

**TERZO VALICO DEI GIOVI - GENOVA JUNCTION**  
**GENOVA, LIGURIA, ITALY**

Primary Lining

**Problem**

The Terzo Valico dei Giovi is an ambitious project aimed at enhancing the Italian railway network, particularly the Genoa Node - Campasso Route. This initiative is crucial in improving both national and international connectivity, facilitating the transportation of goods and passengers. However, the excavation phase has encountered substantial geological complexities, resulting in significant challenges. The instability of the mass and the distress of the primary lining have necessitated the installation of struts to ensure stability at the excavation front and prevent delays in project progression. A primary focus is on mitigating risks for workers and expediting the primary lining phase to ensure that operations continue without impediment. These challenges not only impact production but also raise concerns regarding the safety and timeliness of ongoing operations.

**Solution**

Maccaferri proposed an innovative approach involving Automated Tunnel Ribs HEB 300 complete with automated hinges and automated links (covering a length of 3.7 kilometers) along with fiberglass reinforced solutions (GFRP) pipes (installing 250,000 meters). The decision to adopt this solution was influenced by its distinct advantages. The automation of the Automated Tunnel Rib facilitated installation without manual labor at the front, whether during lifting or connecting to the preceding Automated Tunnel Rib using automated links. This method significantly contributed to the stability of the excavation, allowing the final linings to be positioned further from the front, thereby enhancing production rates.

The uniqueness and advantages of our solution are evident. The automated installation, eliminating the necessity for on-site labor, ensures not only speed and precision in execution but, more importantly, a remarkable increase in worker safety. This streamlined process not only ensures operational efficiency but also maintains a high standard of accuracy, distinguishing our approach in terms of both safety and productivity.

**Client:** Rete Ferroviaria Italiana (RFI)

**Designer / Consultant:** COCIV / Rocksoil

**Contractor:** COCIV (WeBuild)

**Products used (Qty.)**

- Tunnelling Steel Arch 3719
- Tunnelling Reinforcement 250.000 m

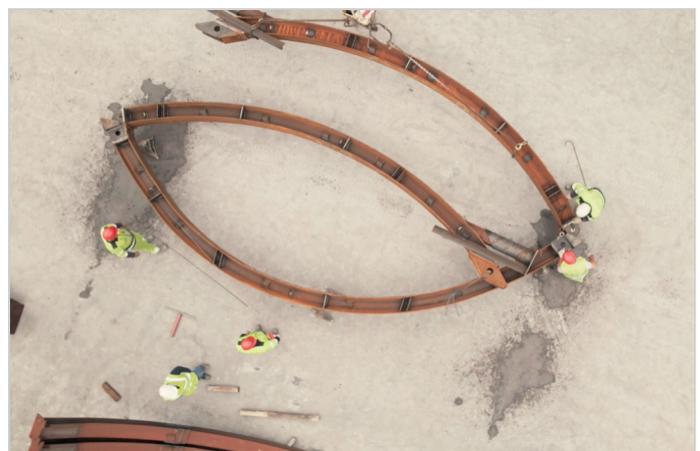
**Date of construction:** 01/2022 - 11/2023

[Google Maps](#)

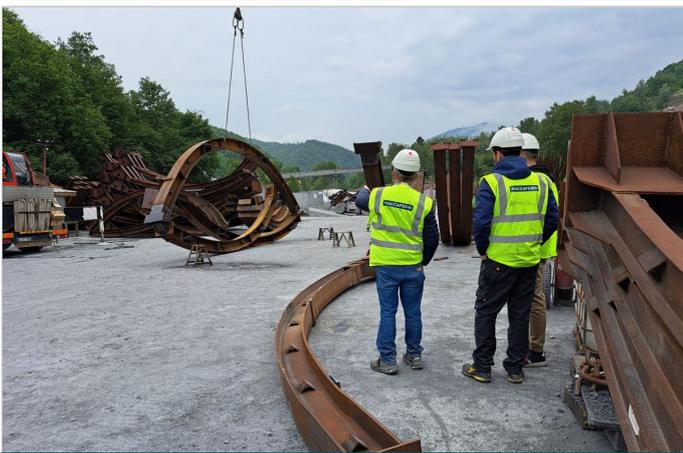
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Crown and shoulder sections are pre-assembled with the hinge



Pre-assembled Automated Tunnel Rib HEB300



Pre-assembled Automated Tunnel Rib HEB300 before installation



Automated installation with no workers near the excavation face



Installation of the Automated Tunnel Rib completed