



Cement Clinker Dome

Medgidia, Romania

Rammed Aggregate Pier® elements provided a safe and cost-effective solution for the world's largest cement clinker dome

Description: Soil Reinforcement for the world's largest cement clinker dome. Dimensions are 75 meters in diameter and a height of 51 meters. The bearing pressure is 742 kPa in the center and 383 kPa at the edge.

Subsurface Conditions: Soil conditions consisted of silty lean clay, with sandy layers at 12.4 to 21.0 meters below the ground surface. Underlain by weathered limestone. Groundwater was not encountered.

Geopier Solution: A total of 2,261 Rammed Aggregate Pier® (RAP) elements were installed to depths that ranged from 7.5 meters to 13 meters below the working platform to support this cement clinker dome. Total allowable settlement was 46 cm and allowable differential settlement was 20 cm. A modulus test was performed to confirm the RAP soil reinforcement design. At design load of 663 kN the deflection at the top of pier was approximately 4.5 mm.



PROJECT TEAM

Owner:

Lafarge Romania S.A.,
Medgidia, Romania

Design:

Engineering Solution Systems,
Idaho Falls, ID, USA

Geotechnical expert from Lafarge:

Prof. Adam, Vienna Technical
University, Austria

General Contractor:

Dome Technology, Idaho Falls, ID; USA

Geopier Installer:

Geopier Spezialtiefbau GmbH

Geopier Designer:

Geopier Spezialtiefbau GmbH