



Gemlik Port Modification and Extension

Bursa, Turkey

A Geopier Impact® solution was proposed for liquefaction mitigation and settlement control for a new port modification and extension project.

Description: Gemlik Port Facilities are located at the south coast of the Marmara Sea. A jetty is used for container ships at the western part of the port. Further, there are coastal protection structures with riprap at the northern and western edge of the port. The project area is planned to be a container storage yard with a footprint area of approximately 26.000 m². The design load considered for settlement control was 60 kN/m². The project site mainly consists of land reclamation area.

Subsurface Conditions: The soil conditions mainly consisted of 2 m of controlled fill over 6 m of soft / loose sandy silt and silty sand over 10 m of soft to medium stiff silty clay underlain by medium stiff to hard silty, sandy clay.

Geopier Solution: Approximately 11.250 Impact® Pier elements were constructed and installed to penetration depths of about 16 m below existing ground surface to provide improved foundation support for settlement control. Additionally, piers were installed in a grid pattern to mitigate the



potential for liquefaction at the site. During the project, a comprehensive test program was conducted such as single pier load tests, area load tests and post-installation soundings to verify construction results.

PROJECT TEAM

Owner:

Borusan Logistics

Geotechnical Engineer:

ZER

Structural Engineer:

ZER

General Contractor:

SENTEZ İnşaat, Istanbul, Turkey

Geopier Installer:

SENTEZ İnşaat, Istanbul, Turkey

Geopier Designer:

SENTEZ İnşaat, Istanbul, Turkey