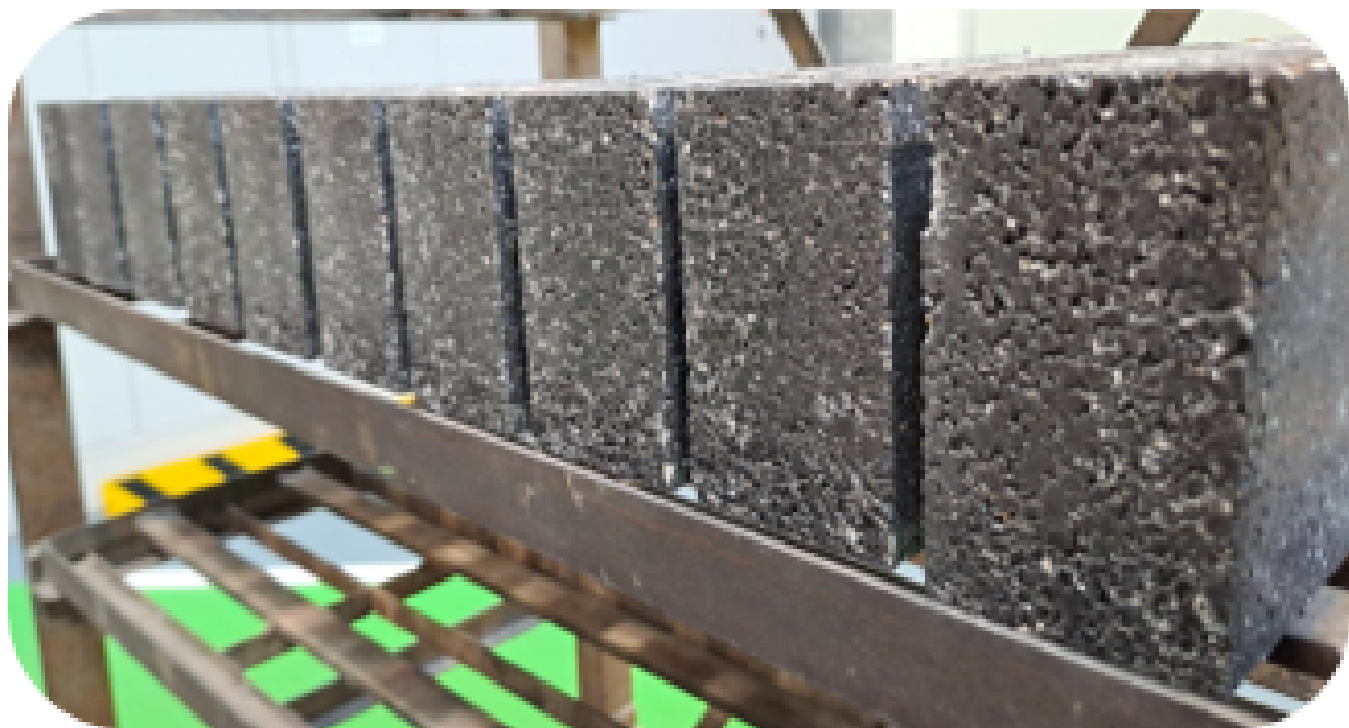


Boosting Recycling Rates in Low-Carbon Refractory Products

Fact sheet

Description of the result

The recycling rate in low carbon refractory products is increased to 40% by using recycling material below 1 mm which is pre-processed by an innovative comminution technique and the multi-chamber separator. The depletion of the carbon content in the coarser fraction and the enrichment of carbon in the finer fraction enables the production of well performing low carbon recycling products for the steel industry.

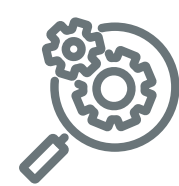


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Problem addressed

Conventional comminution and manual sorting technologies generate agglomerates within circular raw materials for recycling, accompanied by high carbon content in the coarse fractions, which limits the reuse in low carbon recycling bricks.



Main features & benefits

The improved liberation of carbon matrix by optimized pre-processing technologies in combination with a multi-chamber separator enables the generation of tailored circular raw materials, separating carbon-enriched from carbon-depleted fractions. This results in improved brick properties, e.g., density and porosity while increasing the share of recycled content.

Contact & Further Information

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Environmental Benefits

- 40% recycling rate
- 100% graphite substitution in low carbon bricks
- Significant CO₂ savings by replacing virgin raw materials



Who Is Leading the Development?



RHI MAGNESITA



Prospects for the future

- Targeting TRL 6 (brick prototype produced by pilot trials in the plant)
- Transfer to additional carbon bonded refractory materials
- Deployment of the separation technology within PHOENICS



Scan to learn more about SINTEF





Technical facts

- TRL 4: Lab trials
- Processed particle sizes: < 1 mm
- Physical brick properties: density ↑ . porosity ↓
- Homogeneous carbon distribution in the brick matrix



Scan to learn more about RHIIM

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