

February 8, 2023

SEKISUI KASEI CO., LTD. (Head Office: 2-4-4 Nishi-tenma, Kita-ku, Osaka, Japan; President: Masato Kashiwabara) has been working to change its business structure to one focused on the circular economy, with the aim of shifting into a business that solves environmental and social issues.

In an effort to expand material recycling, we have established a technology for recycling fish boxes, which had previously proved difficult to remove the odors of fresh fish, etc. from, and have begun mass production as recycled materials for “ESLEN Beads RNW.”

Strengthen the Material Recycling of Foamed Polystyrene as Part of a Shift to Business Activities Focused on the Circular Economy

1. Background

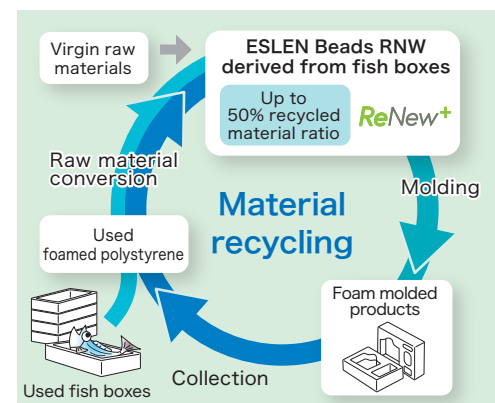
SEKISUI KASEI Group has continued to develop the foaming and polymerization technologies that it has cultivated since its founding, and at the same time has developed manufacturing that coexists in harmony with the natural environment, such as energy conservation and recycling, with the aim of realizing a low-carbon, recycling-based society. Foamed polystyrene, which is widely used as a logistics container, packaging material, and thermal insulation material, has been the subject of industry-wide recycling efforts since the 1970s, and the domestic recycling rate has reached 92% (actual rate in 2021*1). In addition, the raw material is a single mono-material, making it suitable for horizontal recycling*2. In the 2000s, we launched “ESLEN Beads RNW” (pre-expanded polystyrene beads made from recycled materials), which enabled the material recycling of used household appliance packaging materials and used household appliance components.

However, for food-related materials (e.g., fish boxes), which account for approximately 50% of all foamed polystyrene applications, there were many other issues besides the removal of specific odors that had limited its use in material recycling.

2. Details

We have studied the identification and desorption of odor components from fish boxes and by integrating recycling and polymerization technologies, we have been able to offer the same performance compared to foamed polystyrene made from virgin raw materials. To date, we have established a mass production technology for “ESLEN Beads RNW,” which is derived from fish boxes, allowing a ratio of up to 50% recycled materials.

Initially, we expect to adopt the material for use in industrial logistics materials, construction materials, and civil engineering applications. To further improve resource recycling, we will pursue initiatives to realize horizontal recycling of foamed polystyrene with minimal use of virgin raw materials.



3. Future developments

SEKISUI KASEI Group is implementing SKG-5R, which adds the 2Rs (Replace and Re-create) to the 3Rs (Reduce, Reuse, and Recycle) activities it has been focusing on to realize a sustainable society, and aims to become carbon neutral by 2050 and achieve a 50% sales ratio of Sustainable Star Product, its products and systems that make greater contributions to the natural environment among our sustainable products, in FY2030.

We recognize that the development of materials from recycled material, particularly horizontal recycling, presents various challenges, but we also recognize its importance from a waste reduction perspective. We will continue to develop our foaming and polymerization technologies and work to reduce the environmental impact through our business activities.

*1 Data source: JEPSA

*2 Horizontal recycling: Recycling used products that have been collected and returned to raw materials to make the same type of product.