

ShrinkSan – the New Sustainable Kiln Furniture for Sanitaryware Developed by Imerys

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The integration of the ceramic sanitaryware pieces into house furniture or pre-assembled kits is developing due to a better dimensional control of the ceramic sanitaryware pieces. In a traditional firing process, sanitaryware pieces are placed on kiln furniture to proceed to firing. The extreme heat causes the ceramic piece to shrink, which creates friction with the kiln furniture, sometimes resulting in defects such as glaze chipping or foot deformation on the fired piece.

To reduce the occurrence of these defects, single use tiles are placed between the piece and the kiln furniture. While this solution has proven its efficiency, its environmental impact is questioned, as single used tiles are increasing the manufacturer's waste.

Imerys has decided to address this issue and has developed ShrinkSan, a patented kiln furniture system able to cope with the piece contraction during firing while being

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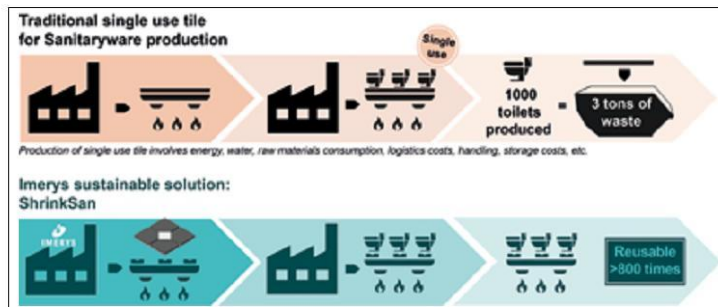


Fig. 1 Ceramic sanitaryware production: comparison between the traditional firing and the new sustainable firing solution developed by Imerys



Fig. 2 ShrinkSan system blocked by an organic spacer

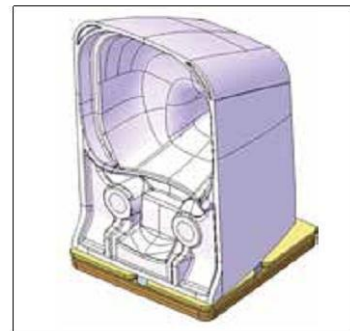


Fig. 3 Sanitaryware piece loaded on the ShrinkSan system

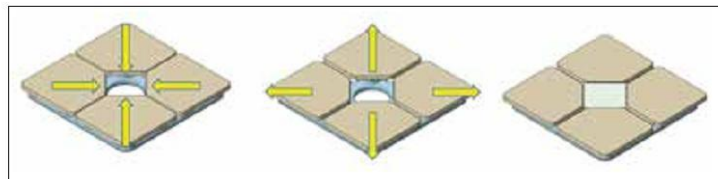


Fig. 4 ShrinkSan reset system

reusable and therefore sustainable (Fig. 1). ShrinkSan is a kiln furniture system based on four mobile elements placed on a refractory batt. In their initial position, the mobile elements are blocked by organic spacers and the sanitaryware piece is loaded on top. During firing, the organic spacers decompose and allow the elements to follow the contraction of the sanitaryware pieces (Fig. 2–3).

After firing, the ceramic piece is unloaded and the system is easily reset by positioning new organic spacers between the mobile elements (Fig. 4). The system is then blocked and ready for a new loading. This system has been tested and is operational in several sanitaryware factories across Europe. ShrinkSan has proven to absorb more than 75 % of the firing shrinkage and to reduce the friction of the sanitary-

ware pieces on the kiln furniture supports, hence decreasing the number of defected pieces. This performance is also valid compared to the single use ceramic tiles and ShrinkSan presents several advantages:

- better follow the differential contraction of the piece whatever the design;
- opened design to ease heat transfer – Increased air flow in the piece;
- easy set up and maintenance.

Imerys is relying on its high quality standard as the Group is producing its kiln furniture portfolio with high quality refractory materials. The design of the system allows replacing components individually which enables to extend the lifetime of the system.

Delivering sustainable products and services to its customers is central to Imerys strategy and how the company does business. To achieve its ambition, with clear measurable objectives, the Group launched in 2018, its CSR Program SustainAgility.

Imerys wants to unlock the sustainable potential of its portfolio. With SustainAgility, Imerys wants to be a positive force for change across the value chain creating sustainable solutions to allow companies to achieve their own CSR goals.

ShrinkSan development is one example of the Group's determination and commitment to respect the world in which it operates. The company's new range of sustainable mineral solutions, aims to play a key role in overcoming the world's environmental and societal challenges.

With ShrinkSan, Imerys offers an alternative to single-use ceramic plates used during the firing of sanitaryware pieces. Being reusable, up to 800 times, allows sanitaryware producers to significantly reduce the amount of waste generated, about 3 t of waste for 1000 toilets, which represents about 15 % of the weight of one piece. As part of Imerys Product Sustainability

Assessment Methodology, ShrinkSan has been scored with the highest sustainability rating. This assessment includes a Life Cycle Analysis (LCA) "cradle-to-gate" conducted according to ISO 14040 and ISO 14044 standards to assess the environmental footprint associated with the manufacturing of ShrinkSan solution.

As a recognition of its strong CSR engagement, Imerys has been awarded the Ecovadis 2020 Platinum Medal. Ecovadis is the leading provider of business sustainability ratings for global supply chains. More than 60 000 businesses, of which many industry leaders, are part of the Ecovadis network. Imerys platinum achievement, places the Group in the top 1 % of assessed organisations, the only one in the mining industry. This is a recognition of Imerys leadership, actions and concrete results in the fields of environment, labour and human rights, ethics and sustainable procurement.