



Pioneering mining screener makes Vale a finalist for Swedish Steel Prize 2014

For developing a highly durable mining screener for iron ore in high strength steel, the Brazilian company Vale is a finalist for the 2014 Swedish Steel Prize.

The Swedish Steel Prize is awarded annually by SSAB, the global leader in high-strength steel and wear plate, to recognize the most innovative design utilizing high-strength steel. Vale, from Brazil, is one of four finalists for this year's prize, which will be awarded during a ceremony on November 20 in Stockholm, Sweden.



"It makes us proud to be selected as one of the finalists in an international competition of high-end engineering design such as the Swedish Steel Prize," said **José Cléber Rodrigues da Silva**, Engineering Maintenance Supervisor at Carajás, Vale's largest mining operation. "There was nothing like it before. The screener was created and developed to address the negative impacts of large blocks of iron ore on crushing plants."

The screener is formed by several 3 m x 3.30 m fixed grids with a shape specially designed to withstand the impact of large rocks and optimize iron ore flow. They are mounted on a two-meter-high 21 m x 18 m supporting structure, which in turn is placed on top of the ore hopper.

"The main reason for using high-strength steel was the combination of high hardness, excellent mechanical properties and toughness," said Rodrigues da Silva. "In addition, the hardness ensured wear resistance against the flow of iron ore on the screen."

The benefits obtained after only three months' use were much higher than expected. After this period, the reduction in downtime due to obstruction was 92% and the reduction in costs of losses arising from stoppages amounted to more than three times the value of the project.

The Jury's motivation

The Swedish Steel Prize Jury's motivation for selecting Vale as a finalist for the 2014 Swedish Steel Prize is:

"Utilizing Hardox 450, which combines strength and toughness with wear resistance, Vale has designed a new generation of screening grids for application primarily within large-scale mining and quarries. The grid geometry and the cutting of single plates are unique compared to that of traditional square patterned networks. This means the flow of ore through the grid is maintained despite larger objects being stopped. The new grid results in less downtime and easier maintenance, which in turn gives major economic benefits as well as environmental savings.

First awarded in 1999, the Swedish Steel Prize exists to inspire and increase knowledge surrounding the use of high-strength steel to develop lighter, safer and more sustainable products.

The winner of the Swedish Steel Prize will receive a stipend of SEK 100,000 and a trophy by Jörg Jeschke. The award ceremony is part of a three-day event at which approximately 600 international representatives from the global manufacturing and steel industry will participate in seminars and site visits at SSAB.

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