



# SIKA AT WORK

## ARGESSA HYDROPOWER PLANT, OBEREMS, SWITZERLAND

RESERVOIR REFURBISHMENT: Sika® ViscoCrete®, Sika®Fro, SikaFume®,  
Sika® Emulsion, Sigunit®, Sika® FastFix, Sika® MonoTop®, Sikafloor®,  
Sika®Concrete Primer, Sikalastic®

BUILDING TRUST



# REFURBISH AND UPGRADE OF THE BALANCING RESERVOIR

## PROJECT DESCRIPTION

The balancing reservoir for the Argessa hydropower plant is located south east of the plant and at an altitude of 1,360 m. The reservoir also provides an equalizing connection between the two power plants of Oberems and Turtmann, holding a useful capacity of about 25,000 m<sup>3</sup>. Its primary functions are the retention and interim storage of tail waters from operation of the power plant, allowing the operations to be regulated at times of different demand and the optimum water levels to be maintained in the environment.

## PROJECT REQUIREMENTS

In 2011 a routine inspection determined that the reservoir no longer met the latest increased and very stringent earthquake protection requirements of the Swiss Federal Office for Energy. Therefore to guarantee future long term earthquake protection, it was decided to refurbish and upgrade the



structure. The works were to be extensive and the following specification and procedure was developed by the engineers for the strengthening and simultaneous refurbishment and upgrading works:

- Removal of the existing matrix coating (containing asbestos)
- Removal of a sprayed concrete layer applied in 1991, by high pressure water jetting
- Placing and anchoring of additional reinforcement on the rows of arches
- Application of a new sprayed concrete layer of up to 120 mm thick
- Application of a surface levelling layer with R4 mortar, 5-10 mm thick
- Waterproofing of the whole surface area with a polymer based, liquid applied membrane (LAM)

## SIKA SOLUTIONS

Sika proposed a complete system solution that was accepted and included the detailed design of the sprayed concrete and all of the other strengthening and waterproofing requirements for this project. Sprayed concrete was applied in two layers of up to 130 mm and a levelling layer of R4 mortar was also spray applied. All of the sprayed concrete works were carried out using a Sika Sprinter Spray machine. Finally, the surface was trowel sealed with Sika FastFix mortar and the substrate was then levelled with Sika MonoTop mortars, ready for the final application of the elastic LAM system using a Sikalastic polyurea based waterproofing membrane.



# ARGESSA HYDROPOWER PLANT, OBERREMS, SWITZERLAND



## SIKA PRODUCTS

- Sika® ViscoCrete® SC-303
- Sika® Fro V-5 A
- SikaFume® HR/TU
- Sika® Emulsion-93
- Sigunit® L-5601 AF
- Sika® FastFix-121
- Sika® MonoTop®-910 N
- Sika MonoTop®-412 N
- Sikafloor®-160
- Sika® Concrete Primer
- Sikalastic®-8800

## PROJECT PARTICIPANTS

Owner: ARGESSA AG  
Contractor: ARGE AAO, Walpen AG

Our most current General Sales Conditions shall apply. Please consult the most current local Product Data Sheet prior to any use.



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