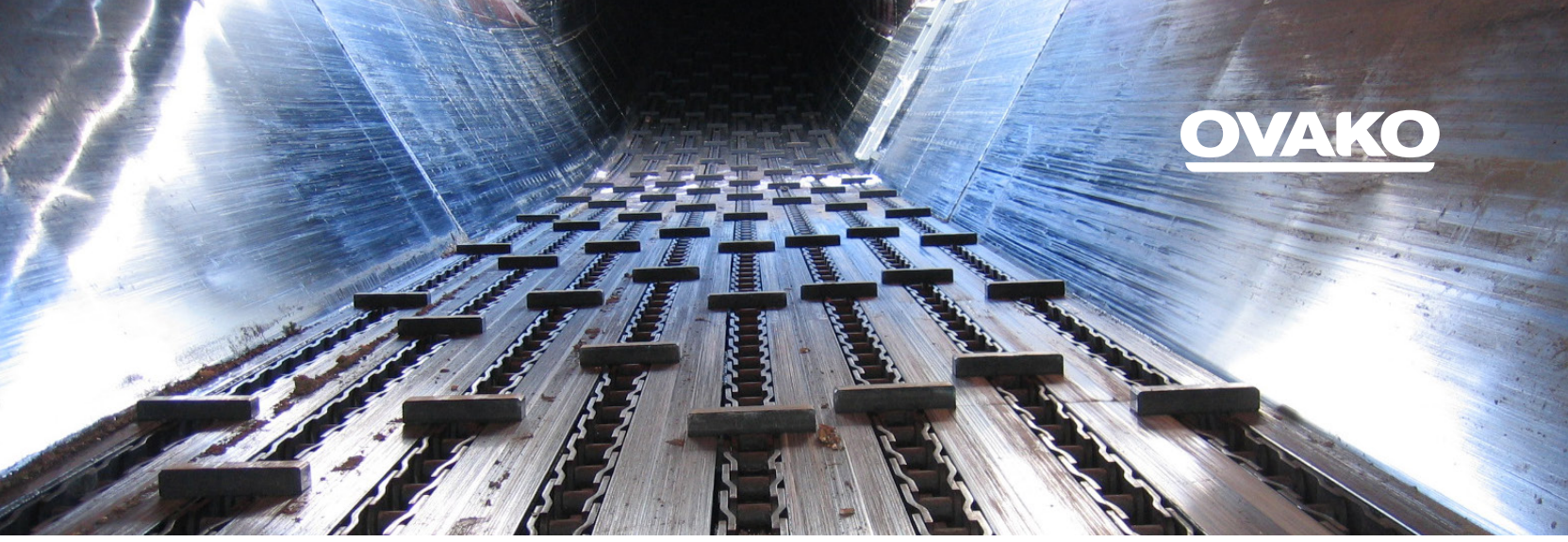

CASE STORY · WR-STEEL®, BORON STEEL · FB KETJUTEKNIIKKA OY

BUILDING A STRONGER CHAIN

When FB Ketjutekniikka Oy, Europe's leading conveyor chain manufacturer, started using FB1000 boron steel, a WR-Steel® branded grade from Ovako, the result was a more wear-resistant product expected to last up to 10 years. That's significantly longer than those of its competitors.

Not many companies that have successfully developed a world-class product are willing to risk changing a successful formula. But two years ago FB Ketjutekniikka Oy, Europe's number one manufacturer of conveyor chains, decided to upgrade its steel to make their chains even stronger.

"In addition of technical and application features, the life time cost should play an important role, when selecting a chain. If you can run a chain longer, you won't need as many maintenance shut downs or chain changes and you can keep your costs down," explains Matti Vekkeli, Managing Director of FB Ketjutekniikka.

FB1000, a type of boron steel developed in close consultation with Ovako metallurgists, is significantly harder than standard construction steel, which FB Ketjutekniikka had once used and which most chain manufacturers use today. FB1000 is a highly wear resistant, weldable and heat treatable steel with a high breaking load. The bottom line: chains built with FB1000 last longer and are more reliable.

Based in southwestern Finland, FB Ketjutekniikka annually produces 5 million link plates or the equivalent of 300 kilometers of customized, top-of-the-line conveyor chains – enough to cover the distance between Rome and Milano or New York and Boston. Their customers range from pulp and paper plants and furniture production companies to recycling and mining companies. All of their production or processing lines operate in extremely challenging environments.

"If our customers are looking for a long-lasting chain that can withstand the aggressive environment and high temperatures and sand, then our chain is really the only choice for them," explains Vekkeli over the loud clanking and hole-punching sound as link plates are spat out by the production line.

Indeed, Vekkeli says his company's conveyor chains are capable of lasting up to 10 years – significantly longer than the six-year average for most chain manufacturers. And so far the indications are very favorable.

Matti Vekkeli,
Manager Director,
FB Ketjetekniikka Oy

But developing the steel required a close, two-year joint effort with Ovako, a company they have worked hand-in-hand with during a 70-plus year-old partnership. Today, Ovako is the sole steel supplier to FB Ketjutekniikka.

"When we started this process a few years ago, we had Ovako sales people and metallurgists meet here to come up with a solution. During this process, they did three test batches and we had some issues with the smaller dimensions, 8, 10 and up to 12 mm, but we eventually solved that problem too."

As the company's Purchaser, Tuomas Pohjalainen, has worked closely with Ovako on delivery, quality and other technical issues. "In my opinion, the technical support has been superb," he says. The FB1000 recipe, however, remains a closely guarded secret.

When the FB1000 steel flats are delivered to the customer's factory in Köyliö, the lengths are cut into link plates, punched and machined before being sent to a third party for heat-treatment. Once these hardened links are returned to the factory, they undergo shot peening and are finally welded and assembled into a customized chain built of plates, bushes and pins.

Although the chains made from FB1000 have not been on the market for more than a year and a half, all tests by the company and Tampere Technical University, a highly regarded research institute, have surprassed expectations.

For example, breaking loads on FB1000 are twice those of standard steels and, after heat treatment, it is three times harder. After all, adds Pohjalainen, hardness and wear resistance usually go hand-in-hand.

"Sure, it's a new product and sometimes the field conditions is different from the test environment," says Vekkeli. "But we get more information from the field all the time and the test results have exceeded our expectations."

Tuomas Pohjalainen, Purchaser, Ketjetekniikka Oy

Key advantages of WR-Steel®

WR-Steel, which stands for wear resistance steel, includes a broad range of grades such as FB1000 characterized by wear-resistance and a high degree of wear and tear.

- Proven superior wear resistance
- Broad range of hardness intervals (400–650 HB)
- Right properties after rolling or heat treats
- Cost-effective due to optimized alloy content for different end-applications
- Wide range of steel grades in different dimensions
- Reliable partner with centuries-old steelmaking heritage

Ovako facts and figures

- A leading producer of engineering steel for customers in the bearing, transportation and engineering industries
- Products: low-alloy steels and carbon steels in the form of bars, tubes, rings and pre-components
- Locations: Ovako has ten production plants and a number of sales companies in Europe, Asia and the USA
- Net sales 2017: EUR 921 million
- Employees: 3,040

FB Ketjutekniikka Oy facts and figures

- Based in Köyliö, Finland, FB Ketjutekniikka
- Part of the FB Group, owned by Swedish listed company Addtech AB
- Scandinavia's leading manufacturer and supplier of high quality conveyor chain, sprockets and attachments for a wide range of industries.
- First chain manufacturer in Scandinavia fully accredited to ISO9000
- Sales growth of 20 % over past 5 years
- Exports to over 30 countries
- Employs 70

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