



CIXERRI SECONDARY DAM

Italy, 1989

PROJECT CHARACTERISTICS

Works: 2 Secondary Earthfill Dams waterproofed with PVC geomembrane protected

Purpose: industrial water supply and irrigation

Dimensions of Dam 2:

- height: 6.5 m
- embankment volume: 23 400 m³
- crest length: 235 m

Dimensions of Dam 3:

- height: 8.5 m
- embankment volume: 42 600 m³
- crest length: 327 m

Watertightness: geocomposite on the upstream slope, shallow grouting of the rock along the toe

Materials:

- foundation: sand and gravel rock
- embankment: gravel



PROFESSIONAL SERVICES PERFORMED

Design of the waterproofing system of the dams and supervision during placement.

Cixerri secondary dams have been built in 1989 and are part of the reservoir built on the Cixerri River, near Cagliari, in Sardinia. The waterproofing system was the same for the 2 secondary dams. The geocomposite was placed on the 2H/1V upstream slope in rolls from the dam's crest. The rolls were welded with an automatic welding machine and the seams protected with a PVC butt strap. Permanent anchoring to the PVC liner was provided along the crest.

Along the upstream toe, the geocomposite was sealed to the plinth with the "insertion" arrangement.

Cixerri dams mark the first application of this type of periphery for a geomembrane liner where the geomembrane is inserted in a slot prepared in the concrete plinth and sealed with special mastic. The geocomposite was protected with precasted concrete slabs, 0.2 m thick and 3 x 3 m wide, placed over a geotextile separator.

Laboratory tests on mastic and air pressure tests on weldings were carried out to assess the quality of the work.

