SSAB READY TO ROCK 'N' ROLL

SSAB'S EXPANDABLE ROCK BOLTS HAVE BEEN USED IN INTERNATIONAL MINES FOR YEARS. NOW, THE OEM IS EXPANDING ITS OFFERING INTO AUSTRALIA.

unnelling deep into the ground to extract valuable ore can be a dangerous job. Knowing this, SSAB developed its expandable rock bolts (ERB) to help miners secure the rock roof and avoid harmful accidents when heading underground.

Through supplier Cimertex, metals mines in Portugal have been using SSAB ERB for several years and have found that no other bolts can match up.

"From our experience with mining and tunnelling, we looked for the best quality ERB available to distribute and contacted SSAB," Cimertex executive director Álvaro Bastos said.

"Our SSAB ERBs are by far the market leaders because of quality and logistics."

A primary feature of the SSAB ERB is how quickly the bolts can be installed. Once a hole is drilled, the folded rock bolt can be inserted and expanded with water from a high-pressure pump.

As soon as the bolt is expanded, it is squeezed against the rock, meaning operators don't have to wait for any grout or resin to harden.

This also means operators aren't having to work with dangerous chemicals contained in resins or grout. The pure steel bolts can also remain in the rock without contributing negatively to the natural environment.



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"There are just four easy steps to securing the SSAB ERB," SSAB said.

"First, the hole is drilled to a necessary length. Then, the bolt is inserted and a pressure pump is attached to expand the pipe. Finally, the pump is removed and the rock is secured."

SSAB ERBs have been reliable tools for Somincor, the company that operates the Neves-Corvo underground copperzinc mine in Portugal.

"SSAB ERBs fits our needs regarding our safety standards and the fact that we do not feel the necessity of change, because operational and performance issues prove that this support has been fulfilling our operational requirements," Somincor head of rock mechanics Rodolfo Machado said.

"The fact that the industry is moving in a sustainable direction also speaks strongly for this technology."

SSAB controls the entire production chain of the SSAB ERBs, meaning the product is always trustworthy and stable. "Each production stage from steel manufacturing to profiling and assembling of rock bolts is covered by SSAB's own production and quality control chain," SSAB said.

"Each individual bolt is marked with a unique code, which enables full traceability."

SSAB ERBs are employed in mines all over the world, including at the Jokisivu gold mine in Finland.

Dragon Mining, the company that operates Jokisivu, is currently mining at a depth of 645m and trusts SSAB ERBs with its rock support.

"We prefer inflatable bolts instead of split set bolts due to availability issues of split-set in the Nordic region," Jokisivu mine manager Timo Ridaskoski said.

"It's also easier to run one bolting system rather than two. We can get the bolts directly from SSAB in Sweden, which secures our supply of bolts."

An innovative concept, the SSAB ERBs feature high-quality Nordic steel and guarantees a minimum breaking load.

The bolts also go through eddy current non-destructive testing, inflation tests and flattening tests to ensure they are safe to use.

SSAB explained exactly how the ERBs work.

"The bolt forms a mechanical interlock between the borehole wall and the bolt over the full bolt length," the company said.

"When the SSAB ERB is inflated it also contracts in the bolt length which effectively tensions the bolt's face plate against the rock surface.

"The rock bolts are designed to accommodate large rock movements and still maintain their high load bearing capacity. SSAB ERB is suitable for both manual and mechanised installation."

Having been used by miners across the globe for decades, SSAB is excited to bring this offering to the Australian mining industry.



Better weldability with SSAB's Hardox

A long-standing customer and partner of SSAB products through the registered Hardox[®] In My Body program, Chris's Body Builders has access to not just quality steel but exclusive member benefits.

One of Australia's premier tipping equipment manufacturers, Chris's Body Builders (CBB) has been sourcing SSAB steel for over 20 years for its tipping bodies and tipping trailers to cover all areas of tipping transport industry. Throughout this time the tippers have become a bit bigger but using SSAB material has allowed CBB to expand its product range to become the one-stop tipper shop.

All of steel industry giant SSAB's Hardox[®] products guarantee tight thickness tolerances, tight flatness tolerances, and tight bending properties. CBB sources SSAB's Hardox[®] 450, which is available in thicknesses of 3.2 to 130 mm as plate, 2.0 to 8.0 mm as sheet, and 0.8 to 2.1 mm as CR sheet.

"The benefits of Hardox[®] wear plate is

the exceptional hardness and toughness, allowing it to better endure the extensive wear and extreme pressures common in heavy industrial environments," says Chris Debono, Chief Executive Officer of CBB. "Due to its unique level of toughness, Hardox[®] withstands heavy impacts, wear, and abrasion without cracking, denting, bending, or warping. These properties make it perfect for use in a wide variety of tipping applications," he adds.

"CBB stands by its product and guarantees that only the highest guality components and skilled craftsman produce a product which will stand the test of time and provide hassle free performance for years to come," Chris says. To achieve that benchmark the company ensures that each steel unit produced has Hardox in its body.

While managing the overall operations of the company, Chris remains very hands-on within the business and works very closely with his production team to build a quality product. He trusts the quality and reliability that SSAB's Hardox[®]450 delivers. Hardox[®] wear plate has shown that it is stronger, has better wear resistance, and is very good to work with from a weldability and fabrication point of view in comparison to other products in the market place. Our effort to improve and provide new products in different applications is the reason why we have stood by Hardox[®] for over 2 decades" he says.

Starting as a small family business located in the north western suburbs of Melbourne, CBB has gone from strength to strength in the past 40 years working

alongside their customers to not only build a vehicle to suit your needs, but a partner you can rely on to support you every kilometre.

As a Hardox[®] In My Body brand program member, CBB has direct and prioritised access to SSAB's resources for design and manufacturing with the Hardox[®] wear plate. "We are also excited to share with CBB on how our new range of Hardox[®] 500 Tuf steel can help them to deliver more payload and make their equipment lighter through thinner dimensions and less heavy wear packages while maintaining its high durability," says SSAB.

Chris' team enjoys many exclusive Hardox®In My Body membership benefits such as priority access to technical training and seminars, innovation support from SSAB Knowledge Service Centre, design and manufacturing advice, support for business development, WearCalc and WeldCalc calculation tools. Available for both mobile and desktop, the WearCalc application lets manufacturers quickly and easily calculate the relative service life for all Hardox[®] wear parts of different grades. Meanwhile, the WeldCalc app calculates and presents welding recommendations for both Hardox[®] wear plates and Strenx[®]



performance steels based on the welding method, the welding joint, steel grades

CBB has also gained logistical benefits by cementing its relationship with SSAB for all of its Hardox® wear plate needs. In fact, CBB was one of SSAB's first customers to begin using Hardox[®] steel in Australia. "We have been able to streamline our production by consolidating wear plate materials to one supplier and have seen productivity

and thicknesses, in a matter of seconds.

benefits from the improved weldability over other wear plates," Chris says. "We are grateful to work with a quality product that has never let us down. We are proud to mark our CBB logo on SSAB Hardox® products."

Contact

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High-strength steel holds the key to future success

SSAB's innovative high-performance Strenx steel delivers superior mechanical properties compared to aluminium, increased durability, better road handling, and overall design and production improvements for higher efficiency and lower operating costs.

The road freight transport industry is experiencing pressures like never before. It is not just transport business operators who are feeling the pressure, but truck and trailer OEMs, logistics providers and other market players are facing a heavy load of challenges due to operational and regulatory demands. A study by global commercial vehicle industry consultancy Roland Berger found that trends like new logistics, electrification of commercial vehicles and alternative drives, autonomous trucks, and evolution of digital technologies will affect the market in the coming years. The 2018 report 'Trends in the truck & trailer market' states

that technical capabilities and power to innovate are essential competitive factors that are gaining importance in the industry and will have the ability to make or break a business.

Currently the market is experiencing many uncertainties and challenges including driver shortages, digitalisation, inefficient processes, high fleet operations costs, and stricter emission standards. As a result, capability improvements and technical innovations are becoming the norm for transport operators, truck and trailer OEMs, logistics providers and other market players. Innovation efforts are put into high-performing, high-strength

steels that can make trucks and trailers stronger yet lighter. Strenx performance steel from SSAB is one such innovation. Strenx performance steel is used in trailers to address key challenges through the production of more competitive and cleaner running commercial vehicles. Strenx performance steel provides opportunities to develop equipment in a way that is not possible using conventional steel. Strenx steel in trailers helps significantly reduce the overall weight of the trailer, which results in increased payload, fuel cost savings, lower life cycle carbon footprint, and an increase in the operator's bottom line.





Trailer and tipper components made of Strenx in thinner dimensions compared to conventional steel are not just stronger but also lighter. This means they can take higher payloads, which reduces the number of trips required to move the same material. When the vehicle is unloaded, there is less overall weight, which reduces fuel consumption. Lower fuel consumption translates to environmental benefits and a lower life cycle carbon footprint.

SSAB's performance steel grades have been successfully used in trailer flooring and siding, in rear underrun protection devices (RUPDs), kingpin assemblies, drawbar couplings, and timber trailer stakes, bunks, and main load carrying structure (cross members and longitudinal beams). The most common grades used for trailers are Strenx 100, Strenx 700, Strenx 900 and Strenx 960.

Strenx performance steel is workshopfriendly and guarantees optimum performance. It has extremely consistent properties, ensuring precision and efficiency in the workshop. It is delivered with a set of guarantees for tight thickness tolerances, tight flatness tolerances and bending guarantees. These guarantees act as a safeguard for trouble-free production with every batch of material. Strenx steel can generally be processed by the same kind of machinery and technology used for conventional steel. Another benefit is that using thinnergauged steel in the workshop can reduce the cost of cutting, bending and, in particular, welding because less weld consumables are needed, and weld speed can increase.

Apart from designing industry leading Strenx performance steel, customer support drives innovation in steel technology at SSAB. The team is passionately dedicated to the business success of each customer, which is why SSAB provides not only high-quality steel, but also a high-quality relationship built on trust. The team conducts local customer visits and offers seminars and development projects. It also collaborates with businesses to help develop products that are stronger, lighter and deliver more value.

Choosing SSAB assures customers they will get the best support they can get. SSAB provides all customers complete design and development support. From material selection of specific products to collaborative design and innovation recommendations, production efficiency recommendations, specialist advice, and best-practice guidance. To ensure smooth production processes and help customers get more value from their vehicles, SSAB's Strenx performance steel is workshop-friendly and guarantees optimum performance.

specialists also provide support and know-how. SSAB's workshop fabrication support includes recommendations on welding and forming, tooling advice and the provision of trial material for testing or prototyping.

SSAB extends its high-performance, quality steel offering to customers through its My Inner Strenx brand program that allows certified members to market their equipment using the My Inner Strenx sign on equipment. The mark assures customers that their qualified products have been certified to meet the strictest quality control production techniques and highest published guarantees for highperformance steel. It has been proven that products in the My Inner Strenx® program also have a higher resale value.

Italian trailer manufacturer Mantella has designed an innovative trailer chassis using Strenx 960. The revolutionary chassis is 145 kg lighter than its aluminium predecessor, and has superior mechanical properties, durability, fatigue strength, and improved road handling. The design made Mantella a winner of the international Swedish Steel Prize in 2018.

Contact

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ADDS VALUE EVERY DAY, EVERY TRIP, EVERY LOAD

Strenx[®] performance steel can meet the challenges facing the transport industry, which is constantly looking for ways to increase payload and improve fuel efficiency. Strenx[®] is a high-strength structural steel with extremely consistent properties, making it perfect for designing trailer chassis and other transportation products that are stronger, lighter and safer. That's why we call it performance steel.

Explore the world of Strenx®



Contact SSAB Brisbane. Melbourne. Perth G1, 28 Balacalva Street Woolloongabba, QLD 4102 australia@ssab.com strenx.com





HARDOX[®] WEAR PLATE WORK<u>SHARDIN MINING</u>

The harder it gets, the more Hardox[®] abrasion-resistant steel shines. Thanks to its superior resistance to wear and dents, your mining equipment will last longer and need less maintenance. Hardox[®] 500 Tuf is a cutting-edge grade with a unique combination of hardness and toughness. This wear steel is so tough it can double as a structural material in heavy-duty mining dump bodies and buckets.

Safeguard your equipment's productivity with the world's leading wear steel. Learn more about Hardox® at hardox.com.

Contact SSAB Brisbane. Melbourne. Perth G1, 28 Balacalva Street Woolloongabba, QLD 4102 australia@ssab.com hardox.com





THE WORLD'S HE WORLD'S HE STEEL

Hardness and toughness work together to make Hardox[®] wear plate a leading abrasion-resistant steel. It's hard from the surface to the core, giving long service life and low maintenance even in the most extreme wear environments. It's also tough, which makes it possible to use Hardox[®] as a structural steel. If you are looking for the best in wear steel, make sure you get genuine Hardox[®].

www.hardox.com



SSAB



TIME FOR A TOUGHER BODY

Hardox[®] 500 Tuf is the latest grade of Hardox[®] wear plate. It combines the hardness of Hardox[®] 500 with the toughness of Hardox[®] 450. The wear resistance of Hardox[®] 500 Tuf makes it possible to increase the load capacity by using a thinner plate and still have the same outstanding service life. Or stay with the same thickness and increase service life by 30% or more.

Hardox[®] 500 Tuf can also double as a structural steel. Its high yield strength and toughness allow for lighter mining bodies that are resistant to dents and can take impact loads with less supporting structures.

Get the full story of Hardox® 500 Tuf at www.hardox.com



LIGHTER MINING TRUCK BODY

HIGHER LOAD CAPACITY

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LESS FUEL ON EMPTY RUNS

EXTENDED SERVICE LIFE

HARDOX® 500 TUF

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HARDOX® HIACE FIGHTS ACIDIC WEAR IN WASTE COLLECTION

The trend today is to build lighter waste collection trucks that save fuel and have higher load capacities. This puts special demands on the steel, which must resist corrosion from acidic waste. Hardox® HiAce is developed specifically for these types of aggressive loads. At lower pH levels, Hardox® HiAce can extend service life by up to 3 times in comparison with a conventional AR400 steel. Test has also showed that Hardox® HiAce can outperform ordinary stainless steel, such as SS304 by almost 20%.

Don't be surprised by unexpected corrosion. Secure your equipment's service life with Hardox® HiAce for acidic environments. Learn more at hardox.com.

HARDOX HIACE

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DON'T GAMBLE WITH PERSONAL SAFETY AND PRODUCTIVITY

Make sure you get genuine Hardox[®] wear plate

By using genuine Hardox[®] wear plate, you can be sure to get the guarantees, hardness, toughness, service life and reliable performance you expect from this premium wear-resistant steel.

Hardox[®] wear plate is produced by the Swedish steel company SSAB. Hardox[®] is only available through SSAB's own sales channels and in equipment produced by OEMs who are members of the quality program Hardox[®] In My Body.

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HARDOX® 500 TUF FOR HIGH PRODUCTIVITY IN MINING BI SAVE 25% WEIGHT IN MINING





