

Genoa (Italy)

SAN GIORGIO BRIDGE:
THE SPIRAL RAMP

REPAIRING, STRENGTHENING AND WATERPROOFING THE SPIRAL RAMP THAT CONNECTS THE BRIDGE TO THE A7 MOTORWAY

An access ramp connects the San Giorgio Bridge to the A7 Motorway on the eastern side. This spiral viaduct provides access for traffic coming from the bridge onto the motorway that runs towards the lower Piedmont and Lombardy regions. Repair and strengthening work was carried out on all parts of the viaduct and various Mapei products were used for repairing, strengthening and waterproofing its elements.

Concrete repair and strengthening

MAPEFER 1K cementitious mortar was applied on the steel reinforcement to prevent corrosion and MAPEGROUT EASY FLOW one-component, fibre-reinforced thixotropic mortar was used to repair the concrete structures. In those areas where a higher level of ductility was required, the team decided to opt for MAPEGROUT EASY FLOW GF, hi-flow cementitious mortar reinforced with inorganic fibres.

The hi-flow, fibre-reinforced, com-

pensated-shrinkage mortars MAPEGROUT HI-FLOW B2 and MAPEGROUT GF BETONCINO B1 were used for repairing concrete.

MAPELASTIC GUARD, a two-component, elastic cementitious mortar, was used for waterproofing the concrete surfaces.

The following products also came into use: MAPEGROUT LM2K, thixotropic, fibre-reinforced, cementitious mortar for concrete repair; ADESILEX PG1, thixotropic epoxy adhesive for structural bonding; EPOJET, superfluid epoxy resin for injections and anchoring, and MAPEFIX EP 585, pure epoxy resin-based chemical anchor for structural loads.

Waterproofing the deck

The deck of the access ramp was waterproofed by applying PURTOP 400 M SYSTEM DECK, a complete waterproofing system which is CE marked in compliance with ETAG 033 guidelines. PRIMER SN two-component, fillerized epoxy primer

was used to treat the concrete substrate, before broadcasting QUARTZ 0.5. Then, PURTOP 400 M hybrid polyurea membrane was applied to waterproof the surfaces, followed by the application of PURTOP PRIMER BLACK, a solvent-based primer that improves adhesion of asphalt surfaces waterproofed with products from the PURTOP line.

Finishing the surfaces

The surfaces were finished off by applying MAPECOAT E23, an epoxy primer used to protect concrete before applying polyurethane finishing products, MAPECOAT PU33, a polyurethane resin-based, flexible coating for protecting concrete, MALECH, an acrylic, water-based primer used to even out surfaces and promote adhesion, and ELASTOCOLOR PAINT, an elastomeric paint for the crack-bridging protection of internal and external surfaces, with permanent elasticity and a high level of resistance to chemicals.



ABOVE. Repair work was carried out on both the intrados and the extrados of the bridge deck. Various products by Mapei were used for the job, including MAPEGROUT EASY FLOW fibre-reinforced thixotropic mortar and the hi-flow mortars MAPEGROUT GF BETONCINO B1 and MAPEGROUT HI-FLOW B2.

**PURTOP 400 M**

Two-component, solvent-free, hybrid polyurea membrane applied by spray using a high-pressure, bi-mixer type pump to form waterproof coatings on roofs and bridge decks directly on site.

FIND OUT MORE

**TECHNICAL DATA**

Access ramp to San Giorgio bridge, Genoa, Italy

Period of intervention: 2019-2020

Intervention by Mapei: supplying products for concrete repair, structural strengthening, waterproofing and

finishing surfaces

Contractors: Pavimental, Mosconi, LP Costruzioni, Tecnomanto

Mapei coordinators: Dino Vasquez, Gianpiero Peluso, Corrado Villa Presutti, Roberto Pasquali, Federico Regoli, Corrado Castiglioni, and Roberto Checchi, Mapei SpA (Italy)

MAPEI PRODUCTS

Concrete repair and structural strengthening: Adesilex PG1, Epojet, Mapefer 1K, Mapegrout Hi-Flow B2, Mapegrout Easy Flow GF, Mapegrout Easy Flow, Mapegrout GF Betoncino B1, Mapegrout LM2K

Chemical anchoring:

Mapefix EP 585

Waterproofing: Mapelastic Guard, Primer SN, Purtop 400 M, Purtop Primer Black

Coatings: Elastocolor Paint, Mapecoat E23, Mapecoat, PU33, Malech

For further information see www.mapei.com