

LGP “cigar” tanks in Bizerte

Buildings and Industrial Installations
Jan. 2014 - Dec. 2014



TUNISIA - Bizerte

Client

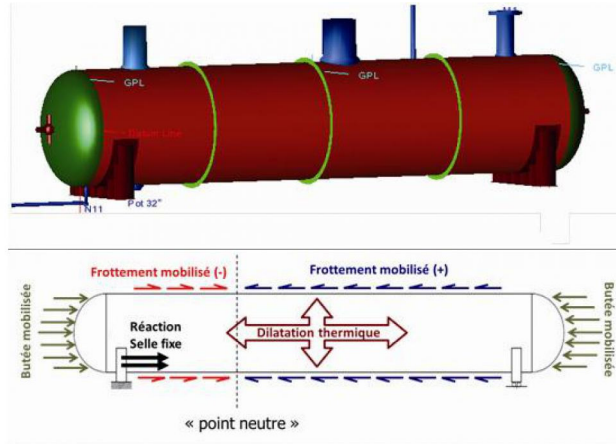
TANKO SPA

Project owner

Société Tunisienne des
Industries de Raffinages
(STIR)

Miscellaneous

5 gas (LGP) tanks storage
of 1200 m³



Description of the project

TERRASOL assisted the Italian company TANKO SPA, which builds ‘cigar’ tanks - an innovative concept for storing LPG – in the framework of a project in Bizerte, Tunisia.

Intended for the Société Tunisienne des Industries de Raffinage (STIR), these cylinders buried in a compact backfill are subject to temperature changes.

Key features

- Estimate and optimize the thermal loads applied on the support points of the tanks

Description of the mission

TERRASOL’s task: calculate and optimize the thermal loads exerted on the tanks at the fixed support points (slab on piles) taking into account the tank / backfill / foundation block interaction mechanisms. Without involving numerical processing in three dimensions, these interactions could be investigated in a satisfactory manner using the Thermopie program (developed by TERRASOL originally for the design of geothermal foundations), using as input parameters:

- The result of a PLAXIS 2D model for a cross-section of the tank, intended to assess the normal stress state around the tank (and consequently the lateral friction mobilisable longitudinally);
- The result of a Groupie+ model (FOXTA software) used to quantify the lateral response function at the top of the foundation block.