CORECORK

REINVENTING SUSTAINABLE CORE MATERIALS

Reinventing how cork engages the world.

AMORIM
CORK COMPOSITES

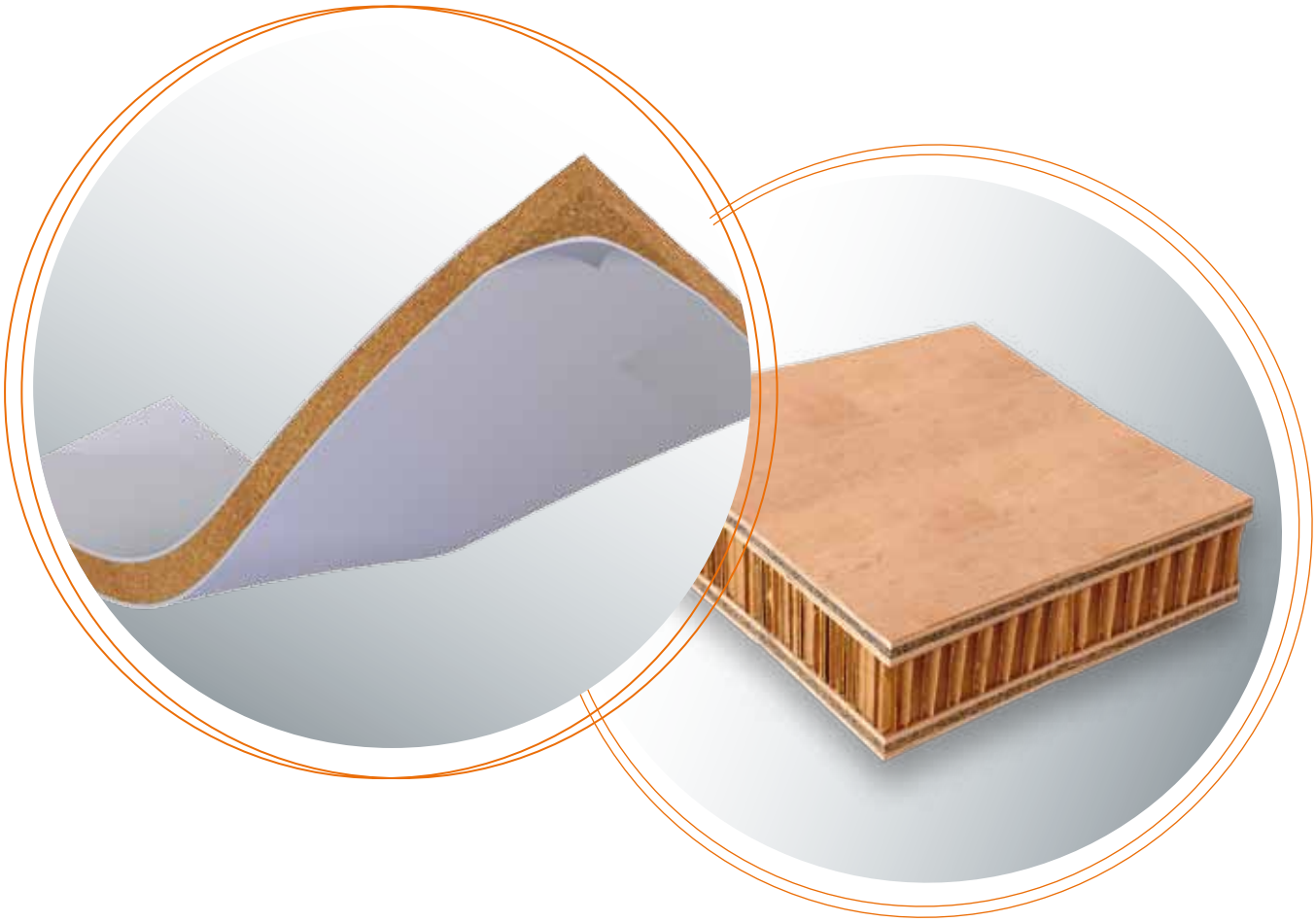
STRONG, SOLID, LIGHT AND LONG-LASTING STRUCTURES

Discover innovative Core Material solutions

The concept of using relatively thin, strong face sheets bonded to thicker, lightweight core materials has allowed the industry to build strong, stiff, light, long-lasting and highly durable structures that otherwise would not be practical.

Our range of Core Materials enhance performance in composite and sandwich material solutions with unique properties.
Cork granules are ground and sifted in various dimensions and densities and incorporated in a specific material matrix in accordance with the application.

The Composite Materials Technology product range is focused on core materials for lightweight composite structures and products, while the Sandwich Materials Technology product range is aimed at thermal, acoustical or fire performance for sandwich constructions, used in residential and industrial applications.



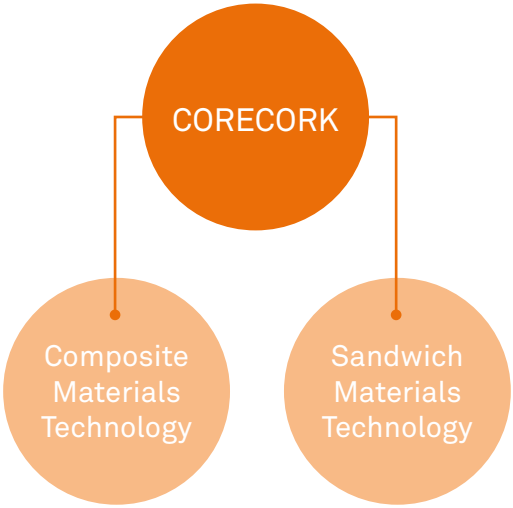
Choose cork, choose a sustainable future

A Natural Resource

Cork is harvested on a sustainable basis and the regular extraction of the cork every 9 years does not harm the tree in any way. The bark grows back completely after each harvest because cork bark renews itself. Cork oak trees store CO_2 in order to regenerate, and can be safely harvested up to 20 times during its life cycle, making cork a truly natural resource.

Truly Green Solutions

Our products are already overlapping the common core requirements with the exclusive advantage of being truly natural, eco-friendly, sustainable and recyclable material. The unique properties of cork core, such as a closed air cells structure, low water absorption, rot resistance with specific formulation for fire resistance and noise and vibration attenuation, make it an excellent core alternative.



COMPOSITE MATERIALS TECHNOLOGY

Strong lightweight structures used in everyday life

Amorim's composite core materials are incredibly useful materials to form strong lightweight structures used in everyday life, giving excellent damping and thermal characteristics.

Cork's chemical and physical structure, and consequent mechanical properties, provides low weight and low thermal conductivity values.

Amorim Cork Composites is committed to the development of materials suited to the requirements of industries such as Sports and Leisure; Marine; Construction; Wind Energy; Aerospace and other industrial applications.

REINVENTING SUSTAINABILITY FOR THE FUTURE

Cork's chemical structure is resistant to acids, most fuels, oils and does not rot when immersed in water for long periods of time. The main constituent, Suberin, makes the cork cell membrane impermeable and the cell airtight.

A versatile and cost-effective material

CORECORK

• Is produced through a special process to guarantee a total compatibility with the resins used in the FRP lamination, such as polyester, vinyl ester, phenolic, epoxies.

• Products can be used in most common manufacturing processes, such as hand lay-up, spray, vacuum infusion and RTM processes, easily adaptable without additional investment.

• Can be trimmed and machined with regular tools or equipment without the need for any specific protection equipment.

• Impregnates much less resin than fibre reinforcements or other flexible fibre mats (bulker mats).

Contrary to other cork materials, CORECORK composition does not contain any plasticisers or any other additive that could bleed or migrate during the curing process or service life.

• Will not dissolve or distort when used with styrene based resins during the infusion process. Materials are made of cork granules agglomerated with special binder that can be tailored to suit any particular requirement (fire-proof, anti-fungi, etc.)

Product range

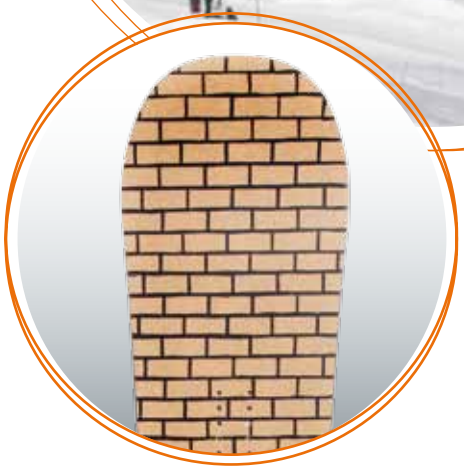
Materials are made of cork granules agglomerated with special binder that can be tailored to suit any particular requirement (fire-proof, anti-fungi, etc.)

PRODUCT	HAND LAY-UP	VACUUM BAGGING	RESIN INFUSION	RTM/LITE RTM RESIN TRANSFER MOLDING	PREPREGS PRE-IMPREGNATED	RFI RESIN FILM INFUSION
NL 10 140Kg/m³ - 8.74lb/ft³	++	++	+	+	++	++
NL 20 200Kg/m³ - 12.5lb/ft³	+	+	++	++	++	++
NL 25 250Kg/m³ - 15.6lb/ft³	+	+	+	+	++	+
NL 11 FR 160Kg/m³ - 10lb/ft³	++	++	+	+	++	++

++ **Best** + **Fair**

FORMATS **	THICKNESS
SHEETS 1000 X 500mm	From 2,0mm up
ROLLS 1000 or 1250mm (Width)	From 2,0mm to 10mm

* Special dimensions upon request



Product features

Eco design
Designing composites and contributing to the preservation of nature.

Design of freedom
Easily adaptable to complex surfaces.

Acoustic and thermal insulation
High loss factor and low thermal conductivity.

Compression and recovery
In the event of an impact, CORECORK will recover up to 85% of the original thickness.

Material stability
Low water absorption with wider temperature service range.

SANDWICH MATERIALS TECHNOLOGY

REINVENTING SUSTAINABILITY FOR THE FUTURE

Resilience, durability and impermeability are intrinsic features of cork.

Achieving acoustic and thermal properties

A sandwich construction consists of two high strength skins or facings separated by a core material.

The skins support the bending stresses and give the structure a hard wearing surface, while the core contributes to specific thermal or acoustical requirements.

Amorim Cork Composites Sandwich Materials product range was developed through the combinations of polymers, cork granules and engineered compounding to achieve acoustic, fire or thermal properties.

Amorim Sandwich Materials Technology is used in several applications where the need for noise reduction or thermal barriers is a requirement; such as doors, windows, partition walls, roofs or metal structures with good mechanical and structural properties.

These materials ensure conformity with all known regulations for hazardous substances such as Rohs and REACH (free of PVC, Heavy metals and Formaldehyde).

Product range

PROPERTIES	INSULATION CORK BOARD	ACM15[3]	ACM17[3]	ACM28[3]	ACM87[3]	ACM89[3]
Density (Kg/m³) [1]	120	650	965	350	800	1200
Thermal Conductivity (W/m°K) [2]	0,040	0,089	0,177	0,055	0,120	0,150
KEY REQUIREMENT						
Sound performance	+	++	+++	+	++	+++
Thermal insulation	+++	++	+	+++	++	+
Fire resistance	FD30*				yes	yes
MAIN APPLICATION	Roof and Door	Multilayer Door Panel	Multilayer Panels	Windows	Multilayer Panels	Multilayer Panels

+++ **Best** ++ **Fair** + **Acceptable**

[1] ASTM F1315
[2] ISO 8301
[3] Can be supplied with adhesive backing.
* Customer data
Dimensions available in standard dimension and tolerance data sheet.

Main product advantages

- Improve thermal insulation.
- Fire resistance properties.
- Good acoustic properties.
- Environmentally safe materials.
- Reduce surface weight.

Process related features

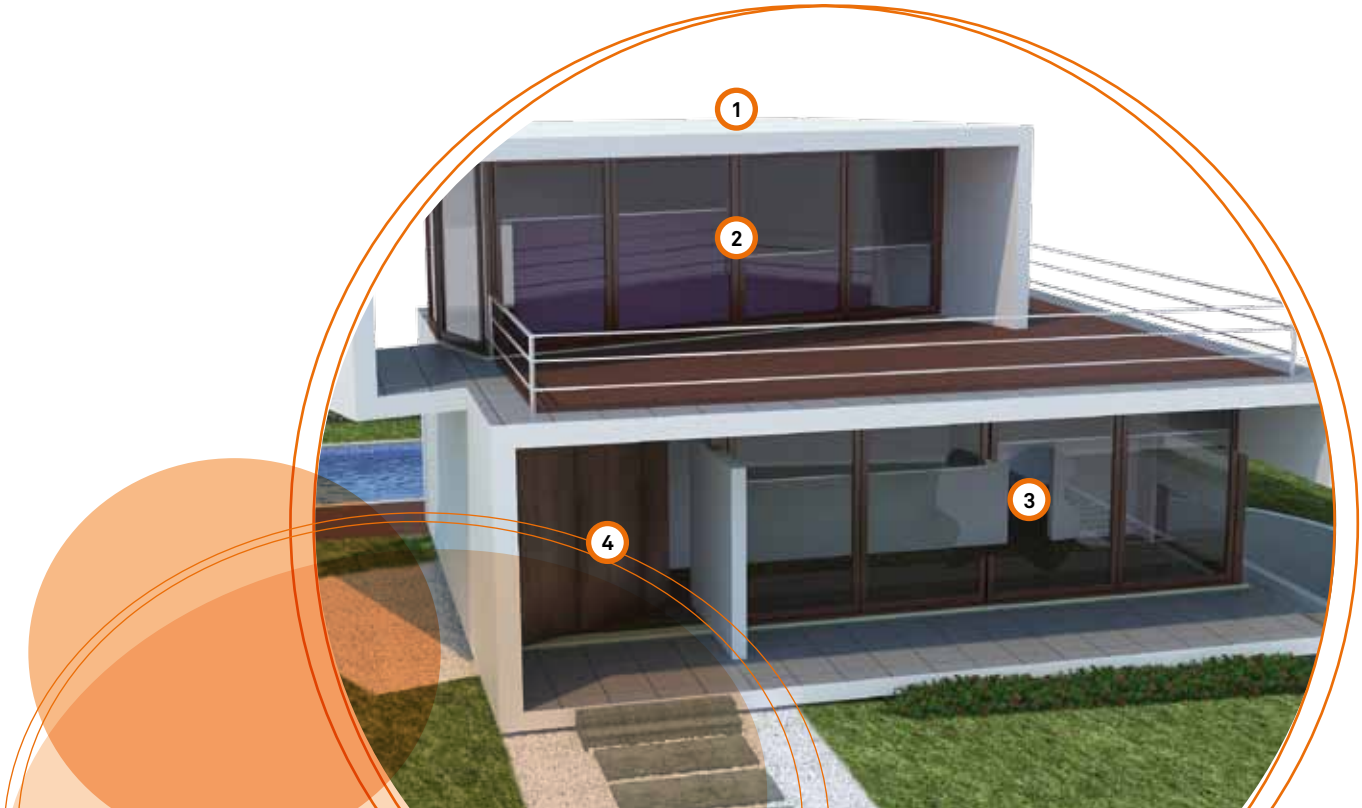
- Can be bonded to substrates of different type of materials, such as plywood, aluminium, steel and others, using common bonding systems;
- Easy integration into the customer's manufacturing process;
- Easy cutting and clean trimming of the panel edges.

Roof

Window

Wall partition

Door



REINVENTING LIGHT CORE MATERIALS, MAKING STRONGER AND STIFFER STRUCTURES

Natural and sustainable core material for the demanding requirements of the composites industry.

CORECORK is perfectly aligned with the energy and environmental requirements that the market demands.

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