



SAN VALENTINO DAM

Italy, 1986 – 1994 – 1997 – 1998 – 2002

PROJECT CHARACTERISTICS

Works: earthfill zoned dam built in 1942 - 1950 and commissioned in 1950

Purpose: multiannual regulation for hydropower production

Dimensions:

- *height:* 32.8 m,
- *embankment volume:* 556 000 m³
- *storage:* 127 000 000 m³
- *crest length:* 450 m

Watertightness: Central core and partly penetrating concrete diaphragm wall

Materials:

- *foundation:* micaschists (right abutment), alluvial sands and gravels;
- *embankment:* alluvial sand and gravel. Core enriched with bentonite



PROFESSIONAL SERVICES PERFORMED

Study of all documents relevant to the dam and analysis of all instrumentation data, data bank of more than 500 000 readings. Geotechnical characterisation of the foundation, stability analysis, settlements and deformational analysis, seepage analysis. Stress analysis of the main dam by a 3D finite element method. Design of upgrading works.

San Valentino dam, located at the head of Adige River in the Western Italian Alps, is in operation since 1950. The dam is a zoned earthfill with central core connected to a concrete diaphragm.

In 1986 the dam and its foundation were object of a Certification which provided an evaluation of the dam behaviour through the reconstruction of the dam's history and the analysis of all readings taken at the instruments during the first 35 years of the dam's life (assignment carried out in co-operation with another consulting firm).

In 1994 the analyses carried out for the Certification were updated and the design of the necessary upgrading works was developed.

The design was mainly aimed at upgrading and extending the dam's watertightness system.

In 1997 the design of upgrading works was completed and extended.

In 1998 a 3D stress analysis was performed.

