



7 Steel Nordic, Norway

Melting expectations

From recycled rubber to reduced emissions – 7 Steel Nordic and Genan are reshaping steelmaking for a cooler planet. And have already done so for years...

To most people, rubber and steel may not seem like an obvious match. But in the heart of the Norwegian fjords, a surprising partnership is helping to make steel production more sustainable.

Because at 7 Steel Nordic's steel plant, recycled rubber from end-of-life tyres is being put to good use. Today, as much as 40% of the carbon injected into the furnace can be replaced with Genan recycled rubber – and they have only seen positive results across the board. This shift has helped optimise the steel melting process, making it both more efficient and more sustainable.

"We see several benefits using recycled rubber in combination with anthracite," says Per Johan Högberg, Environmental Manager

at 7 Steel Nordic Manufacturing. *"We started using it years ago after a research project showed potential emission reductions. Since then, we've also discovered the biogenic carbon content in rubber to be a real advantage."* In short, that means less fossil CO₂. Fewer harmful emissions. And one less reason to dig into nature's limited resources.

7 Steel Nordic's production is based on Electric Arc Furnace technology, which uses scrap metal instead of virgin materials. It's already a more sustainable approach – and adding recycled rubber from Genan makes it even better.

The rubber is mixed with a traditional carbon source and added to the furnace. It helps create a foamy layer of slag on top of

the molten steel, which improves energy use and protects the furnace itself. This method may sound like a complicated adjustment but is actually a simple idea that has slotted smoothly into 7 Steel Nordic's existing process using their existing equipment and this way making a real difference – without major changes or complications.

"We do not use virgin ore. We use something that has already been used before," says Per Johan Högberg. "It's good for emissions. And it's good for the planet."

Even small changes can make a difference. In early tests, 7 Steel Nordic observed lower emissions of dioxins – a type of air pollutant – and found that using rubber helped reduce the overall carbon footprint of the process.

While many steel producers are still searching for more sustainable solutions, 7 Steel Nordic has already been working with this setup for nearly a decade. The know-how and the results are already there. Results, that speak for themselves. And they're not stopping there...

With promising results, the steel company is now looking into increasing the share of recycled rubber in the mix. As a next step, they will also continue measuring the biogenic content to better document and report emission savings, not only for compliance, but as part of a broader ESG commitment.

At Genan, this is seen as a step in the right direction, and part of something much bigger.

"Our recycled rubber is used in a high number of functions, and we're happy to have a diverse application span," says Thomas Ballegaard, Group CCO at Genan. "We are also striving to expand this application base all the time, and basically the only limit is our imagination."

From playgrounds to highways, from binders to steel, Genan rubber helps replace virgin materials with recycled ones. It's a small but powerful example of how the company works to give used resources a second life – which is, in fact, the larger mission.

And this mission also means challenging assumptions about how recycled materials are used today and can be used in the future. *"Some might assume that rubber would simply burn away in the furnace, but that's not the case,"* Thomas Ballegaard explains and adds:

"Using recycled rubber in steel production doesn't necessarily mean that we burn it. Because it's used in a precise, technical way that helps the process perform better. And it's a great example of how circular thinking can be applied even in heavy industry".

Both 7 Steel Nordic and Genan know that the future of industry depends on our ability

to rethink the materials we use and reuse them in smarter ways. When waste becomes a resource, and when innovation aligns with sustainability, real progress happens.

The collaboration between 7 Steel Nordic and Genan is a reminder that even long-term improvements can feel simple when the right idea meets the right mindset.

What started as a research project has quietly become a proven solution that fits right into everyday operations. So, when recycled rubber meets steel, it doesn't just lower emissions – it melts expectations.

Thomas Ballegaard
Group CCO, Genan



About 7 Steel Nordic

- 🌿 700,000 tonnes of steel produced in 2022
- 🌿 770,000 tonnes of steel recycled per year
- 🌿 22 work centres and 1,400 employees (including subcontractors)
- 🌿 7 Steel Nordic consists of:
 - 7 Steel Nordic Manufacturing (formerly Celsa Armeringsstål)
 - 7 Steel Service (formerly Celsa Steel Service)
 - 7 Steel Nordic Recycling (formerly Celsa Recycling)

