

Project:

ENEL Hydroelectric station
Waterproofing of Channel in
a Hydroelectric Power Station

Location:

Garfagnana, Lucca (Italy)

Project completed:

2012

Owner/s:

ENEL Green Power

Applicator/Contractor:

F.lli Rossi di Fivizzano MS

Market sector:

Water Management Industry

Products used & amounts:

MasterSeal 6100 FX:
approx. 2.9 tons
MasterEmaco S repair
mortars MasterSeal 590
and other ancillaries

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Our reference in Garfagnana, Lucca (Italy): ENEL Hydroelectric station

The background

The production of electrical power through the use of the gravitational force of falling or flowing water is the most widely used form of renewable energy. In the nice Italian region of Tuscany, in Castenuovo de Garfagnana, the water of the artificial Lake Vagli is channelled and diverted to the hydroelectric power station of Torrite.

Built in 1926 and owned and operated by ENEL Green Power, the station channel has been recently repaired and waterproofed.

The challenge

Since the operation of the station has to be stopped for maintenance works, the main challenge here was to complete the job within 10 days.

Any delay in the maintenance works would cause a stop in energy production and thus losses for the company.

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Our solution

The solution included the complete treatment of the channel, starting with the mechanical preparation of the substrate. The concrete substrate required some repair jobs due to several damages including concrete spalling and rebar corrosion. Repair works were done using our MasterEmaco S repair mortars. Additionally, the wall to wall and wall to floor joints were treated using MasterSeal 590 to smooth the angles. The quick setting of the mortar allowed the immediate application of the waterproofing membrane.

MasterSeal 6100 FX was sprayed over the surface, in certain areas applied by hand. The average consumption of the product was, as specified, 1.8 kg/m² and the total treated surface was approx. 1,600 m².

The customer's benefit

- Easy and quick application of the waterproofing membrane.
- MasterSeal 6100 FX has a low consumption. Only 2 mm are required to waterproof surfaces with positive pressures up to 5 bar.
- Low density makes this 2 mm thickness possible using only 1.8 kg of powder product.
- Speed of application by spraying the product.
- Product can be applied on wet substrates without the need of special priming.
- Quick hardening and return to service only 3 days after application allowed finishing the job in the required period of time.

Projects facts at a glance

- Complete solution toolbox applied to the renovation of a channel in a hydroelectric station.
- A total of approx. 1,600 m² of waterproofed area.
- MasterSeal 6100 FX applied at 2 mm thickness with 1.8 kg of product per m².
- Quick return to service, only 3 days after application, thus reducing the stop period for maintenance works.
- The use of MasterSeal 6100 FX instead of other traditional cementitious two-component waterproofing membranes saved in this job approx. 2,5 tons of waterproofing material.

Master Builders Solutions by MBCC group

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Master Builders Solutions is built on the experience gained from more than a century in the construction industry. At the core of the Master Builders Solutions brand is the combined know-how and experience of a global community of construction experts, who connect with you to solve all your construction challenges.

Further information is available at:

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