



SUSTAINABILITY REPORT 2019

BOLON

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Our aim is to continue creating design that provides a greater impression and a smaller footprint. This means that we integrate sustainability with all stages of the production chain: from raw material to the customer. A Bolon floor should always offer long-term appeal.

Because we are convinced that good design is design that lasts longer.



GOOD DESIGN DEMANDS A GREATER PERSPECTIVE

At Bolon, development and sustainable innovation have always been close to our heart. Each generation has made its mark and left a lasting impression: our grandfather with his idea of weaving offcuts into rugs, our father with his innovative mindset and camping interest and Annica and I with one foot in fashion and one foot in design. Each of us has gone our own way and allowed our passion to drive the company forward. And my dream is for future generations to be able to hold their heads high when looking back at today's Bolon and say: "They did it! They created long-term sustainable design floors."

In order to achieve this, we continuously strive to improve all stages of our production and we have made good progress. For example, we have installed a recycling facility that enables waste material to be used to make new floors. Our entire factory is powered by 100% renewable electricity. And all collections have been free from toxic plasticisers and harmful heavy metals for many years. Moreover, we are testing methods for removing and recycling old floors, and naturally we are proud of this progress. Proud, but not content. We will continue to challenge ourselves and take responsibility for a sustainable future.

MARIE EKLUND
CEO Bolon

A handwritten signature in black ink, appearing to read 'M. Eklund', positioned below the printed name and title.

BOLON IN BRIEF

More than 70 years ago, the idea of recycling vinyl and textile offcuts into woven rag rugs was hatched, the result being a durable and attractive product that soon proved a success throughout Sweden. Laying the foundation for today's Bolon. A business that retains the same innovative spirit and commitment as back then.

We develop and produce highly decorative and durable designer floors suited to both commercial and public environments. With their special, woven-vinyl structure and extensive design possibilities, our floors help to create unique interiors.

All product development, design and production take place in Ulricehamn, which means that the entire chain from idea to implementation is both seamless and manageable. And this is of great value to an innovative and highly adaptable company such as Bolon.

People all over the world tread our floors on a daily basis, as 95% of all our production is exported. Among our 55 markets, France, the USA, England, China and Japan are the largest. In 2018, we generated sales of over SEK 350 million. And Bolon continues to strengthen its position as a global designer brand every year.

SEK 350,528,000

sales in 2018

55 countries

our markets

106 employees

Bolon heroes 2018



A HOLISTIC APPROACH TO SUSTAINABILITY

For several decades, here at Bolon we have taken a determined and proactive approach to sustainability. We have invested in combined development and manufacturing in Ulricehamn, which gives us control and the opportunity to adapt and optimise our resource use as best benefits the environment. This opportunity has been put to good use and resulted in floors with high environmental performance.

Bolon's sustainability work entails responsibility throughout the chain; from sourcing raw material to installation and use at the customers. This means that we include all environmental impact:

from production of raw material, through the impact of our factory and the content of our products, to transportation to and installation and use at customers. Moreover, from hereon in we also plan to include post-use product management and efforts to transition our products to a circular economy.

Over the past 20 years, we have worked systematically and invested in increasing the environmental performance of all our products. And these efforts have paid off:

RESOURCE-EFFICIENT FLOORS

Our designer floors are resource efficient and all collections use recycled material

INTEGRATED RECYCLING

Production with integrated recycling ready for increased recycling

NO PHTHALATES NO HEAVY METALS

A Bolon floor is always completely free of phthalates and heavy metals

BEST PRACTICE PVC

We only source raw material from the greenest polymer factories

100% RENEWABLE ENERGY

Our factory is powered by 100% renewable electricity without any climate footprint

LESS FOSSIL-BASED MATERIAL

Our floors have significantly less fossil-based content than other plastic floors

GREEN TRANSPORT

We work primarily with local suppliers, which reduces transport-related environmental impact

HEALTH-FRIENDLY

Bolon floors produce low emissions – they are even approved for use in hospital environments

CLEAN MAINTENANCE

99% of the time, water is all that is needed to clean a Bolon floor

10–15-YEAR WARRANTY

Our floors are hard-wearing with a long life, which is why we offer a 10–15-year warranty

STEP BY STEP TOWARDS SUSTAINABLE DESIGNER FLOORING

The road to a sustainable world requires change in all areas. Moreover, as a contemporary design company, we want to be a positive driving force and a bold role model.

Successful sustainable development requires resource-efficient materials produced in an environmentally friendly manner that can also be recycled and are part of a circular economy. One prerequisite for circular material flows is that the materials themselves are free of pollutants and hazardous chemicals.

With this in mind, Bolon has chosen to split its sustainability work into three focus areas: material, climate and chemicals. Accordingly, the rest of this report is split into three corresponding sections.

MATERIAL

100%

Our floors are resource efficient and the degree of recycling is increasing year after year thanks to our integrated recycling facility.

of our collections use recycled material

500%

increase in total share of recycled material 2016–2018

47%

reduction in industrial waste 2016–2018

CLIMATE

0%

A Bolon floor is a climate-friendly option as its production leaves no climate footprint and impact from transport is kept low by using local suppliers.

climate impact from production and head office

100%

renewable energy in manufacturing

85%

loading factor with more efficient transport, the result is reduced transport emissions

CHEMICALS

100%

Our floors are non-toxic and contain no harmful stabilisers or plasticisers. In other words, a good foundation for a better indoor environment.

non-toxic floors

0%

phthalates and heavy metals

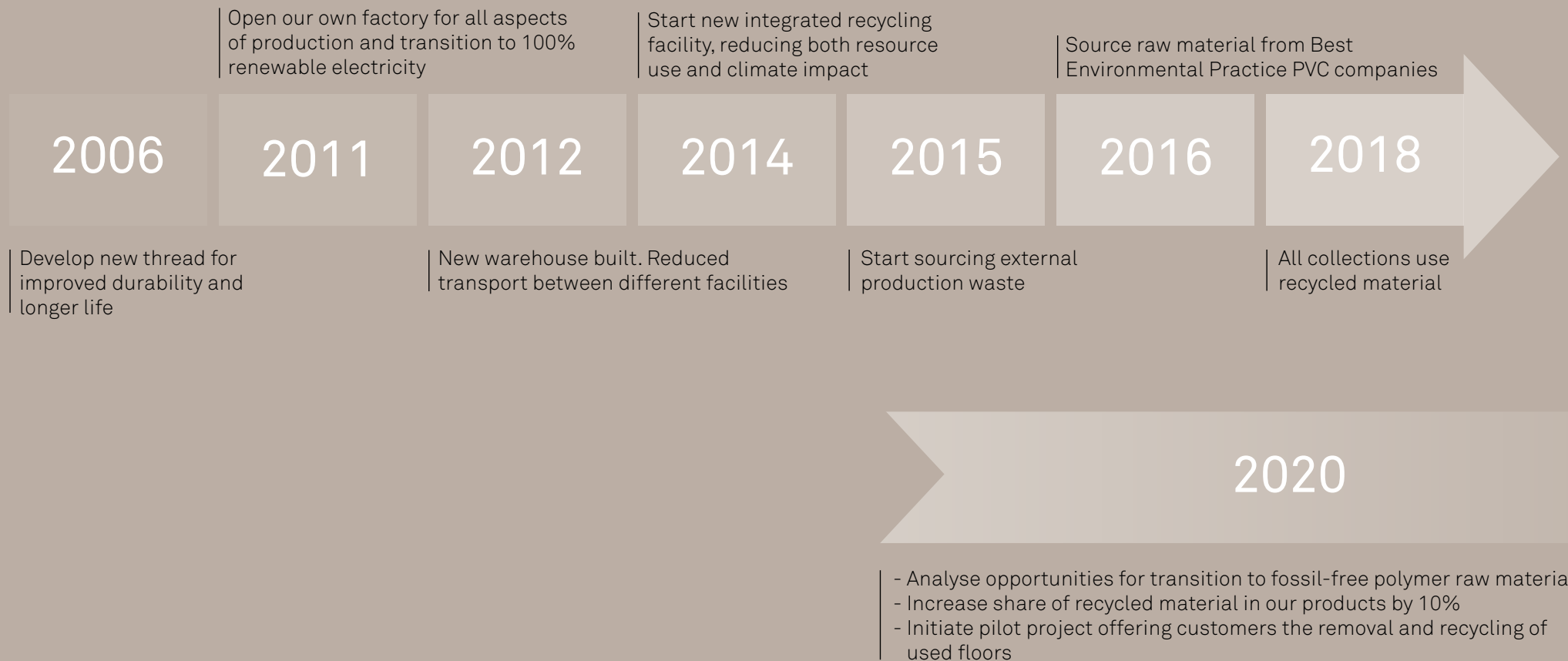
99%

cleaning without chemical detergents

MATERIAL

Bolon designs and manufactures vinyl flooring with a focus on creating products with a long life and minimal use of raw materials. This means that we strive to increase recyclability while reducing waste and continuing to develop the product's physical and aesthetic longevity.

STEP BY STEP TOWARDS ECO-FRIENDLY FLOORS



LONGER LIFE REDUCED WASTE MORE RECYCLING

In 2018, Bolon used a total of 5,686 tonnes of material for its base products: rolls and tiles with different base layers. The company's environmental performance is based on and refined by means of these basic products. The greatest environmental impact is seen in the roll product category, simply because this is our biggest seller and is produced in the largest volumes.



RECYCLING AND WASTE

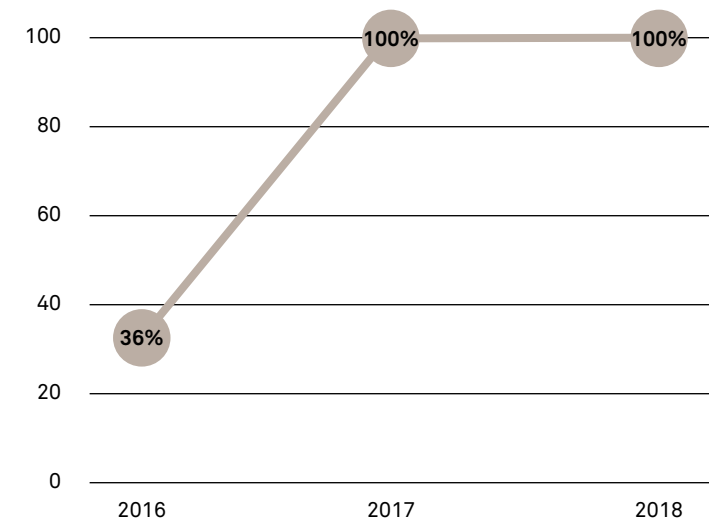
Bolon strives to be as resource efficient as possible. This includes ensuring that our own and other companies' waste is used for the backing (the base layer of our floors).

Since the product being manufactured is often alternated, and thereby even the input material, the share of recycled material also varies in particular collections throughout the year. At most, we have achieved a 33% share of recycled material in an entire product/collection. As we implement recycled material in increasingly more collections, the share in particular collections falls as the total share of recycled material increases. The average values for the last three years for the different collections for which recycled material is used range from 13.3 – 22.6%.

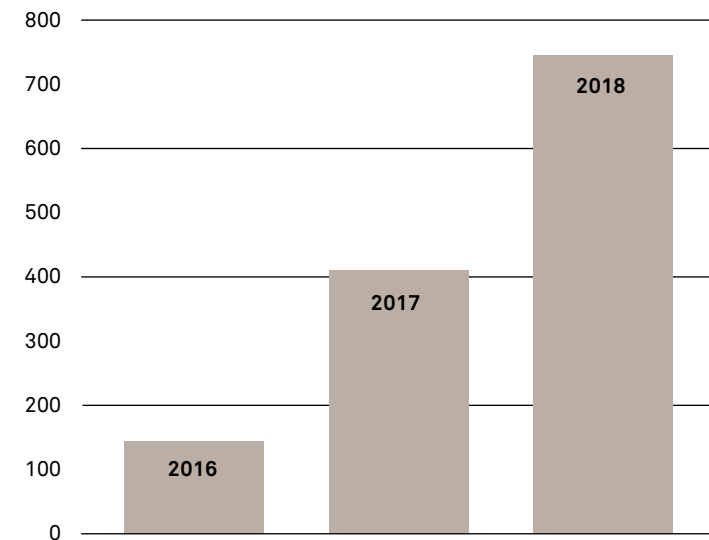
In 2018, our raw material needs fell by 750 tonnes thanks to recycling. This means that the same raw material is sufficient for a greater floor area and our environmental impact decreases. This ensures resource-efficient floors. And this is down to our investment in an integrated recycling facility at our factory, with which we can increase

the share of recycled material over the coming years. The next step is to examine how we can best reclaim used floors from our customers. We define recycled material as: own waste, externally sourced waste and recycled floors from our customers. We started out recycling our own waste to determine the best method. Then we began sourcing external waste that would otherwise have been used for landfill or energy recovery. Over the past three years, externally sourced waste has accounted for 24 – 80% of our total recycling. Our goal is to within the next few years also use recycled floors from our customers.

During the period 2016 to 2018, the share of collections with recycled material increased. Today, all of our collections use recycled material.



SHARE OF COLLECTIONS USING RECYCLED MATERIAL



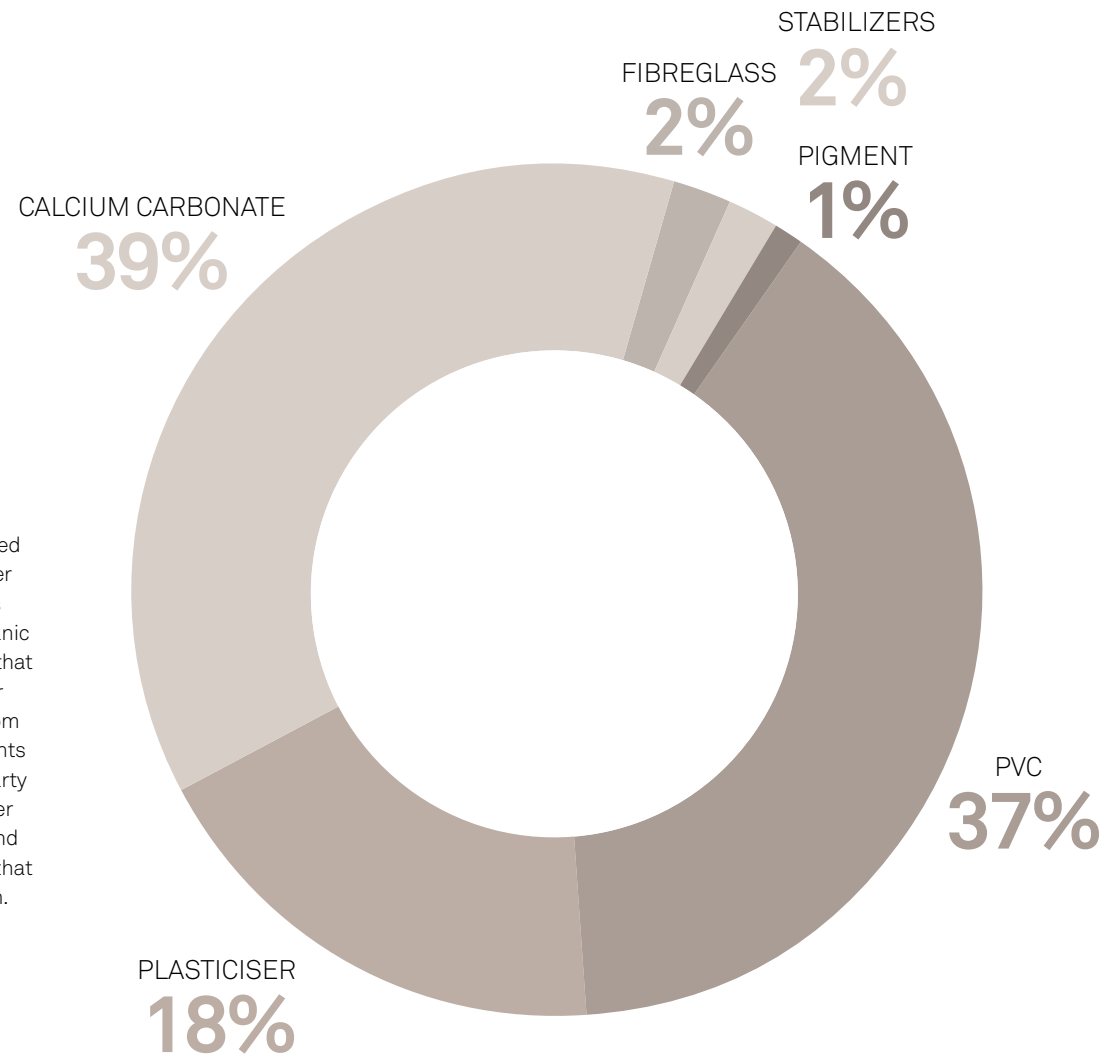
TOTAL AMOUNT OF RECYCLED RAW MATERIAL IN OUR FLOORS
(tonnes per year)

RAW MATERIAL

Our plastic raw material, PVC, is made of 57% salt and 43% oil, with chemical processes turning them into a polymer. The result is a durable plastic that is free of harmful chemicals such as phthalates and heavy metals. By using salt, significantly less fossil-based raw material is required compared to other plastics. The unique polymer structure also makes the PVC 100% recyclable multiple times after its long life.

Our floors consist of 39% calcium carbonate, 37% PVC, 18% plasticiser, 2% fibreglass, 2% stabiliser and 1% pigment. From a fossil perspective, this

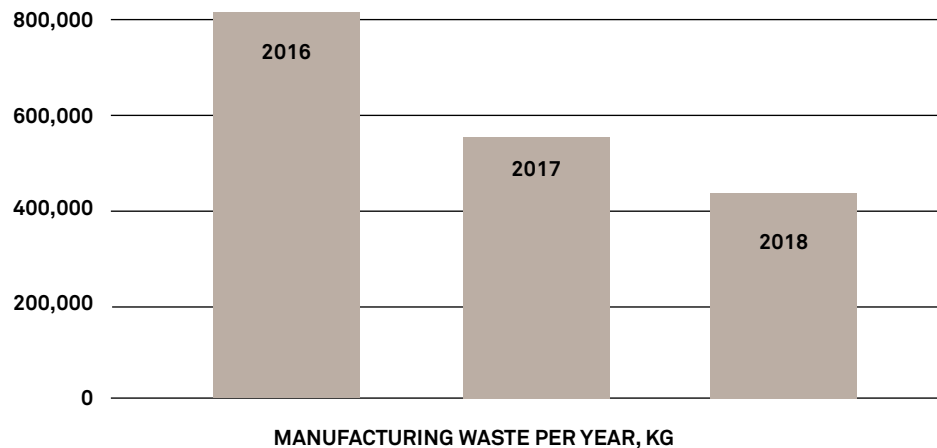
means that the floors contain 33% fossil-based raw material, which comes from the plasticiser and PVC, with the remaining 67% of the floors comprised of inorganic material. Of the inorganic material, the lion's share is comprised of salts that are found in abundance in Earth's crust. As for the actual polymer, we source the material from vinyl manufacturers that meet the requirements of **Best Environmental Practice PVC** (third-party certification). The certified factories have lower emissions from the manufacturing process and are more energy efficient compared to those that do not meet the requirements for certification.



THE COMPONENTS OF OUR FLOORS

INDUSTRIAL WASTE

We have continuously reduced our industrial waste. From 2016 to 2018, this reduction was 47 %, while production was increased by 12 %.



CIRCULAR PRODUCT MANAGEMENT

Reclaiming floors is a complex task as our products are sold to customers throughout the world. At present, the customer decides what happens to the floor once it has served its purpose. We have laid the foundation and

created the necessary conditions for circular product management by developing non-toxic floors and offering, for certain applications, glue-free tile installation. This is an area that will see further development over the coming years.



INTRODUCTION

MATERIAL

CLIMATE

CHEMICALS

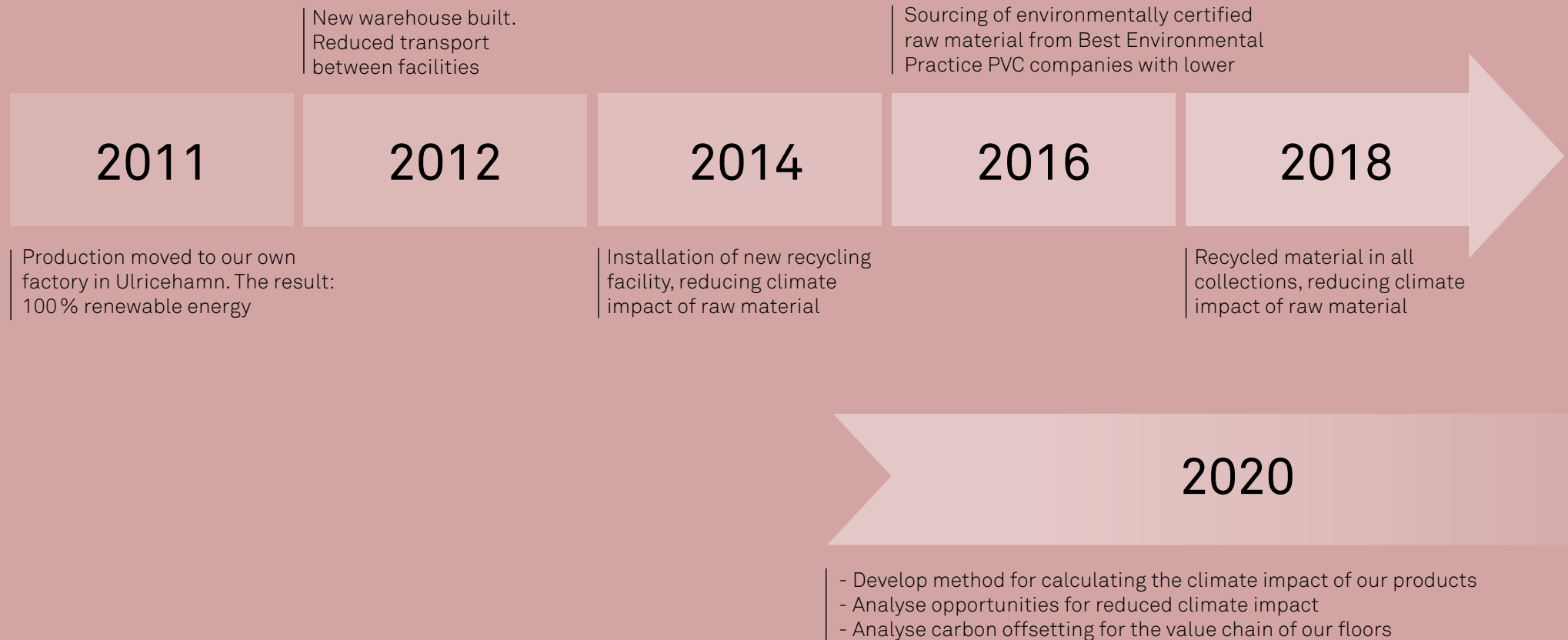
CERTIFICATES



CLIMATE

Bolon's entire production, from design to finished floor, takes place at our factory in Ulricehamn. This means reduced transport emissions and 100% renewable energy use in the manufacturing process. We have also installed a new recycling facility, which reduces the climate impact of the raw material.

STEP BY STEP TOWARDS REDUCED CLIMATE IMPACT



GREATER IMPRESSION, SMALLER FOOTPRINT

At the 2015 United Nations Climate Change Conference in Paris, the countries of the world agreed to keep global warming below two degrees. Achieving this requires zero emissions of greenhouse gases by 2050. Bolon has begun this journey with the ambition of developing fully climate-neutral flooring.

Bolon's climate focus encompasses the energy required to manufacture, transport, install and maintain our floors. Climate impact arises from

the use of electricity and fuel in the value chain and can be reduced by means of renewable energy and more resource-efficient and energy-efficient methods and processes. In 2018, Bolon's total climate footprint was 12,100 tonnes from raw material up to and including use. This is equivalent to 0.035 kg per SEK in sales.



RAW MATERIAL

The lion's share of Bolon's climate footprint originates from polymer raw material, amounting to 9,900 tonnes of CO2e per year. However, with an increased share of recycled material combined with the measures taken by our suppliers, over the next few years we will reduce our climate impact while increasing our production.

TRANSPORT

Our own transport to customers currently gives rise to 270 tonnes of CO2e per year. We have a loading factor of 85 %. By refining how our floors are transported, the loading factor has been improved significantly. Our transport to customers amounts to 7.7 million tonne-km, 47 % by road and 53 % by sea.

TYPE	VALUE	UNIT
Fuel for road transport (EURO 0-5 mix)	0.0066	l/100 km
Road transport distance (weighted average)	724	km
Sea transport distance (weighted average)	816	km
Loading factor (includes unladen return journeys)	85	%

DISTRIBUTION OF FOSSIL-BASED ENERGY USE

Number from sold products. Handling of samples is excluded.

MANUFACTURING

All floor manufacturing takes place in Ulricehamn. Here we manufacture the thread and the backing, weave the designer surface and combine all these elements into a high-quality floor. Our factory is powered by 100% renewable electricity and all our premises are heated by a combination of geothermal heat, electric boilers and the surplus heat generated by our machines. This also applies to our head office, which is integrated with the factory. This means that the climate footprint of our production and office space is zero.

INSTALLATION AND MAINTENANCE

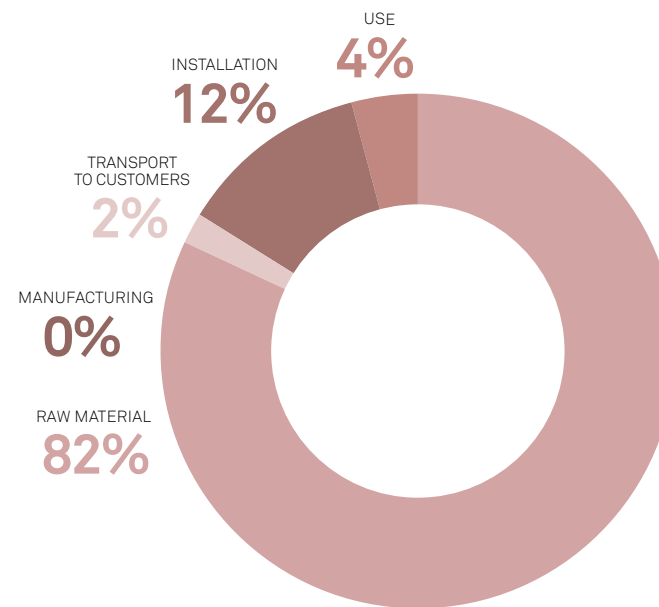
Installing and maintaining our floors gives rise to 2,000 tonnes of CO₂e per year, with about 84% coming from installation. We work with a glue-free installation, which helps to facilitate floor replacement and means that any reclaimed material is purer. In the long term, this will help to reduce climate impact.

RENEWABLE ENERGY

For the entire supply chain, from raw material to use, the share of renewable energy is 81%. Fossil-based energy is mainly used during the manufacture of the raw material and the installation of our floors.

CLIMATE IMPACT THROUGHOUT THE LIFE CYCLE

The environmental product declarations (EPDs) that we have commissioned enable us to review climate impact throughout the life cycle. About 4/5 comes from the raw material.



OUR FLOORS' CLIMATE FOOTPRINT

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[MATERIAL](#)

[CLIMATE](#)

[CHEMICALS](#)

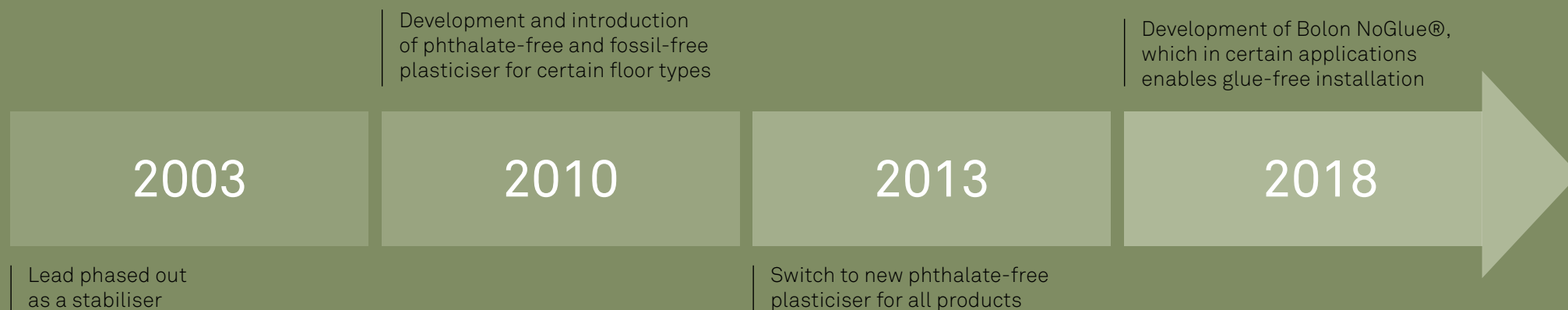
[CERTIFICATES](#)



CHEMICALS

We are proud of our work, which has resulted in well-designed vinyl floors that are non-toxic and can be cleaned using water alone. Moreover, our floors produce such low emissions during their lifetime that they are approved for installation in hospital environments.

STEP BY STEP TOWARDS NON-TOXIC FLOORS



100% NON-TOXIC AND APPROVED FOR HOSPITALS

Hazardous chemicals have been, and remain, a problem for modern society. Many chemicals that are or can be harmful to people and the environment are still permitted. Bolon, however, has taken the initiative and stopped using such permitted yet hazardous substances.

Plasticisers, in the shape of phthalates, and stabilisers, in the shape of the heavy metal lead, have previously been used for vinyl floors. Bolon's floors have been completely free of phthalate and lead additives for many years. The plasticiser that we use instead is approved for use in children's toys.

Non-toxic materials are also a prerequisite for a circular economy. Today, many materials cannot be recycled due to their hazardous substance content. Since our floors are non-toxic, they offer a favourable starting position and solid foundation for being recycled.



CLEANING AND MAINTENANCE

Our floors are highly durable and come with a 10–15-year warranty. Since the floors are waterproof, neither dirt nor stains penetrate to any depth. This means easier maintenance and cleaning without the need for waxing or polishing. Moreover, our classic designs enable our floors to be used for very many years. During their life, 99% of the time our floors can be cleaned without using any chemical detergents. This ensures eco-friendly use.

Independent analyses of the impact of our products during use show that detergent use per square metre throughout the floor’s lifetime is 100 ml.

TYPE OF CLEANING	VALUE	UNIT
Water consumption	4	litre
Detergent	0.1	litre
Electricity consumption	0.314	kWh

ESTIMATED IMPACT OF CLEANING ONE M²
OVER A 10-YEAR LIFETIME

EMISSIONS

Bolon floors achieve the best classification* for emissions during the product’s lifetime. This means that our floors can be used in hospitals and other sensitive environments.

**Bolon floors have received M1 classification from the Building Information Foundation RTS, as well as FloorScore classification, with total volatile organic compounds (TVOC) emissions measured at less than 0.5 milligrams/m3 of air.*

CHEMICALS FOR COOLING

Our production machines are cooled using only groundwater from our own wells. We employ a closed system that cools and then pumps the water back. This provides cooling without any chemical use or water consumption.



CERTIFICATES

Bolon operates in a global market, catering to customers with different demands. Our portfolio of product certifications and declarations is an important tool for securing the entire supply chain and continuously driving progress.

TRANSPARENCY AND PERFORMANCE

Our products and processes have been awarded rigorous environmental certification for buildings. These third-party verified certifications are one way of demonstrating and communicating the environmental quality of our products and processes. The product declarations also provide transparency and are openly available to everyone. Bolon operates in many different markets and as such holds a wide range of certificates and declarations (see table).










Our raw material has earned the third-party ecolabel Best Practice PVC. The environmental performance of our products is assessed by BRE Global, which is a part of BREEAM, an








international labelling system for buildings. For chemicals we have the Swedish BASTA declaration and for emissions during use we have the international FloorScore. For post-use, we have Golvbranschens kretsloppsmärkning, a recycling label from the Swedish floor industry association.

We also have EPDs (environmental product declarations) for all collections. An EPD is a life cycle assessment based on ISO standards and produced by a third party. An EPD shows resource use and environmental impact from raw material to end of service.



CERTIFICATIONS / DECLARATIONS

CERTIFICATE / DECLARATION	REGION / COUNTRY	DECLARATION	ENVIRONMENTAL PERFORMANCE	AIR QUALITY / HEALTH	COMMENT	
BASTA	Sweden	✓	✓		Strict requirements for chemical content.	
BRE Global	International		✓		Product ranking with different levels. Part of the international BREEAM label for buildings.	
Byggsvaru- bedömningen	Sweden	✓	✓		Ranking with different levels, our products are ranked as 'Accepted'. Chemical content requirements and some life cycle criteria.	
DGNB Navigator	Germany/ International	✓			Based on ISO standards. Offers guidance towards more sustainable materials.	
FloorScore	International			✓	Strict requirements for low emission levels. Provides ranking in systems such as LEED, BREEAM and WELL	
EcoProduct	Norway		✓		Rankings of different levels based on data in EPD.	
Byggsvarudeklaration – eBVD	Sweden	✓			Shared industry database. The data are used by, among others, Byggsvarubedömningen and SundaHus.	
EPD	International	✓			EPD – Environmental Product Declaration. Based on ISO standards.	
FDES (EVEA)	France		✓	✓	Based on life cycle assessment as per French standards and includes health aspects.	
French VOC	France/ International			✓	French compulsory emission certification. Ranking with different levels.	

CERTIFICATE / DECLARATION	REGION / COUNTRY	DECLARATION	ENVIRONMENTAL PERFORMANCE	AIR QUALITY / HEALTH	COMMENT	
Best Practice PVC	Australia/ International		✓		Ecolabelling of the manufacture of PVC raw material.	
Green Tag	Australia/ International		✓		Assessment based on life cycle, ranking with different levels.	
Green Tag – PHD	Australia/ International	✓		✓	Focus on health and chemicals.	
Kretsloppsmärkning	Sweden	✓			Declaration of chemicals contained in flooring with care instructions and information on environmentally sound disposal.	
M1	Finland/ International			✓	Strict requirements for low emissions from the end product.	
NAAF	Norway			✓	Strict members label issued by the Norwegian Asthma and Allergy Association.	
SundaHus	Sweden		✓		Ranking of different materials used in buildings.	

FACTS 2018

CATEGORY	AMOUNT	UNIT
Sourced raw material	5,686	tonne
Recycled raw material	750	tonne
Total amount of fossil-based raw material	1,650	tonne
Total amount of sorted waste material	437	tonne
Non-renewable energy from raw material to use	13,000	MWh
Renewable energy from raw material to use	68,000	MWh
Renewable energy in manufacturing	644	MWh
Transport factory–customer	7,700,000	tonne-km

SOURCES

TYPE	SOURCE
Material use	Bolon's production data
Energy consumption in manufacturing	Sourcing data at Bolon
Manufacturing waste	Data from waste management service provider
Renewable electricity	Good Environmental Choice electricity labelling
Climate footprint	Data from EPDs produced by IBU in 2016 and valid until 31 January 2022
Detergent use during use	Data from EPDs produced by IBU in 2016 and valid until 31 January 2022
Share recycled	Bolon's production data
Components of floors	Bolon's production data
Share of renewable energy from raw material up to and including use	Data from EPDs produced by IBU in 2016 and valid until 31 January 2022
Transport	Data from EPDs produced by IBU in 2016 and valid until 31 January 2022
Climate impact after use	Data from EPDs produced by IBU in 2016 and valid until 31 January 2022
Emissions of hydrocarbons during use	FloorScore classification
Best Environmental Practice PVC	https://new.gbca.org.au/pvc/