



Desso: Superior floor design and Cradle to Cradle into practice



1 - Desso is a leading world supplier of high-quality carpets for commercial use, for the hospitality, maritime and airline sectors and for consumers. They focus primarily on superior floor design, adding functional benefits and Cradle to Cradle®. According to their website, they are committed to make products that contribute to people's health and wellbeing. Desso is also a recognized leader in the supply of sports surfaces including the pitch for Wembley Stadium and the grounds for premier football teams including Manchester City, Arsenal and Liverpool.

Corporate responsibility

Corporate Responsibility means many things to Desso. It embraces their responsibility to a business model that delivers success in terms of commercial profitability and a positive impact on people and the environment.

In a resource-constrained world the linear economy of 'take, make and dispose' is unsustainable. There is a better way: reshaping businesses so that products are made to be made again in a circular fashion as seen in nature. Businesses, Desso believes, need to reshape their models for the circular economy, where goods and materials are reused and recycled.

Inspired by nature's continuous cycle, this concept requires companies to use materials and design products in such a way that they will be positive to the environment and human health. In broad terms, this means using positively defined materials so that the goods can be returned and the materials recycled into new high-quality products through two streams: technical or biological. In the former, the materials are fed back into the manufacturing process to make new goods; in the latter, they can go back as a nutrient into the soil.

But this is not easy. There are many complex and rigorous procedures to adhere to in order to ensure that a product can meet five criteria set by the assessors of Cradle to Cradle Certified CM programme - and framed by the co-founders of the concept, Prof. Dr. Michael Braungart, a German chemist and former Greenpeace scientist and William McDonough, a US architect.

Desso believes that its commitment to the Cradle to Cradle[®] philosophy and the transition to the circular economy will enable it to become more efficient in the use of natural resources, improve its environmental footprint and develop healthier materials in its products that benefit people and the planet.

Cradle to Cradle as an innovation strategy



Flooring company Desso have been one of the pioneers of the Cradle to Cradle approach. The company continues to innovate around circular economy principles, developing take-back programmes and products with recyclable yarn that can be separated from the backing and used over and over again.

Stef Kranendijk was CEO of Desso between April 2007 – October 2012, and a key driving force in re-thinking the business model of the company. He explains that “the idea is to become a service industry, relying on a leasing system: then you don't buy the product, you only pay for its use, which means materials remain our responsibility and of course it's not our interest to see them wasted, at the end everybody wins.”



The ongoing transition to a circular business model has demanded an ambitious strategy with challenging milestones. Desso identified that the B2B market was more readily open to the performance model: “we started with the carpet tiles for offices and industry, then we will make our sports systems Cradle to Cradle, move to our woollen carpets – in that field, we’re working on a bio-degradable base made out of corn by-product – then we’ll tackle the consumer market.” Designers and materials experts have also experimented in the biosphere, notably taking yarn from bamboo, which has the benefit that once the carpet is worn, it can be safely return to the food-farming system. However, Kranendijk notes that “We still have to improve the product though, notably to enhance its durability.”

Desso know that the circular economy isn’t just about products and materials, and Stef states that “We aim to use renewable energy in all stages of the cycle...All the electricity we use in our Holland and Belgium plants comes from hydropower, thus we do not use any fossil fuel-generated electricity there. Our energy providers have certified that, and we’ve double checked via an independent firm that the provider was being honest.



2 - "

The business model works and makes sense, we’ve gained a competitive edge whilst making better products, when in 2009 eight out of the ten biggest carpet manufacturers recorded considerable losses. The idea is not for me to brag, but to show that the Cradle to Cradle concept is highly credible."

-Stef Kranendijk, CEO

Cradle to cradle in practice

By 2020 all Desso's materials will have to be free of toxins that could cause harm , energy used will be renewable and the specially designed goods will be capable of being taken back and the materials used to make new high-grade products, ending the need to continually draw on the earth's resources to meet growing consumer demand across the world.

In short, the vision allows for companies and people to prosper while taking cognizance of the planet's delicate ecosystem and finite resource. It deals head-on with three global challenges we face: toxicity in materials; climate change; and resource scarcity. It is also about making sure everything we do has a positive impact on human health. The five criteria that Desso and other Cradle to Cradle® companies must adhere to are:

1. Material Health
2. Material Reutilization
3. Renewable Energy Use
4. Water Stewardship
5. Social Responsibility



3 - Material Health

1) **Material Health** - ensuring all of the chemical ingredients in products are defined as positive (either optimal/green or tolerable/yellow). These are judged against a set of environmental and human health criteria and any ingredients that are classified as red (high risk) or grey (unable to define) should be phased out and replaced.

Desso has achieved this with its new DESSO EcoBase® backing, which contains a polyolefin based layer that is 100% safely recyclable in Desso's production process. Carpet tiles with DESSO EcoBase® achieved a Cradle to Cradle® Silver Certificate for having reached a level where up to 97% of the materials are positively defined¹) (Green or Yellow).



4 - Material Reutilization

2) **Material Reutilization**- you must be able to identify the material streams that can be reutilized when the product is taken back after it has been used by the consumer or customer. These are fed back as nutrients either into the manufacturing process (technical sphere) or into the earth (biosphere).

At the heart of the Cradle to Cradle® philosophy is the idea that 'waste equals food'. So, in the case of carpets, Desso has developed the technology to take back carpets and recycle or reuse the materials.



Today, we take back used carpets from our customers and our competitors and 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. Today's bitumen backing is recycled as a valuable raw material for the road and roofing industry. All non-recyclable fractions will be used as secondary fuel in the cement industry.

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.



3 - Renewable Energy Use

1) **Renewable Energy Use** - One of Cradle to Cradle®'s three core principles (the other two being Waste equals Food; and encouraging diversity as in nature) is to use current solar income, meaning that energy use should be, as far as possible, renewable. In this way, Cradle to Cradle® companies like Desso can be assured that the bulk of what they do and what they produce is positive for the environment and for human health.

During the period 2007-2011, Desso reduced its CO2 emissions by 50% owing to its increased use of green electricity (mostly hydropower and biomass). Besides Desso's roof is currently covered by 25,000 m2 solar cells. It aims to switch over completely to renewable energy by 2020.



4 - Water Stewardship

2) **Water Stewardship** - Companies following this route must demonstrate they are using their water resources responsibly and efficiently and that the water discharge from factories into local rivers is as clean as possible.





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