



# SIKA AT WORK

## LINING OF RESERVOIR FOR POTABLE WATER, GUANAJUATO REGION, MEXICO

WATERPROOFING: Sikaplan® WT 4220-15 C SHEET WATERPROOFING MEMBRANE

# WATERRESERVOIR FOR POTABLE WATER, GUANAJUATO REGION, MEXICO



## PROJECT DESCRIPTION

Guanajuato is one of the 32 Federal States of Mexico, covering only 1.6% of the Country, but it is the sixth most highly-populated state in Mexico, with 14 Towns and Cities of more than 100,000 inhabitants. The Guanajuato Water Tank project was undertaken to secure the drinking water supplies for these communities, following previous serious problems including the loss of clean water through leaks, and the ingress of contaminants into stored fresh water supplies making it unfit for human consumption.

## PROJECT REQUIREMENTS

The project requirement overall was quite simple: to reliably waterproof all of the main drinking water storage reservoir tanks that supply all of these different communities across the State. This work had to be done in both in new tanks that were under construction or to be built shortly, and for the up-grading and improvement of the existing tanks.

Previous attempts had been made to waterproof the tanks with various different technologies, including different ranges of cement and resin based mortars, plus several tiled systems over the years, but these had all failed.

Therefore a reliable and secure, cost-effective waterproofing system was now required. It was also a pre-condition that all of the products used in the waterproofing system must be certified for use in contact with potable drinking water i.e. water that is fit for human consumption, plus for peace of mind the owners engineers wanted a guarantee of watertightness with minimal maintenance for at least 10 years (knowing that if there are no problems in this period then the waterproofing will likely last up to the service life of the structure).





### SIKA SOLUTIONS

Sika Mexico proposed a solution using Sikaplan® WT sheet membrane based on flexible, polyolefin (FPO) technology, reinforced with a glass fibre fabric against restraint, which easily meet all of the performance, ease of installation and warranty requirements, plus had numerous national and international references of similar successful projects.

In the phase of the works in 2014, three tanks were water-proofed with this system, one in Guadalupe and two in Tierra Blanca. The Sikaplan® WT sheet membrane system was installed throughout to line all of the interior concrete surfaces of the tanks, generally this was laid over a Sika Geotextile supporting and protective layer, which is used to cover any edges or protrusions on the concrete surfaces that could potentially damage the membrane. The system was then fixed into the concrete through Sikaplan® WT Fastening Plates, plus Sikaflex®-1 A sealant was used to provide a watertight seal with the membrane onto the concrete structure around the top and upper parts of the perimeter, and at other terminations.

Date of waterproofing works: Dec. 2014

### Sika Products used:

Sikaplan® WT 4220-15C

Sikaplan® WT Fixation Plate PE

Sikaflex®-1 A

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## PROJECT PARTICIPANTS

Owner: Municipio Tierra Blanca

Designer: Geometrica de Mexico SA de CV

Main Contractor: Servicio Retana SA de CV

Specialist Contractor: CILIMPIA

Sika organization: Sika Mexicana S.A.

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