



The Floor is Yours



Beyond Sustainability

Table of contents

1 GOING BEYOND SUSTAINABILITY	p. 3
Message from Desso's director of sustainability	p. 4
Transforming our business	p. 7
The three Cradle to Cradle® principles	p. 9
Taking the road less travelled	p. 10
Eco-efficiency	p. 13
Eco-effectiveness	p. 14
Cradle to Cradle® is all about transparency	p. 17
Desso's Cradle to Cradle® roadmap to 2020	p. 19
2 MILESTONES IN OUR JOURNEY	p. 21
Making eco-effective products	p. 22
100% safely recyclable	p. 25
Silver Milestone	p. 26
Take Back™	p. 28
Refinity®	p. 30
Closing the loop	p. 33
3 USING CRADLE TO CRADLE® TO BOOST INNOVATION	p. 35
How Cradle to Cradle® boosts innovation	p. 36
DESSO AirMaster® - the carpet that clears the air	p. 38
Textile floor coverings and volatile organic compounds	p. 41
Our environmental standards and certifications	p. 42
4 ALTERNATIVE APPROACHES TO MEASURING SUSTAINABILITY	p. 45
Environmental product declarations	p. 47
Why does DESSO also use life cycle assessment (LCA)?	p. 49
Cradle to Cradle® and LCA	p. 51
LCA as a measurement tool	p. 52
5 ACHIEVING MORE TOGETHER	p. 56
Being open and transparent: measuring progress	p. 56
Join the Cradle to Cradle® journey	p. 59
Certification: our hallmarks of quality	p. 60

1 Going beyond sustainability



Message from Desso's director of sustainability

In 2008, Desso began its transformational journey towards becoming a 100% Cradle to Cradle® company by 2020. From the start, we have set ourselves the goal of implementing 'sustainability with substance' and have always aimed to be open and transparent in our reporting.

In the coming year we will publish our first 'Corporate Sustainability Report', which is made in accordance with the internationally recognised guidelines set by the Global Reporting Initiative (GRI). We want to provide our stakeholders with the most transparent information possible regarding our operations.

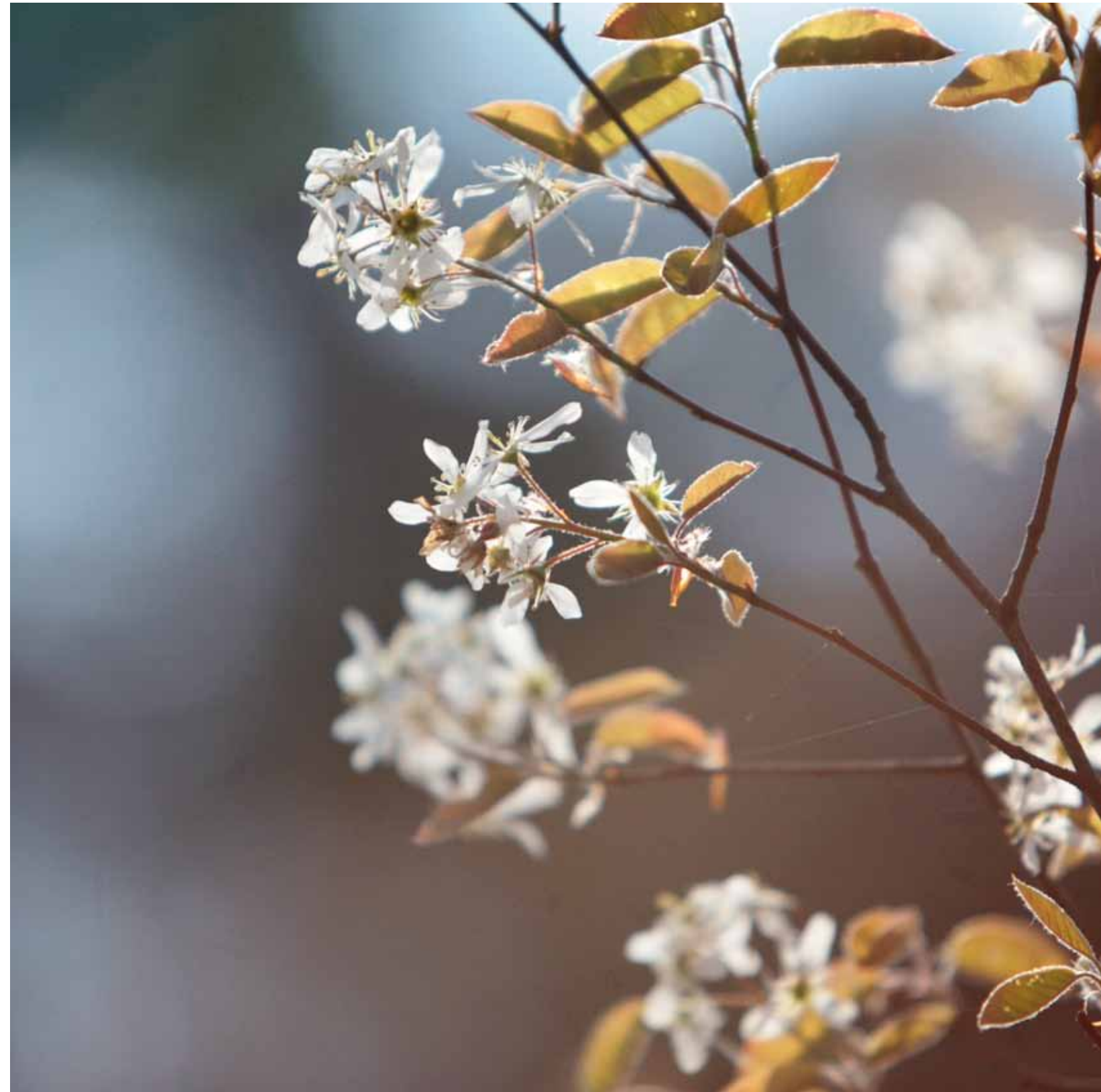
In addition to this, we will continue to report on our ongoing progress with regard to Cradle to Cradle® in various publications. An updated Cradle to Cradle® brochure will also be published in 2012, which will focus on the progress we have made towards our 2020 goal.

We acknowledge that many of our stakeholders need to be informed about the tools and reporting methods relating to both conventional sustainability as well as Cradle to Cradle®.

Therefore, we have also included information on other sustainability measurement tools as part of this brochure.

We expect and hope that more companies will adopt the Cradle to Cradle® philosophy and produce products which are good for human use and the environment.

Rudi Daelmans, director of sustainability.





We committed the company to become **fully Cradle to Cradle® by 2020.**

Instead of a linear economic model where products are made and then disposed of, **the Cradle to Cradle® model is circular.**

That is why we decided to transform our entire business according to the Cradle to Cradle® philosophy.



Transforming our business

“No man is an island, entire of itself.” These words from the 17th century English poet John Donne remain as relevant today as they were then, though we would include women. As a European manufacturing business we know that everything we do has an effect on wider society around us and we want to make sure that our impact is a positive one.

At Desso we are aware of the major environmental challenges facing the world both in terms of climate change and the overuse of scarce natural resources. We know that action now can make a big difference to the way our society develops for future generations. In October 2011, the seven billionth human being was born; bringing us ever closer to the forecasted rise to nine billion people on Planet Earth by 2050. In September 2011, UN Chief Ban Ki-moon said that sustainable development in the face of climate change was the single biggest issue facing us¹. It is clear that the planet cannot sustain the same wealth creation and commercial growth unless the business model changes.

The German chemist Professor Dr. Michael Braungart and the US architect William McDonough, the thinkers behind the Cradle to Cradle® design concept, set out their ideas in the groundbreaking book, *Cradle to Cradle®: Re-Making the Way We Make Things* (Vintage, 2009).

In one important passage they discuss the lessons of nature. Using the cherry tree as an example, they point out that nature produces ‘eco-effective’ systems, whereby waste is food for the subsequent growth of new products.

“Although the tree makes more of its ‘product’ than it needs for its own success in an ecosystem, this abundance has evolved (through millions of years of success and failure or, in business terms, R&D), to serve rich and varied purposes. In fact, the tree’s fecundity nourishes just about everything around it.”²

They argue that if we learnt from nature we would focus on eco-effectiveness – doing things right from the start – rather than eco-efficiency – where we try to curb something we have not been doing well.

“Our concept of eco-effectiveness means working on the right things – on the right products and services and systems – instead of making the wrong things less bad. Once you are doing the right things, then doing them ‘right’ with the help of efficiency among other tools, makes perfect sense.”

That is why we decided to transform our entire business according to the Cradle to Cradle® philosophy.

¹ Sustainability world’s top issue: UN chief, The Independent, September 9, 2011.

² Braungart, M & McDonough, W, *Cradle to Cradle®: Remaking the Way We Make Things* (Vintage Books, 2009), p. 78.



Quite simply, it's about **'doing the right things right'**.

We want to avoid creating an efficient pursuit of the wrong goals, and make a fundamental shift towards a new design objective.

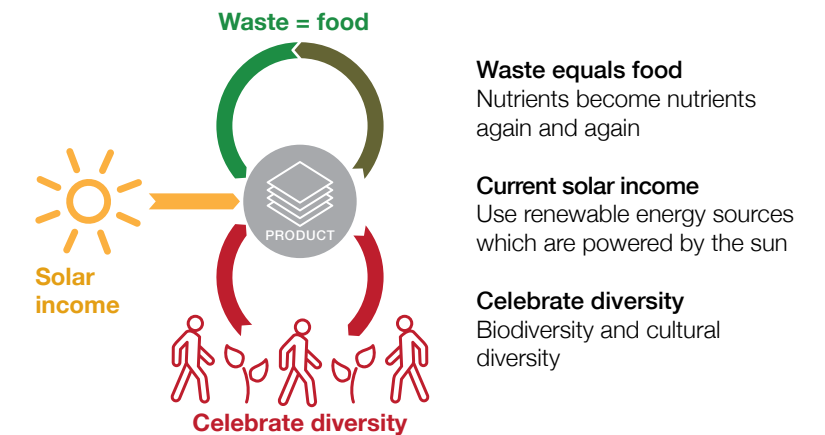
By doing that we can ensure that our products are made from **positively defined³⁾ materials that are safe for human use and can be biologically or technically recycled at the end of their useful life.**

The three Cradle to Cradle[®] principles

So, we embarked on the very tough process of analysing and re-designing our products after entering into a partnership agreement with the Hamburg-based Environmental Protection Encouragement Agency (EPEA), run by Professor Dr. Michael Braungart, the co-founder of the Cradle to Cradle[®] design philosophy.

This made Desso the first carpet manufacturer in EMEA to adopt Cradle to Cradle[®].

Ever since this point, we have assessed the functional purpose of our products by applying the three Cradle to Cradle[®] principles to the product and the design process.



By taking our inspiration from nature's continuous cycles, we are able to design and create materials that will be used as 'nutrients' for biological or industrial systems. By using renewable energy and celebrating the diversity of Cradle to Cradle[®] design, we want to ensure our activities have ecological, social and economic benefits.

³⁾ Positively defined = all ingredients have been assessed as either Green (optimal) or Yellow (tolerable) according to the Cradle to Cradle[®] assessment criteria. As described in the Cradle to Cradle[®] Certification Program Version 2.1.1, prepared by MBDC September 2008, updated January 2010.

Taking the road less travelled

Many people have asked us why we took the giant step to go from sustainability to Cradle to Cradle®. To answer this question, we have to look at the main differences between sustainability and Cradle to Cradle®.

Often, sustainability starts by evaluating the impact of a material or an activity on the environment, and then tries to minimise those impacts. But in following this approach, you could be optimising the wrong things – trying to do less of a bad thing.

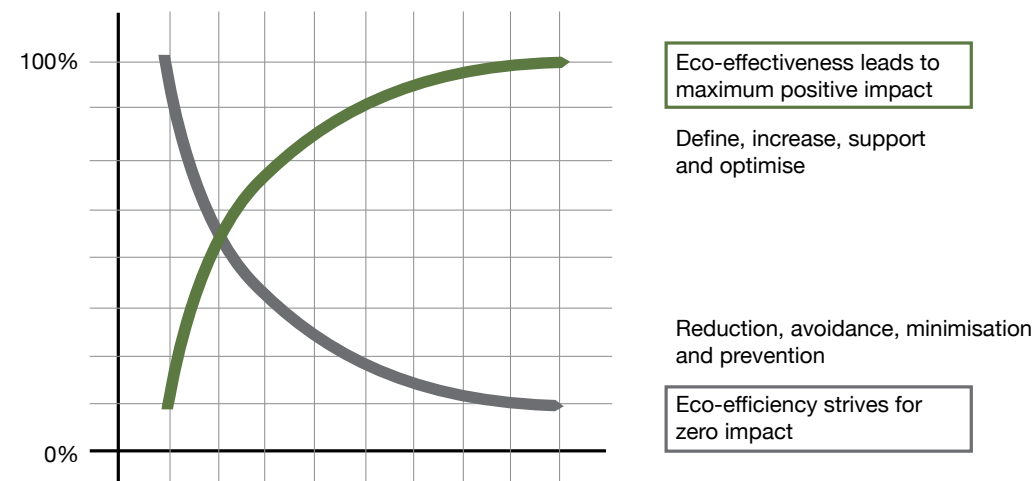
Cradle to Cradle® starts by defining the 'perfect' product based on user requirements and functionality and by applying the three Cradle to Cradle® principles: waste equals food, use current solar income and celebrate diversity.

When any business is planning its sustainability strategy it must answer the following two questions and decide which direction to take.

Is your target to achieve zero impact? Or is your target to achieve maximum positive impact?

If the answer is zero impact, you will be designing a product focused on doing less harm with current methods.

If you adopt the quality approach, you will be designing products that are built to have a positive impact on the environment.





Eco-efficiency






Desso has been making a difference with eco-efficiency for years. We have never lost sight of the fact that our goal was to minimise our impact on the environment. Listed below are some examples of what we do in the area of eco-efficiency:

-  32% reduction in energy consumption per carpet tile produced from 1998-2010 at Desso's production location in Waalwijk, the Netherlands.
-  100% use of electronically powered forklift trucks at our production location in Waalwijk, the Netherlands. These trucks do not produce any emissions or dangerous fumes. Electric forklifts are cost-effective, quiet and hence more user-friendly for our employees and the environment.
-  100% recycling of pure textile manufacturing waste at Desso's production plants.
-  In 2011, 88% of all packaging materials were recycled.

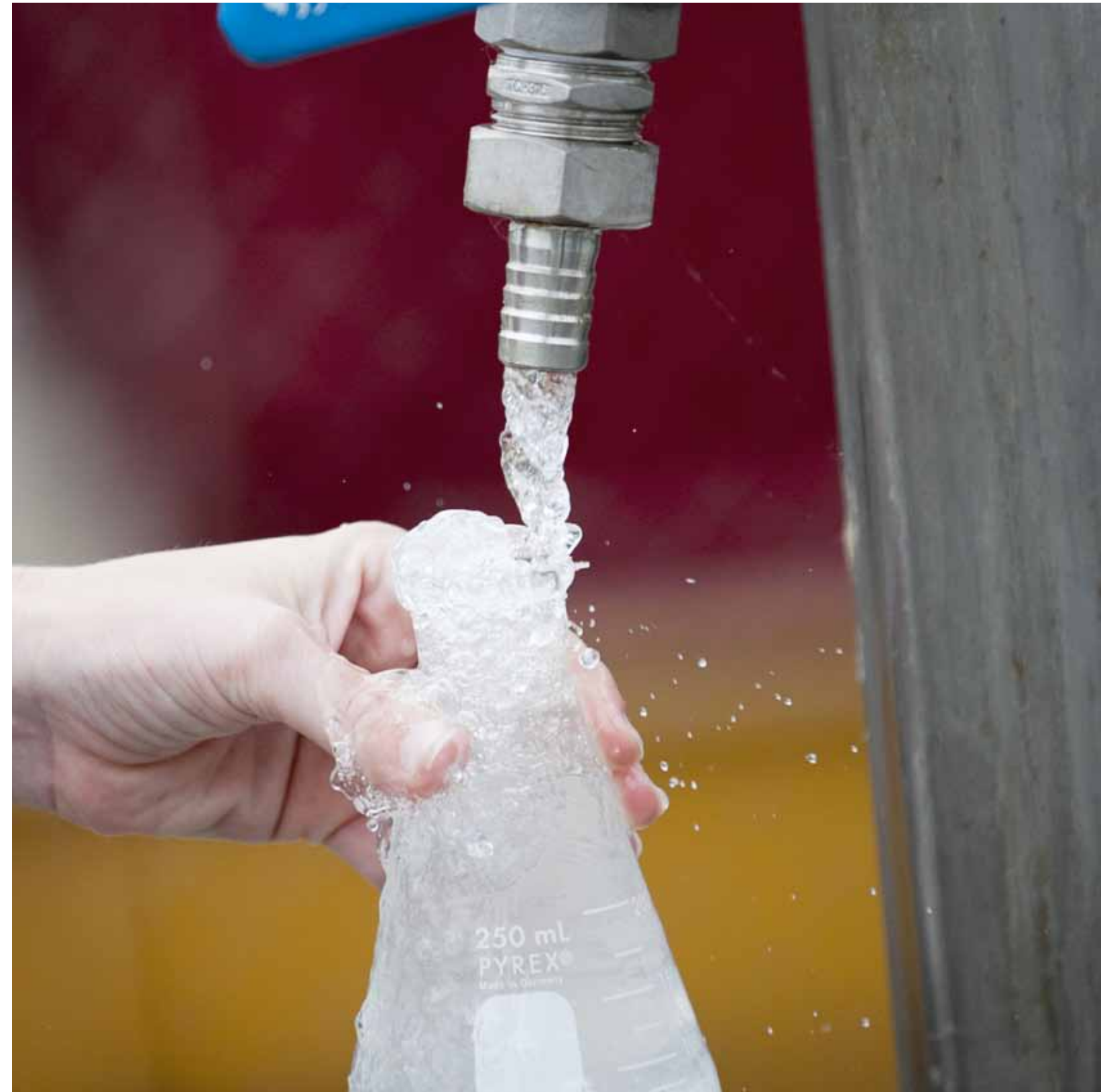


Eco-effectiveness

As part of our Cradle to Cradle® strategy, we want to go a step further with eco-effectiveness. As mentioned earlier, this approach is all about creating products that are designed to have a positive impact on the environment and use renewable energy in all stages of the cycle. These are some of the steps we have already taken:

-  50% CO₂ reduction between 2007-2011 for the total company. This due to the use of increasing amounts of renewable electricity (hydropower and energy from biomass) year on year.
-  The amount of renewable energy used at Desso accounted for 33% in 2011, up from 7.8% in 2008 and from zero in 2007.
-  Self-generated energy: a total of 25,000m² roof covered by solar cells at our plants in Dendermonde, Belgium and Waalwijk, the Netherlands.
-  100% biological purification of our waste water in Dendermonde. In 2011, 94% thereof was additionally purified with a special ozone treatment.
-  The special ozone treatment resulted in a 56 million litre saving on fresh water in 2011.

Naturally, eco-effectiveness goes further than the above mentioned steps. On the following pages, we will describe our key milestones in more detail.



Five categories are assessed:

Each category covers the following aspects:

There are four levels of Cradle to Cradle® certification:

1 Product / material health

- Passive / positive list
- Supplier declaration
- ABC-X categorisation

2 Product / material re-utilisation

- Defined cycle (technical / biological)
- Design for disassembly
- Take back and recycling
- Re-utilisation score
- Closing the loop

3 Renewable energy

- All energy inputs to come from 'current solar income' which includes geothermal, wind, biomass, hydro and photovoltaic

4 Water use at manufacturing facility

- Water stewardship guidelines
- Water audit
- Innovative conservation measures
- Innovative discharge measures

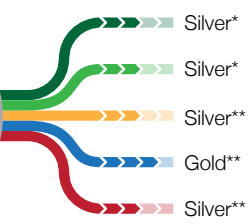
5 Social fairness & corporate ethics

- Corporate ethics / fair labour statement
- Social accreditation process
- Third party accreditation (SA8000)

Certification applies to a specific product:



Desso's current status:



* For Desso EcoBase® backed PA6 carpet tiles

** Desso's status within these categories relates to the overall company.

A product can attain one of four levels, to reflect continuous improvement:

- Basic
- Silver
- Gold
- Platinum

The above mentioned 5 categories relate to the requirements as set out in the 'Cradle to Cradle® Certification Program Version 2.1.1, prepared by MBDC September 2008, updated January 2010'.



Cradle to Cradle® is all about transparency

It is important to realise that Cradle to Cradle® implementation is a very challenging process, and also one which involves all areas of the business.

But most importantly - it's all about **transparency**.

Current Cradle to Cradle® certification is a four-tiered approach consisting of **Basic, Silver, Gold, and Platinum** levels to reflect continuous improvement.

Cradle to Cradle® implementation is carried out according to the strict certification criteria, as set out by McDonough Braungart Design Chemistry (MBDC)⁴⁾ and independently certified by the new California-based Products Innovation Institute.⁵⁾

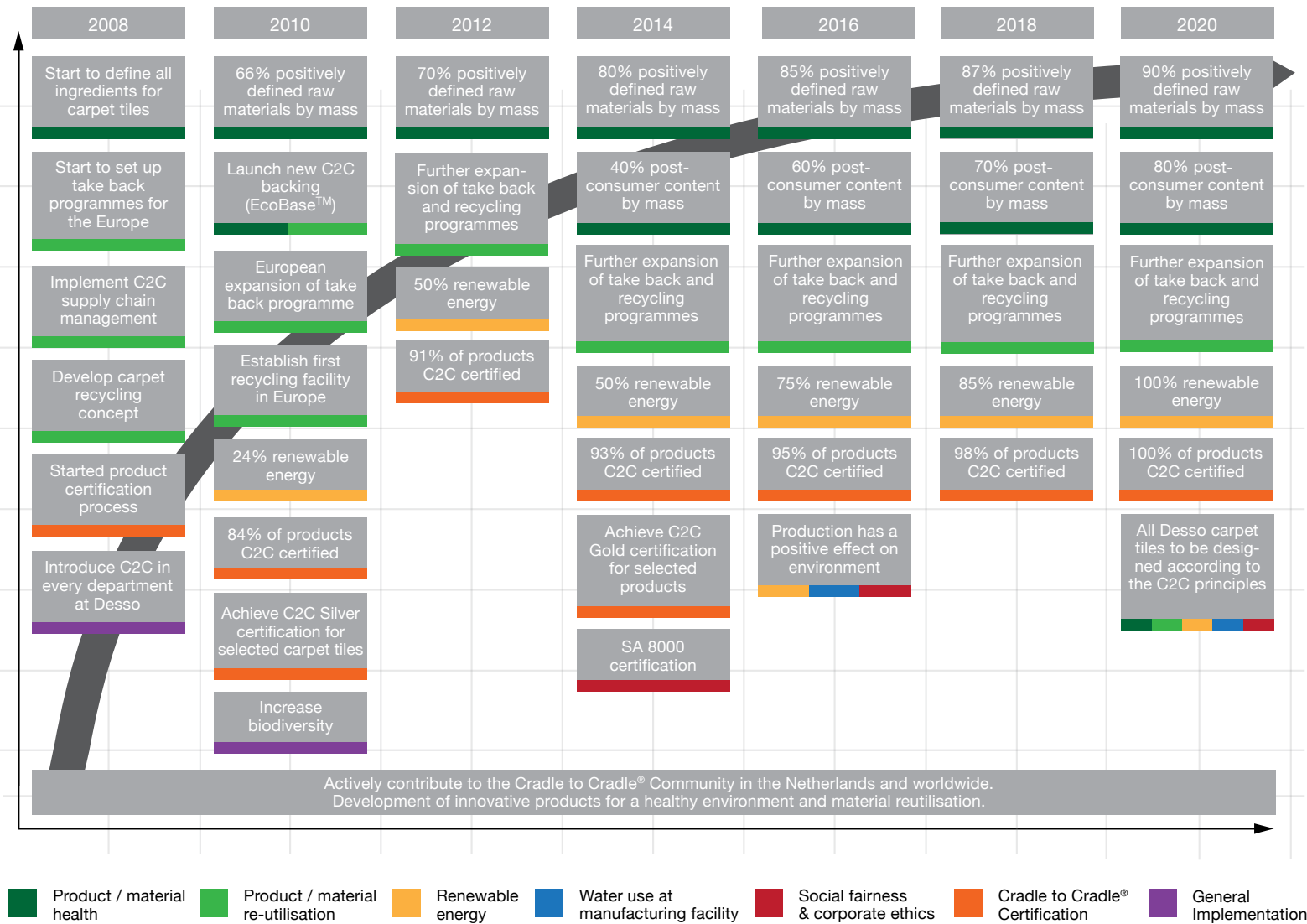
The graph on the left page shows the key requirements within the certification programme, as well as Desso's current status.

Desso's overall implementation plan is carried out in accordance with the Cradle to Cradle® roadmap to 2020, as described on the following page.

⁴⁾ Cradle to Cradle® Certification Program Version 2.1.1, prepared by MBDC September 2008, updated January 2010.

⁵⁾ www.c2ccertified.org/index.php/about/about_innovation_institute

Roadmap to 2020 for commercial carpet tiles



Positively defined = is based on current used raw materials and hazard assessment (calculated by mass)
C2C Products certification = based on sales volume in m² (2012 figure is based on actual sales volume)
All Cradle to Cradle® objectives as mentioned in the Roadmap are subject to commercial and technical viability.
© July 2012 DESSO®



Desso's Cradle to Cradle® roadmap to 2020

Setting a long-term goal for the implementation of Cradle to Cradle® is critical. Desso's plans are set out in a very detailed roadmap where each milestone is defined through to 2020 and assigned to project leaders within the organisation, in order to ensure that the target is met.

The future plans for Cradle to Cradle® implementation during 2012- 2020 are:

- By 2014, use 40% post-consumer (used) material to produce carpet tiles increased to 100% by 2020.
- Reach the target of 100% renewable energy for processing and manufacturing.
- Ensure that factory effluent water is cleaner than the water it is discharged into.
- Further expansion of take back and recycling programmes.
- Further implement Cradle to Cradle® supply-chain management.
- All Desso carpets to be designed according to the Cradle to Cradle® design principles by 2020.
- 100% of materials and process inputs to come from renewable or recycled sources.
- Achieve a SA 8000 certification in 2014.
- In 2012, define a key performance indicator (KPI) for biodiversity and ecosystems.
- 100% of materials to be capable of returning safely to either the biological or technical cycles.
- All stages in the product life cycle to support the reuse or recycling of materials at the highest possible level of quality.

2

Milestones in our journey

Making eco-effective products

All companies should produce goods that are healthy for people and the environment. Unfortunately, this is not the reality in many cases.

At Desso, our commitment to Cradle to Cradle® design means that we will lead by example and aim to only use positively defined⁶⁾ materials in all of our products by 2020. To achieve this we rigorously assess our materials in partnership with EPEA. All the materials in our products are assessed by the Cradle to Cradle® design protocol which enables us to design eco-effective products.

They are placed in one of four categories (ABC-X categorisation)⁷⁾ based on human health and environmental criteria.

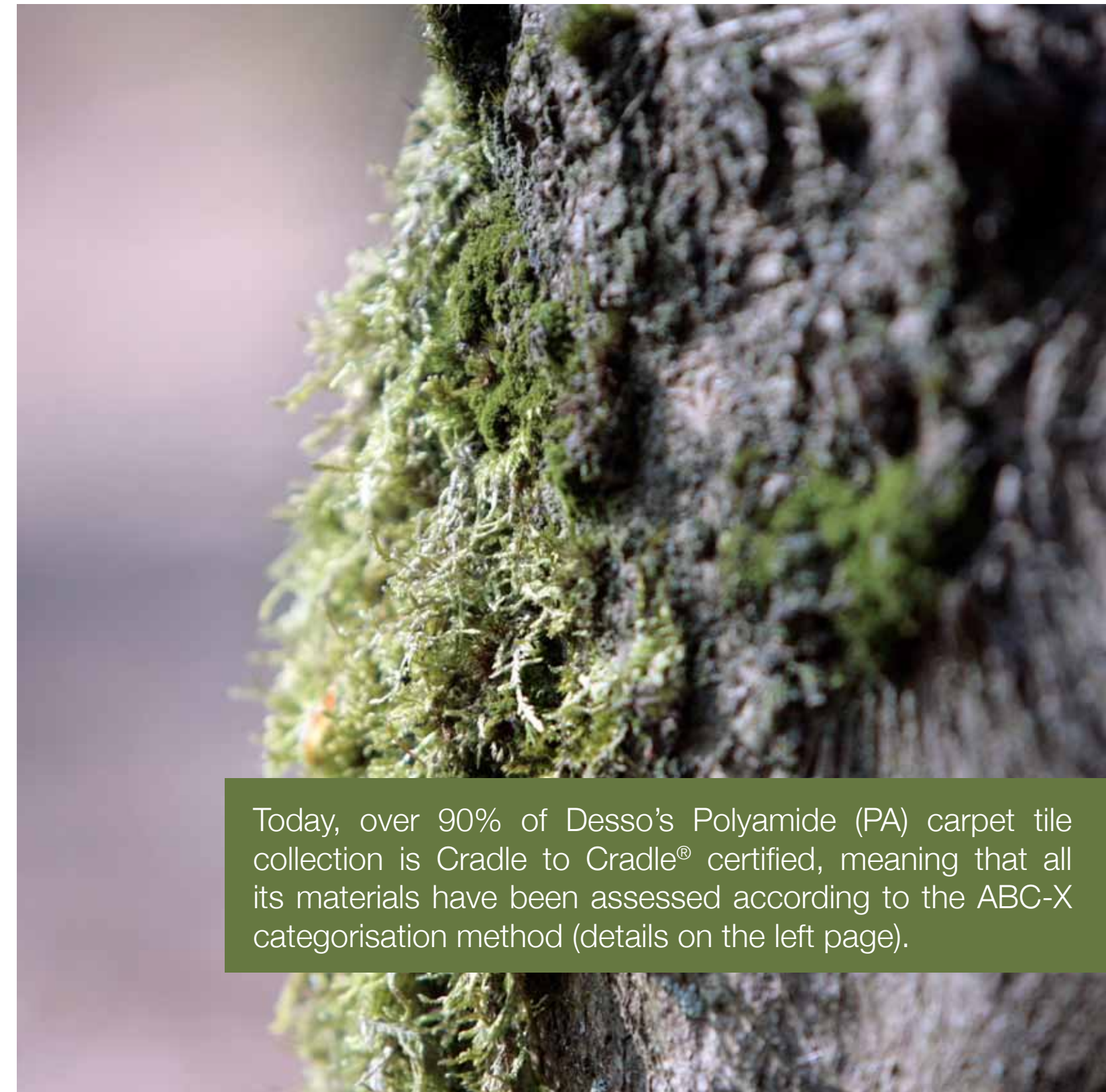
After we have assessed all the ingredients in the materials of the products, they are then optimised by selecting replacements, if necessary, and using only tolerable or optimal chemical ingredients or materials as they become available.

ABC-X categorisation	Risk	Usage status
Green A Optimal	Little to none	Preferred
Green B Optimising	Little to none	Preferred
Yellow C Tolerable	Low to moderate	Acceptable unless Green alternative available
Red X Not acceptable	High	Develop strategy for phase out
Grey Not characterised	Not known	Grey materials must be fully assessed within one year or they will be considered Red

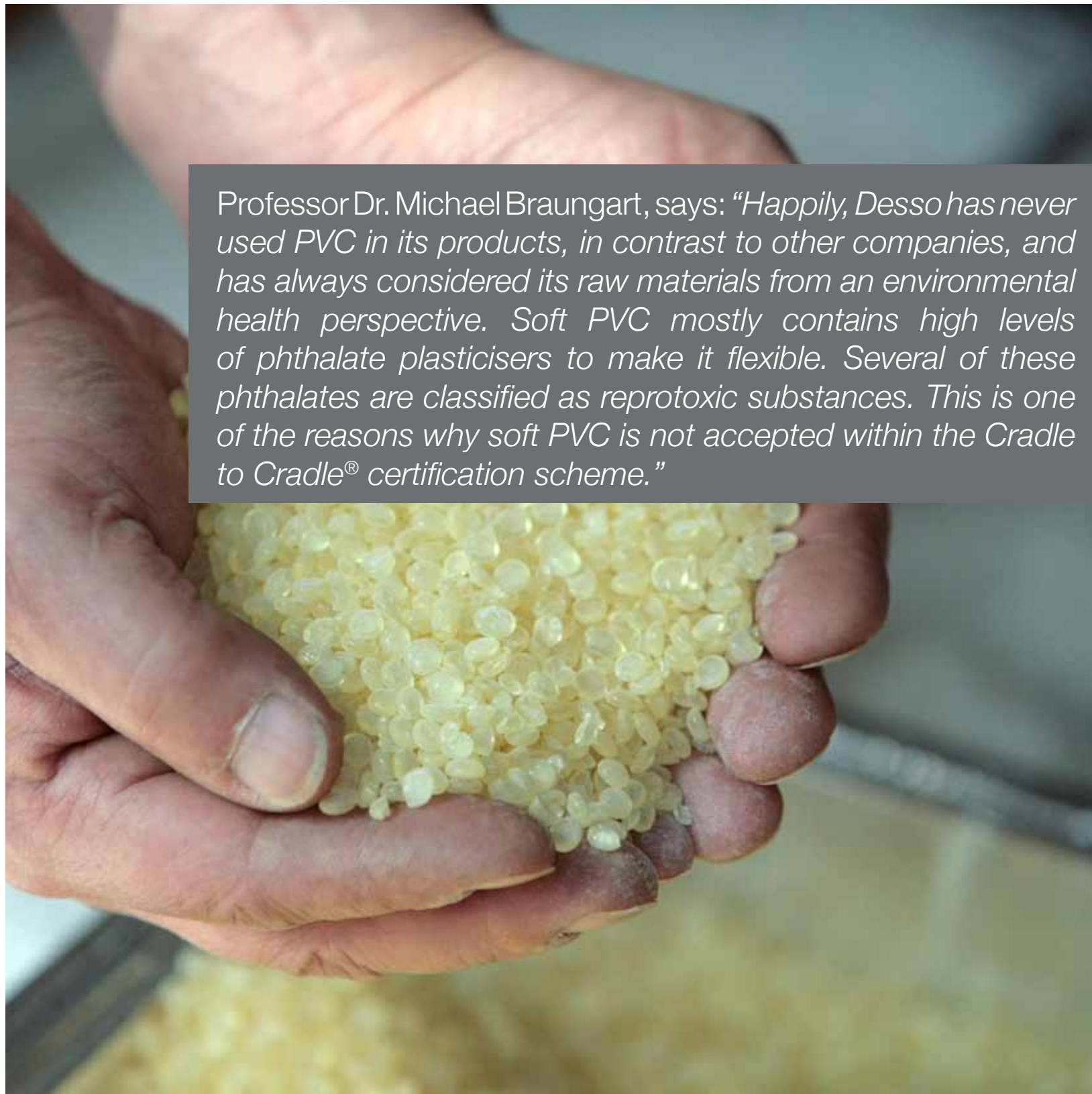
Positively defined

⁶⁾ Positively defined = all ingredients have been assessed as either Green (optimal) or Yellow (tolerable) according to the Cradle to Cradle® assessment criteria.

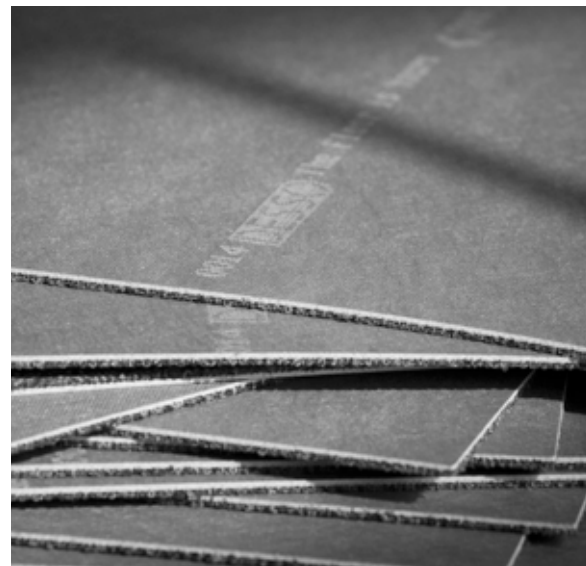
⁷⁾ Cradle to Cradle® Certification Program Version 2.1.1, prepared by MBDC September 2008, updated January 2010.



Today, over 90% of Desso's Polyamide (PA) carpet tile collection is Cradle to Cradle® certified, meaning that all its materials have been assessed according to the ABC-X categorisation method (details on the left page).



Professor Dr. Michael Braungart, says: *“Happily, Desso has never used PVC in its products, in contrast to other companies, and has always considered its raw materials from an environmental health perspective. Soft PVC mostly contains high levels of phthalate plasticisers to make it flexible. Several of these phthalates are classified as reprotoxic substances. This is one of the reasons why soft PVC is not accepted within the Cradle to Cradle® certification scheme.”*



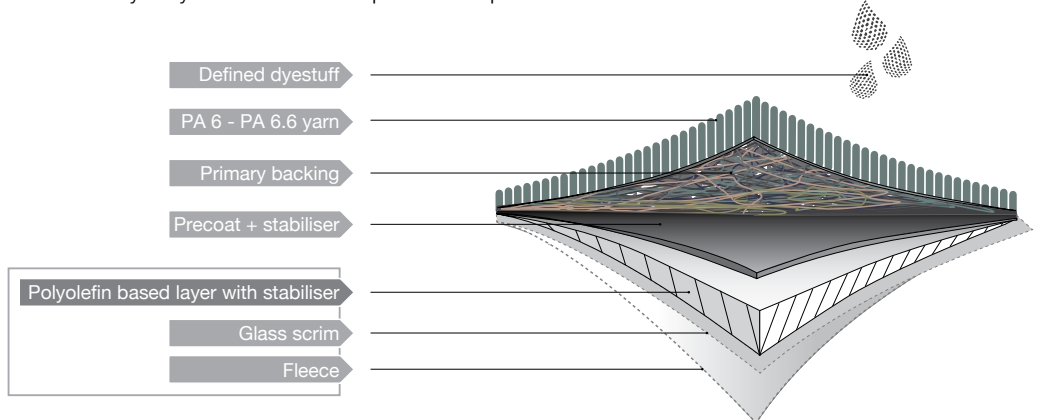
100% safely recyclable


Cradle to Cradle® design is inspired by nature and sees carpet as being made up of nutrients, that should consistently remain in use.

Within the carpet industry, there are also still a number of manufacturers using PVC in their backing. This is a choice which, quite simply, does not fit in with Desso's Cradle to Cradle® philosophy.

Instead we developed and launched our new DESSO EcoBase® backing in 2010, which is designed and produced according to Cradle to Cradle® design principles.

Due to its innovative composition, the polyolefin based layer of the DESSO EcoBase® backing is fully recyclable in our own production process.



 = DESSO EcoBase® secondary backing. (The polyolefin based layer with stabiliser accounts for minimum 96% (in weight) of the total secondary backing and this layer is 100% fully recyclable).



Silver Milestone

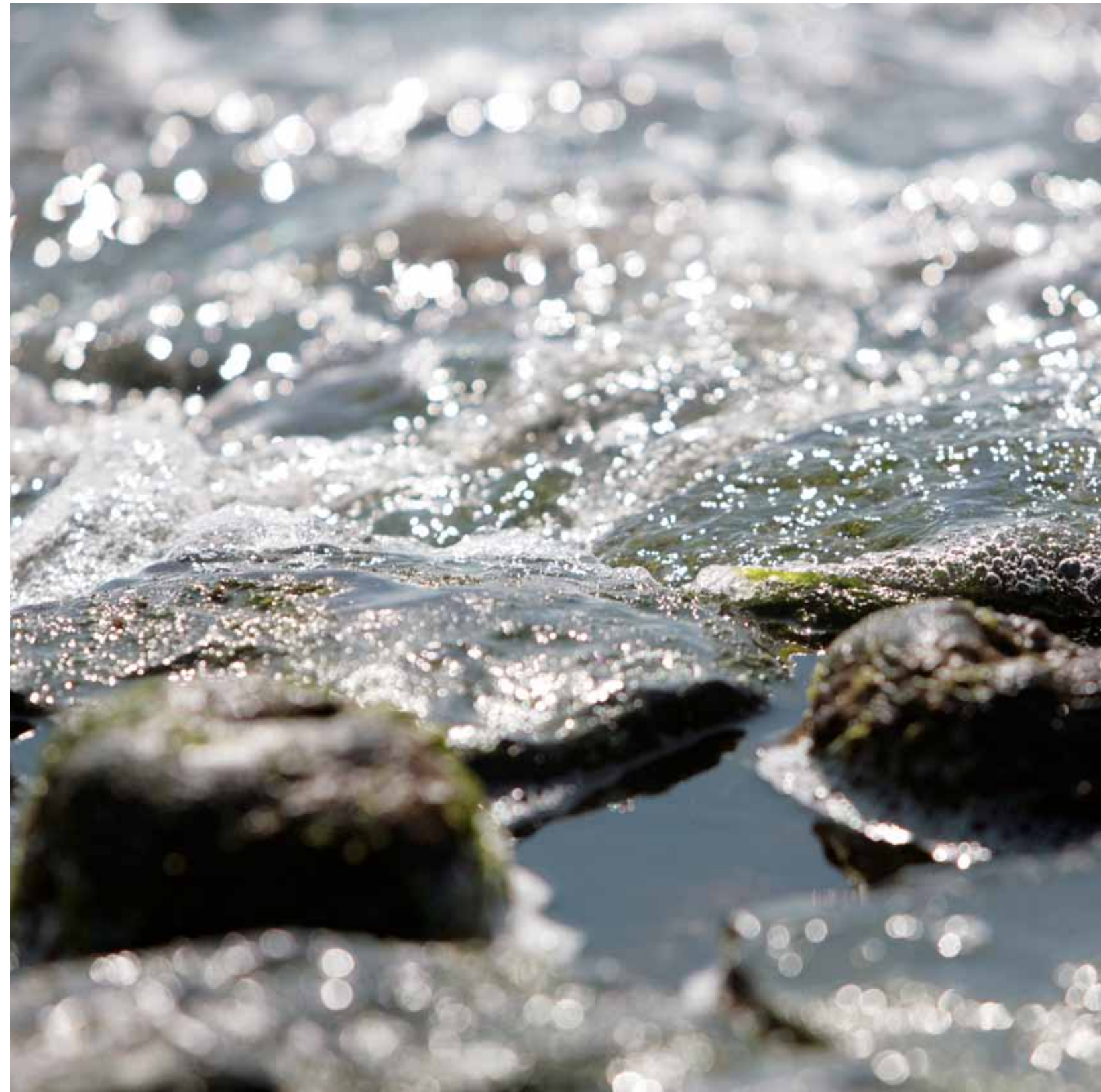
At Desso we see the Cradle to Cradle® certification process as a significant milestone. This certification provides us with a tangible means to measure our achievements. It reaffirms that our products are environmentally safe, are designed for re-utilisation, use renewable energy and that we have a responsible attitude towards water usage.

Carpet tiles with DESSO EcoBase® backing reached a level where up to 97% of the materials are positively defined⁸⁾.

Desso is proud to have achieved a Cradle to Cradle® Silver certificate for an entire carpet tile product.



⁸⁾ Positively defined = all ingredients have been assessed as either Green (optimal) or Yellow (tolerable) according to the Cradle to Cradle® assessment criteria



Take Back™

Millions of square metres of worn-out carpet are thrown away every year, often burned or dumped at landfill sites, leading to the destruction of valuable raw materials. In early 2008, Desso took revolutionary steps to ensure that carpets would be safely recycled by launching its Take Back™ programme.

Desso offers clients a Take Back™ programme to ensure that products will be recycled according to the Cradle to Cradle® principles. Products will be taken back by Desso after their useful life, and will be safely recycled into new carpet products, or used in other recycling initiatives. By sourcing positively defined raw materials, introducing new manufacturing methods and collecting used carpets from clients, we are doing everything we can to achieve a closed loop process (from production to use and back again).

Besides our own products, we also encourage the international collection of all types of used carpet, except for those products containing PVC. Carpets are recycled using our innovative separation technique called Refinity®, which separates the yarn and other fibres from the backing.

Our goal is to collect 50,000 tonnes of post-consumer carpet via our Take Back™ programme by 2020.



DESSO Refinity® and the DESSO Take Back™ programmes are co-funded by the European Union.



Our goal is to collect 50,000 tonnes of post-consumer carpet via our Take Back™ programme by 2020.

Refinity®

In 2009, Desso developed an innovative separation technique called Refinity®, which enables us to separate the yarn and other fibres from the backing, thereby producing two main material streams which can be recycled. After an additional purification stage, the yarn (with the required purity) is returned to the yarn manufacturer for the production of new yarn. In the entire process, some virgin material is needed to compensate for losses and process inefficiency.

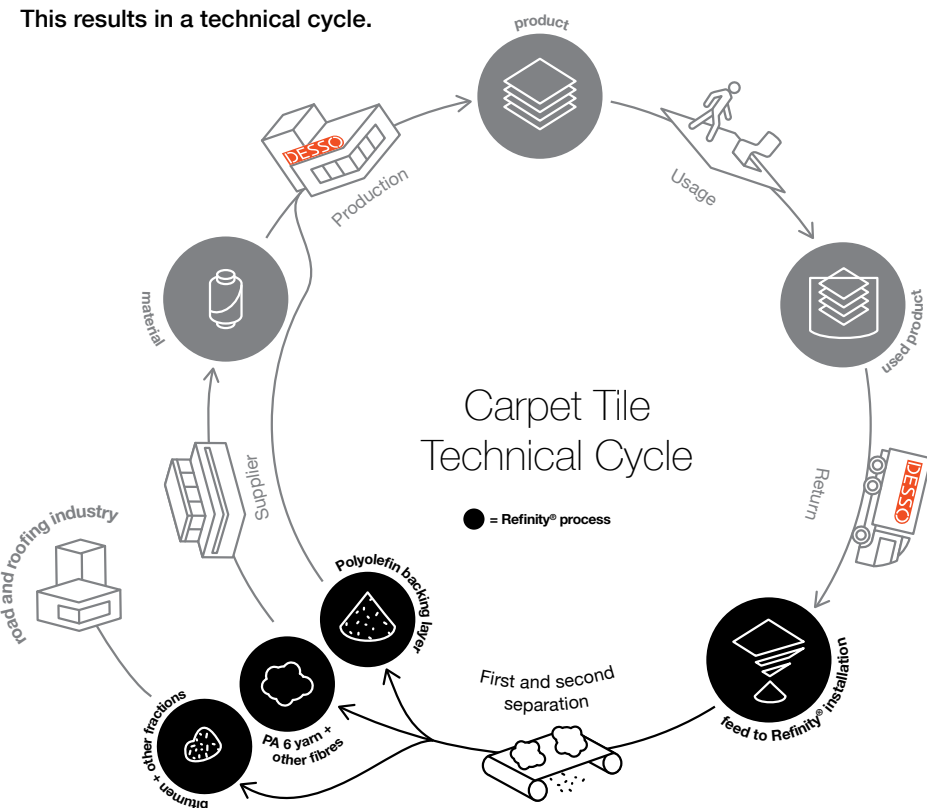
For Polyamide 6 yarn, this process takes place at Aquafil; one of our yarn suppliers. Aquafil has developed proprietary technology at its regeneration plant to turn recovered post-consumer polyamide 6 carpet fibres into new polyamide 6 again and again.

The polyolefin based layer of our EcoBase™ backing is 100% safely recyclable in our own production process, whereas the bitumen backing (used in most carpet tiles in Europe presently) is reused in the road and roofing industry. All non-recyclable fractions will be used as secondary fuel in the cement industry.

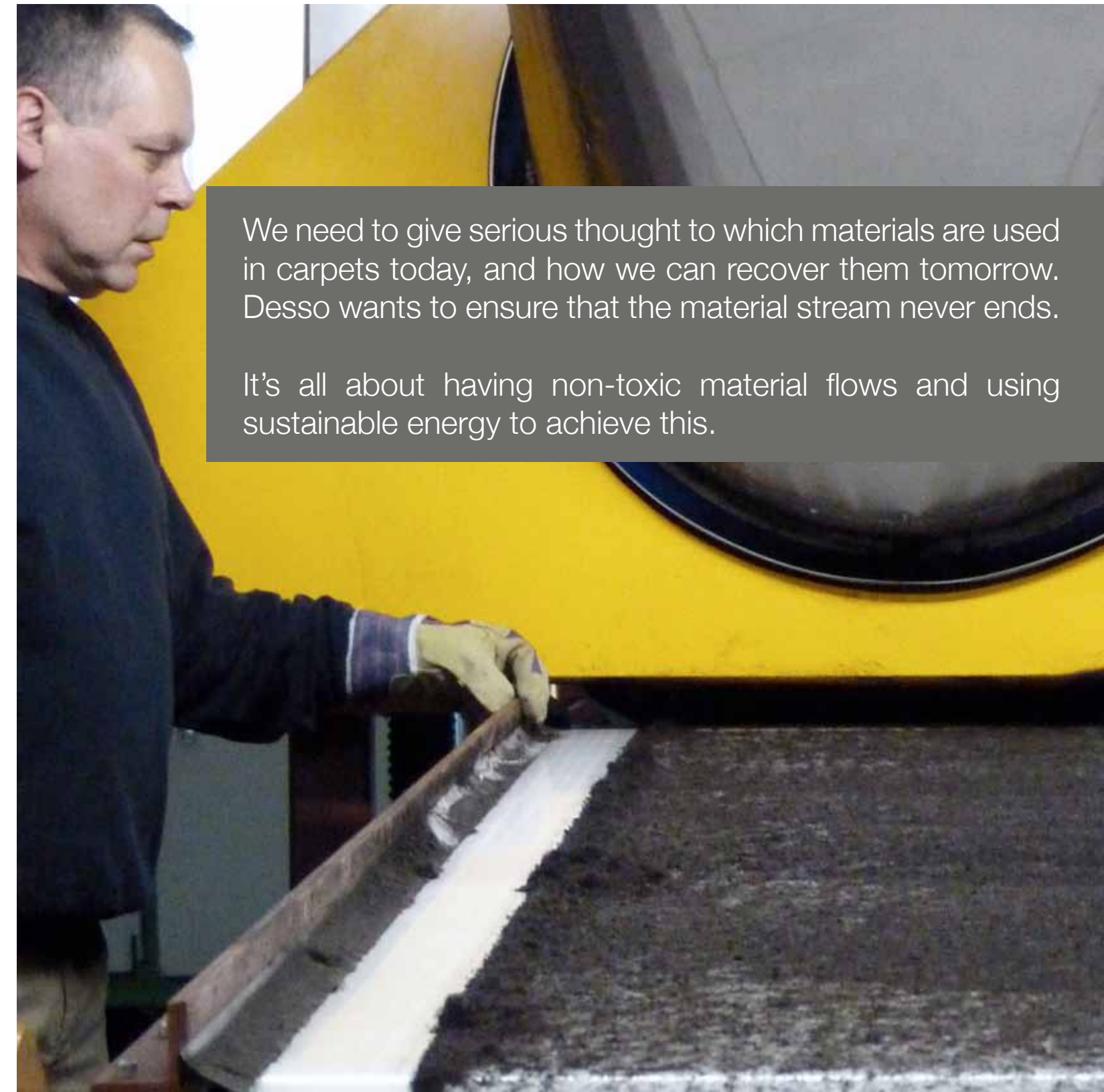
We need to give serious thought to which materials are used in carpets today, and how we can recover them tomorrow. At Desso we want to ensure that the material stream never ends.

It's all about having non-toxic material flows and using sustainable energy to achieve this.

This results in a technical cycle.



All non-recyclable fractions will be used as secondary fuel in the cement industry.

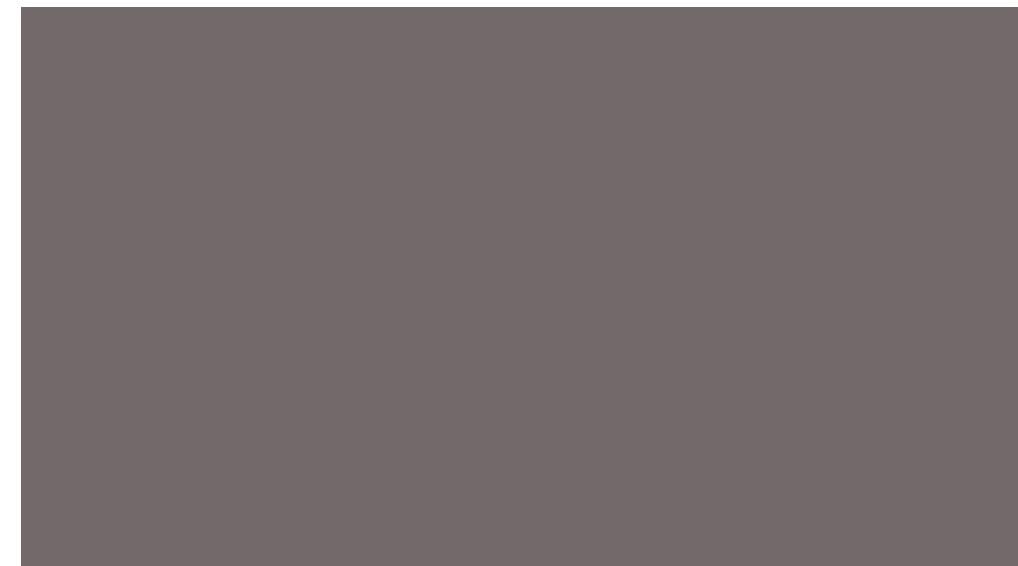


We need to give serious thought to which materials are used in carpets today, and how we can recover them tomorrow. Desso wants to ensure that the material stream never ends.

It's all about having non-toxic material flows and using sustainable energy to achieve this.

Over 60%* of our carpet tile range is available with ECONYL® yarn. ECONYL® is a yarn which is made from 100% regenerated nylon including post-consumer yarn waste from Desso's Refinity® plant.

* 60% relates to the sales volume of products available with ECONYL® yarn in the commercial carpet tile collection. The total % of recycled content varies per product and per colour. Whether a colour contains ECONYL® yarn and the exact % thereof can be found on our website: www.desso.com.



Closing the loop

As mentioned earlier, many 'sustainable' activities are often defined in terms of minimising their environmental impact. The Cradle to Cradle® philosophy recognises that we all create an impact on the world we live in. The challenge is to make this impact beneficial for current and future generations.

From the onset, we recognised that in order to achieve our Cradle to Cradle® goal, co-operation and commitment is needed from key partners.

We are not in the business of recycling for the sake of it. For Desso, the use of positively defined⁹⁾ materials which are safe for human use is at the centre of everything we do.

ECONYL®
Made with 100% Regenerated Nylon

⁹⁾ Positively defined = all ingredients have been assessed as either Green (optimal) or Yellow (tolerable) according to the Cradle to Cradle® assessment criteria. As described in the Cradle to Cradle® Certification Program Version 2.1.1, prepared by MBDC September 2008, updated January 2010.

3 Using Cradle to Cradle[®] to boost innovation

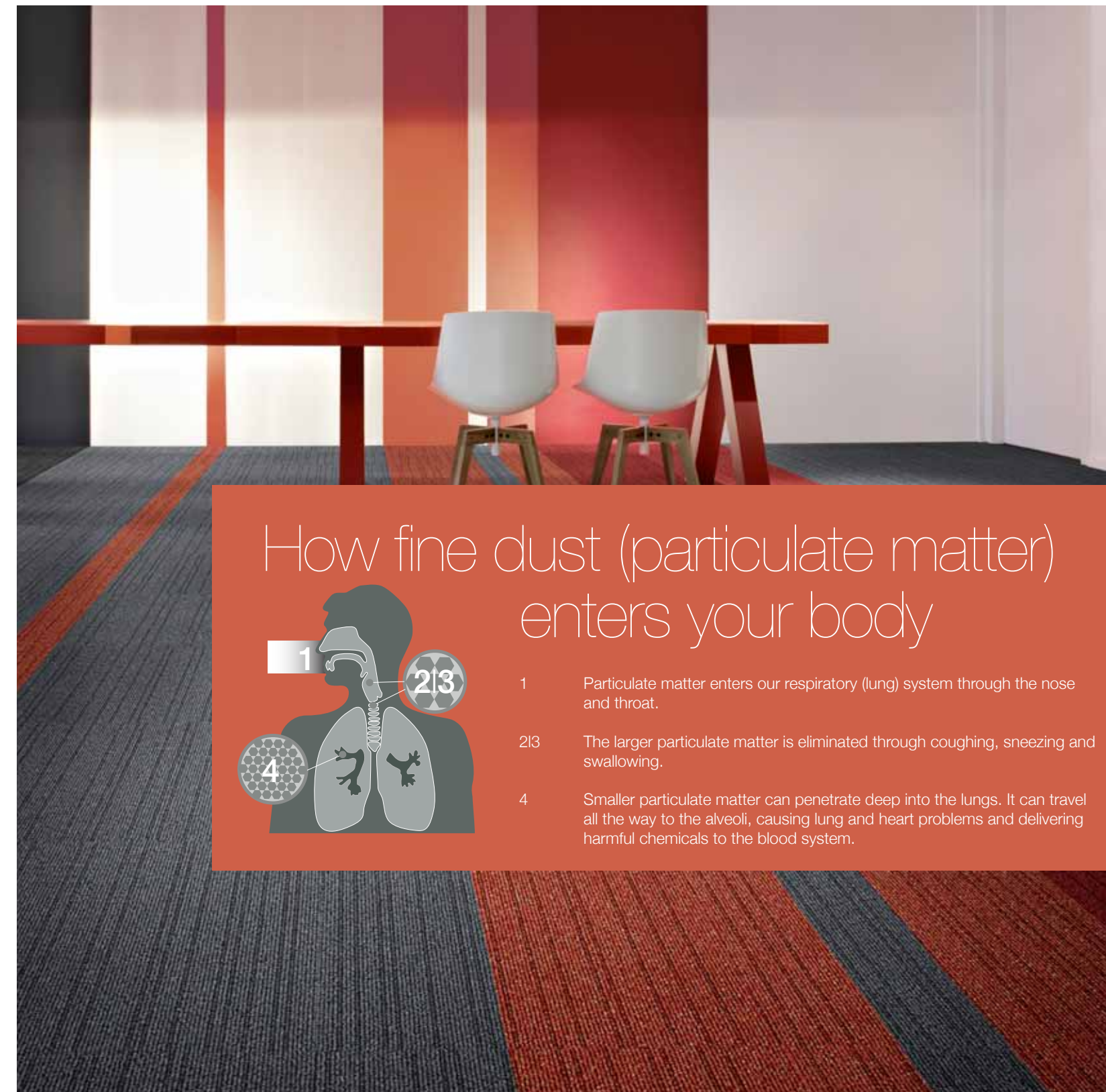
How Cradle to Cradle® boosts innovation

One of the many positive effects of following the Cradle to Cradle® design concept is that it has improved our creativity in product design and boosted our own innovation performance. This was very noticeable in the case of our DESSO AirMaster® product which helps to reduce the amount of harmful fine dust in the indoor air, thereby helping to improve the quality of life.

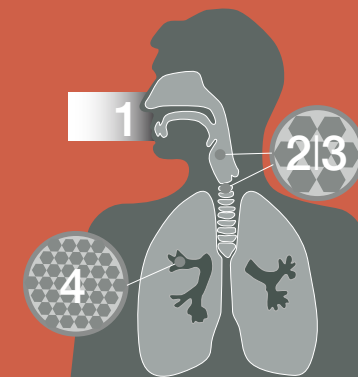
The air that we breathe has a crucial effect on our health and well-being. Since we spend on average more than 90% of our time indoors, the air quality inside is of the utmost importance. The presence and size of particulate matter (PM) or fine dust is a determining factor in air quality and is directly linked to potential health problems.

The World Health Organization (WHO) has designed clear guidelines on air pollution from fine dust (indoor and outdoor), indicating that the presence of PM with an aerodynamic diameter of 10 µm or smaller (PM₁₀) is damaging to your health. These small particles are invisible to the naked eye and may not produce a noticeable odour. Therefore, an apparently clean room can pose a considerable air quality problem. Extensive evidence from WHO indicates that concentrations of fine dust currently found in most cities in developed countries around the world results in a serious health risk¹⁰.

¹⁰ Air quality guidelines for PM, global update 2005, World Health Organization.



How fine dust (particulate matter) enters your body



- 1 Particulate matter enters our respiratory (lung) system through the nose and throat.
- 2|3 The larger particulate matter is eliminated through coughing, sneezing and swallowing.
- 4 Smaller particulate matter can penetrate deep into the lungs. It can travel all the way to the alveoli, causing lung and heart problems and delivering harmful chemicals to the blood system.



DESSO AirMaster®

According to a study performed by the German Allergy and Asthma Association, DAAB¹¹⁾, it has been proven that the burden from fine dust in the indoor air is significantly reduced when using carpet, as opposed to hard flooring.

With the introduction of DESSO AirMaster® the filtering function of carpets is taken to the next level. Tests performed by the independent German test institute GUI, which specialises in the analysis of indoor and outdoor air quality, have proven that DESSO AirMaster® is the most effective flooring solution^{12) 13)} to capture fine dust from the air.

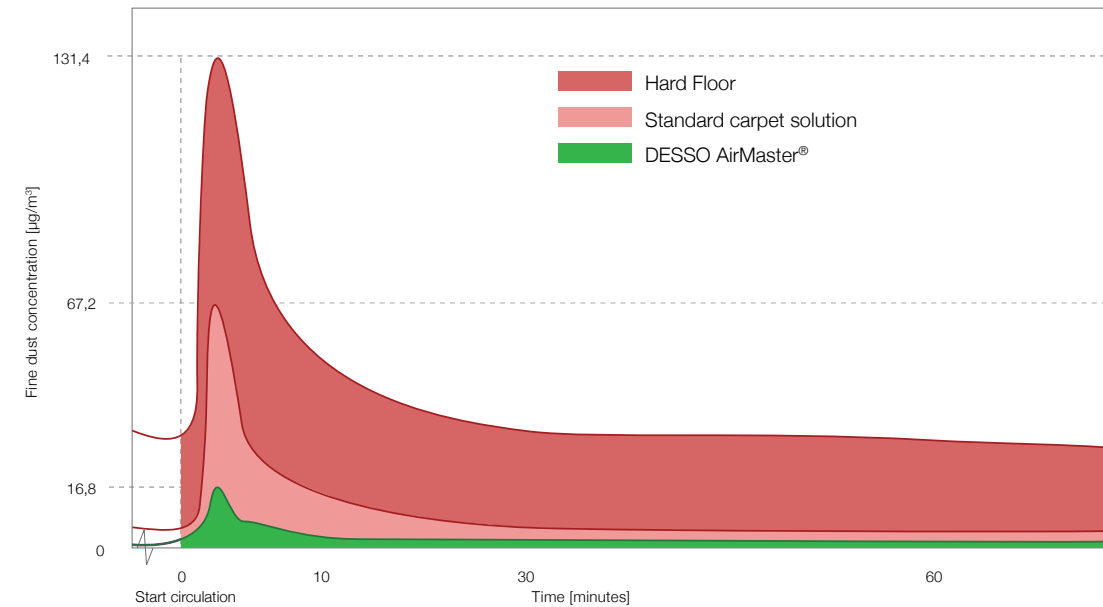
Based on the test results DESSO AirMaster® is the only existing product in the world that is certified with a GUI Gold logo.



2010:
good industrial
design

¹¹⁾ Study performed by Deutscher Allergie- und Asthmabund e.V. in 2005.
¹²⁾ Based on tests performed by GUI, with DESSO AirMaster® versus standard PVC hardfloor.
¹³⁾ Based on tests performed by GUI, with DESSO AirMaster® versus standard structured loop pile carpet.

Laboratory Test DESSO AirMaster® - particulate matter (PM₁₀)



With DESSO AirMaster® the amount of airborne particulate matter is 8 times lower than with hard floors.

With DESSO AirMaster® the concentration of particulate matter drops significantly faster than with hard floors.

With hard flooring the amount of airborne particulate matter stays consistently higher than the peak level of DESSO AirMaster®.

Measurements are carried out at a height of 80 and 110 cm (in the breathing zone)

With DESSO AirMaster® the fine dust concentration in the indoor air is 8 times lower than with hard flooring solutions (PM₁₀)¹²⁾

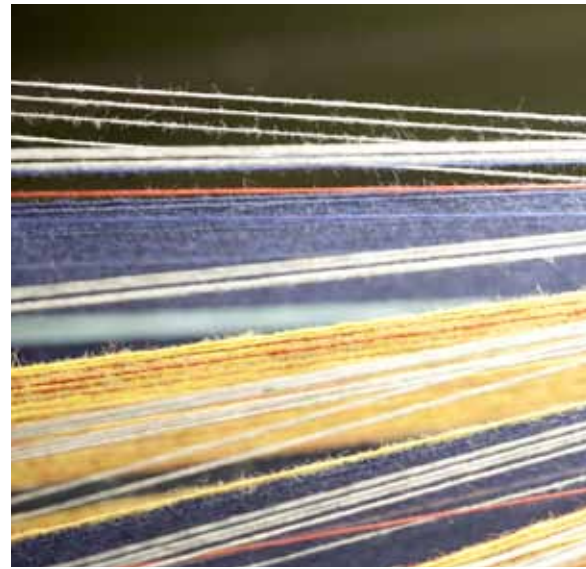
With DESSO AirMaster® the fine dust concentration in the indoor air is 4 times lower than with standard carpet solutions (PM₁₀)¹³⁾



Limit values for Capitals = Volatile Organic Compounds (as defined by the GUT)

Compound	Limit value after		Unit
	3 days	28 days	
TVOC(C ₆ to C ₁₆)	250	100	µg/m ³
SVOC (C ₁₆ to C ₂₃)	30	30	µg/m ³
VOC without LCI value	100	50	µg/m ³
R value	<1,0	<1,0	µg/m ³
Formaldehyde	10	4	µg/m ³
Carcinogenic substances (EU list classes 1 and 2)	not detectable		

Note:
 If, 3 days after being loaded into the test chamber, a textile floor covering meets the criteria listed (termination criteria), the chamber test may be terminated because it is guaranteed that in such a case also the 28-day criteria will be complied with. The test is deemed to have been passed if the product meets the 3-day termination criteria. If a textile floor covering does not meet the 3-day termination criteria and the 3-day TVOC value does not amount to more than 500 µg/m³, the test may also be terminated after 7 days if the following conditions are met.
 Total volatile organic compounds (TVOC) < 210 µg/m³
 Semivolatile organic compounds (SVOC) < 30 µg/m³
 VOC without Lowest Concentration of Interest (LCI) < 85µg/m³
 R <1,0
 Formaldehyde < 10 µg/m³
 Carcinogenic compounds: not identifiable.



Textile floor coverings and volatile organic compounds

All Desso products are tested and adhere to the limit values (the largest amounts allowed) for Volatile Organic Compounds (VOCs) as defined by the GUT (the Carpet Industry Association for Environmental Issues.)¹⁴⁾

VOCs from textile floor coverings are determined in compliance with the test-chamber process. The limit values are specified for the compounds listed in the table on the left page.

The same test criteria are used by the US-based Carpet & Rug Institute (CRI)¹⁵⁾ which launched its Green Label Plus testing and certification to indicate carpet and carpet backings that emit low VOCs.

All Desso's business carpet products meet these criteria.

¹⁴⁾ GUT test criteria for VOC emissions and contaminants, Version 2011. For further information, please visit: www.gut-ev.org

¹⁵⁾ www.carpet-rug.org

Our environmental standards and certifications

Our products meet the following International certifications and standards, which help to contribute to a healthy environment for buildings.

Gemeinschaft umweltfreundlicher Teppichboden (GUT)

As a member of industry organisation GUT, Desso is committed to ensuring minimum environmental impact and consumer protection at every stage of the carpet's life cycle: from production to installation, from daily use to end-of-life. All our products are examined according to the GUT criteria to ensure strict safety standards are met.

BRE Environmental Assessment Method (BREEAM)

BRE Global is responsible for the internationally renowned BREEAM family of schemes for assessing the environmental performance of buildings. BREEAM (BRE Environmental Assessment Method) is the leading and most widely used environmental assessment method for buildings.

Green Label Plus (GLP)

The Carpet and Rug Institute (CRI, US) introduced Green Label Plus to identify carpets that meet stringent criteria for low chemical emissions. It establishes the highest standard for indoor air quality. The Green Label Plus indicates that Desso is committed to developing ways to minimise any adverse effects on indoor air quality and that the product type meets the established emissions requirements.

Leadership in Energy and Environmental Design (LEED)

The LEED green building certification system was introduced by the US Green Building Council and is one of the most used green building standards globally. It gives building owners and operators the tools they need to have an immediate and measurable impact on their buildings' performance. Desso products can contribute to earning LEED points in several categories.

Gesellschaft für Umwelt- und Innenraumanalytik (GUI)

The independent German test institute GUI specialises in the measurement and analysis of indoor air quality and the influence of (interior) products on indoor air quality. Tests and measurements are run in both laboratory simulations and on-site locations. All certified products have a level of fine dust significantly lower than 50 mg/m³ and therefore effectively reduce fine dust in indoor air.

Good Environmental Choice Australia (GECA)

The Australian Environmental Labelling Standards are designed to give manufacturers, distributors and users the certainty of working with environmentally preferable products. The environmental performance of a product (or service) is tested against scientifically recognised benchmarks. The programme awards a mark of recognition for products and services that meet high standards of environmental, quality and social performance.



4 Alternative approaches to measuring sustainability



As part of our policy to be 100% transparent in our communications, we have recently launched our first EPD relating to carpet tiles with Polyamide 6 (PA6) yarn.

However, our Cradle to Cradle® Roadmap to 2020 and our Corporate Sustainability Report remain our key tools for communicating the measurable milestones aligned with our overall strategy.



Environmental product declarations

The Environmental Product Declaration (EPD) is a communication tool based on Life Cycle Assessment (LCA), which is used to report on the environmental performance of a product. It is a standardised (ISO 14025) and Life Cycle Assessment (LCA – ISO14040) based tool.

It includes information associated with a product during its life cycle including the consumption of resources, energy, and emissions to air, soil and water.

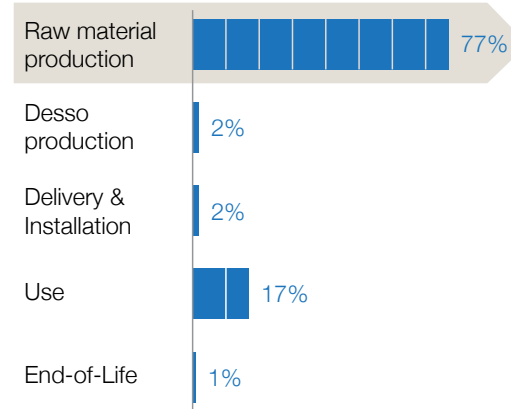
The environmental impacts are expressed by the following categories:

- Abiotic depletion potential (ADP)
- Global warming potential (GWP)
- Ozone-layer depletion (ODP)
- Acidification of soils and waters (AP)
- Nutrification (NP)
- Photochemical oxidant formation (POCP)

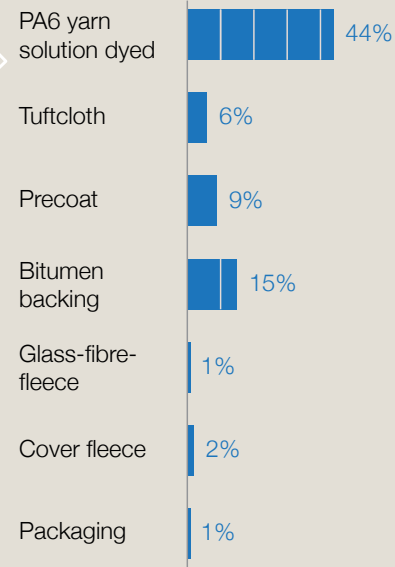
If you want more information, our EPDs can be downloaded via: www.bau-umwelt.de

Environmental impact of the different stages in a product's lifecycle

Breakdown of primary energy consumption for Libra Lines



Further breakdown of raw material production's contribution of 77%



Graph shows one of nine categories that are disclosed in the EPD. The graph shows the primary energy consumption, in which the production and provision of raw materials are dominant (>75%).

Values are derived from:
 DESSO EPD-DES-2011111-E
 Product: Libra Lines
 According to: ISO 14041/44/25
 PCR: Textile Floor coverings, 2008-01
 Programme Operator: Institut Bauen und Umwelt e.V.
 Programme Facilitator: GUT Declaration
 Holder: Desso B.V.

Graph is representative for Desso products with following characteristics:
 Solution dyed
 Bitumen backing
 PA6 yarn
 Pile weight of 500-645g/m²
 C2C Basic certification

See EPD-DES-2011111-E for further details on goal & scope of LCA and other environmental issues.

Figures have been rounded off during calculation, so may not add up in the above table. Non-renewable energy only. 'End-of-life' covers incineration in the cement industry and municipal waste incineration. Excludes credits from thermal recovery. 'Raw materials' covers production and transport of raw materials. Life time assumed 10 years.



Why does DESSO also use Life Cycle Assessment (LCA)?

As a supportive tool, the LCA helps to make sure we don't shift the environmental burden onto others.

The graph shows that raw material production, in this case the yarn, has the greatest impact during the life cycle.

So, why not cut back on the amount of yarn to achieve a better environmental impact?

We do not believe that this is the right answer or approach. This is an eco-efficient approach, focused on doing less harm with current methods.

We need to offer our customers a choice with respect to the 'look & feel', quality, performance, environmental impact and, last but not least, the optimal functionality of our carpets.

Whilst we continue using LCAs, our Cradle to Cradle® Roadmap to 2020 and our Corporate Sustainability Report remain our key tools for communicating the measurable milestones aligned with our overall strategy.

Desso participates in the Cradle to Cradle® Learning Community, an initiative set up by NL Agency, a department of the Dutch Ministry of Economic Affairs, Agriculture and Innovation.



Cradle to Cradle® and LCAs

Desso, together with 16 other pioneering companies, participates in the Cradle to Cradle® 'Learning Community', an initiative set up by NL Agency, a department of the Dutch Ministry of Economic Affairs, Agriculture and Innovation. The C2C Learning Community has looked into how to evaluate the usability of LCA as a tool for the development and measurement of C2C products.

In a separate working group within the 'Learning Community', experts from EPEA and an external LCA consultant have evaluated the different options. Their conclusions have now been published in a White Paper and have been checked by an international review board, consisting of scientists, non-governmental organisations and other key stakeholders.

The White Paper, called Usability of Life Cycle Assessment for Cradle to Cradle® Purposes¹⁶⁾, provides insight into the usefulness of LCAs as a measuring instrument in the development of Cradle to Cradle® products.

The main conclusions reached in the White Paper with respect to the use of LCA for Cradle to Cradle® purposes are:

- 1) LCAs help you to identify the environmental impact. However, the Cradle to Cradle® inventory includes data that go beyond the environmental data included in an LCA. An example of this is the complete product and material declaration, as stipulated in the Cradle to Cradle® certification programme.
- 2) LCAs will not tell you how much progress has been made towards designing a full Cradle to Cradle® product. The Cradle to Cradle® roadmap and the specified milestones should be used to measure this. LCA can, however, be used as an internal check to prevent the shift of the environmental burden to other parties.
- 3) Cradle to Cradle® progress cannot be measured within an LCA, and an LCA should therefore not be used for external communication purposes related to the measurement of such progress.

Next to that, strict guidelines for the communication of LCAs are described in the ILCD Handbook General Guide for Life Cycle Assessment: *"Communication in the public domain is especially critical because the risks of misinterpretation are heightened when LCA-derived information is provided to audiences not familiar with the complexity of the methodology and related limitations that may apply."*¹⁷⁾

¹⁶⁾ Usability of Life Cycle Assessment for Cradle to Cradle® Purposes, Position paper, December 2011, download via: www.agentschapnl.nl/content/position-paper-usability-lca-cradle-cradle-purposes

¹⁷⁾ ILCD Handbook: General guide for Life Cycle Assessment - Detailed guidance, page 307

LCA as a measurement tool

Is LCA the right tool to measure our Cradle to Cradle® products? We do not believe so!

The Cradle to Cradle® innovation framework is about future solutions. Targets are set and milestones are defined in the roadmap to achieve these targets. This way, Cradle to Cradle® acts as a driver for innovation. When embarking on the Cradle to Cradle® journey, the final answer is often unknown. Measuring future solutions with an LCA is very difficult and uncertain, as data is often not available for such solutions. Therefore, we do not find it an optimal tool for measuring the type of innovative solutions which we need to reach our 2020 Cradle to Cradle® goal.

Toxicity and LCA

Within an LCA, measurement of toxicity is based on global emissions into the environment, whereas Cradle to Cradle® looks at the local toxicity of the materials. Within Cradle to Cradle® each material formulation must be reported down to the 100 ppm (parts per million) level.

Within an LCA, low levels of emissions are often excluded, because they are simply not known.

See the White Paper: Usability of Life Cycle Assessment for Cradle to Cradle® Purposes¹⁹⁾, which states: "Around 145,000 chemicals are used in industry (REACH preregister). The vast majority, however, are simply not classified. The most comprehensive LCA impact assessment method, Usetox, includes profiles for 5,000 substances." Within the Cradle to Cradle® philosophy, all chemicals must be identified.

Energy and LCA

Cradle to Cradle® calls for the use of renewable energy in the whole product chain, which means that new technology and solutions often need to be developed. This is one of the greatest challenges within the Cradle to Cradle® philosophy. Unless renewable energy is taken into account within the LCA, the true benefit of a Cradle to Cradle® product is not recognised.

Social Aspects and LCA

These downsides of the LCAs have triggered the LCA community to look for ways to model other types of environmental impact more accurately. These include: **Social aspects** (human rights, working conditions, cultural heritage, poverty etc.) and **toxicity** (determining the level of exposure which is dependent on the climate, population density, and in the case of indoor emissions, ventilation).

All the above mentioned aspects are key within our Cradle to Cradle® strategy, and are the main reasons why we do not find LCA comprehensive enough to measure our Cradle to Cradle® products.

¹⁹⁾ Usability of Life Cycle Assessment for Cradle to Cradle® Purposes, Position paper, December 2011, download via: www.agentschap.nl/content/position-paper-usability-lca-cradle-cradle-purposes



5 Achieving
more together

Being open and transparent: measuring progress

The old management saying goes: "You can't manage what you cannot measure". This holds true for Cradle to Cradle®.

We are entering new territory and there are few standardised measures out there which encompass everything we need to cover within our Cradle to Cradle® implementation plan.

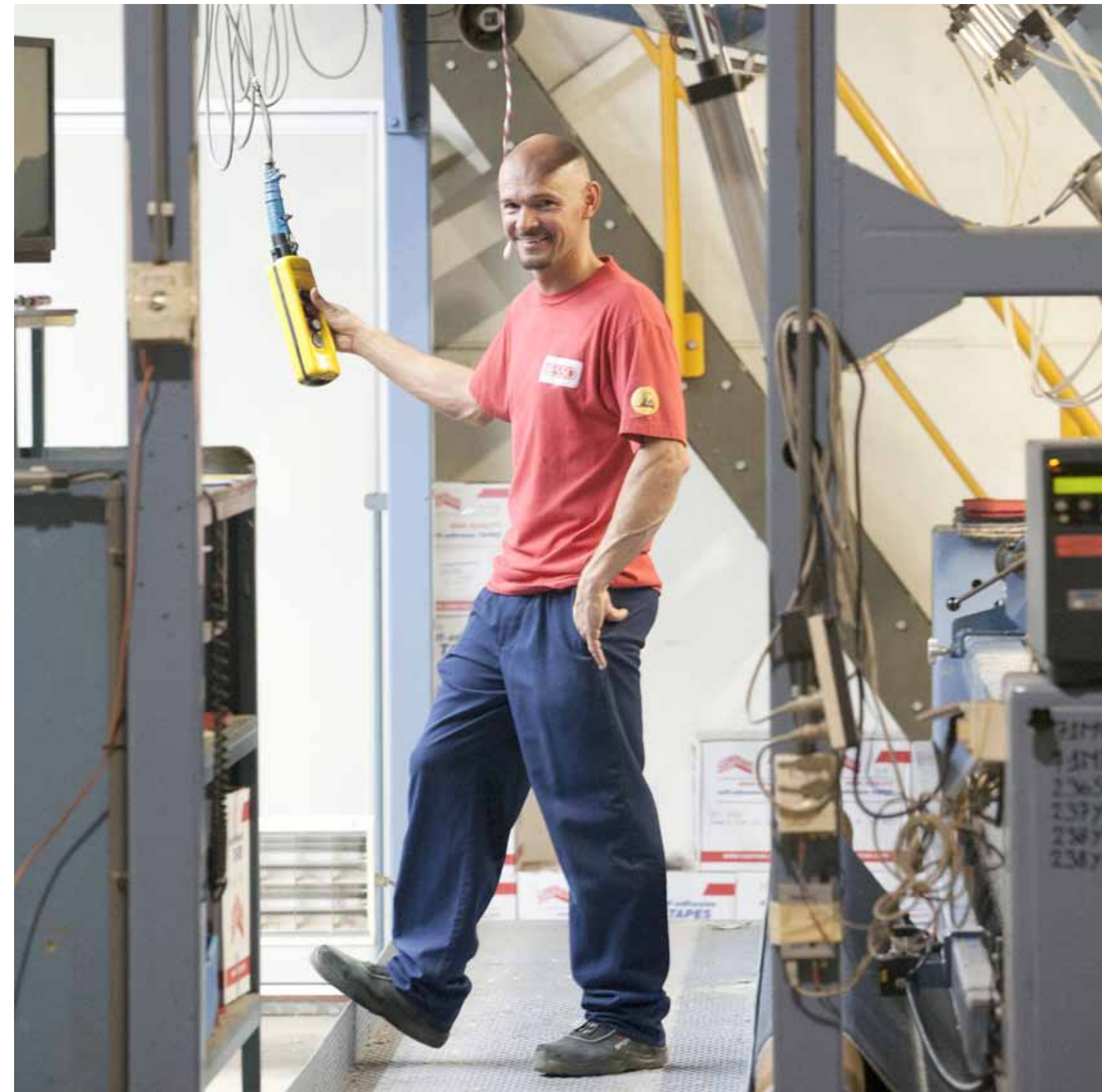
But we know we must do it. That's why we have developed a rigorous Cradle to Cradle® roadmap which sets out every step of the process from now until 2020. It is important to us to communicate what we are doing to the outside world, in a clear and frank manner to keep our customers, suppliers, shareholders and all other stakeholders fully informed.

The Cradle to Cradle® certification process is a significant milestone in our journey. It provides us with a tangible means to measure our achievements. It also reaffirms that our Cradle to Cradle® Silver Certified products are composed of mostly positively defined materials and are therefore safer for the environment. In this process, products are designed for re-utilization. Also, the company is required to be a good steward of its water and increase the level of renewable energy used. In addition, we aim to further build on our reputation as an honest and ethical trading partner, great employer and responsible neighbour by fulfilling the Global Sullivan Principles¹⁹⁾ (a code of conduct for socially responsible businesses relating to human rights and social justice).

Next to that, we are currently in the process of preparing for a SA8000 certification. Social Accountability International's SA8000:2008²⁰⁾ is the most widely recognised global standard for managing human rights in the workplace. It is one of the first auditable standards, and provides a framework for assuring all of our stakeholders that social accountability is being guarded by Desso.

¹⁹⁾ www.thesullivanfoundation.org

²⁰⁾ www.sa-intl.org





Join the Cradle to Cradle[®] journey

Our innovative agenda improves the quality of life and the environment, and does so by also encouraging our clients to maximise their positive environmental footprint. Sustainability policies tend to lay down rules to lessen the impact on the environment. The path we have chosen, however, favours consumption in a new way, by putting natural processes first. This encourages us to make products that have a positive environmental impact from the start.

Carpets manufactured according to Cradle to Cradle[®] design principles will be available in the same full range, superior quality and durability that the Desso brand has always represented.

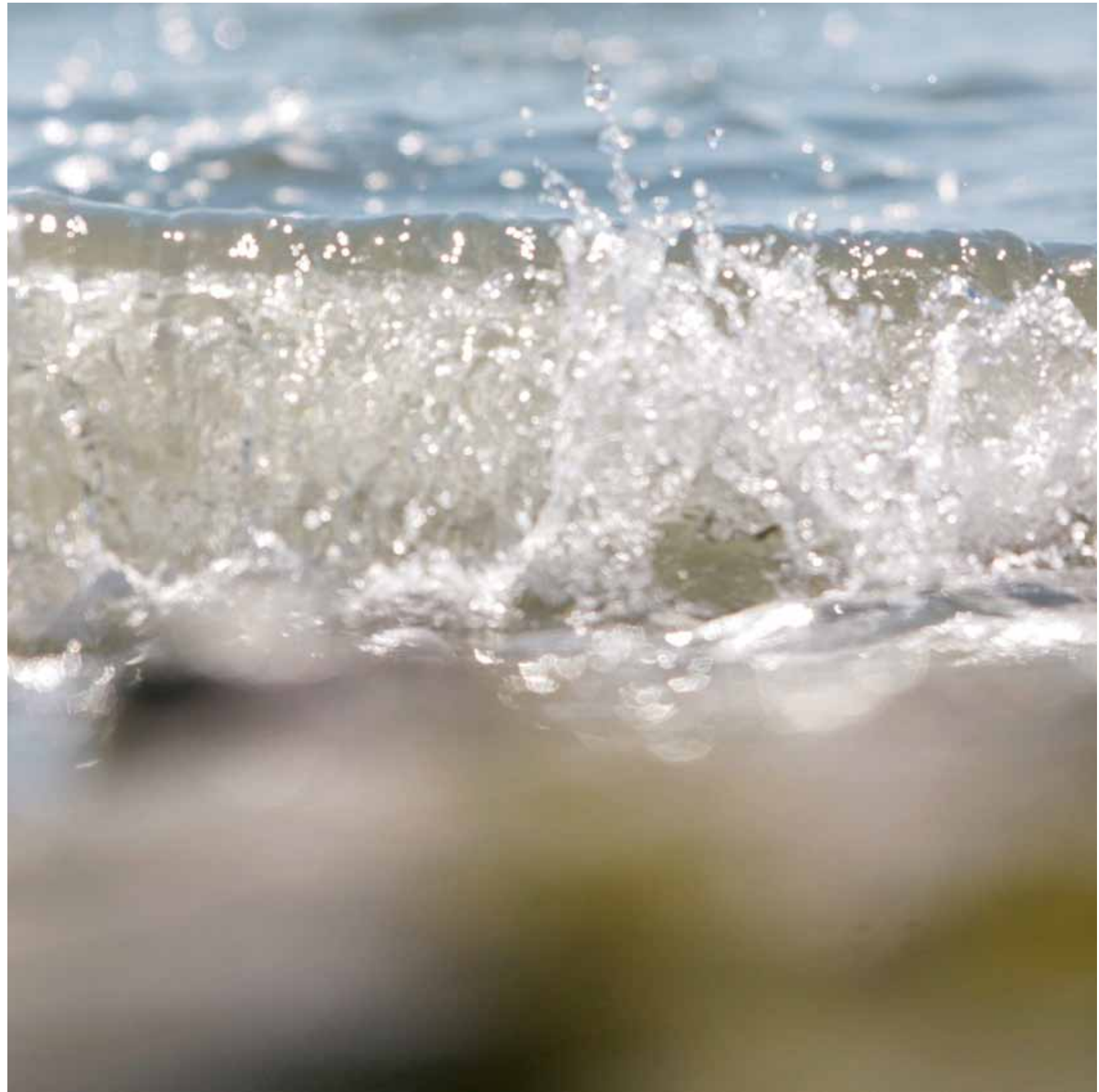
Desso products promote health and well-being to create a positive impact on people and the environment. Desso's footprint is a positive, creative one. But if this is to become something bigger, we need more companies taking up Cradle to Cradle[®] design.

It is a tough journey but we know it is the best way to build triple bottom line profitability in the long-term. We are convinced the winners of tomorrow will build in these capabilities now.

And we would be delighted to explain how we are implementing the change. If you want to get started and want encouragement and hard information, don't hesitate to contact our own Cradle to Cradle[®] trained experts, who would be available to make presentations on the topic. Alternatively, you can call our sales representatives in your markets for more information.

Please visit: www.desso.com

So why not find out more about how you can join us on the Cradle to Cradle[®] journey. We'd be delighted to tell you more.



Certification: our hallmarks of quality



- ISO 9001 and ISO 14001 certified
- EN 9100 certified
- GUT member
- BRE certification
- CRI Green Label Plus (according to the LEED directive for building products)
- Cradle to Cradle® Basic certification
- Cradle to Cradle® Silver certification
- GUI Basic certification
- GUI Gold certification (AirMaster®)
- NF-UPEC Certification
- GECA (Good Environmental Choice Australia)

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 www.linkedin.com: Look for Desso



The Floor is Yours

About DESSO®

Desso focuses primarily on superior floor design and Cradle to Cradle®, in providing high quality carpet tiles and broadloom. Its commercial product offering, business carpets, represents more than half of total sales and can be found in offices, banks, retail units, public buildings, schools, universities and care centres. Customers include ABN AMRO, Rabobank, AkzoNobel, Dutch Ministry of Safety & Justice, KPMG, PWC, Deloitte, Allianz, Canon, EDF, HSBC, Porsche, Procter & Gamble, SNCF, Nestlé and many more.

Desso's innovation strategy is concentrated in 3 key areas: Creativity, Functionality and Cradle to Cradle®. For Desso, creativity is synonymous with CARPETECTURE®, which is a powerful example of Desso's commitment to creative carpet design and its dedication to meet the needs of architects, interior designers, building owners and end users. In the field of functionality, Desso develops pioneering solutions that make a difference for health, wellness and wellbeing. As a result of this innovation and creativity strategy, Desso has launched a number of patented products like DESSO AirMaster®, for 8 times lower fine-dust concentration in the air (versus hard floors), and DESSO EcoBase®, which enabled Desso to achieve a Cradle to Cradle® Silver certificate for an entire carpet tile product.

Desso Consumer Carpets is represented by three strong brands: Parade, Bonaparte and Desso. All with a rich history in manufacturing high-end consumer carpets where products are available through specialist retail traders, plus selected carpet stores and home furnishing shops. Desso Consumer Carpets is the only European high end consumer carpet company with sales in Benelux, Germany, France, Switzerland and Austria.

Desso's creative carpet design and service oriented approach has enabled Desso to become a leader in developing solutions for the Hospitality, Marine and Aviation (HMA) markets. Desso's HMA division works with companies such as Hilton, Intercontinental, Maritime, KLM, Virgin, Royal Caribbean Cruise Lines and Holland America Line.

Desso Sports Systems is a leading player in the provision of artificial turf for sports fields and reinforced natural grass systems that provide the perfect surface at every level of sport. DESSO GrassMaster® is a sports field of natural grass reinforced with Desso synthetic grass fibres, which has been installed in two Euro 2012 stadiums and in 'football temple' Wembley.

Cradle to Cradle®

In signing a partnership agreement with the Hamburg-based Environmental Protection Encouragement Agency (EPEA), Desso has become the first carpet manufacturer in EMEA to adopt the Cradle to Cradle® design. It marks Desso's radical decision to move beyond 'mere' sustainability in producing its carpets and artificial grass. In the Cradle to Cradle® principles, products are made from positively defined* components that are easy to disassemble, in order to create new products in both the biological and technical cycles.

Desso is active in more than 100 countries and can look back on almost 80 years of proven performance, having built a reputation as a leading manufacturer of high quality carpet tiles, broadloom and artificial grass pitches.

Desso has four factories and a major distribution centre in Europe, as well as specialist customer service centres throughout Europe, in America, Asia, Latin America, Africa, the Middle East and Australia.

For more information please visit: www.desso.com

*Positively defined = all ingredients have been assessed as either Green (optimal) or Yellow (tolerable) according to the Cradle to Cradle® assessment criteria. As described in the Cradle to Cradle® Certification Program Version 2.1.1, prepared by MBDC September 2008, updated January 2010.

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