Use of Bituminous geomembrane in hydraulic: watertightness in dam construction

Jacques Moeglen  
*Coletanche Area Manager East Europe*

Didier Ulrich  
*Coletanche Area Manager France*

Bernard Breul  
*Coletanche Worldwide Technical Manager*

**ABSTRACT:** "A bituminous geomembrane was used in 2000 for the construction of the upstream waterproofing face of La Galaube dam in the south of France near Carcassonne. This paper will describe the different phases of the project, the specific techniques and equipment that were required to carry out in a short time the construction of 23,000 m² of impervious structure, and will insist on the quality management that was applied to achieve a record height for upstream impervious face based upon a bituminous geomembrane.

Storage capacity of this dam more than 35 million m³, in order to supply drinkable and irrigation water within three counties and 185 municipalities of the south of France, Aude, Haute-Garonne and Tarn, and regulate the flow of the Canal du Midi classified at UNESCO World Heritage.

The stability of the dam is ensured by the weight of the rocks, which consist in about 800,000 cubic meters of micaschist excavated on the site. The embankment is based upstream on a reinforced concrete plinth, founded on fresh or slightly weathered granite.

The dam is 380 meter long at its ridge and the slopes have a gradient of 2 horizontal to 1 vertical. The maximum height above the foundations is 43 meter.

The dam waterproofing is prolonged inside the foundation by an injection wall through the upstream plinth."

**Keywords:** [bituminous], [liner], [wind], [thermal expansion]