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Project: Flexural strengthening of two arches and confinement of three piers of the bridge using glass fiber reinforcement

Location: San Casciano dei Bagni, Siena - Italy

Client: Provincia di Siena

Contract Duration: 4 weeks

Flexural strengthening of two arches of the masonry bridge on the Paglia river, San Casciano dei Bagni, Siena - Italy.

A multi-span arch masonry bridge, situated at Paglia River near Siena had suffered due to the strong currents of water present at the area. Specifically one pier in particular was severely eroded and the consequence was extensive cracking at the adjacent arches. The bridge was taken out of commission until it would be structurally sufficient for traffic.
In order to restore the bridge in a swift and secure manner it was designed for the arches to be repaired and strengthened with Composite materials. Fibrwrap Italy proposed and executed, the application of Tyfo® Glass Fiber System (Tyfo® SEH-51A with Tyfo® S Epoxy) at the bottom of the arches in both directions, parallel and perpendicular to the traffic flow. The project was carried out during July & August and it was decided to carry out the works during night hours, thus taking advantage of cooler air temperature and allowing the epoxy to cure at the constant rate specified by the manufacturer. The bridge is not operational yet pending execution of phase two where confinement of three piers with the application of Tyfo Glass Fiber System is required.

Scope of Works:

- Increase of the arches flexural capacity as well as confinement of the piers' bridge with Tyfo® SHE-51A Glass Fiber System
- Final coat of Polyurethane paint (2 coats) in the typical red-brick color