SIKA AT WORK
WATERPROOFING OF CHANNEL IN ENEL HYDROELECTRIC POWER STATION, ITALY

WATERPROOFING: Sikalastic®
CONCRETE REPAIR: SikaEmaco®

BUILDING TRUST

WATERPROOFING OF CHANNEL IN ENEL HYDROELECTRIC POWER STATION, ITALY

PROJECT REQUIREMENTS

In Castenuovo de Garfagnana, in the Italian region of Tuscany, the water of the artificial Lake Vagli is channelled and diverted to the hydroelectric power station of Torrite. Owned by ENEL Green Power, this hydroelectric station required urgent waterproofing of its channel to maintain energy production. Built in 1926, the station needed repairs and waterproofing within a tight 10-day window to prevent operational downtime and financial losses. The project faced the challenge of repairing damage, including concrete spalling and rebar corrosion, and waterproofing the channel to ensure uninterrupted power generation.

SIKA SOLUTIONS

The solution included the complete treatment of the channel, starting with the mechanical preparation of the substrate. The concrete substrate required some repairs due to several defects, including concrete spalling and rebar corrosion. Repair works were carried out using SikaEmaco® S repair mortars with quick setting properties, which allowed the immediate application of the waterproofing membrane. Additionally, the wall-to-wall and wall-to-floor joints were treated using SikaTop®-590 Seal (formerly known as MasterSeal 590) to provide a smooth surface for the membrane.

Sikalastic®-6100 FX (formely known as MasterSeal® 6100 FX) was chosen as the waterproofing membrane for its easy and quick application and rapid hardening, as well as its ability to be applied on wet substrates without priming. It was applied over a 1,600 m^2 area at an average consumption rate of 1.8 kg/m^2, with some areas being sprayed by hand. An added benefit of Sikalastic®-6100 FX is that it has a low material consumption, with a thickness of only 2mm required to waterproof surfaces with positive pressures up to 5 bar. A low material density makes this 2 mm thickness possible using only 1.8 kg of powder product, saving approximately 2.5 tons of waterproofing material when compared to traditional cementitious two-component waterproofing membranes.

This approach allowed the station returning to service in just 3 days, ensuring the project was completed within the critical timeframe.

SIKA PRODUCTS

- Sikalastic®-6100 FX
- SikaEmaco® S repair mortar
- SikaTop®-590 Seal

PROJECT PARTICIPANTS

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