

CASE STORY · SZ-STEEL · GUNNEBO INDUSTRIES

SAFE LIFTING IN LOW TEMPERATURES

High winds, rough seas and sub-zero temperatures are not ideal conditions in which to lift heavy containers from a ship's deck or oil platform. But this is the environment in which offshore crews and crane operators often work, pushing the limits of safety and the strength of the weakest link in the proverbial chain.

Gunnebo Industries, a leading global manufacturer of high quality offshore and onshore lifting and lashing equipment, knows exactly what it takes to produce the equipment offshore crews can count on. In keeping with their products' reputation for strength and reliability, the company has long trusted Ovako to deliver the right steel.

"Ovako supplies us with the quality steel required to produce the high standards we deliver and that our customers expect," says Mats Jeppsson, VP Head of Components. "We highly value our collaboration with both our suppliers and our customers, and we have had a lot of benefits being able to get Ovako's support with both technical and logistics issues."

A significant percentage of the steel bars from Ovako is intended for the offshore lifting products, which is designed to withstand subzero temperatures, shock loads and fatigue. These products – hooks, shackles and master links – are sold with the DNV (Det Norske Veritas) 2.7-1 certification, which



Mats Jeppsson, VP Head of Components, Gunnebo Industries

means they are approved to function safely in temperatures as low as minus 20°C. Gunnebo Industries goes a step further by developing and certifying their products' performance at minus 40°C.

"Our commitment to quality runs throughout the organization, starting with where we source the raw material to how we treat each product at every step of the production and the testing process," explains Jeppsson. "Everyone in the organization is trained and fully aware of our quality way of thinking."

A large amount of Gunnebo Industries' products are manufactured at a new, 10,000 square meter state-of-the-art factory in Växjö, southern Sweden, where forging, heat treatment, machining, assembly, testing and painting take place under the same roof. Here, two types of Ovako steel bars – highly specified SZ-Steel® (sub-zero) for off-shore products and standard bars – are developed into the Gunnebo Industries master links and forged components. A factory in Lonevåg, Norway, specializes in producing shackles and blocks; sheaves and swivels are produced in the U.S.

As Jepsson points out, the Ovako steel bars must fulfill specific characteristics, particularly the more highly specified SZ-Steel. These include non-metallic inclusions, grain size and impurity requirements.

The details of each delivery are included in inspection certificates that Ovako delivers to Gunnebo Industries, providing traceability and assurance about the quality of the steel and of the process used to produce it. These certificates also include the results of tests that measure the steel's toughness, tensile strength, elongation and hardness.



In combination with the state-of-the-art technology at the plant, many steps in the production process are handled manually to ensure that each component meets the quality standards. The manual process enables the handling of small batches of components, each of which requires a change in tools. The factory produces nearly 1,000 different forgings per year.

Traceability codes are stamped onto all products, enabling the company to trace the product all the way back to the raw material, providing additional assurances for the customer and end-user.

Rigorous testing is also fundamental to the Gunnebo Industries brand's reputation for safety. To reassure the customer that there are no faults, such as subsurface cracks and heat treatment irregularities, each individual product is proof-loaded to 2.5 times their working load limit and visually inspected by competent personnel. This is considered the most reliable testing method, but it is also supplemented with magnetic particle inspection.

"In the end, what all this boils down to is safety," Jeppsson says.

About SZ-Steel

SZ-Steel is a family of Ovako steel grades with low impurity levels and controlled grain size, well proven and tested to retain their key properties in sub-zero conditions.

The benefits are:

- Enables the application of high-strength solutions at sub-zero temperatures.
- Enables design that creates safety for workers, service crews and the environment.
- Retains key material properties and offers reduced risk of embrittlement and fracturing.
- Meets key global safety standards.

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 sites and a number of sales companies in Europe and the USA
- Net sales 2014: 862 MEUR
- Employees: 2,925

Gunnebo Industries facts and figures

- Headquartered in Sweden, Gunnebo Industries is an international company and a global leader within the lifting- and material handling industry.
- Products include crane blocks, wire rope sheaves, chain and lifting components, shackles and lashing products, among others.
- Manufacturing units are located in Växjö, Sweden; Gunnebo, Sweden Tulsa, Oklahoma, US; and Lonevåg, Norway.
- Gunnebo Industries founded in 1764 in Gunnebo, southern Sweden, as a company manufacturing nails, belts, belts and iron for shipbuilding.
- Owned by Segulah, a Nordic private equity firm.

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