



**THE GREEN
BOOK**

THE GREEN BOOK

3^a EDITION, JANUARY 2022



CONTENT

THE VIRTUOUS CIRCLE OF PAPER BAGS	4
THE BAG THAT PLAYS A ROLE IN SUSTAINABILITY	6
THE PAPER BAG IS CULTIVATED	7
THE PAPER BAG AS A CO ₂ SINK	9
THE PAPER BAG NEGATIVE CARBON FOOTPRINT	10
THE PAPER BAG IS RECYCLABLE	11
THE PAPER BAG BIODEGRADES NATURALLY	12
THE PAPER BAG IS REUSABLE	13
The reuse concept	13
ENVIRONMENTAL PAPER BAG LABELS	14
THE BAG THAT PLAYS A ROLE WITH CONSUMERS	16
NEW TRENDS FROM THE HAND OF CONSUMERS	20
SUSTAINABLE, ETHICAL, ENGAGED, RESPONSIBLE AND EMPATHETIC CONSUMERS	21
THE BAG THAT PLAYS A ROLE FOR COMMERCE	24
PUTTING VALUE IN THE HANDS OF CUSTOMERS	25
THE BAG IS THE CENTER OF ATTENTION	26
THE BAG FULL OF EMOTIONS	27
THE BAG THAT IS COMPLIANT	28
ASSESSMENT OF A PAPER BAG'S PHYSICAL AND MECHANICAL PROPERTIES	29
Testing procedures	30
Conclusions	31
THE BAG THAT IS COMPLIANT	32
EUROPEAN MEMBERS PREFER ENVIRONMENTALLY FRIENDLY BAGS	33
THE BAG THAT GROWS OUR FUTURE	34
THE PAPER BAG MANUFACTURERS ASSOCIATED WITH LABOLSADEPAPEL ARE AMONG THE MOST DYNAMIC AND INNOVATIVE IN EUROPE	35

THE VIRTUOUS CIRCLE OF PAPER BAGS



Many readers, faced with this headline, will wonder, **what's behind a simple paper bag?**

The answers are so extensive that, at the very least, it would take several chapters of this Green Book to explain the different aspects that make up the world of paper bags.

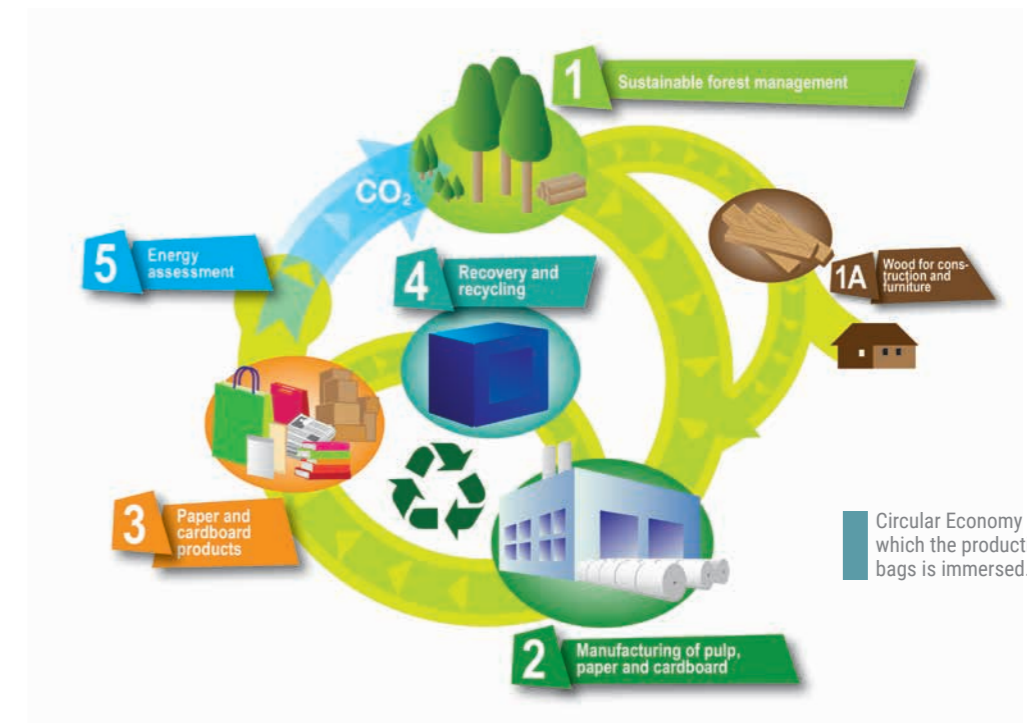
The paper bag plays in favor of a more sustainable world, contributing naturally to curb climate change.

- 🌱 Its raw material, wood, is a renewable and constantly growing resource.
- 🌱 Due to their biodegradable characteristics, paper bags do not pollute the environment or harm marine life.
- 🌱 They are a key factor in the development of the image of the stores.
- 🌱 They are appreciated by consumers, most of whom have a better understanding of the benefits of using paper.
- 🌱 They comply with all laws by respecting all requirements proposed in the new EU and Spanish legislation on the use of shopping bags.



In this green book, you will discover the virtuous circle of the paper bag and why it is now so popular.

THE BAG THAT PLAYS A ROLE IN SUSTAINABILITY



THE PAPER BAG IS CULTIVATED

Wood is the raw material used in the manufacture of paper and is the main source of paper bags. This source is natural, renewable and is constantly growing.

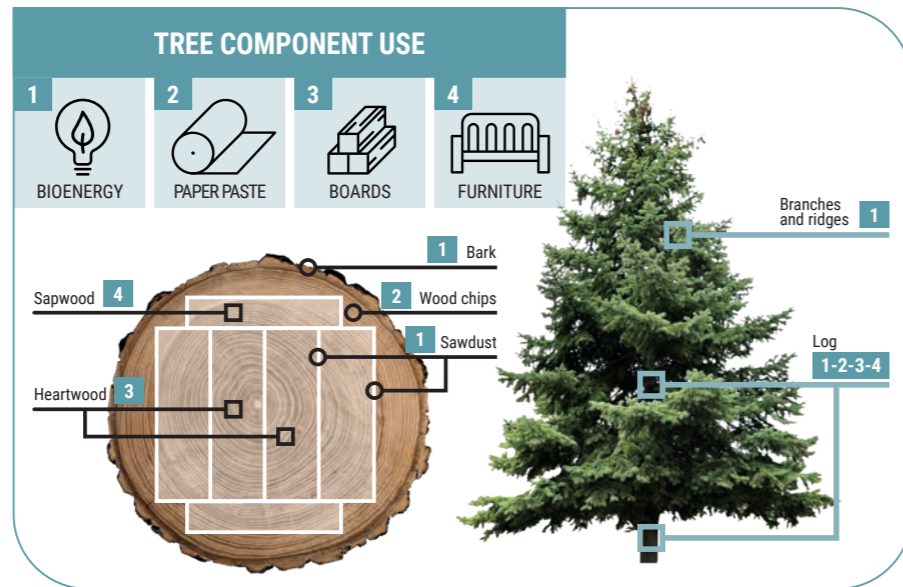
No wood from exotic species from tropical forests or from oak, beech or holm oak is used to manufacture paper.

To make paper, wood from fast-growing species (in Spain eucalyptus

and pine) are used, which are continually being regenerated and replanted and would not otherwise exist.

This represents a wealth of natural resources and an enormous potential to mitigate climate change. Sustainable forest management protects watercourses, enhances research into new species, protects biodiversity and ensures the well-being of forest industry workers.

All components of a tree are fully utilized when it is harvested, there is no waste. The trunk is normally used for lumber and pulpwood. The branches and tops of the tree are used for bioenergy.



Since 1990 forest in Spain have grown **34%** and continue to grow.

SOURCE: FAO - Global Forest Resources Assessment 2020 (five-year report)

Every year, more wood grows than is harvested in European forests. Between 1990 and 2020, the area of European forests has increased by 9%, or 227 million hectares. This means that more than a third of Europe is covered by forests.

In Spain, eucalyptus and pine paper wood plantations occupied 491,370 hectares in 2019 (2.6% of the total forest area in our country).

Plantations are mainly carried out on land that is vacant due to the abandonment of agricultural crops, so that thanks to the plantations the wooded area increases.

The largest forest areas in Europe are in the Russian Federation, Sweden, Finland, Spain and France.

SOURCE: FAO - Global Forest Resources Assessment 2020 (five-year report)



THE PAPER BAG AS A CO₂ SINK

Plantations of cellulose fiberspecies are large CO₂ sinks. As young trees grow, they absorb carbon dioxide (CO₂) from the atmosphere and this is stored in the growing forests

Once the forest reaches maturity it stops absorbing carbon, so productive plantations, which are constantly renewed, are a great opportunity to contribute to curbing climate change.

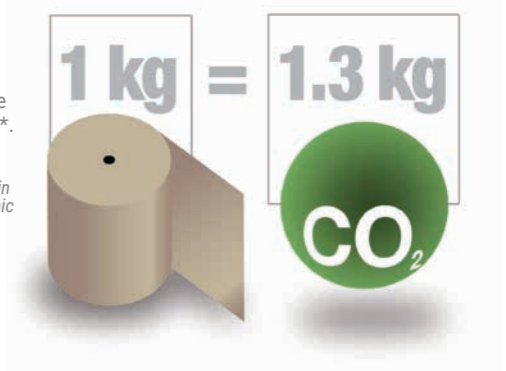
Between 2010 and 2020, the average annual carbon sequestration in forest biomass reached 155 million tons in the European region. Sequestration corresponds to about 10 % of gross greenhouse gas emissions in the EU-28. (1).

The 491,370 hectares of paper plantations in Spain store 28 million tons of CO₂ equivalent. (2)

The stored carbon is not released when the tree is cut down, but remains in forest products such as paper bags. One kilogram of paper stores 1.3 kilograms of CO₂ equivalent and, thanks to recycling, the carbon sequestration period is being extended.

1 kilo of paper stores 1.3 kg of CO₂, depending on the proportion of cellulose fibers that compose it*.

(*). According to the procedure as calculated in CO₂, including e.g. biogenic paper.



(1) CEPI, EU Forest Industries 2050: Calculating the CO₂ effect in support of the sector's vision of sustainable options for a climate-friendly future, 2020.

(2) SOURCE: ASPAPEL. Sustainability Report 2021- Statistical Report

THE PAPER BAG NEGATIVE CARBON FOOTPRINT

All industrial activity causes greenhouse gas emissions. The carbon footprint measures the total emissions of a product throughout its life cycle: from the origin and procurement of its raw material to the different manufacturing processes, including its transportation and its different uses and the practices for its recovery or disposal as waste.



A study conducted to identify the carbon footprint of different types of bags used in commerce revealed the following conclusions:



THE PAPER BAG IS RECYCLABLE

Europe is a world leader in paper recycling. The paper recycling rate in Europe was 73.9% in 2020. 56 million tons of paper were recycled in that 1 year, i.e. 1.8 tons of paper every second.

In Spain, 5.2 million tons of waste paper are recycled annually, making us the second-largest recycler in Europe, behind only Germany and tied with France and Italy.

We currently collect for recycling almost seven kilos of paper for every ten kilos we consume. This is a very significant percentage, taking into account that there are certain types of paper that do not enter the recycling cycle because we keep them (photos, documents, books...) or because of their use (toilet paper).



All the paper recovered in Spain represents a saving in landfill volume equivalent to 52 large soccer stadiums such as the Bernabéu or Camp Nou filled to capacity.

Paper bags are part of this recovery cycle.

When the cellulose fiber is used for the first time in the manufacture of paper, it is called virgin fiber. When the same cellulose fiber is reused several times through recycling, it is called recycled fiber.

And although the paper utilization cycle is very broad, since a cellulose fiber can be recycled up to 6 times, it is necessary to incorporate a certain amount of virgin fiber to keep it in operation, since the successive uses deteriorate the fiber and there are also bags that, due to their use, need to be manufactured with papers that preferably contain virgin fiber.

THE PAPER BAG BIODEGRADES NATURALLY

Businesses and consumers using paper bags facilitate the end of pollution in the environment and the aggravation of litter in water bodies, threatening aquatic ecosystems worldwide, generating negative economic, health and aesthetic impacts.

A paper bag is environmentally friendly. If it were to end up in nature by mistake, it would not harm the earth or the oceans. Being a natural product, it would biodegrade in a period of 2 to 5 months without harming its environment, unlike other commercial bags that can take more than 400 years to decompose.



THE PAPER BAG IS REUSABLE

Experience shows that consumers reuse paper bags for different uses or for re-purchasing with them. But there was no scientific method of evaluation to support the reusability of paper bags.



To this end, **labolsadepapel** proposed to **Itene**, Technological Institute of Packaging, Transport and Logistics, to obtain a method for evaluating the reusability of paper bags.

The reuse concept

After studying different definitions, the one contained in Law 11/1997, of April 24, 1997, on Packaging and Packaging Waste, was chosen. Reuse (Directive 94/62/EC), which states:

"any operation in which packaging conceived and designed to carry out a minimum number of circuits, rotations or uses throughout its life cycle is refilled or reused for the same purpose for which it was designed, with or without the aid of auxiliary products present on the market that allow the packaging itself to be refilled. Such packaging shall be considered waste when it is no longer reused."

In particular, in this study, for paper bags, a minimum of 4 reuses was considered as an achievable and extrapolate parameter for all paper bags in general, regardless of design, paper quality, dimension, etc.

The study evaluates two different uses, the bag for use in the textile trade and the bag for "other uses" that can be used in other commercial sectors. Filling the same bag with a textile garment is not the same as filling it with a purchase made in a supermarket. Neither the weight to be supported nor the transport time are the same.

For the textile use tests, we worked with a load capacity of 4 kg, a transport time of 30 minutes and five pulls.

The results of the validation show that the paper bag, regardless of the type of handle, is reusable, both for textile use and for other uses, since it has withstood 5 sequences of the pull test plus fatigue test, which, depending on the use for which it is intended to validate the reuse of the paper bag, changes in terms of time and weight to be supported per bag.

ENVIRONMENTAL PAPER BAG LABELS

It is becoming increasingly common for paper products to be labeled with information on the environmental aspects that have been taken into account in some of the stages of their life cycle.

Through labeling, paper manufacturers and converters of paper products communicate sustainability aspects of their products, the raw materials used and their final environmental performance, providing useful information to help express to buyers or users the choice that has been made of some materials over others.



In general, the multitude of existing environmental labels can create confusion among consumers, and even among retailers themselves. It is therefore advisable to understand what they represent, so that consumers are clear about what the message is and what the eco-labels certify.

In this sense, the "labolsadepapel" platform has created an environmental symbology to help retailers defend the sustainability of the bags they offer to their customers and to convey to consumers the values of the paper bag as an environmentally responsible good.

In the symbology are represented the attributes of the paper bag as:

Renewable, since its raw material, cellulose fiber, is inexhaustible, grown specifically in responsibly managed forests.

Biodegradable, the paper bag is made with natural fibers, printed with water-based inks and ecological glues and degrades in a short period of time without harming the natural environment.

Recyclable, a paper bag has the virtue of being recyclable up to six times, extending its useful life and minimizing the volume of deposits in landfills.

Reusable, it has been demonstrated that paper bags can be reused a minimum of five times to repurchase the same type of product for which it was purchased.



It is also common for paper bags to carry forest certification.

Forest certification is a program through which an independent entity guarantees that a forest product comes from wood from a sustainably managed forest. It certifies, firstly, that the management of the forest area complies with sustainability criteria, covering forest inventory, management planning, silviculture, harvesting, as well as the ecological, economic and social impacts of forestry activities.



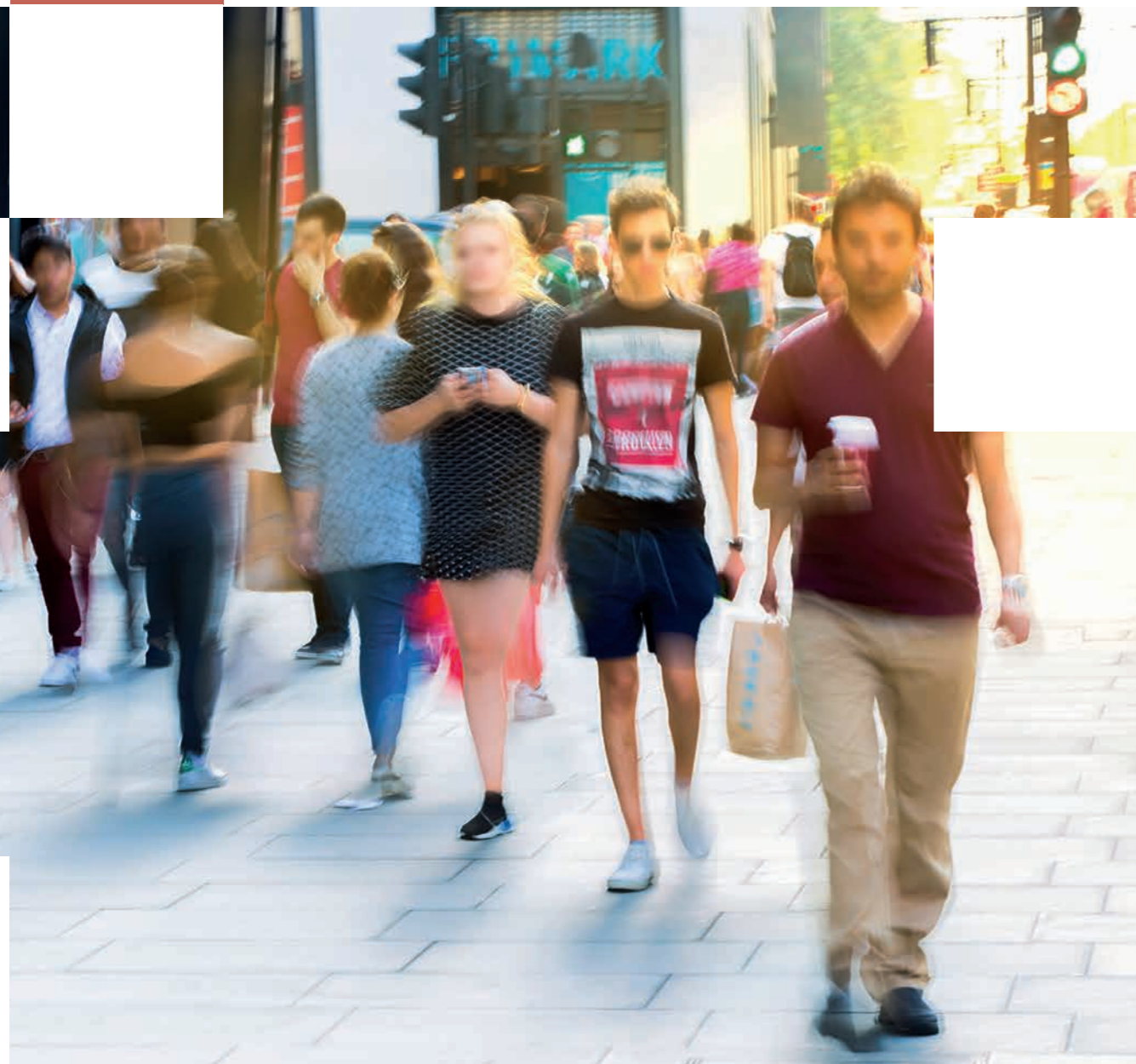
Then, when the certified wood enters the industrial process, the chain of custody (its traceability from the forest to the final consumer) is controlled and certified. Finally, consumers receive the product with a label that guarantees its origin from a sustainably managed forest.



The main forest certification and chain of custody programs are: "Forest Stewardship Council" (FSC) and the "Programme for the Endorsement of Forest Certification" (PEFC).

In short, environmental labels help to certify the commitment of businesses to a sustainable, environmentally friendly economy.

THE BAG THAT PLAYS A ROLE WITH CONSUMERS



ARE CONSUMERS CONCERNED ABOUT THE ENVIRONMENT?

85% of consumers are concerned about the environment.

83% of those who care, between a great deal and a fair amount, about the environment, state that they are personally involved in its care.

This represents **71%** of the sample.



TO WHICH VALUES IS THE PAPER BAG SPONTANEOUSLY ASSOCIATED?

The paper bag reaffirms itself as a transmitter of the **values of sustainable ecology and care for the environment**.

Attributes spontaneously associated by a minimum of **2 out of 3 respondents**.



DOES THE PAPER BAG HARM THE ENVIRONMENT?

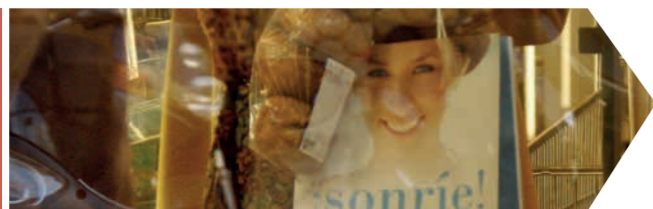
74% of consumers know that a **paper bag biodegrades over a period of about three months**, without harming the environment.



WHAT CHARACTERISTICS BEST SUIT THE PAPER BAG?

Respondents associate the paper bag with the following characteristics:

- > For **90%** it is **environmentally friendly**.
- > For **90%** it is **biodegradable**.
- > For **88%** it is **ecological**.
- > For **88%** it is **renewable, from natural sources**.
- > For **83%** it is **sustainable**.
- > For **82%** transmits a **better image of the store**.
- > For **82%** it **gives a good image**.
- > For **78%** its **environmental information is credible**.
- > For **61%** like to wear it on the street.



ARE CONSUMERS SATISFIED WITH THE PAPER BAG?

Consumers are very satisfied with the paper bag, giving it an average score of **5,46** points out of **7**.

The main satisfaction variables are:

- The good image they give of the stores where they buy.
- Care for the environment.
- The design.
- The quality.
- The practicality.
- Being able to use it for other things.
- The modernity.



QUELLES SONT LES CARACTÉRISTIQUES D'UN SAC IDÉAL POUR LES CONSOMMATEURS ?

The characteristics that consumers ask for in an ideal bag are:

- Resistant.
- Reusable.
- Recyclable.
- Suitable for what you buy.
- Sustainable.
- Biodegradable.



WHAT IS THE IMAGE OF STORES THAT GIVE OUT PAPER BAGS?

For **36%** of consumers, the image is very excellent.

The average score for the total sample is of very good: **8** points out of **10**.

91% of consumers recommend that retailers provide paper bags.



PAPER BAGS IN SUPERMARKETS?

Still, **88%** of consumers would like to be able to choose between paper and plastic bags at the supermarket.

69% would use a paper bag for grocery shopping.

At the same price, **70%** would choose a paper bag and **17%** a plastic bag.

17% would be willing to pay more for a paper bag.

NEW TRENDS FROM THE HAND OF CONSUMERS



SUSTAINABLE, ETHICAL, COMMITTED, RESPONSIBLE AND EMPATHETIC CONSUMERS



Consumers are responding with sustainable lifestyles to their growing concern for the environment.

New purchasing decisions are based on increased consumer awareness of brand sustainability.

Social networks drive the connections and mobilizations of the new generations to fight climate change.

SUSTAINABLE

ethical

Green posturing doesn't cut it. Consumers are looking for the ability of businesses to demonstrate their true ethical and environmental values.

Brands need to think about how they can help consumers be more environmentally friendly in their daily lives.

Consumers want brands to provide eco-friendly packaging and retailers to provide bags that do not harm the environment and oceans.

Sustainable businesses, in addition to having a positive impact on the environment, improve their reputation, generate higher profits and increase their brand value to fight climate change.

Committed



empaths

Consumers relate the values of the store where they shop to the bags they are offered.

Delivering paper bags is closing the virtuous circle of a great shopping experience.

Carrying a paper bag in your hand is associated with going with the times and being a responsible citizen.

The influence of social networks has turned the consumer into a "prosumer" (producer and consumer) by influencing the manufacture of products and the provision of the services he/she wishes to receive.

Sustainability is no longer a competitive advantage, it is a necessary condition. Differential values must continue to be generated with the rest of the attributes of the offer.

THE BAG THAT PLAYS A ROLE FOR COMMERCE



PUTTING VALUE IN THE HANDS OF CUSTOMERS

A bag must fulfill the following functions as packaging:

- > Have the appropriate capacity according to the volume of items that make up the average purchase for which it is intended.
- > Provide sufficient resistance to tensile strength, pulses and puncture that occur in use during transport.
- > To be a good support to formally transmit the characteristics of the brand image of a commercial brand, in terms of printing quality, color reproduction, ease of reading, texture, rigidity, etc.
- > Allow a good adaptation to the social and legal values of the environment in which it will be used, as it is a very visible part of the corporate social responsibility that a commercial brand can develop.

“ Commercial bags are the packaging used by retailers to facilitate protection and transportation of their customers' purchases.

From these functions is when you have to evaluate the material that we will use in the bags and is where the paper, the paper bag, plays a strategic role for the trade to develop the following objectives:

- > Dispense truly sustainable bags.
- > Support the culture of new consumption.
- > Personalize customer service.
- > Improve delivery of purchases.
- > Imaginative advertising.
- > Remain in the minds of shoppers.
- > Show your social responsibility.

“85% of passers-by notice **printed messages** on paper bags they see on the street.

SOURCE: Media analyzer software & research 2007.

The paper bag is an excellent vehicle to project the brand image of the stores, achieving maximum notoriety within its environment and generating great appreciation from customers.

The paper bag allows for great creativity and brand image development due to its shape, texture and printing quality.

The paper bag is an economical advertising medium, available to all businesses and very effective, achieving thousands of impacts throughout the city.

THE BAG, THE CENTER OF ATTENTION



“80% of consumers consider the **brand printed on paper** to be more pleasing and attractive.

SOURCE: IPSOS survey for Spain and six other European countries.



THE BAG FULL OF EMOTIONS

Distribution is a clear exponent of **as commitment, personalization and proximity** in order to efficiently satisfy its customers. The paper bag reaffirms these values by presenting unique features and benefits to the consumer.

The paper bag creates emotional ties between the retailer and its customers, since when customers reuse them, they use them to carry, preferably, objects for personal use. It is in itself a precious commodity when it enters consumers' homes.

“Offering paper bags **say a lot about the retailer, conveys a message of appreciation for the environment and, at the same time, is improving the quality of life of consumers.**

THE BAG THAT CARRIES EVERYTHING



The wide variety of specialized papers for bags for different uses and the different structures with which a paper bag can be manufactured has made it possible for paper bags to be present in all stores today, adapting to each type of purchase.

At first glance, a paper bag may seem fragile and not suitable for carrying heavy purchases or, for example, wet or sharp products.

To reinforce the usefulness of paper bags in all types of commerce, a Study by **ITENE**, Technological Institute of Packaging, Transport and Logistics, confirmed the suitability of paper bags to support heavy weights and to transport a wide variety of shopping products.

EVALUATION OF THE PHYSICAL-MECHANICAL PERFORMANCE OF PAPER BAGS FOR USE IN THE TRANSPORT OF RETAIL PRODUCTS





The objective of the study is to validate the performance of different types of paper bags for use in large-scale retail distribution, both in the food sector and in the textile and bazaar sector. For this purpose, an evaluation of the physical-mechanical resistance of the bags during transport and handling from the time the purchase is made until it reaches its final destination has been carried out.

The main requirements for this type of bags include their ability to withstand short distribution cycles characterized by factors specific to the product contained (poorly distributed load, high density products, products with apices and/or frozen products, etc.), as well as factors due to handling by the user (pulses, low frequency and amplitude vibrations, variable environmental conditions, etc.), all of which have a negative influence on the structural strength of the bag.

TESTING PROCEDURES

Fatigue test

This first test simulated the transport of the bag by a person walking at a normal pace from the supermarket to the destination.

On the other hand, in order to evaluate the behavior of the bags when they contain humid products or products with water condensation due to temperature changes (such as fruits, vegetables or refrigerated foods), the same test was carried out using the wet simulant. For this second case, only the paper references that could be used for food transportation were evaluated.

Handle or "pull" test

This test simulated the stresses to which the bag is exposed when the user grasps it several times by the handle (or in the case of flat bags by the top) from a state of rest.

Perforation testing with corner or edge elements

This test simulated the transport of sharp or sharp-edged products inside the bags, such as small cardboard boxes. For this purpose, a combined test was performed, in which first the pull test was carried out and then the fatigue or vibration test was performed on the same bag, with the variant that in this test the simulant used as content consisted of vertexes, tips or edges.



CONCLUSIONS

It is concluded that the paper bag references studied can be used by large-scale distribution for retail sales in the food sector as well as in the textile and bazaar sectors.



The results obtained in the case of the small-format paper bag indicate that it can hold a load equal to or greater than 12 kg in all cases.



The maximum load to be contained in the medium-sized "all-commerce" paper bag was equal to or greater than 12 kg, depending on the type of bag tested.



The small-format bag was subjected to the same set of tests but using a wet simulant in order to reproduce those conditions that can have a more critical effect on the paper bag, such as the humidity generated during the transport of fruits or other refrigerated foodstuffs. Under these severe conditions, the paper bag withstood load contents equal to or greater than 8 kg.



The flat bottom bag without handle has a maximum load to be transported equal to or greater than 5 kg in the case of medium format references and 2 kg in the case of small format references, both loads are higher than those normally used for this type of bag.

In order to test the resistance of the paper bags to the risk of perforation or tearing caused by products with edges or corners, specific tests were carried out. The paper bags tested behaved adequately without any deterioration or incidents that could affect the bag's transport function.

THE BAG THAT IS COMPLIANT



WE NEED
A CHANGE

The dumping of plastic bags causes a widespread problem of litter in water bodies, threatening aquatic ecosystems around the world, biodiversity and, potentially, human health. It is also an inefficient use of resources.

EUROPEAN MEMBERS PREFER ENVIRONMENTALLY FRIENDLY BAGS



Already in 2015 Directive (EU) 2015/720 saw the introduction of charges for the use of plastic bags and changed the behavior of shoppers across the continent. Resulting in an increased presence of paper bags in stores and a greater appreciation of them by consumers.

The transposition of said Directive in Spain through Royal Decree 293/2018, of May 18, on the reduction of the consumption of plastic bags, regulates in our market the prohibition or mandatory charging of different types of plastic bags.

With paper bags, we all ensure that we all comply with the environment and ecosystems.

THE BAG THAT GROWS OUR FUTURE



THE PAPER BAG MANUFACTURERS ASSOCIATED WITH LABOLSADEPAPEL ARE AMONG THE MOST DYNAMIC AND INNOVATIVE IN EUROPE

With a modern processing industry, generating employment and driving new solutions to meet the multiple needs of all sectors of distribution and product manufacturers.

Paper bag manufacturers are part of the value chain of the macro paper sector. The key sector of the new decarbonized bio-economy, based on an efficient use of renewable and recyclable resources, for the manufacture of natural products with high added value.

The wood fiber industry constitutes, together with agriculture, in terms of tonnage and value added, the largest part of today's bio-economy.

In the very near future, greater attention will be paid to the sustainability of raw materials used in manufacturing, sustainable consumption and recycling to boost resource efficiency and reduce CO2 emissions. Bio-based products will be widely recognized and will meet the demands and expectations of new consumers.





THE PREFERRED CHOICE

labolsadepapel.com