



## Peio (Province of Trento, Italy) CARESER DAM

CONCRETE REPAIR FOR A DAM CONSTRUCTED IN THE 1930'S  
IN AN EXTRAORDINARY NATURAL SETTING

Val di Sole, in the Trentino Region of Northern Italy, has a long tradition of creating energy from water: from windmills to sawmills, right up to the large hydroelectric plants built between the 1920's and 1950's.

Two large dams located in Val di Peio are still operational today: the Careser and the Pian Palù.

The Careser dam is located at 2,603 m above sea level near the town of Peio and was constructed between 1928 and 1934 to exploit the water

running off from the Careser glacier to generate hydroelectric energy. Surrounded by a majestic Alpine landscape, the lake – covering an area of 0.48 km<sup>2</sup> with a maximum depth of 57 m and a capacity of 15 million m<sup>3</sup> - is enclosed in a gravity-type dam which is 62 m high above the level of the foundations and has a 444 m crest. The dam is connected to the Malga Mare power plant and exploits a drop of 635 m to drive a Pelton turbine that gener-

ates up to 12 MW for a total annual production of 27.7 GWh. The water is discharged from the power plant and, along with water from the River Noce, is channelled to the hydroelectric plant in Cogolo.

### Products for concrete repair

Between 2017 and 2019, important repair work was carried out on 13,000 m<sup>2</sup> of the concrete on the valley-side wall of the Careser dam wall.

### TECHNICAL DATA

**Careser dam, Peio**  
(Province of Trento, Italy)  
**Period of construction:**  
1928-1934  
**Period of the Mapei  
intervention:** 2017-2019  
**Intervention by Mapei:**  
supplying products for

concrete repair and  
waterproofing surfaces

**Owner:** Hydro Dolomiti  
Energia Srl

**Works director:** Michele  
Buratti

**Head of Civil Engineering**

**Hydraulic Department:**  
Enrico Dalla Villa

**Main contractor:** Co.ge.dit  
Srl, Diego Ditomasso

**Mapei coordinators:**  
Stefano Barachetti and  
Paolo Banfo, Mapei SpA  
(Italy)

**MAPEI PRODUCTS**  
Concrete repair:

Mapegrout 430,  
Mapegrout MS  
Sealing joints: Mapeflex  
PU40

For further information  
on products see  
[mapei.com](http://mapei.com)



Amongst the various products used for the repair work, a key role was played by MAPEGROUT 430 fine-grained, fibre-reinforced, normal-setting mortar. This is a spray-applied product and, after adding the correct amount of water, it forms a mortar with a thixotropic consistency which is waterproof and very easy to apply, even on vertical surfaces, at a thickness of between 5 and 35 mm without the need for formwork.

MAPEGROUT MS, a fibre-reinforced, micro-silicate based cementitious mortar, which is ideal for levelling off uneven concrete surfaces or surfaces subjected to heavy abrasion, was also used for repairing some areas of the concrete surfaces.

The expansion joints were sealed with MAPEFLEX PU40, a polyurethane sealant with a low modulus of elasticity, specifically formulated for sealing expansion and contraction joints in horizontal and vertical surfaces.

MAPEFLEX PU40 hardens following its reaction with the humidity in the surrounding air and, because of its special characteristics, offers a guarantee of a long service life.

### MAPEGROUT MS

Cementitious fibre-reinforced  
thixotropic mortar with added  
micro-silicates

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