

Stainless Steel-containing Tram Serves Alicante Coastline

Vossloh España has designed the first train-tram to be built in Spain. This new transport concept is fast, efficient, and less polluting than other modes of public transport. Developed in Alicante, the vehicle meets the needs of both train and tram travellers. New materials, such as modern stainless steels, were considered from the very first design concepts for this train-tram.

Stainless steel has been included in the production process due to its suitability for different parts of this project, particularly interiors and structural components. Few materials have the performance characteristics demanded by the railway sector. However, stainless has the mechanical characteristics, formability, and corrosion properties required. One of the main reasons Vossloh's materials engineers decided to use stainless is its great capacity to resist wear-and-tear, without losing its durability, or its aesthetic appeal.



Train-tram stop next to Alicante beach (Photo: Vossloh España)



Train-tram station in Alicante (Photo: Vossloh España)

Identifying the optimum materials mix was important to meet targets for passenger safety and low fuel consumption (and therefore low emissions). The materials selected had to be as thin and light as possible while ensuring they could fulfil their operational roles.

Because of its inherent strength, stainless steel can be thinner, and therefore lighter, than other materials while retaining its operational integrity. Vossloh España took this feature into account during the design of the train-tram.

A wide range of stainless steel grades were required for this project. Many of them have been specifically developed for use in various railroad-industry applications. Stainless steel is utilised for most of the external parts of the vehicle. Both ferritic stainless steels (such as EN 1.4003) and austenitic grades (such as EN 1.4301 [AISI 304]) are used.

The appearance, durability, mechanical properties and ease of cleaning increase the scope for stainless steel.

Vossloh España has used stainless for many parts of the internal furniture, bringing modernity in terms of design, and at the same time exceptional resilience.

Stainless steel offers reductions in cost, weight and energy use. These properties are essential for the success of stainless in rail transport and to ensure the sustainable growth of the railroad industry.



Train-tram interiors (Photo: Vossloh España)