

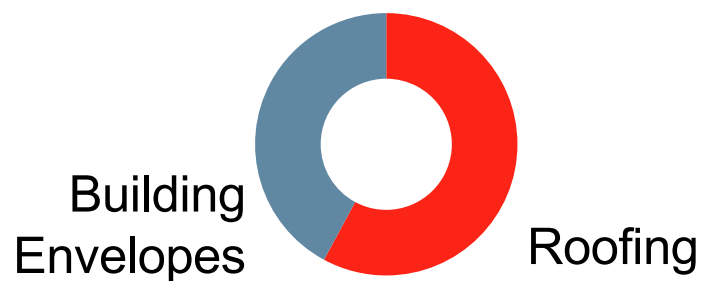
Towards carbon neutral building products

Sustainable growth together with customers
Ruukki Construction – Building Envelopes | 2023

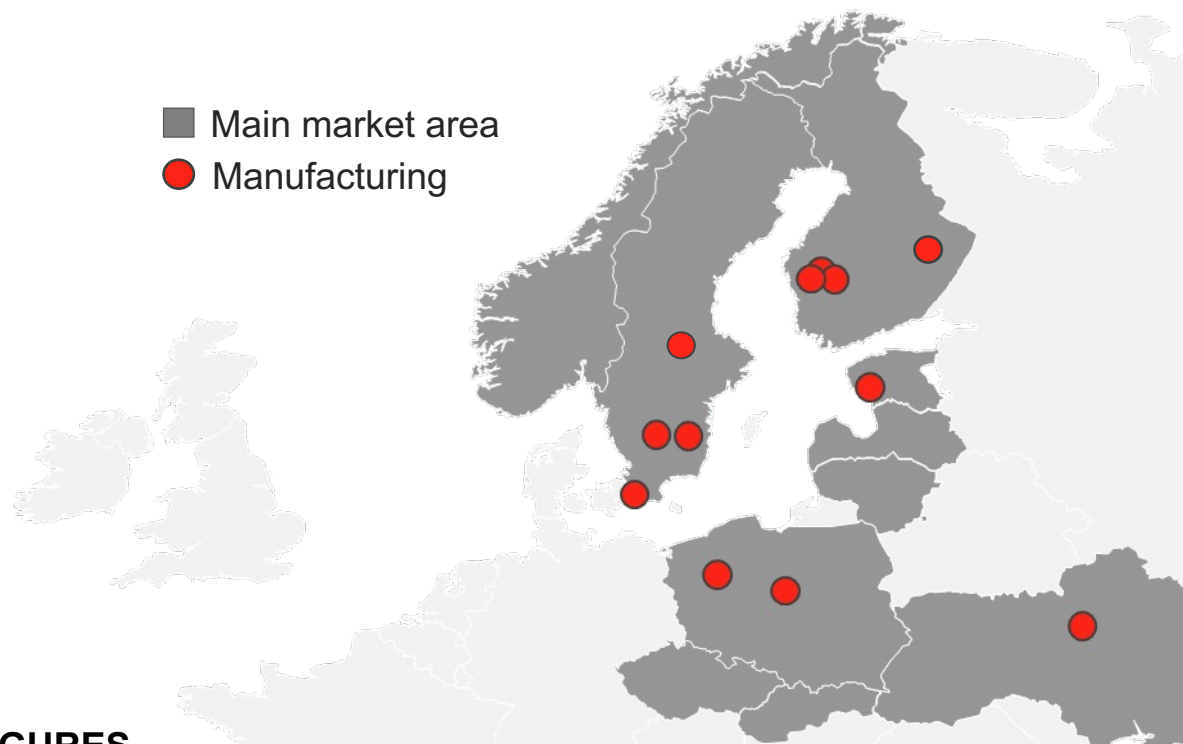
Ruukki Construction in brief

Daughter company of SSAB

NET SALES BY BUSINESS



- Main market area
- Manufacturing



FACTS & FIGURES

646

Net sales 2022 €m

12

Manufacturing sites

1 500

Personnel

46

Net Promoter Score

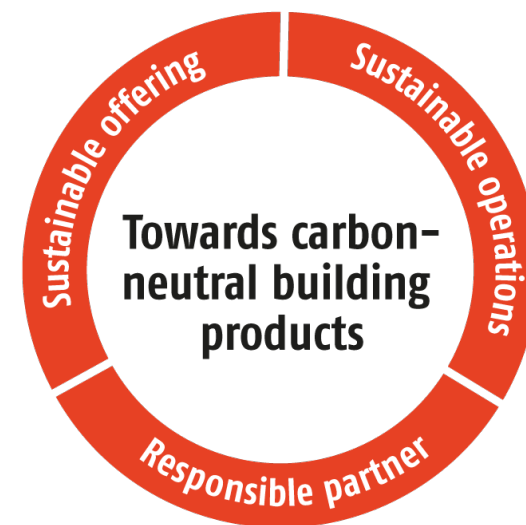
The background of the slide is a photograph of a calm body of water under a hazy, blue sky. In the middle ground, a small, dark island is covered with trees. On this island, a modern building with a dark, gabled roof and large glass windows is illuminated from within, casting a warm glow. To the right of this building, on a smaller patch of land, is a small, simple wooden hut. In the far distance, another island is visible, featuring a small, white, two-story house. The overall atmosphere is peaceful and natural.

Our mission:

Together we transform how future
buildings are made for the wellbeing
of people and environment.

We help reduce the carbon footprint of buildings by

- ▶ **Reducing the environmental impact** of our operations
- ▶ **Delivering sustainable building products** with minimized carbon footprint
- ▶ **Acting responsibly and developing our way of working** to ensure that we have safe operations, engaged employees and satisfied customers



Ruukki focus areas in sustainability

CLIMATE CHANGE

Carbon (production & in use)

Energy efficiency (in use)

Extreme weather

BIODIVERSITY

Resource efficiency

Land use

Water

Urban nature solutions

CIRCULARITY AND RESOURCE SCARCITY

Use of circular raw materials

Durability and extended lifecycle

Circularity at end-of-life

HEALTH AND WELLBEING

Safety, value chain transparency and ethics

Indoor environment and life quality

Aesthetics

Our life-cycle approach



Case: Ruukki® Patina panel

- A Cor-Ten® steel faced
and elegant sandwich
panel

Project: Padelarena Östersund, Sweden

Raw-materials

- SSAB steel, 20% lower CF than Global average
- Light-weight Life-insulation with over 70% recycled content

Manufacturing

- Green electricity
- Insulation scrap reduced by 30%, rest used as blowing wool

Transportation

- Green transportation available based on bio-diesel

Installation

- Light-weight product enables site electrification
- Trainings for air-tight installation

Building use phase

- Available as part of Ruukki® Airtightness - saving heating energy even 30%
- Self repairing feature for scratches - no maintenance need and long service life

End of Life

- Robust Cor-Ten® face enables easy panel re-use
- 100% recyclable steel in the end of life



Building use phase

Wellbeing of buildings and users





Case: Ruukki® Sound Environment solution

Wellbeing. Life cycle features and costs.

- Embedded in a building envelope.
- Better acoustic enables better comfort, safety and productivity in the premises.
- Enables building adaptability to different uses.
- Simple structure with low investment and installation cost.
- Up to Class A absorption roof structures based on our perforated load bearing sheets.
- Lower carbon footprint compared to add on absorption solutions.
- No maintenance need.
- Fully recyclable steel profiles.

Products

Energy panels, Accessories.

Our promise

Air tightness promise.
Money back -guarantee.

Services

Energy calculation.

Installation support

Trained and certified installers.
Wide installation network.

Details

Airtight details.
Climate change considered.
Tested structures.

With Ruukki Airtightness Package you get

- Complete end-to-end solution from simulation to installation.
- CAPEX and energy cost reductions.
- Up to 30% lower emissions in heating
- Savings in insulation means lower production phase CO₂
- BREEAM & LEED credits & better energy class (E) for the building.

Circularity



Recycled material in production

Recycled content in Nordic SSAB steel is about 20% including internal scrap.



Source: SSAB

Recycled glass is used in Life panel insulation over 70% of the weight.



Source: Isover

Our own PIR-formulation contains a raw material that uses 50% recycled PET.



Source: EFSA

A person wearing a high-visibility yellow safety jacket is holding a large roll of mineral wool insulation. The roll is cylindrical and has a blue and white striped pattern. The background shows a factory environment with concrete walls, pipes, and a corrugated metal wall. The floor is covered with a layer of mineral wool scrap.

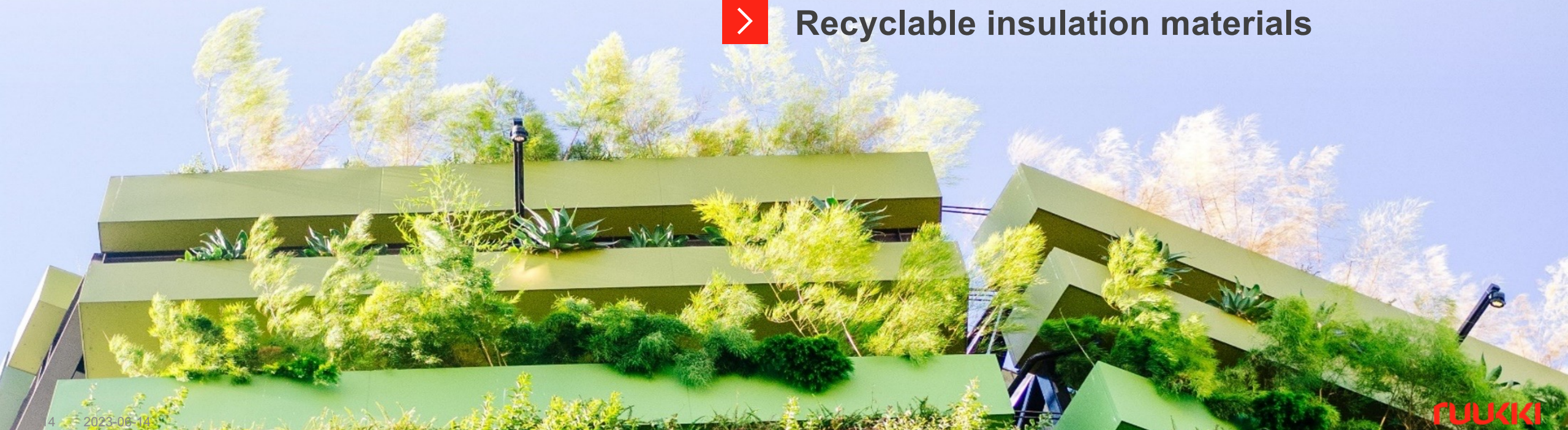
Utilization of production scrap

- All mineral wool scrap from Alajärvi panel production is utilized as blowing wool insulation by Ekoexpert company.
- Mineral wool scrap from the Oborniki panel factory is sent back to mineral wool factory as raw material for new products.
- All steel scrap from all factories is recycled and utilized in steel production reducing iron ore need and decreasing CO₂-emissions.

Source: Ekoexpert

Less waste thanks to re-usability and recyclability

- > Long service life – up to 60 years
- > Products easy to dismantle, re-install and re-use for building modifications
- > Building product data and CE-markings available through BIM
- > Products based on **100% recyclable steel**
- > **Recyclable insulation materials**



The image shows a large industrial building under construction. The top half of the image shows the exterior steel frame and roof structure, while the bottom half shows the interior of the building, which is a large, open space with a high ceiling and a complex steel truss system. The text "Case: Reuse of load bearing sheets" is overlaid on the image in a large, white, sans-serif font.

Case: Reuse of load bearing sheets

Photo: Reusing of steel frame and load bearing sheets

- Easy to dismantle especially by using screw connections.
- Re-design and reuse is possible after identification of the sheeting type and strength.
- Good example in Urjala S-Market, Finland where total steel frame including load bearing steel sheets were dismantled from 80's commercial building and reused in the new market building.
- Reuse becomes easier thanks to CE-marking and building product data available through BIM.

Design phase



Construction phase



Building use phase



End of life phase



Join the carbon neutral journey with us.

Support for life-cycle planning

- ✓ Environmental Product Declarations (EPDs) available at [ruukki.com](https://www.ruukki.com)
- ✓ Help with certifications
- ✓ BIM data for lifecycle design
- ✓ Tools for optimizing energy, cost and CO₂

Lower embodied carbon emissions

- ✓ Low carbon product portfolio
- ✓ Optimized offering with light weight products
- ✓ Less insulations needed due to excellent air-tightness
- ✓ Minimized emissions from transport
- ✓ Easy and safe installation

Sustainable buildings and wellbeing for people

- ✓ Long service life - durable and maintenance free building envelopes
- ✓ Comfortable and energy-efficient buildings thanks to airtight envelope solutions
- ✓ Acoustically pleasant buildings with sound environment solutions

Less waste thanks to reusability and recyclability

- ✓ Product re-usability in building modifications
- ✓ 100% recyclable steel
- ✓ Recyclable panel insulations




Coming in near future

Ruukki® “Lightfoot” offering roadmap

CO ₂ reduction	2023	2024	2026
SPA 230E (stone wool panel)	-50%	-80%*	-85%
SPA 200E LIFE (glass wool panel)	-	-55%*	-70%
SP2E 120 PIR	-	-55%*	-80%
Light weight steel products	-	-80%	-90%

*It's possible to reach lower carbon footprint than in timber wall element

Estimated reduction for A1-A3 GWP_{total} (all compared to 2022 values)



With focus on the wellbeing of people and environment

Fossil-free steel

By 2026, We will be the first to offer fossil-free steel products for roofs and walls. The total carbon emission of these products will be reduced by around 85%

Carbon neutral industry

We reduce the carbon footprint of our operations by 25% by the year 2025 compared to 2019. We are there already!

Close to our customers

We optimize our green logistics to be as close to our customers as possible. Local production reduces the need for transportation and associated emissions.

Efficient & health building use phase

Our airtight envelope solutions reduce energy consumption and our acoustic solutions improve wellbeing

Circularity

We increase of recycled raw materials and utilize production scap for new products. Our products are easy to reuse and recycle.

NUKI

Building your tomorrow.