

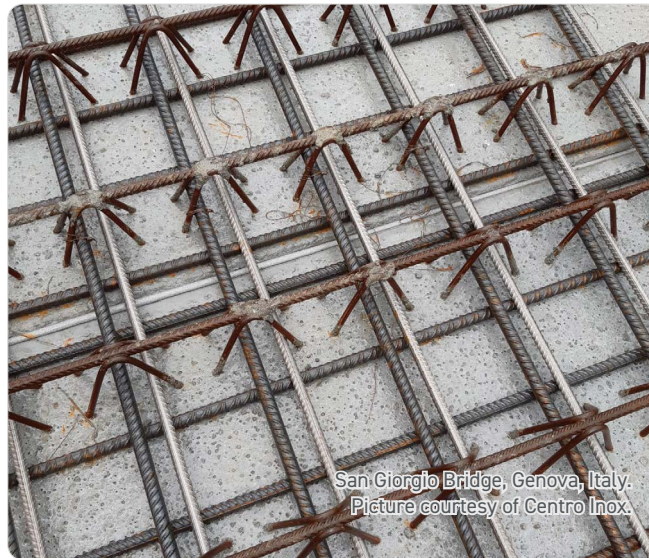
Saint George bridge



Location: Genova, Italy
Crosses: Polcevera river, Turin-Genoa railway and Milan-Genoa railway
Type: viaduct
Opened in: 2020
Materials: concrete, carbon and stainless steel rebar
Stainless steel products: 250 tons of EN 1.4307 (AISI 304L) rebar
Photographs and text: courtesy of Centro Inox
More information: centroinox.it

History

The Morandi Bridge was a road viaduct in Genoa (Italy), constructed between 1963 and 1967 along Italy's A10 motorway over the Polcevera River, from which it derived its official name. The bridge was widely called "Ponte Morandi" after its structural designer, noted engineer Riccardo Morandi. The bridge was an engineering and architectural landmark since its construction. It connected Genoa's Sampierdarena and Cornigliano districts across the Polcevera Valley. It also provided a critical artery of European Route E80, linking Italy and France. When a 210-metre (690 ft) section of the viaduct collapsed during a rainstorm on 14 August 2018, 43 people died – leading to a year-long state of emergency in the Liguria region, extensive analysis of the structural failure, and widely varying assignment of responsibility. The remains of the original bridge were demolished in August 2019. The replacement bridge, the Viadotto Genova-San Giorgio ("Genoa-Saint George Viaduct") was inaugurated on 3 August 2020.



San Giorgio Bridge, Genova, Italy.
Picture courtesy of Centro Inox.



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Why stainless steel?

Stainless steel rebar plays a key role in ensuring not only structural strength but also resistance to corrosive phenomena, for maximum structural safety. Stainless steel has been provided in the areas considered the most delicate from the corrosion resistance point of view. In detail, REVAL® (trademark of Acciaierie Valbruna) EN 1.4307 (AISI 304L) stainless steel was supplied. Since stainless steel, thanks to its intrinsic properties, allows considerable savings on maintenance costs for structures that, as in this case, are exposed to aggressive environments, this choice results to be the most economical solution in the long term. Other relevant characteristics of stainless steel rebar are their high mechanical strength, high ductility, excellent energy absorption capacity during seismic events, as well as low magnetic permeability and better fire resistance, compared to carbon steels.