

Project Report/January 2023

Economic efficiency and safety for the Bertoldshofen tunnel with StoConcrete Protect Classic TU 100

In the Bavarian Ostallgäu region (Southern Germany), the towns of Marktoberdorf and Bertoldshofen, which are heavily burdened by regional traffic, are being bypassed by the Bertoldshofen tunnel. The two-lane road tunnel with a tube approximately 600 metres long ensures a traffic connection to the B 12.

In order to increase the cost-effectiveness of tunnel maintenance and to improve safety in the tunnel, the surface protection system **StoConcrete Protect Classic TU 100** was applied.

The almost 7,000 square metre inner tunnel shell, consisting of reinforced concrete with an external synthetic sealing membrane, was first given a hydrophobic impregnation with StoPox HG 200. This was followed by a coating of StoPox TU 100 up to a height of 3 metres, a total area of more than 3,500 square metres.

StoConcrete Protect Classic TU 100 creates a bright and non-reflective surface in the Bertoldshofen tunnel, thereby increasing safety for all transport users. The system's optimised surface quality offers a low susceptibility to soiling and at the same time is extremely easy to clean. This means that cleaning intervals are extended and the necessary traffic closure times are reduced. Effort, costs and traffic disruption are minimised. The StoCretec coating system also supports nature protection: significantly less water is required per cleaning cycle. Furthermore, the use of chemical cleaning additives is not necessary.

StoConcrete Protect Classic TU 100 is mechanically highly resistant, has a carbon dioxide barrier and is permeable to water vapour. It permanently protects the structure of the new tunnel against exhaust gases, water-soluble pollutants and fuels.

Properties of **StoConcrete Protect Classic TU 100**

- Very low susceptibility to soiling
- Very good cleanability even without additional cleaning agents
- High mechanical resistance
- Optimised light reflexion coefficient and gloss level
- High resistance to alkalis, hydrocarbons, and petrol
- Application by paint brush, by roller, by sprayer

Road tunnels also require safety facilities such as fire water tanks and storm water overflow basins. Both concrete structures were coated with the **StoWaterproof Mineral Elastic FB** waterproofing system.

The tested StoCretec surface protection system prevents water, de-icing salts dissolved in water, and carbon dioxide from penetrating the concrete. Chloride and carbonation-induced corrosion of the steel reinforcement is prevented. The highly elastic coating system reliably bridges existing and new cracks even at low temperatures. It is also resistant to thermal stress.

StoWaterproof Mineral Elastic FB is suitable for basin crests, floor, and wall surfaces as well as for shaft inlets. The system is a tested waterproofing for containers and basins as well as for components in contact with the ground. The StoCrete FB coating can be applied by airless sprayer or by hand and is fully resistant after just 7 days.

Properties of **StoWaterproof Mineral Elastic FB**

- Highly elastic coating system for the protection of concrete structures
- Waterproofing in accordance with DIN 18533 and DIN 18535 as a mineral waterproofing slurry
- Excellent static and dynamic crack-bridging ability
- Good weathering and ageing resistance
- Resistant to salt spray
- Tried and tested material technology

Both towns, Bertoldshofen and Marktoberdorf, experience significant traffic reduction thanks to the new transport link, and supra-regional traffic benefits from faster and simpler traffic routing through the German Ostallgäu region.

Who & What

Project:	Tunnel Bertoldshofen, Ostallgäu, DE
Investor:	Staatliches Bauamt, Kempten, DE Landesbaudirektion Bayern, DE
Planner:	EDR GmbH, München, DE PSP Consulting Engineers GmbH, München, DE
Construction Supervision	Dipl.-Ing. Bernd Gebauer Ingenieur GmbH, München, DE
Applicator:	Trauffer AG Bautenschutz, Brienz, CH Hörnig Bauwerkssanierung GmbH, Aschaffenburg, DE
GC:	BEMO Tunneling GmbH, Innsbruck, AT
Realisation:	5/2022
StoCretec Competences:	StoConcrete Protect Classic TU 100 Impregnation StoPox HG 200 Coating StoPox TU 100

StoWaterproof Mineral Elastic FB
Levelling coat
and waterproofing StoCrete FB

(Photos: MediaProd HJG für StoCretec)







