

voestalpine expands its Lightweight Construction Expertise to Railway Systems

The automotive industry considers the steel and technology group, voestalpine, a technology leader in the production of ultra-high tensile auto parts that are also particularly light. The Group is now applying its lightweight construction expertise to railway systems as well. In cooperation with the Rail Cargo Group, the cargo subsidiary of the Austrian Railways (ÖBB), voestalpine's Steel Division and Logserv, its logistics subsidiary, have developed "TransANT"—a novel design concept worldwide, specifically, freight cars equipped with a range of lightweight modular superstructures.

voestalpine supplies a complete system for the new lightweight freight cars that encompasses high-performance steels and the appropriate welding technology, both of which substantially contribute to the freight cars' lower weight and greater flexibility. For example, the undercarriage, which is about 20% lighter than conventional models, makes it possible to add loads of up to four tons per freight car. Stiff, ultra-high tensile section solutions for the cars' superstructures enable additional weight reductions. "Thanks to our innovative production and processing technologies, we can now also make an important contribution to greater sustainability in rail freight traffic. We have been an important development partner to the automotive industry for years whenever the issue concerns ever lighter and, at the same time, ever safer vehicles," Herbert Eibensteiner, Chairman of the Management Board of voestalpine AG, emphasizes. voestalpine supplies cutting-edge solutions made of ultra-high tensile steels for lightweight automotive construction. The Group's "phs-ultraform" product innovation — hot-dip galvanized strip steel and the process of turning it into press-hardened auto parts — has already become a new, worldwide standard for the manufacture of lightweight components that provide greater corrosion protection and improved crash performance. Premium automakers utilize components made of phs-ultraform for side members, A and B-pillars, struts in side walls and doors (crash-relevant components), as well as sills.

voestalpine is also forging new approaches to the design of the new lightweight freight cars: This is the very first time so-called topology optimization is being applied in the construction of freight cars. The technology, which so far has been used in automotive and aerospace construction, involves a software algorithm that works out a particular design proposal autonomously based on predetermined parameters. This yields a structure that combines minimum weight with maximum tensile strength.

Logserv (voestalpine's logistics subsidiary) is already using the initial batch of freight cars to carry out iron ore transports with great success. The freight cars' innovative lightweight design will make it possible to reduce the number of train trips by about 100 per year.

The voestalpine Group

In its business segments, voestalpine is a globally leading steel and technology group with a unique combination of materials and processing expertise. voestalpine, which operates globally, has around 500 Group companies and locations in more than 50 countries on all five continents. It has been listed on the Vienna Stock Exchange since 1995. With its top-quality products and system solutions, it is a leading

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partner to the automotive and consumer goods industries as well as the aerospace and oil & gas industries, and is also the world market leader in railway systems, tool steel, and special sections. voestalpine is fully committed to the global climate goals and is working intensively to develop technologies which will allow it to decarbonize and reduce its CO₂ emissions over the long term. In the business year 2019/20, the Group generated revenue of EUR 12.7 billion, with an operating result (EBITDA) of EUR 1.2 billion; it had about 49,000 employees worldwide.

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