

CIRCULAR ECONOMY IN ACTION

The building and construction industry uses half of all new resources and generates more than a third of all waste in the European Union. The building chain has an imperative to stop and reverse this unsustainable trend. At Knauf Insulation we are focusing on better resource use through reduction, reuse and recycling.

RAW MATERIALS AND SECONDARY MATERIALS

Sustainable wood: Heraklith Wood Wool materials are sourced from mostly Forest Stewardship Council (FSC) woods which are managed sustainably.

Saving trees: In the UK we've trimmed the weight of our wood pallets by around **2kg** per pallet – saving approximately **5,000 trees** a year.

Great suppliers: We work with our suppliers to ensure the best quality materials from sustainable sources and ISO 14001 standards.

Recycled glass: Our Glass Mineral Wool is made up of **80% recycled glass**.

New glass plant: A new recycling facility next to our UK St Helens site annually recycles **350 million household bottles** into insulation. The Knauf Insulation/Veolia venture will also save **375,000 miles** in transportation.

25% recycled rock: At our Nova Bana plant in Slovakia a quarter of the raw materials used are constituted of recycled steel slag.

CONSTRUCTION PRODUCTS MANUFACTURING

Reduced energy: In 2017 our energy use was down by 20.6% and CO₂ emissions were reduced by 20.7% compared to 2010.

Zero waste: We aim to reduce waste to landfill to zero across our company by 2020. Since 2010 we have cut our landfilled waste by **64.9%**.

Less packaging: Since 2014 we have used thinner film, reducing consumer waste by **27%**.

Sustainable standards: International Management Standards at production sites: ISO 9001 (Quality Management), ISO 14001 (Environmental Management), ISO 50001 (Energy Management) and OHSAS (Health and Safety Management).

RECYCLED SUCCESS

Three key figures highlight how innovative resource use is helping us drive our circular economy success:

85% of the materials used to create our bio-based ECOSE binder is derived from rapidly renewable materials

Up to **80%** of recycled glass is used in our Glass Mineral Wool with ECOSE Technology

Since 2010 we have reduced our waste to landfill by **64.9%**

MANUFACTURING WASTE

Recycled board: When multi-layer boards are damaged, we cut out and recycle the different elements.

TRANSPORT

Reduced distance: We cut transportation distances. For example at our Tyumen plant in Russia we sourced suppliers just 30km from the plant and increased our storage to reduce deliveries.

Train gain: In the Czech Republic, we switched from road to rail and saved **424 tonnes** equivalent of CO₂ in the first 15 months.

VALORISATION/BY-PRODUCTS

Ceiling tiles: In just three years we **doubled** the amount of end-of-line secondary material from our Glass Mineral Wool plants that is being re-used by our sister company Knauf AMF to make ceiling tiles.

Wonder Wool: Thermo O46 Blowing Wool produced at our Lannemezan site is created from recycled end-of-life ECOSE Mineral Wool.

CONSTRUCTION AND DEMOLITION

Going Dutch: We support De Groot Vroomshoop, a Dutch prefabricated building company, reusing waste insulation off-cuts. Material is compressed, valorised and 'downcycled' into secondary insulation for bricks.

Recycling support: Using online guides, we work with the European Insulation Manufacturers Association to promote the recycling of Mineral Wool from buildings to be deconstructed.

Insulation reuse: In New Zealand, we supported a project to insulate homes using off-cuts from demolition sites.

Sandwich success: A new wall system, ECO-SANDWICH in Croatia, uses our Mineral Wool with ECOSE in addition to recycled demolition waste.

Trim back: At our Skofja Loka site in Slovenia, the plant reuses up to **7%** of Rock Mineral Wool trim returned from customers.

SAVING FUTURE ENERGY

Today a unit of energy used to manufacture a typical Glass Mineral Wool product

saves 570 units in its 50-year use phase. In 2008 one unit saved 489 units – that's 16% more today compared to 10 years ago.



LIFE CYCLE ASSESSMENTS

"We are seeing growing awareness of what actually makes a sustainable building. Schemes are placing more emphasis on the whole life cycle of buildings – and the products they use – and more importance on issues such as circular economy, well-being, life cycle costing, water use, comfort and indoor air quality. Until recently, the focus was on the use phase of a building with, for example, data about water and energy use. Now data about the environmental impact of construction products during their production, installation and future removal is absolutely essential."

Jean-Pierre Pigeolet, our Products and Buildings Sustainability Manager.

