2nd EDITION

THE GREEN BOOK

Facts and figures about paper bags

From quality standard to EU legislation and branding issues

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2nd EDITION, July 2021

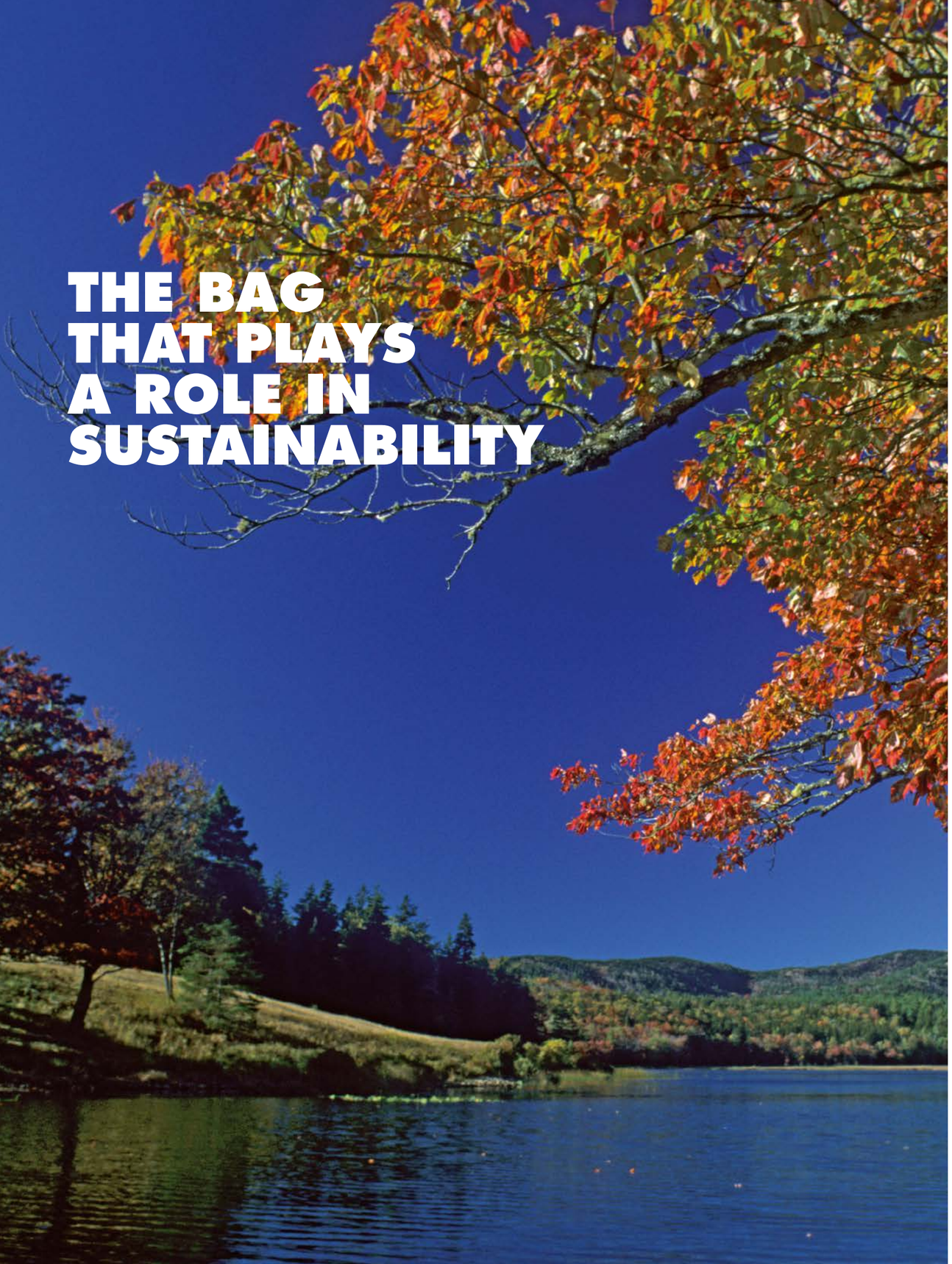
PAPER BAGS ARE A VITAL PART OF A SUSTAINABLE PAPER CIRCLE

After seeing this headline many readers will wonder **what's behind a simple paper bag?**

The answers are so extensive that at least two chapters of this Green Book are required to explain the different aspects that make up the world of paper bags. Paper bags work to create a more sustainable world, naturally contributing to slowing climate change.

- The raw material, wood, is a renewable and ever-growing resource.
- Due to their biodegradable characteristics, paper bags do not harm any sea life.
- They are a key factor in developing the brand image of shops.
- They are appreciated by consumers who now have a better understanding of the benefits of using paper.
- They comply with all laws by respecting all the requirements proposed in new EU legislation on the use of shopping bags.

In this Green Book, you will discover the sustainable circle of paper bags and why they are so popular.



THE BAG THAT PLAYS A ROLE IN SUSTAINABILITY

Paper bags are natural

Wood is the raw material used in papermaking and the major source for paper bags. This natural source is renewable and ever-growing.

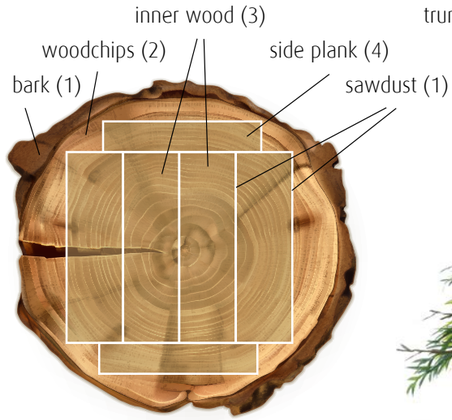
Every year, more wood grows than is harvested in European forests. Between 1990 and 2020, the area of forests in Europe has increased by 9%, amounting to 227 million hectares. That means, more than a third of Europe is covered by forests.[1]

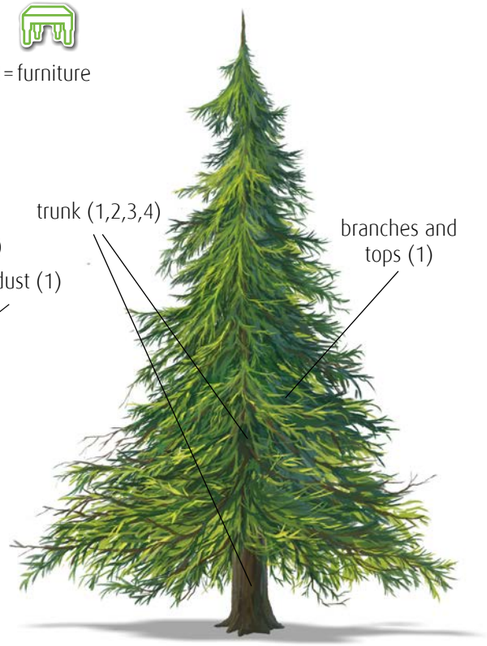
This provides a wealth of natural resources and an enormous potential to mitigate climate change. Sustainable forest management protects water courses, increases research in new species, protects biodiversity and looks after the welfare of forest industry workers.

All constituents from a tree are fully utilised when a tree is harvested – there is no waste. The trunk is typically used for sawn timber and pulpwood. The branches and tops of the tree are used for bioenergy. The fibres for pulp production are withdrawn from tree thinnings and from process waste from the sawn timber industry.
They are 100% natural, renewable and biodegradable.

Usage of tree Constituents

1 = bioenergy 2 = pulpwood 3 = planks 4 = furniture





1 Forest Europe, State of Europe's Forests 2020, 2020

Paper bags store CO_2

Paper is based on wood, a natural and renewable material. As young trees grow, they absorb carbon dioxide (CO_2) from the atmosphere. CO_2 is removed from the atmosphere in large quantities and stored in growing forests. The carbon eventually circulates back into the atmosphere. Part of it is stored in forest products before it reenters the natural biogenic carbon cycle.[1] The carbon stored is not released when the tree is cut, but rather remains in the forest's products, such as wooden products, paper and paper bags.

1 Cepi, EU forest-based industries 2050: CO_2 effect calculation supporting sector's vision of sustainable choices for a climate-friendly future, 2020

Between 2010 and 2020, the average annual sequestration of carbon in forest biomass reached 155 million tonnes in the European region. The sequestration corresponds to around 10% of gross greenhouse gas emissions in the EU-28.[1] As European forests continue to expand in standing volume as well as annual growth, they may offer further potentials for climate change mitigation.[2]

1 Forest Europe, State of Europe's Forests 2020, 2020
2 Cepi, EU forest-based industries 2050: CO_2 effect calculation supporting sector's vision of sustainable choices for a climate-friendly future, 2020

Paper bags are recyclable and biodegradable

Europe is the world leader in recycling paper. The paper recycling rate in Europe was 73.9 % in 2020. 56 million tonnes of paper were recycled in that year[1] – that's 1.8 tonnes of paper every second. Fibres are reused on average 3.8 times in Europe[1] and paper bags are part of this loop.

However, a cellulose fibre from a paper product can be recycled up to six times[2] before it is turned into bioenergy or being composted at the end of its life cycle. Recycling paper means reducing polluting emissions produced by landfills.

Recovered paper cannot be efficiently used in all paper grades, nor can it be used indefinitely. Paper recycling needs to continuously incorporate a certain amount of fresh fibres for three main reasons:

- **Strength** – cellulose fibre deteriorates each time it is recycled.
- **Quality** – certain properties (as high-grade artwork or technical characteristics) for the paper product can only be achieved with fresh cellulose fibres.
- **Availability** – some paper products are not sent for recycling, such as books, photographs, or paper products that are destroyed when used (sanitary paper or cigarette paper).

On occasions where strength is required, a paper bag made of natural kraft paper has major benefits:

- Due to the natural kraft paper's long and strong virgin fibres, it has a high level of mechanical strength.
- Lower weights of paper can be used while maintaining the same strength.
- It can be reused several times thanks to its good quality and design.

And if a paper bag were to mistakenly end up in nature, it would not harm the land or the oceans. As a natural product, it is biodegradable.

Eight million tonnes of plastic waste are deposited into the sea each year. They make up 80 % of all marine debris from surface waters to deep-sea sediments.[3] Plastic bags rank in tenth place of marine litter items that are found on European beaches, from plastic shopping bags to small plastic bags such as freezer bags or the remains of rip-off plastic bags. Littering of plastic waste including plastic bags leads to a widespread problem of rubbish in bodies of water, causing harm to the environment such as by threatening aquatic ecosystems worldwide and generating adverse economic, health and aesthetic impacts.[4] Marine species ingest or are entangled by plastic debris, which causes injuries and deaths. Moreover, plastic litter does not degrade, but instead breaks down into smaller pieces, microplastics and nanoplastics, which end up in the animal and human food chain.[5]

1 European Paper Recycling Council, Monitoring Report 2020, 2021
2 "The Fiber Cycle Technical Document, Summary Report 2006", Metafore
3 https://www.iucn.org/resources/issues-briefs/marine-plastics, accessed on 16 June 2021
4 Anna Maria Addamo, Perrine Laroche, Georg Hanke, Top Marine Beach Litter Items in Europe, EUR 29249 EN, Publications Office of the European Union, Luxembourg, 2017
5 https://www.iucn.org/resources/issues-briefs/marine-plastics, accessed on 16 June 2021

RECYCLING

Paper bags are reusable

Experience shows that consumers reuse paper bags for different purposes or use them for their next shopping trips.

The concept of reuse is defined in Directive 2008/98/EC as proposed in the Packaging and Packaging Waste Directive 2015/0276:

“reuse” means any operation by which products or components that are not waste are used again for the same purpose for which they were conceived.

The eco-labelling of paper bags

It is increasingly common for paper products to be labelled with information on **the environmental aspects that have been considered in certain stages of their life cycle.**

The EU Ecolabel is one of many of these labels used in Europe.

But the multitude of environmental labels may create confusion among consumers, and even among the retailers themselves. It is therefore desirable that you fully understand what these eco-labels represent, to make it clear to consumers what the message is and what the eco-labels certify. In this respect, the platform The Paper Bag, comprised of leading European paper manufacturers and producers of paper bags, has created **environmental symbols to help companies promote the sustainability credentials of their bags** and to share the values of paper bags with consumers, demonstrating their environmental responsibility.

The symbols represent the paper bag's attributes, for example:

RENEWABLE

Renewable, given that its raw material, cellulose fibre, is ever-growing, being specifically grown in forests that are managed responsibly.

BIODEGRADABLE

Biodegradable, since paper bags are made from natural fibres, are printed with water-based inks and ecological glues and degrade in a short period of time without damaging the natural environment.

RECYCLABLE

Recyclable, since the cellulose fibres from a paper bag can be recycled up to six times[1] before it is turned into bioenergy or being composted at the end of its life cycle.

REUSABLE

Reusable, as it has been shown that paper bags can be reused several times. The video series "Are paper bags reusable?" gives examples for different reuses.

It is also common for paper bags to have forest certification. Forest certification is a programme through which an independent entity guarantees that a forest product originates from wood from a sustainably managed forest. First, it certifies that the management of the forest area meets sustainability criteria, including the forest inventory, management planning, forestry, harvesting, as well as ecological, economic and social forest activity repercussions.

When the certified timber enters the industrial process, the chain of custody is controlled and certified (it is tracked from the forest to the final consumer). Finally, consumers receive the product with a label that guarantees that it came from a sustainably managed forest.

The main programmes for forest certification and chain of custody are:

- The Forest Stewardship Council (FSC)
- Programme for the Endorsement of Forest Certification (PEFC)

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

1 "The Fiber Cycle Technical Document, Summary Report 2006", Metafore

THE BAG THAT HELPS YOU ENGAGE WITH CONSUMERS

Consumers prefer sustainable packaging

53%
of European consumers consider plastic waste as one of their top-three concerns.[1]

72%
of Europeans prefer products with environmentally friendly packaging.[2]

Consumers' expectations on environmentally friendly packaging[3]

64%	recyclable packaging
53%	reusable packaging
46%	right-sized packaging
39%	compostable/biodegradable packaging
36%	packaging made from renewable resource
35%	easy to separate different materials for disposal

1 GfK with Europanel and Kantar, Who Cares, Who Does? Consumer Response to Plastic Waste, September 2019
2 IRI, European Shopper Survey 2018
3 GlobalWebIndex, March 2019, base: 1,589 (US) and 2,244 (UK) Internet users aged 16-64

Sustainability affects purchase decisions[1]

72%	of consumers buy more environmentally friendly products today than five years ago.
81%	plan to buy more environmentally friendly products over the next five years.
42%	have stopped buying products due to environmental concerns.

1 Accenture, Accenture Chemicals Global Consumer Sustainability Survey, April 2019

Consumers favour paper[1]

Paper and cardboard packaging ranks highest with consumers as material for sustainable packaging for:

72%	home compostability
62%	being better for the environment
57%	easier to recycle

Consumers like paper bags best[1]

for environmental factors such as:

52%	recyclability
47%	compostability
43%	made with renewable materials

1 Two Sides Report: European Packaging Preferences 2020. A European study of consumer preferences, perceptions, and attitudes towards packaging, May 2020, base: 5,000 consumers in nine European countries

THE BAG THAT ENHANCES YOUR BRAND IN RETAIL

Shopping bags are used by retailers to protect customer purchases and to make them easier to transport.

Putting value in the hands of the customers

A bag must fulfil the following functions as packaging:

- Have adequate capacity to safely carry the volume of goods that have been purchased
- Be strong enough to support the weight of the goods inside whilst being able to withstand the rigours of transportation
- Be a good medium to support your brand equity. Paper has many favourable characteristics. Paper is very tactile and its stiff surface allows for excellent printability and colour reproduction
- Be well adapted to the social and legal values of the environment in which it will be used, given that it is a very visible part of the corporate social responsibility that a retail brand can develop

These are the functions that are used when assessing the material used for bags, and this is where paper bags play a strategic role to help retailers achieve the following objectives:

- Dispense truly sustainable bags
- Support a new consumer culture
- Improve delivery of purchases
- Advertise with imagination
- Remain in the minds of buyers
- Demonstrate social responsibility

Paper bags are an excellent vehicle to project the brand image of retailers, achieving maximum visibility within their environment and generating great appreciation from customers.

The bag as marketing instrument

88%
agreed that, when responsibly produced, used and recycled, paper and print can be a sustainable way to communicate[1]

71%
enjoy the tactile experience of paper and print[2]

Paper bags allow great creativity and development of the brand image due to their shape, texture and print quality.

The paper bag is an inexpensive advertising medium which is available to all businesses and is very effective in making an impact throughout the city.

1, 2 Two Sides Survey: The attractiveness and sustainability of paper and print. A survey of Australian consumers undertaken by Two Sides, July 2016

Offering paper bags says a lot about a business – it conveys a message of appreciation for the environment and improves the quality of life of consumers.

The bag full of emotions

Distribution is a clear example of values such as **commitment, personalisation and proximity** in order to efficiently satisfy your customers. Paper bags reaffirm those values because they present unique features and benefits for the consumer.

Paper bags create emotional links between the retailer and their customers since, when they reuse the bag, they often use it to carry their personal belongings.

Using paper bags also involves **giving a clear signal of commitment to the environment:** by using packaging made from renewable, recyclable and biodegradable sources and collaborating effectively in reducing the use of non-biodegradable shopping bags and promoting greater environmental education.

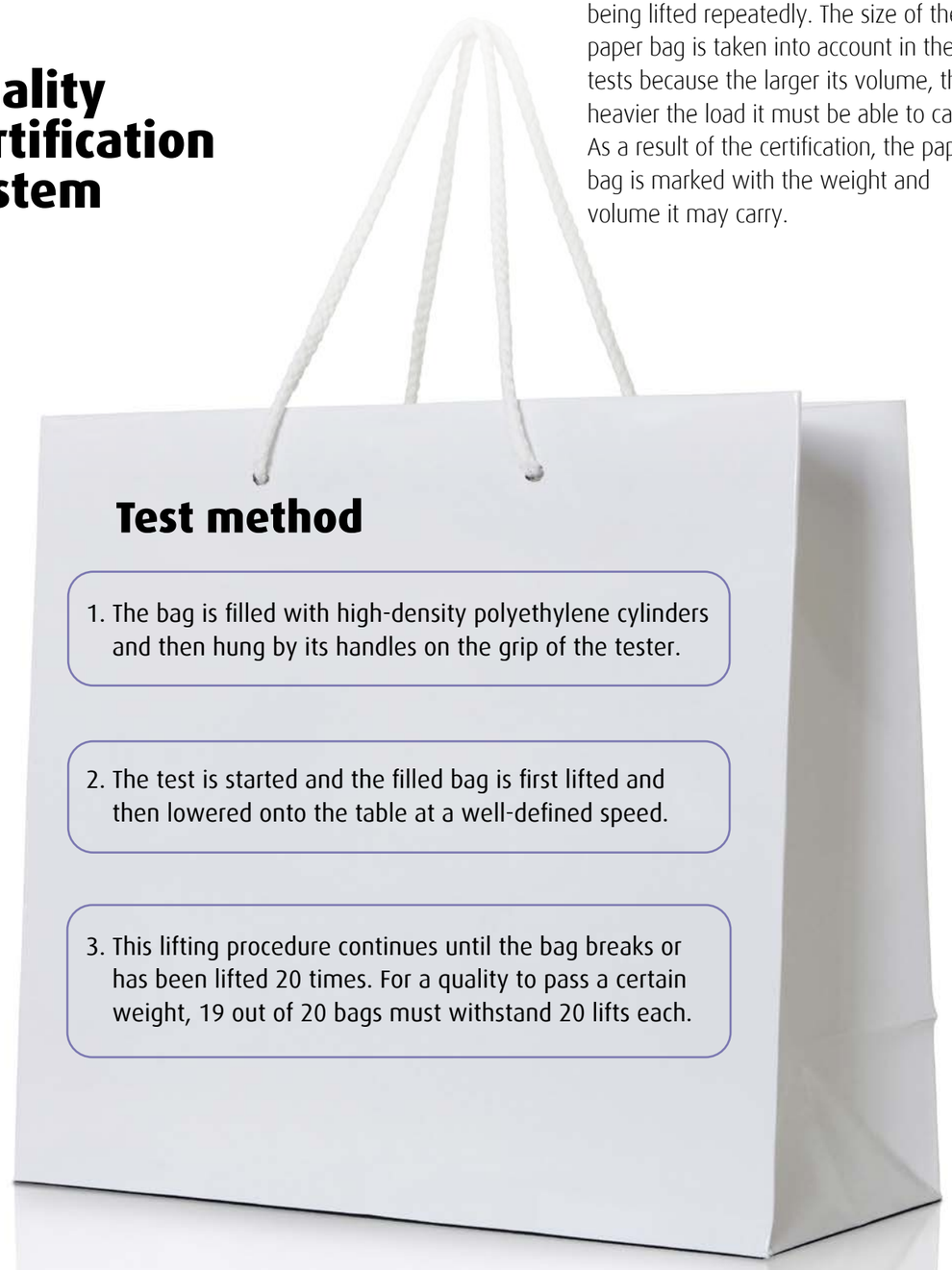
THE BAG THAT CARRIES ANYTHING

Quality standard

A paper bag is the perfect packaging for a wide range of products – from luxury, fashion and decorative items to food, pharmaceuticals and electronics. To increase market penetration, the suitability of paper bags to withstand heavy weights and all kinds of products for purchase can be tested. Paper bag durability can be measured in accordance with the European test standard EN13590:2003. This standard is based on scientifically conducted studies and will help retailers to avoid poor-quality carrier bags.

Quality certification system

The quality certification system for paper bags is based on the test standard EN13590:2003. This test method subjects the carrier bag to heavy weights while being lifted repeatedly. The size of the paper bag is taken into account in the tests because the larger its volume, the heavier the load it must be able to carry. As a result of the certification, the paper bag is marked with the weight and volume it may carry.



Test method

1. The bag is filled with high-density polyethylene cylinders and then hung by its handles on the grip of the tester.

2. The test is started and the filled bag is first lifted and then lowered onto the table at a well-defined speed.

3. This lifting procedure continues until the bag breaks or has been lifted 20 times. For a quality to pass a certain weight, 19 out of 20 bags must withstand 20 lifts each.

The impact of the right material

A strong and durable bag is a real asset to a retailer. It protects the goods, reduces waste and saves money. The key to performance lies in the material and the construction of the bag. It is wise to choose a tested and certified paper bag.

Strong kraft papers
Kraft paper is an excellent choice for carrier bags that must withstand heavy loads. It is especially developed for demanding packaging and is made from slow-growing spruce and pine from sustainably managed forests. The long fibres of the trees result in papers with high strength and durability, which are also a valuable recycling input material for paper recycling streams.

Construction is important
The tests and analyses that have been carried out show that constructive elements affect the paper bag's performance. The choice of glue and a proficient construction of the handles add to the bag's strength and durability.

THE BAG THAT IS COMPLIANT

European member states prefer bags that do not harm the environment

Littering of plastic carrier bags leads to a widespread problem of rubbish in water bodies, threatening aquatic ecosystems worldwide, biodiversity and potentially human health. Furthermore, it is an inefficient use of resources.

In 2018, the European Commission launched an EU-wide plastic strategy with the intent to transform the way products are designed, produced, used and recycled in the EU. The strategy pursues an ambitious target for the recyclability of plastic packaging and the reduction of microplastics which are a significant source of marine pollution. According to the EU Plastic strategy, all plastic waste must be recyclable by 2030.[1]

As a part of this, the Single-Use Plastics Directive bans single-use products made of plastic that are most often found on Europe's beaches and seas, such as cotton bud sticks, cutlery and straws for which alternatives exist.

This Directive follows the Directive (EU) 2015/720 of 2015, which entailed the introduction of charges for the use of plastic bags and changed shoppers' behaviour across the continent.

1 European Commission, A European strategy for plastics in a circular economy, January 2018

THE BAG THAT IS PART OF A SUSTAINABLE FUTURE

Increased knowledge of environmental and social issues has led consumers to demand products that are produced in a more sustainable way. This is why bio-based products are becoming increasingly popular. Consumers are now far more interested in topics such as:

- Made from renewable resources
- The sustainability credentials of the raw materials used in manufacturing
- Sustainable production and consumption
- Reusability
- Recyclability

The paper bag industry in Europe is among the most dynamic and innovative industries. With a modern processing industry, paper bag manufacturers and paper producers create jobs and drive new solutions to meet the multiple needs not only of all sectors of distribution and product manufacturers, but also of the consumers.

Paper bag manufacturers are part of the value chain of the macro paper sector. **This is the key sector of the new bioeconomy, based on the efficient use of renewable and recyclable resources to manufacture natural products with high added value.**

www.thepaperbag.org