Sustainable materials are gaining relevance in furniture design, marking a new stage in how we think and produce. Their incorporation now responds not only to environmental concerns but also to a more **conscious aesthetic, functional and cultural pursuit.**

At Alegre Design, this transformation translates into active observation of emerging **circular solutions** and their integration in early design phases. From biocomposites to upcycled industrial waste, each material is assessed not only for its environmental impact but also for its creative potential and alignment with a more responsible product vision.

Analysis

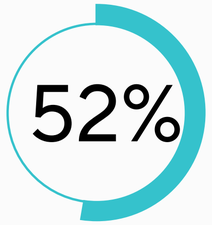
At a time when sustainability and innovation shape the global development agenda, product-based companies face both the challenge—and the opportunity—to transform their models toward more responsible solutions.

Adopting circular economy principles is no longer a differentiating choice, but a strategic requirement to compete in a market that demands transparency, resilience, and regeneration.
Driving this transition means rethinking the entire product lifecycle: from design and material selection to use, repair, reuse, and reintegration into the system as valuable resources. In this process, **materials play a pivotal role as drivers of transformation, shaping not only environmental impact but also the functional, manufacturing, and expressive possibilities of design.**

The key lies in prioritizing recycled, renewable, and low-impact materials—combining technical efficiency with environmental responsibility.

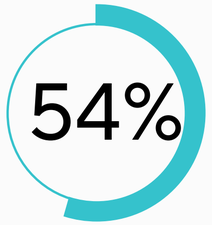
This approach not only aligns with the emerging regulatory landscape (such as the Ecodesign for Sustainable Products Regulation or the Corporate Due Diligence Directive), but also responds to growing demand from more conscious consumers, stricter public institutions, and value chains seeking coherence and positive impact.

Scalable sustainability



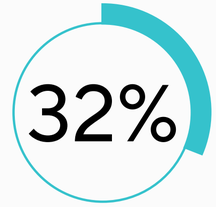
42% of consumers value durability over recyclability when making a purchasing decision.

People in 28 countries say they choose a brand based on its values and principles.

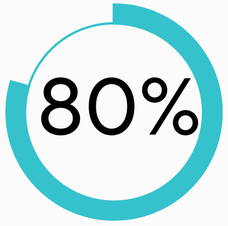


A significant portion of consumers strongly support buying second-hand products because they are better for the environment, and 1 in 4 mention sustainability as a key motivating factor.

77% of consumers in the EU and 80% of young adults (aged 18 to 34) are willing to pay more for sustainable products compared to less sustainable alternatives.



If more consumers adopted circular economy practices, the consumption of primary materials could be reduced by 32% by 2030.



Most discarded products and furniture in EU households end up in landfills, while only 0.3% can be recycled.

80% - 90%

In the EU, over 80% of product waste within the municipal solid waste stream is either incinerated or sent to landfills, while approximately 10% is recycled.

1. Organic compounds

2. Up- and downcycled waste

3. Recycled industrial waste

4. Bio-based solutions

5. Circular remix

6. Recycled plastics

Innovations in sustainable materials

1. Organic compounds

Organic compounds represent one of the most promising solutions to reduce the environmental impact of construction and design materials. They are based on the use of regenerative and biodiverse natural fibers, such as bamboo, wood, or food waste, that have the capacity to capture CO_2 and restore biodiversity, thus contributing to climate change mitigation.

These materials, sourced from renewable origins or even from plant-based and food waste, enable the creation of compostable and recyclable composite materials.

The use of organic compounds also fosters the circular economy, as many of these fibers can be cultivated without intensive resource inputs, facilitating the reuse and recycling of products at the end of their life cycle.

How to implement it:

Use natural, abundant, renewable, or invasive ingredients for pressed, molded, and reconstituted compostable bio-waste compounds.

Picture 1 - Marni/ Bamboo Lamp

Picture 2 - DOCUi/ Usagido

Picture 3 - Osuu Chair / Walter Knoll

Picture 4 - Cala / SeniorCare by Alegredesign

Picture 5 - Fookis - Biomaterials Toy Set

Picture 6 - Atomic Number Six / Charn Sangvirojkul

Innovations in sustainable materials

2. Up - and downcycled waste

The concept of **upcycled and downcycled** waste refers to the transformation of materials derived from waste streams, aiming to optimize the product life cycle. While upcycling enhances the quality or value of a material, downcycling involves a reduction in its quality. As companies and consumers increasingly focus on sustainability, it is essential to explore both types of recycling as viable solutions for reducing environmental impact.

Recycling materials from **unconventional waste sources**, such as low-quality textiles or discarded products like protective masks or chewing gum, is gaining momentum. These materials can be reused to create new products, from alternative fillings to components for goods or accessories. This approach promotes a longer lifespan for materials and encourages innovation in using waste as a valuable resource.

How to implement it:

Identify new viable waste streams beyond plastic and adopt advanced recycling methods that enable the effective reuse of a wider range of materials.

Picture 1 - Knit One Chair / Isomi

Picture 2 - Tumble Occasional Table / KFI Studios

Picture 3 - colección Growth / Polygood®

Picture 4 - Geometrix / Patcraft

Picture 5 - ABM Flex

Picture 6 - Limetex / TextileRefuge

Innovations in sustainable materials

3. Recycled industrial waste

Industrial waste can become a valuable source of materials for design, contributing to new sustainable narratives. Proactively harnessing this waste offers the opportunity to **transform by-products** that would otherwise be discarded into **useful and appealing components** for new products.

It is essential to reimagine industrial waste, such as plastics, glass, ceramics, and rubber, as recyclable materials with the potential to create innovative compositions. These materials can be transformed into **functional and aesthetically pleasing products**, adding value through the story of their previous life.

How to implement it:

Harness local industrial waste, such as plastics, ceramics, paper, textiles, and rubber, and transform it into reusable and sustainable materials

Picture 1 - PSB® Lisocore® Panel / DesertBoard®

Picture 2 - Möbius Chair Eco / Shanghai Ziin Home Technology Co

Picture 3 - Paper Marble / PAPERUS

Picture 4 - Möbius Chair Eco / Shanghai Ziin Home Technology Co

Picture 5 - Palm Strand Board (PSB®) / DesertBoard®

Picture 6 - Oy, Oysterbuoy / KyeonghoPark

Innovations in sustainable materials

4. Bio-Based solutions

The goal is to pursue **bio-compostable materials** that can safely biodegrade into CO_2, water, and biomass within a defined period of time. These materials have the potential to become a key option in the transition toward a more sustainable economy.

It is essential to elevate **circular bio-based materials** by applying refined details, matte surfaces, and well-defined forms. This not only enhances their aesthetic appeal but also improves their functionality and amplifies their positive environmental impact.

How to implement it:

Use renewable and abundant food-based ingredients, such as plant fibers and natural resins, to create biocomposites that can be efficiently molded and reconstituted, offering low environmental impact and high biodegradability.

Picture 1 - Alder Lounge Table / Haworthby Patricia Urquiola

Picture 2 - OWI-FiberFlex / OWI GmbH

Picture 3 - Sea glass / Paolina Kühr

Picture 4 - TerraPebble and Terraleather / Momentum

Picture 5 - Circon / Momentum

Picture 6 - MYCOsella Viridis

Innovations in sustainable materials

5. Circular remix

Circularity remains a key trend in material design, emphasizing the reuse of waste to create innovative combinations.
Blends of plastics, glass, ceramics, paper, and textiles, sourced from both pre-industrial and post-industrial origins, are being transformed into functional and aesthetic solutions.

These speckled textures and molded forms celebrate the history of recycled materials, merging sustainability and creativity in applications such as furniture and modular products.

How to implement it:

Incorporate waste streams into design to create visually appealing circular materials that reduce environmental impact and promote a more sustainable approach to production.

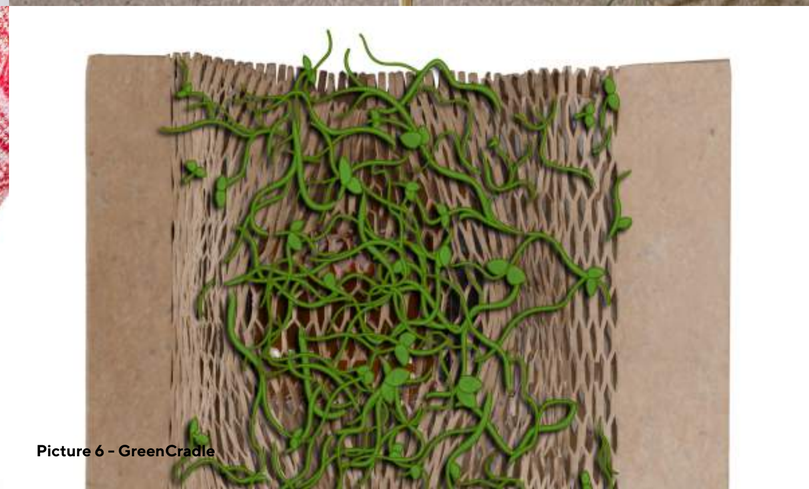
Picture 1 - Idyllwind / Momentum textiles and walls

Picture 2 - Banana-pro-bag / Yen Chang

Pict ure 3 - MuOvO - Sensory Educative

Picture 4 - Closed-Loop Manufactured Fern / Haworth

Picture 4 - Haworth Cardigan Lounge by Patricia Urquiola



Picture 6 - GreenCradle

Innovations in sustainable materials

6. Recycled plastics

The use of **PET waste** offers significant advantages, as it typically comes from clear water bottles, making it easier to color compared to other recycled plastics. In addition, **recycled polyester** requires fewer processing steps and consumes less energy during production, contributing to a notable reduction in carbon emissions.

An innovative approach is **chemical recycling**, which allows the removal of additives such as color pigments, enabling the reuse of plastics that are not recyclable through traditional methods. This advancement opens up new opportunities to transform plastic waste into useful and sustainable materials.

How to implement it:

Explore **recycled plastics** that can be adapted to different needs, taking into account factors such as ease of coloring and material availability. Choose to redesign products.

Picture 1 - Eco Chair / COZU Co

Picture 2 -Collective / Stinson

Picture 3 - Acoustic artwork wall / NARBUTAS

Picture 4 -Ocean Bottle Brew / Ocean Bottle

Picture 5 - KOKON® Ecological Microfiber Suede / Kuangda Automotive Trim System Co., Ltd.

Picture 6 - Byo / Delaoliva by Alegredesign