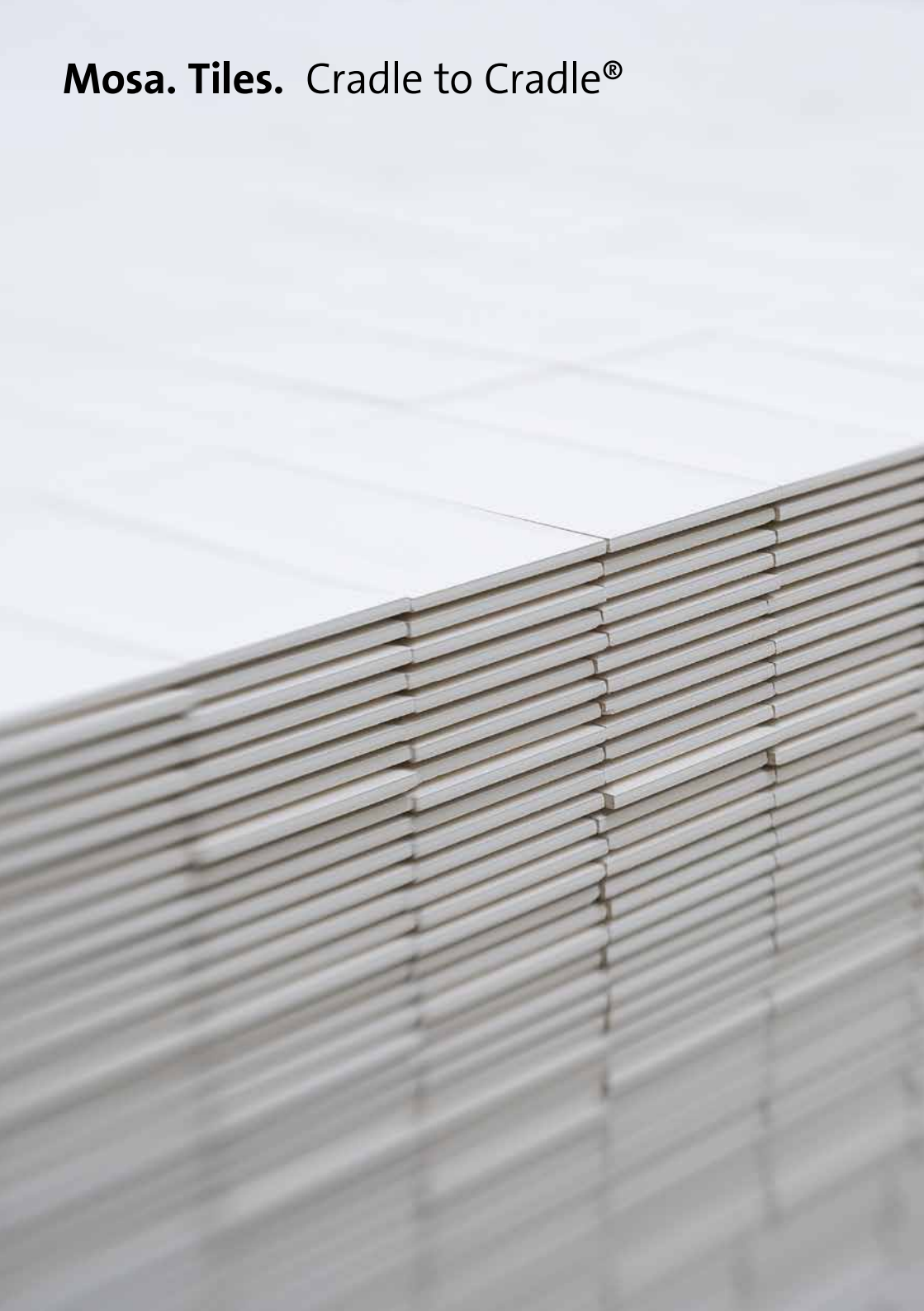


**Mosa. Tiles. Cradle to Cradle®**



**C2C**

# Cradle to Cradle® and Mosa

Sustainability is a cornerstone of Koninklijke Mosa bv's mission and principles. This is an intrinsic element of a sustainable product such as tiles and of the operations of a quality-conscious company of the nature of Mosa.

Cradle to Cradle is an innovative, positive and integral approach to sustainability that avoids reduction and is based on the unlimited reuse of materials: "waste is food".

This approach is highly compatible with Mosa's philosophy, as we are convinced that the future lies solely with sustainable products which are manufactured in a responsible manner and do not pose health risks. This is a responsibility which we share with you, our customers. Moreover, this responsibility is further emphasised by the regulations that increasingly prescribe the use of sustainable construction materials.

Since Mosa adopts a fundamental approach to the company's operations we have entered into close cooperation with EPEA, the centre of expertise founded by Professor Michael Braungart.

Three years of development resulted in the award, in December 2010, of the Cradle to Cradle® Silver certificate to virtually all the Mosa product range. The certification procedure addresses five main criteria: raw materials, recycling potential, energy consumption, water management and working conditions.

As a result, Mosa is the world's first manufacturer of Cradle to Cradle Certified<sup>CM</sup> tiles. However, this does not imply that our work is finished: quite the contrary, in fact, since we perceive Cradle to Cradle certification as an incentive for further innovation in the development of ceramics systems.

Consequently, Mosa signed an organisational charter at the beginning of 2011, as a result of which Mosa has been assigned the Cradle to Cradle Charter Organisation label that specifies Mosa's continued endeavours to implement the Cradle to Cradle philosophy in our company's products and processes.



Cradle to Cradle Certified<sup>CM</sup> is a multi-attribute program that assesses products for safety to human & environmental health, design for future use cycles, and sustainable manufacturing processes.



# Pure raw materials

EPEA\*) has qualified Mosa tiles as “designed for the technocycle, but safe for the biocycle”, a qualification which confirms that Mosa tiles do not release any harmful compounds during their useful life and do not damage nature should they unfortunately be dumped after use. However, the safety of the disposal of our products is without prejudice to Mosa’s objective of providing for the unlimited reuse of the tiles in the biocycle or technocycle.

The main constituents of Mosa tiles are clay and sand, natural raw materials that are present in abundance in nature. Mosa Cradle to Cradle Certified<sup>CM</sup> tiles are free of hazardous compounds such as lead, mercury or cadmium – the result of years of research and development in which all the ingredients used in our tiles were analysed and classified to ppm (parts per million) level. This analytical programme also expressly included our suppliers’ raw materials chain. The EPEA criteria governing the absence of hazardous compounds are much more stringent than the prevailing environmental legislation.

\*) EPEA ([www.epea.com](http://www.epea.com)) is the centre of expertise that developed the Cradle to Cradle philosophy and advises Mosa – and many other companies – on the implementation of the philosophy.

# Recycling

Cradle to Cradle pivots on two recycling factors, namely the extent to which the purity of a material makes it suitable for unlimited reuse and the extent to which a product actually is recycled.

Mosa tiles contain solely natural raw materials and can be recycled. The tiles currently contain a percentage of “pre-consumer” recycled material originating from production waste and residual materials from the stone industry: wall tiles contain between a minimum of 22 and a maximum of 25% of recycled materials, depending on the type of tile, and floor tiles contain between 21 and 45%.

Mosa is also carrying out pilot trials with companies in the construction industry and the waste collection sector to review the feasibility of a tile return system. These trials are limited to the return of used Mosa tiles that are suitable for reuse by virtue of a purity sufficient for eco-effective processing, but also extend to studies carried out in cooperation with adhesive manufacturers. These studies are examining new methods of applying tiles that will simplify their removal and result in “cleaner” tiles, a development that will benefit the recycling process.



# Closed water cycle

Cradle to Cradle regards water as a scarce and expensive resource that requires appropriate management. Reusing water is an essential element of appropriate water management.

Mosa uses water during a variety of process operations, such as preparation of the substrate, applying the glazing, pressing the tiles and calibrating the finished products. The process water is purified in an in-house water treatment plant and the residual sludge is recycled in the tile production process.

In 2010, Mosa succeeded in closing the cooling-water cycle, an achievement that has reduced the total volume of water pumped up from groundwater by more than 60%.







PV  
1174  
SV  
1175

OUT1 OUT2 STOP AT

MANU SUB1 SUB2

↑ ↓ ↻

PV  
1059  
SV  
1000

RMT RSP MANU SUB1 SUB2  
OUT1 OUT2 STOP AT

↑ ↓ ↻

# Energy management

Cradle to Cradle also extends to energy consumption and in particular the source of the energy, since the amount of energy consumed is of no relevance when the energy is generated from a renewable source.

During the past years Mosa has modernised its entire factory to maximise the sustainability and efficiency of our processes. Mosa's modernisation programme has also resulted in the 91% reduction of particulate emissions to virtually zero and the drastic reduction of CO2 emissions.

Moreover, in 2007, Mosa switched over entirely to 'green power' generated by hydroelectric power stations. This use of 'green power' has further reduced CO2 emissions per tonne of finished product and achieved a total reduction of 48%.

Mosa has accepted the challenge of improving its energy efficiency even further. The company is actively seeking longer-term alternative sources of energy: for example, from mid-2011 the residual heat from the furnaces will be recovered for use in the production process and for heating the buildings.

# Working and social conditions

One of the Cradle to Cradle requirements stipulates that the manufacturer and the manufacturer's suppliers in the chain shall implement appropriate working conditions and pure ethical principles.

Generally, Western Europe complies with this requirement. Pursuant to this requirement Mosa implements the local-for-local principle whenever possible, namely production close to the market and raw materials sourced in the vicinity of the factory. Virtually all raw materials are sourced from controlled quarries within a distance of 500 kilometres from Maastricht.

The location of Mosa's factories close to the city centre also imposes requirements on the company's operations. Mosa has implemented measures to reduce emissions and noise that minimise hindrance to the surrounding residential neighbourhoods. In adopting this approach Mosa has implemented the company's mission, in which Mosa expresses its carefully-considered decision to locate the sustainable development and production in Maastricht – the city where the company began its long history. Mosa endeavours to demonstrate that the manufacturing industry has a future in the Province of Zuid-Limburg to ensure that the company can continue to manufacture products that are compatible with both contemporary and future architecture.



# About Mosa

Koninklijke Mosa (incorporated in 1883) is an innovative manufacturer of high-quality ceramic products. The market perceives Mosa as a highly innovative company and a leader in design.

Mosa tiles have received a large number of internationally recognised design awards. Mosa, a completely independent company, is owned by the Dutch Egeria investment group. Mosa's wall and floor tile factories in Maastricht are equipped with state-of-the-art technology and are designed specifically for flexibility and quality. Mosa is the only tile company that manufactures its entire range in the Netherlands using sustainable production methods.

Mosa's products are ideally suited to use in sustainable buildings and contribute to the award of seals of approval from organisations such as LEED and BREEAM.

Mosa is a member of:



GREEN  
BUILDING  
COUNCIL  
DENMARK



Dutch Green Building Council



**DGNB**<sup>®</sup>

Deutsche Gesellschaft für Nachhaltiges Bauen e.V.  
German Sustainable Building Council

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Mosa is a registered provider for continuing education with The American Institute of Architects and the Interior Design Continuing Education Council.



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Mosa is a RIBA accredited CPD Provider





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Pour les informations les plus récentes vous pouvez visiter notre site web [www.mosa.nl](http://www.mosa.nl).  
Für aktuelle Informationen besuchen Sie bitte unsere Webseite [www.mosa.nl](http://www.mosa.nl).  
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