



Products

Principles, Processes and Instruments

A central principle of product development at Wienerberger is the creation of lasting value for our customers by supplying them with durable and innovative building material and infrastructure solutions. Wienerberger brick products are an integral part of sustainable building concepts. They guarantee a high quality of life and make an active contribution to the fight against climate change, not least on account of their heat storage capacity. In the field of pipes and pavers, we offer system solutions for all present-day challenges, including the demands on water management resulting from climate change and increasing urbanization. Durability and innovative strength are quality criteria which we regard as particularly important across all product groups.

In view of what users and developers expect of a modern building, and considering the numerous regulatory requirements to be met, such as the Energy Performance of Buildings Directive (EPBD), a system based approach to building construction is getting more and more important. Integrated system solutions enable us to combine the outstanding properties of individual products of the Wienerberger product portfolio with products supplied by our partners in the field of building services and facilities in order to obtain the best possible results.

Wienerberger aims to secure and further strengthen its market positions through cost and technology leadership and product innovations. Therefore, research and development (R&D) are among the priorities of Wienerberger's strategic planning.

For many years, Wienerberger has been working intensively on the voluntary preparation of eco-balances and environmental product declarations (EPDs) for its entire product range. For several years, all ceramic pipes and fittings produced by Steinzeug-Keramo as well as selected Semmelrock product lines have been certified according to the Cradle to Cradle® concept.

Results of our 2014 Materiality Analysis

The results of our materiality analysis in respect of our products, from raw material procurement to their useful life and their end-of-life disposal, are outlined on page 80 of our 2016 Sustainability Report.

The results of our materiality analysis provide the basis for our five-year plan of action, the Wienerberger Sustainability Roadmap 2020. The product-related targets and measures provided for within the framework of the Wienerberger Sustainability Roadmap 2020 are outlined at the end of this chapter under "Targets and Measures relating to Products".

Innovative Products

Products, system solutions or processes that represent an improvement over earlier versions or add to the diversity of the product range qualify as innovative. In 2017, innovative products and system solutions accounted for almost 30% of the Group's total revenues, which represents a further increase over the previous year's level (almost 27%). For further information on the innovation criteria of the individual products and system solutions, please refer to the following table and to pages 80/81 of the 2016 Sustainability Report.

The specific quantitative targets of the individual Business Units regarding the contribution of innovative products and system solutions to revenues, as well as the results achieved in 2016 and 2017, are shown in the following overview.

Targets for the contribution of innovative products to revenues	2016 in %	2017 in %	Comments
Clay Building Materials Europe: 25%	26	31	New products and system solutions that are durable and cost-efficient, contribute to the energy efficiency of buildings and to climate protection, ensure safety and health for users of the buildings, facilitate correct planning, are easy to use and well-suited for an interesting architectural design qualify as innovative.
North America: 50%	49	51	The definition includes product innovations and system solutions that facilitate compliance with the new energy standards (International Energy Conservation Code, IECC), offer a higher level of energy efficiency and are well-suited for the construction of tornado-proof houses.
Pipelife: 20%	20	19	The definition includes product innovations that represent either a completely new development or a significant improvement of an existing product as regards the production process, cost-efficiency, technical properties or ecological advantages. Individual criteria no longer applied to certain products in 2017, which led to a slight decrease in the percentage of revenues. A renewed increase is expected for 2018.
Semmelrock: 30%	37	38	The definition includes product innovations that offer an added value for customers on account of their cost-efficiency, their technical properties and their ecological advantages, such as water-permeable paving system for unsealed surfaces.
Steinzeug-Keramo: 35%	39	42	The definition includes recently introduced products (e.g. shafts with individually designed, site-specific system solutions), products for particularly innovative applications (e.g. jacking pipes for trenchless installation) or products offering special advantages in terms of energy efficiency and climate protection (e.g. climate-neutral pipes).

The targets of the individual Business Units and the measures relating to innovative products are presented in the following section, with a special focus on product properties identified as essential.

Targets and Measures Relating to Products

The following targets and measures were defined by the Managing Board of Wienerberger AG and the management of the individual Wienerberger Business

Units on the basis of the materiality matrix developed in 2014. They are part of the Wienerberger Sustainability Roadmap 2020.

The data on North America and/or Pipelife do not include the North American production site of Pipelife. This has an influence on the development of indicators relative to the target definitions for North America and Pipelife as compared to previous years.

Innovative and durable products

Clay Building Materials Europe

Quantitative target

- › The percentage of innovative products is to be maintained at 25% of the Business Unit's total revenues through continuous product development and market launches.

2017

- › Innovative products accounted for 31% of the Business Unit's revenues.
- › The ongoing processes of product optimization and innovation management were continued. As in previous years, customers were involved and life cycle analyses were performed. The processes applied included strategic reviews, innovation workshops, activity reports and project documentation.

2018

- › The product improvement and innovation management processes will be further advanced.
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North America

Quantitative target

- › In 2017 and 2018, the percentage of innovative products is to reach 50% of the Business Unit's revenues through continuous product development and market launches.

2017

- › Innovative products accounted for 51% of the Business Unit's revenues, surpassing the target set for the year.
- › Potential local partners for cooperation on a further lighthouse project near Nashville were evaluated.

2018

- › Product optimization and other innovation management measures are being implemented.
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Pipelife

Quantitative target

- › The percentage of innovative products is to be maintained at no less than 20% of the Business Unit's revenues through continuous product development and market launches.

2017

- › Individual criteria for certain products no longer applied in 2017, which led to a slight decline in the percentage in total revenues. Innovative products accounted for 19% of the Business Unit's revenues, falling slightly short of the target set.
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Innovative and durable products

Pipelife

2017

- › Research and development projects aimed at product optimization as well as further innovation management measures were continued in accordance with the most recent findings.

2018

- › The activities described above are being continued in order to make up for the shortfall of the previous year and again achieve the target set for innovative products as a percentage of total revenues.
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Semmelrock

Quantitative target

- › The percentage of innovative products is to be maintained at no less than 30% of the Business Unit's revenues through continuous product development and market launches.

2017

- › Innovative products accounted for 38% of the Business Unit's revenues.
- › The further development of water-permeable paver systems for unsealed surfaces was actively pursued. Examples include ecological paver systems with wide water-permeable joints that allow water to seep easily into the ground.
- › Various joint materials were tested in order to obtain optimal seepage properties.
- › A newly developed coating system, combined with an optimized application technology, was rolled out to the country organizations.

2018

- › Product solutions for water-permeable surfaces are to be rolled out, the first step being the market launch of the product system ASTI Breite Fuge in Hungary, which was originally scheduled for 2017.
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Steinzeug-Keramo

Quantitative target

- › The percentage of innovative products is to be maintained at 35% of the Business Unit's revenues through continuous product development and market launches.

2017

- › Innovative products accounted for 42% of the Business Unit's revenues.
- › A new innovation process was applied in cooperation with an external partner.

2018

- › Work on the innovation process is being continued.
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Recyclability, recycling and re-use

Clay Building Materials Europe

2017

- › The pilot project carried out in cooperation with the Vienna University of Natural Resources and Life Sciences (BOKU) to evaluate various possibilities of using recycled brick material was completed.
- › Further projects were defined on the basis of the results of the research and development project referred to.

2018

- › The projects aimed at investigating various possibilities of using recycled materials were launched.
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North America

2017

- › Work on the optimization of the closed resource cycle was continued and implementation of the results was evaluated at plant level and by the regional management.
- › The issues of packaging efficiency and the recycling of packaging material were investigated in cooperation with suppliers of packaging material.
- › An internal initiative was launched to identify causes of waste and to reduce the volume of waste.
- › The sale of products in “bulk bags” (stable, re-usable containers) instead of paper bags was continued.

2018

- › The measures described above are being continued.
 - › In accordance with the Group-wide supplier management strategy, a supplier guideline is being elaborated to promote the re-use and/or recycling of packaging material.
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Pipelife

Quantitative target

- › By 2020, the amount of recycled material per ton of products produced is to be increased to 70 kg.

2017

- › The amount of recycled material per ton of products produced was 67.2 kg.
- › Research projects aimed at establishing the optimum percentages of primary and secondary plastic materials to be used in Pipelife products were continued.
- › The results of the research projects were applied at selected production sites.
- › Studies on the technical feasibility of using recycling material and the identification of production sites suited for implementation were continued.

2018

- › The research projects are being continued and the results will be put into practice at additional production sites.
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Recyclability, recycling and re-use

Semmelrock

2017

- › Studies on the possibilities of substituting secondary raw materials for primary raw materials without compromising quality were continued.
- › The substitution of recycled material for primary raw materials, e.g. in road construction, was further optimized.
- › The re-certification of ARTE interlocking pavers according to the Cradle to Cradle® concept was prepared. The ARTE product family comprises a selection of pavers in various formats, 8 and 10 cm high, with an integrated interlocking system designed especially for surfaces under high traffic load that prevents shifting and deformation.

2018

- › Studies on the possibilities of substituting primary by secondary raw materials without compromising quality are being continued.
 - › Measures required for the roll-out of Cradle to Cradle® certification are being taken.
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Steinzeug-Keramo

2017

- › All the measures required within the framework of Cradle to Cradle® certification in 2016 were taken in order to obtain Cradle to Cradle® re-certification in 2018.
- › The percentages of internal and external secondary raw materials used in production were evaluated in detail for all production lines. Currently, the average percentage of secondary raw materials used is 40%. This value is subject to continuous re-evaluation on the basis of ecological, technological and economic criteria.

2018

- › All the necessary steps are being taken to obtain Cradle to Cradle® re-certification in 2018.
 - › Further possibilities of improving material properties while increasing the recycling rate as much as possible are being evaluated.
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Ease of installation

Clay Building

Materials Europe

2017

- › The development of new products and/or system solutions to speed up and facilitate masonry work and to minimize the risk of mistakes made at the construction site was continued.
- › Special analog and digital planning tools as well as personal support services were continued to be provided to familiarize architects and designers with the best possible way of using brick products.

2018

- › The solutions available for the applications described above are being further improved and upgraded.
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Ease of installation

Semmelrock

2017

- › Additional visualization tools were developed for optimum application of the products supplied. The safe use of products for their respective applications was supported by a CAD design service for private, commercial and public projects; the design of tailor-made public spaces was facilitated by these means.
- › Slabs and pavers in large formats were further developed and products requiring a high level of application know-how were optimized.
- › The process of setting pavers at the construction site was facilitated through product optimization.

2018

- › Work on the measures described above is being continued.

Renewable energy for buildings

Pipelife

Renewable energy for buildings is an important topic for Pipelife.

2017

- › The range of geothermal products was broadened, including Pipelife's portfolio of distribution chambers.

2018

- › The available range of such products is being extended continuously.
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Contribution to the energy efficiency of buildings

**Clay Building
Materials Europe**

The continuous development of product solutions that contribute to the energy efficiency of buildings is a high priority for Clay Building Materials Europe. Some of the measures pursued in 2017 are described below:

2017

- › The development of clay blocks filled with insulating material was advanced, especially for use in multi-story residential buildings.
- › High thermal insulation clay blocks without infill material but with a special hole geometry were further developed, both for use in single-family homes and for non-load-bearing infill masonry.
- › New facing brick formats for multi-layer exterior walls were introduced to permit the use of more efficient and thicker insulating material without increasing the wall thickness.
- › Special solutions for upon-rafter insulation of pitched roofs were included in the delivery program.

2018

- › The solutions available for the applications described above are being further optimized and upgraded.

North America**2017 and 2018**

- › North America is working continuously on the development of new products and system solutions that facilitate compliance with the new energy standards (International Energy Conservation Code, IECC) and offer a higher degree of energy efficiency.

Pipelife**2017**

- › Pipelife continuously optimized and enlarged the range of planning tools that can be used to measure the heat loss and the heat requirements of individual residential units and entire buildings as a basis for the design of more efficient heating systems.

2018

- › The range of products available for these applications is being further enlarged.
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