Embracing Circular Economy Powered by Cradle to Cradle®

Michael Aastrup
Managing Director
The Nordic Countries

Mail: maastrup@desso.com
Twitter: @Michael_Aastrup

DESSO AirMaster® 9522, 2914
Our vision

How to make the floor work for our health and wellbeing?

We want to be the world leader in making environmentally responsible flooring products.

Today, most people spend 90% of their time indoors. We believe it is our responsibility to develop products that contribute to a healthier living and working space.

At Desso, we say ‘The Floor is Yours’ to underline the fact that we maintain a relentless focus on our customers at all times.
## Business Overview

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carpets</td>
<td>90%</td>
</tr>
<tr>
<td>Commercial Carpets</td>
<td>65%</td>
</tr>
<tr>
<td>Hospitality, Marine &amp; Aviation</td>
<td>12%</td>
</tr>
<tr>
<td>Home Carpets</td>
<td>13%</td>
</tr>
<tr>
<td>Sports</td>
<td>10%</td>
</tr>
</tbody>
</table>

December 2013 - % of total sales
Our innovation strategy is concentrated in 3 key areas:

**Creativity:** Spearheaded by Desso’s design Philosophy CARPETECTURE® and our international concept Circles of Architects®

**Functionality:** Pioneering solutions that make a difference, such as SoundMaster®, AirMaster® and Light Reflection Master®

**Cradle to Cradle®:** Developing products and Processes that will contribute towards a better environment and better indoor air quality such as DESSO EcoBase® and AirMaster®

Most people spend 90% – how can we make the floor work for your Health and wellbeing?
Embracing Circular Economy Powered by Cradle to Cradle®
The Four Crises

**The climate crisis:** Not only is the ultimate goal of the circular economy to move to renewable energy – leading to lower carbon emissions – but the recycling and reuse of materials will make industry much less energy intensive than the current linear system.

**The toxicity crisis:** We inhale chemicals from manufactured goods all the time. We may not think about it but – given that we spend 90% of our time indoors – this is a major problem if not properly addressed.

**Raw material scarcity crisis:** We simply don’t have an endless supply of raw materials. There is commercial value to be gained from finding recycle-and-reuse business models, which could amount to US$ 700 billion in consumer goods material savings every year, according to a report from the Ellen MacArthur Foundation.

**Energy crisis:** Our reliance on fossil fuels is not only unsustainable in the long term, but also makes us vulnerable to economic shocks now. The circular economy, with its long-term focus on the use of renewable energy sources and its less energy intensive model provides a potential structure for this challenge.
The road less travelled

Is your target to achieve zero impact = Eco-efficiency?
Or is your target to achieve maximum positive impact = Eco-effectiveness?

Eco-effectiveness leads to maximum positive impact
Define, increase, support and optimise

Reduction, avoidance, minimisation and prevention
Eco-efficiency strives for zero impact
Towards a circular economy... powered by Cradle to Cradle®
What is Cradle to Cradle®?

According to the Cradle to Cradle® principles, products are made from pure components that are easy to disassemble, so that new products can be made from them (= up-cycling) in both the biosphere and the technosphere.

Michael Braungart
William McDonough
Eco-effectiveness

1. Positive footprint
2. Improve quality of life and environment
3. Re-utilize all materials used in the product. Design criteria: easy disassembly
4. Use post-customer materials as raw material in the product
5. All raw materials should be 100% safe for humans and environment
6. Use renewable energy in all stages of the cycle

It’s all about Eco-Effectiveness
Analysis of all raw materials

**IDENTIFY THE BEST: ABC-X CATEGORIZATION**

- OPTIMAL
- OPTIMIZING
- TOLERABLE
- NOT ACCEPTABLE
- NOT CHARACTERIZED

**PROGRESS OF QUALITY FROM CRADLE TO CRADLE WITH TIME**

- ECO-EFFECTIVENESS

- Clients and suppliers are regarded as partners to reach quality.

**Create ‘Passive Positive List’ for existing products**

- Use only positively defined materials

- Phase out non-acceptable raw materials

**No need to be perfect from day one!**

Clients and suppliers are regarded as partners to reach quality.
The Cradle to Cradle® cycles

Biological cycle

Technical cycle
Over 90% of Desso’s carpet tiles are Cradle to Cradle® certified
In early 2008, Desso took revolutionary steps to ensure that carpets would be safely recycled by launching its Take Back™ programme.

Desso has set up a Take Back™ programme to ensure that products will be recycled according to the Cradle to Cradle® principles.

Besides our own products, we also encourage the international collection of all types of used carpet, except for those products containing PVC.
DESSO Refinity®

In 2009, Desso developed an innovative separation technique called Refinity®.

**NOW**
- Post-consumer PA 6 yarn up-cycled into new yarn
- Post customer backing used for:
  - Road works / cycle paths
  - Cement industry

**FUTURE - Cradle to Cradle®**
- Backing is up-cycled into new backing (DESSO EcoBase®)
- Yarn and backing are up-cycled in other industries such as office chairs, vacuum cleaners etc.

All non-recyclable fractions will be used as secondary fuel in the cement industry.
DESSO joins Healthy Seas Initiative

- As part of our ongoing commitment to making a positive impact on health and wellbeing and the environment, we participate in ‘Healthy Seas, a Journey from Waste to Wear’

- The initiative aims to remove waste, in particular fishing nets for the purpose of creating healthier seas and recycling marine litter into new Desso carpets or other textile products.

His Royal Majesty King Willem-Alexander of the Netherlands presented with the Healthy Seas Promo box.
From the onset, we recognised that in order to achieve our Cradle to Cradle® goal, co-operation and commitment is needed from key partners.

- Over 50%* 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.

* 50% relates to the 2012 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
New Business Models

- Carpet Leasing Programme launched together with ‘De Lage Landen’

- De Lage Landen is a global provider of leasing, business and consumer finance solutions.

- This programme offers a full service to our customers including installation, cleaning, maintenance and eventually removal.

- This makes it easier for us to take our goods back after use and close the loop."
Desso’s Cradle to Cradle® network

Ever expanding....
Using Cradle to Cradle® to boost innovation

‘How can we make the floor work for your health and wellbeing’
The challenge of poor air quality

Aspiring to build the ‘Great Indoors’ can make a huge difference to people’s health and wellbeing as well as work efficiency and creativity.

One key issue is poor air quality.

1) WHO, Tackling the global clean air challenge, 26 September 2011, News Release.
3) William J. Fisk and Arthur H. Rosenfeld of the Lawrence Berkeley National Laboratory in Berkeley in California, US.
DESSO AirMaster®
The carpet that clears the air
When applying DESSO AirMaster® fine dust is captured and retained, which helps creating a cleaner breathing zone.*

* Measurements are carried out in the breathing zone (PM$_{10}$).
The challenge of poor sound quality

Aspiring to build the ‘Great Indoors’ can make a huge difference to people’s health and wellbeing as well as work efficiency and creativity.

Another key issue is poor sound quality.

1m healthy life years
lost every year from traffic or other environmental noise, Western Europe

24 work days
per employee
lost every year in organisations
due to unwanted noise from poor acoustics

77% preferred quiet when needing to focus
69% dissatisfied with noise levels
US employees surveyed about workplace

---

5) Enhance the workplace with Activity Based Acoustic Design*: discussion drawn from new University of European Facilities Management Conference (EFMC) held in Prague, May 23, 2013. 23rd of May: http://www.efmc-conference.com/
Source: http://www.acousticbulletin.com/EN/2013/05/acoustic_design_discussed_at_t.html
DESSO SoundMaster®
The carpet that improves acoustics

up to $+0.15 \ (a_w)$
improvement in sound absorption

up to $+15 \ dB$
improvement in impact sound insulation
Walk on light | PHILIPS

The Floor is Yours
“Using our combined strengths to bring inspiration, information, safety and directions to you via the carpet you walk on”
Thank you!

For more information, please contact us or visit our website: [www.desso.com](http://www.desso.com)

Join us on Facebook: [www.facebook.com/circlesofarchitects](http://www.facebook.com/circlesofarchitects)
Follow us on Twitter: [www.twitter.com/DessoGroup](http://www.twitter.com/DessoGroup)
Watch our videos on YouTube: [www.youtube.com/dessogroup](http://www.youtube.com/dessogroup)
[www.linkedin.com/company/desso](http://www.linkedin.com/company/desso)