputable that cork's sustainability credentials will have a relevant weight in this preference. In addition to cork's innate capacity to sequester carbon, the fact that cork is 100% recyclable is also a relevant factor in consumer choice. In North America, Corticeira Amorimisa partner of Recork, the largest cork stopper recycling project in the United States of America and Canada, that was created in 2008 at the initiative of the shoe company, SOLE. This is another example of the practice of circularity, which allows corks to be retrieved from over 3,000 collection points.



Amorim + Nike

One of the most recent examples is a partnership with Nike to mix cork with waste material from the production of running shoes, in order to create a new composite cork product that can be used as an underlay in the construction sector, which is aimed to be launched in 2021, in the USA. "We are currently pursuing advanced conversations with the team at Nike to develop new concepts and materials based on circular economy principles. In 2022, the market should see the launch of new products with the Amorim + Nike logo", explains João Pedro Azevedo, CEO of Amorim Cork Composites. The latter's pilot factory, i.cork factory, is also developing infill solutions for artificial turf solutions for the sports sector. Artificial turf solutions have experienced tremendous expansion over recent years, mainly because they have much lower maintenance costs than natural turf.

Recupera Programme

Another example of circular economy practices is Recupera – a programme launched by Amorim Cork Flooring in 2018 that aims to incorporate waste material from the sanding, cutting and profiling operations of composite cork solutions. It has already used more than 700 tonnes of raw material for the agglomeration process used in two innovative products, *Subertech* and *Hydrocork*. This programme reduces the carbon footprint, while creating economic value from these by-products, which, instead of being thrown away in a landfill, are crushed and combined with cork.

Expanded cork agglomerate

Amorim Cork Insulation's expanded cork agglomerate solutions can also be recycled and reused for other applications, such as natural turf used in football pitches. In addition to having enormous durability, the addition of cork enables the turf to be watered two or three times a week, instead of two or three times a day, thus saving water. Furthermore, it has been shown that these solutions permit a 40% decrease in athletes' injuries.



Green Cork, the initial seed

Created in 2008, Green Cork is a project managed by the Portuguese environmental association, Quercus, which promotes the collection and recycling of cork stoppers, in partnership with Corticeira Amorim and other partners. In a concerted action with Quercus and Missão Continente, the programme placed 500,000 "rolhinhas" (cork stopper collection bins) in Continente stores in 2019, in order to encourage the recycling of cork stoppers and thereby contribute to reforestation of Portuguese forests, through the Common Forestry Programme (which fosters the planting of autochthonous trees). Since its launch in 2008, this initiative

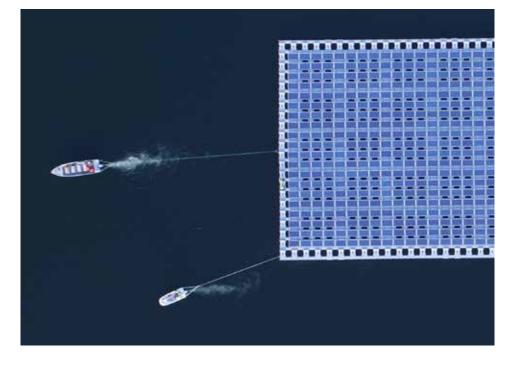
has collected more than 97 million corks and planted over 1.2 million autochthonous trees. This is just one facet of this programme, which includes the Green Cork Schools initiative, an environmental education programme that explains the importance of recycling and preserving the Portuguese forest to younger people. In 2020/21, even during the pandemic, this initiative reached over 60,000 students across Portugal, directly involving 126 schools. At the same time, Corticeira Amorim is promoting reforestation and environmental education initiatives exclusively involving company volunteers. Since 2011, the expanded Amorim family has planted more than 22,500 autochthonous trees, mainly cork oak trees, and

has disseminated key information about cork, including its sustainability credentials and the importance of preserving the Mediterranean Basin's unique ecosystems, found throughout Portugal. Notwithstanding these significant initiatives, a great deal still has to be achieved. Although the pandemic has constrained several projects under development, new opportunities have arisen to develop recycling actions within the group in Portugal and abroad. Because recycling is the present and the future. Because in the cork industry, nothing is lost, everything is transformed, and everything is valued.

Photovoltaic cork float

The future is renewable, and cork has a vital role to play as we move towards carbon neutrality. EDP's new solar energy project in Alqueva will include floats that use a new composite, based on cork mixed with recycled polymers. This innovative material has been developed in partnership with Corticeira Amorim and the Spanish manufacturer Isigenere. The new solution, which aims to achieve a neutral carbon footprint, combines innovation and sustainability, two key concepts in the energy transition process that urgently needs to be implemented.

Responding to the challenge launched by EDP for the new floating solar park in the Alqueva dam, Corticeira Amorim and the Spanish manufacturer, Isigenere, have created a more sustainable float, made from a cork-based material, that is used for more than 11,000 photovoltaic panels and 25,000 floats of the future energy project. The solution, that has been perfected over 12 months, in an intense collaborative work between the three companies, combines cork - a 100% natural, recyclable and biocompatible raw material-with recycled polymers. It has been developed at i.cork factory, the pilot-factory and innovation hub, implemented by Amorim Cork Composites, Corticeira Amorim's composite cork unit. The project included a vital contribution from Isigenere, one of the world's most innovative companies in the development of floating solar systems and the creator of the Isifloating system. The application of cork-based solutions in the energy sector has tremendous potential for expansion, raising the profile of cork in a key area for sustainable development and revealing the affinities between cork's innate characteristics and the cutting-edge objectives of this sector. «Cork has been used in the energy market for many years, but its potential is gaining fresh impetus. From solar and wind energy to electric mobility, over the medium term, the main ambition is to make this sector one of Corticeira Amorim's core pillars of growth in the field of composite cork materials", explains António Rios de Amorim. Praising the advantages of cork in terms of



its "capacity to deliver a negative carbon balance", Corticeira Amorim's Chairman and CEO emphasises that "the application of this material in the energy sector is notable because of its technical characteristics endowed by nature: resistance to extreme temperatures, chemical compatibility, anti-vibration properties, low thermal conductivity, impermeability, elasticity, compressibility, resilience and lightness are attributes that enhance cork's potential for numerous applications in this sector".

Reduce carbon footprint

Cork is used in transmission and distribution systems, in photovoltaic installations and in wind turbines, and thereby plays an increasingly important role in the energy sector. This is because it ensures all the technical needs required for the various solutions, while helping to reduce their carbon footprint. The fact that this photovoltaic float uses recycled polymers further reinforces Corticeira Amorim's position in terms of sustainability, by implementing circular economy principles. Through such reuse, the company avoids these materials being thrown away in landfills, reducing the need to extract virgin raw materials and mitigating depletion of the planet's resources.

Annual production capacity of 7.5 GWh

The photovoltaic float made from this new composite solution, in addition to incorporating cork, will also use recycled plastic, instead of new plastic that is typically used in conventional floats. EDP believes that by adopting this more sustainable combination, the floating solar project can reduce the project's carbon footprint by at least 30%. Occupying four hectares in the Alqueva reservoir, next to the dam, EDP's new solar energy park is one of the company's most innovative projects. With an annual production capacity of 7.5 GWh, it is expected to supply the equivalent of 25% of consumers in the region (Portel and Moura). The future solar park involves an investment of more than €4 million and has a storage system with batteries, integrated with the Alqueva hydro power plant, a pumped-storage hydro power plant that is one of Portugal's biggest energy storage systems.

Cork in the Google Store: a perfect symbiosis

Cork has been used in Google's first-ever physical store in the world. The new store, which opened this summer in New York, includes cork furniture created exclusively by the North American designer, Daniel Michalik, in a project designed by the architecture firm, Reddymade. By using cork, the technology giant draws closer to nature, in a perfect symbiosis.



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The city that never sleeps, built from concrete and steel, has thereby surrendered to the charms of cork, the 100% natural, sustainable and biodegradable material that has been chosen for the interior design in Google's first store, in New York. As part of the project developed by the New York architecture firm, Reddymade, the cork furniture created by the designer, Daniel Michalik, creates a "friendly" universe, that has been designed on a human scale, with profound respect for nature and the planet. Sustainability was a core reason underpinning the choice of this raw material. Google was looking for a sustainable material that would enable it to attain the coveted LEED® Platinum status - the highest possible certification within the green building ratings system, Leadership in Energy and Environmental Design (LEED®). Cork, one of the world's most sustainable materials, has unique characteristics in terms of carbon retention and potential for circularity, makingit "natural choice" according to Daniel Michalik. It wasn't just cork's impeccable sustainability credentials that underpinned his decision. He also chose cork because of its beauty, human character, and the fact that it seems to be "a blank sheet", onto which customers can project their ideas or experiences, interacting with it in a single space.

Healthy, humanistic and sustainable

With organic shapes that create tremendous spatial fluidity, designed and developed in Daniel Michalik's Brooklyn studio, all the items use Portuguese cork supplied by Amorim Cork Composites. Michalik is clear about his approach to the material: "I defend the use of cork because I believe it is one of the healthiest materials on the planet. Cork is a healthy material from the perspective of the natural health/renewal system, the human work and payment of fair wages to everyone involved in the supply chain, and the health of those who use cork objects." This is Michalik's most popular project using cork, but it is not the first time that he has worked with this material: «I started using cork to create furniture and objects in 2005. That year, I also completed my Master's degree in Furniture Design at the Rhode Island School of Design, where my master's thesis was about new uses of cork in furniture. In the following year, I presented my thesis project at the Salone del Mobile, in Milan. Since then, my relationship with cork has been growing stronger and stronger." In relation to Amorim Cork Composites' participation in this project, Michalik does not conceal his enthusiasm and admiration: "Amorim Cork Composites has been a key partner in my cork design projects for many years. The company is committed to innovation and has a vision of the future for the potential applications of cork in design and architecture, with deep respect for the culture, history and wisdom that is embodied in the cork industry and agriculture. Both Amorim Cork Composites and Corticeira Amorim are world leaders in the cork sector and stand at the forefront of sustainability and human concerns in the industry."

Silence! We're about to talk about cork

In the future, cities will be smarter, as a direct consequence of the current dizzying pace of technological innovation. However, we expect that these smart cities will also be more sustainable and quieter, two characteristics of future urbanisation where cork has a major role to play. In this case, it's worth saying: silence, we're about to talk about cork!



The Four Seasons Hotel, in Bangkok, uses the underscreed from Acousticork range

Noise pollution is a serious environmental problem in European cities, that has been recognised by the World Health Organisation. The main sources of pollution in urban areas are road, rail and air traffic, and industry (EEA Report: Environmental noise in Europe, 2020). However, since this is not a new problem, the construction industry has been looking for solutions to combat noise over recent decades and cork is an old ally in this context. To understand why, we must look closer at this raw material-at a microscopic level. Cork has a microscopic cellular structure that resembles a beehive, filled with an air-like gas, and primarily coated with suberin and lignin. The high gas content in each cell explains cork's extraordinary lightness. The association of these cells, as if they were a small set of cushioned pads, explains the cells' compressibility and elasticity. These characteristics also mean that cork has exceptional performance in terms of sound absorption. Sound absorption depends on the existence of pores and gaps in the connections between materials, which cause sound energy to dissipate, in the form of mechanical waves that circulate inside. $Cork is a good \, option \, for \, any \, building$ application where such characteristics are valued, for example: control of vibrations in buildings, or insulation against sound transmission.

Beyond the microscopic level and focusing on practical issues, cork can be found in a newly-purchased apartment, in our company's office building, or in the public building across the street, without us even realising it. It may be between the walls and under our noses, or rather under our feet. At the ground level, cork offers a high level of performance with reduced thickness, protecting the floor of the building, guaranteeing the capacity to withstand high, repeated, short-duration loads. One example is underscreed, which provides acoustic insulation. Applied in adjacent vertical rooms, underscreed makes it possible to reduce sound transmission, as well as achieving the necessary acoustic comfort in the building. Another application where cork is valued is in the support base of the walls, since it prevents the propagation of low frequency sounds in the building, by decoupling the elements. Higher quality of life, with lower environmental impact. These are the prime characteristics that cork brings to cities.

Higher quality of life, with lower environmental impact. These are the prime characteristics that cork brings to cities.

The sustainability factor

Depending on the specific type of application, several materials in the market, with a synthetic or inorganic base, are competing with cork. Rubberor foam-based materials have dominated the world market, since they combine performance with low costs. However, the situation has been changing over recent years, due to more rigorous requirements related to the negative health impacts of these synthetic materials, caused by the release of volatile components. For this reason, use of these synthetic solutions is expected to decline in several countries, also catalysed by another key factor, which will revolutionise the future of the construction of our cities - sustainability. Sustainability is an increasing concern for consumers, societies, government institutions and regulatory bodies. In this context, cork has a great deal to offer. It stands out because it introduces a natural component in an area that is excessively dependent on synthetic materials, combining performance with long-term sustainability, not only due to its negative carbon footprint, but also in view of the harmful chemical components found in other materials. Cork delivers a higher quality of life, with a lower environmental impact. These are the prime characteristics that cork brings to cities.

Polymers and the circular economy

Although this is an article about silence, since we are talking about cork's impact on the quality of life in urban contexts, it would be absurd to focus solely on cork's acoustic performance. Cork is valued in the building industry due to many other characteristics, in particular the fact that it offers excellent thermal insulation and is resistant to fire and friction. It is a material that is pleasant to the touch, fosters comfort and is aesthetically attractive. It is therefore not surprising



 $\label{eq:composites} Amorim {\it Cork}\, Composites' underscreed, installed beneath the final floor, provides sound insulation.$



 $Lisbon\,Cruise\,Terminal\,that\,uses\,a\,type\,of\,light\,structural\,white\,concrete\,mixed\,with\,granulated\,cork.$

that cork is increasingly chosen by leading architects and designers worldwide. Further research and innovation are required to respond to the increasingly rigorous requirements posed by these markets and consumers, without ignoring the question of sustainability. These are the fundamental pillars that enable cork to go further every day. Examples include combinations of cork with polymers from different sources. This has not only exponentially multiplied cork's potential applications, but also makes it possible to embrace the circular economy, an area where Amorim Cork Composites (ACC), the composite cork business unit of Corticeira Amorim, is a pioneer and leader. Projects have been carried out in the four corners of the world, such as the Four Seasons Hotel in Bangkok, where a cork underscreed with recycled rubber

was applied throughout the hotel area, in order to meet the rigorous acoustic performance requirements specified in the building project. In the case of the Lisbon Cruise Terminal, designed by the architect Carrilho da Graca, Amorim Cork Composites, in partnership with Secil and the University of Coimbra, developed a new type of lightweight structural white concrete, with cork granulate, that was used in the terminal's façades. The composite cork solution made it possible to reduce the overall weight of the building's structure, while maintaining the structure's strength, and improving its comfort and energy efficiency.

The fact that cork has a negative carbon footprint also favourably influences any analysis of a product's life cycle and, most important of all: it has a positive impact on the planet.

SUG-HERO Metaform: cork as a metaphoric hero

The name hints at the journey that lies ahead: SUG-HERO – Metaform. Cork as the metamorphic "hero" of an exhibition that tells a story of innovation and sustainability. The journey through the various exhibition rooms, installed in a historic building in the centre of Conegliano, in the Veneto region, in Italy, begins by demystifying the raw material, through a multi-sensory journey that transports us to the cork oak forest. Then, inevitably, it addresses the role of cork in the world of wine, and the exhibition gradually assumed a multidisciplinary character, demonstrating cork's potential applications in fields such as design, architecture, fashion, mobility or sport.

Sustainability and, in particular, the circular economy are transversal themes within the exhibition. During the inauguration ceremony, António Rios de Amorim drew attention to the "the intuitive and pedagogical manner in which the exhibition was conceived and, above all, the way that it projects cork and the ETICO project". Amorim Cork Italia's award-winning stopper recycling programme underpins one of the core protagonists of the exhibition: SUBER, a furniture collection developed from recycled cork stoppers. Amorim Cork Italia's general director, Carlos Veloso dos Santos, explained that "SUG-HERO is the culmination of a trajectory, financed by the Veneto Region and managed by Fondazione CUOA, which makes us truly proud and which began when Amorim Cork Italia won the public tender to build a company museum". Around 100 people attended the inauguration, which also included a special panel of guests who, prior to the inaugural visit, participated in a debate on the theme "The hybrid ecosystem of the future". The exhibition, which was supported by the Veneto Region, the Consorzio Prosecco DOC and the Cities of Wine, closed its doors on October 30.











"A dream material", says Tom Dixon

British designer Tom Dixon continues to explore cork's almost boundless potential. He says that it is a "dream material", having previously developed other items of furniture in his Cork Collection. On display at the London Design Festival 2021, the new items, which have organic forms, highlight cork's tremendous versatility, while appealing to nature, circularity and sustainability, which are topical issues in today's society. Cork's natural beauty is effortlessly expressed through contemporary features, rounded silhouettes and smooth contours. However, Tom Dixon wanted to go further in his approach to this genuinely Portuguese raw material within the framework of the renowned London Design Festival. With this goal in mind, he designed a space entirely made of cork - "The Cork Room" through which he aimed to explain cork's features, provenance and charms to visitors. «For the London Design Festival 2021, we chose the theme of materiality, in which we discussed the importance of choosing materials for the design world. We focused on our favourite materials - including aluminium, glass, brass and clay – and our latest passion which is, of course, cork», emphasises the British designer. «We built a complete room, whose walls were lined with cork and filled the space with cork furniture, complemented by numerous large blocks of unprocessed raw cork". "The conversations that were held in 'The

Cork Room'" – continues Tom Dixon – "included a wide range of topics, such as cork's long-term sustainability and its production techniques, which are now the most current, urgent and important issues in the fields of design and consumption. We look at cork's functionality, in terms of acoustics, tactility and durability. We also address the pleasant aroma of expanded cork agglomerate, that is an interesting by-product of the process of boiling and manufacturing cork. We use expanded cork agglomerate because we like the colour of dark cork. In short, it is a raw material that appeals to all the senses".

United by great causes

To be part of the Amorim family means devoting oneself to a passion that unites and inspires everyone: cork. But for many employees-such as Marta Alves and Pedro Santos -their dedication to major causes goes even further. Asvolunteer firefighters, they show us that it is possible, and rewarding, to combine an active professionallife with community service.



Marta Alves: following the call

Marta Alves unequivocally affirms, "It is never too late to follow your dreams". She waited until she was 40 to fulfil a greater ambition, almost a calling: to place herself at the service of others. Marta, who works for Champcork, has been with the Amorim Group for 24 years and is a member of the Lourosa Fire Brigade for the past three years. She always wanted to do something related to health. She always felt this calling and admits that she even felt that it was a vocation. She didn't pursue health--related studies because this wasn't an available option, but she never lost her desire to help those in need. "At some point I decided I couldn't wait any longer and so I joined the fire brigade" she explains. She became a volunteer, underwent training, and even fought fires. But the area where she feels most at home is helping people. At Champcork, where she drives the forklift truck and works on the automatic stopper sorting machines, she is also part of the company's first-aid team and is head of the intervention brigade. For many people this would require great personal sacrifices, that would be difficult to manage, but Marta sees this as an expression of her own identity. As a company executive, firefighter and mother of a family, she is aware that none of this would have been possible without her children. They always understood her choice, and today her oldest son, 19, takes care of his younger sister so that his mother can help those in need. Reconciling the various facets of her life is truly challenging, but Marta can't stop: "I can't explain why, I don't know whether it's because of the adrenaline, I can't explain it. It's about finishing a task and feeling that you have done your duty. Concluding something and people thanking you. You like it and that's enough", she sums up.



Pedro Santos: heart and mind

Sometimes, it is in the most unexpected situations that we discover a new direction. In the case of Pedro Santos, 36, who has been working with the Amorim Group since 2001, his life changed direction during a wedding party. After the couple were wed, they opened the dance floor and a lady fell ill at the end of the first song. She was having a heart attack and died on her way to the hospital. "I felt useless, because I couldn't do anything and the lady unfortunately didn't make it", recalls Pedro. He was 21 years old at the time. Soon after, he signed up for the volunteer fire brigade. 15 years later, Pedro Santos combines his work at Amorim Cork Flooring with his volunteer work at Espinho's Voluntary Fire Brigade. He says, without any hesitation, that being a firefighter "is not for everyone". But in his case, he thinks that it's in his blood. Being a firefighter requires a great deal of courage and technique (he studied for 18 months at the Firefighters School, followed by two complementary courses) and, above all, great determination. The psychological component is essential, to help those who need it most, to maintain sufficient distance not to be bothered by extremely hard situations. Like other Amorim employees who do volunteer work outside the company, Pedro Santos is part of the first responders team and the Intervention Brigade. He has already helped several work colleagues in small everyday accidents. Determined to follow his mission with full conviction, he admits that since becoming a dad, he is now more sensitive to the extreme situations he faces as a firefighter. But he always keeps a cool head and continues to help others.

Our People



AMORIM

Sustainable by nature