

# GRAIN STORAGE SILOS

UTTAR PRADESH, PUNJAB, BIHAR, WEST BENGAL



## Overview

Keller's use of deep vibro techniques - vibro stone columns & vibro compaction at various location in Punjab, Uttar Pradesh, Bihar & West Bengal, is a great example of applying geotechnical engineering to support heavy infrastructure like grain storage silos. Installing approximately cumulative 215,000 linear meters is a substantial effort, indicating both the scale of the project and the ground conditions that required reinforcement.

### • The project

Adani Agri Logistics Ltd (AALL), a wholly owned subsidiary of Adani Logistics Ltd, has been awarded to construct & operate grain storage silos by the Food Corporation of India (FCI) after competitive bidding. Under this contract, AALL will develop and manage cutting-edge silo complexes at different sites, aligning with the Government of India's initiative to modernize the country's storage infrastructure and significantly increase total silo storage capacity.

### • The challenge

Across various project sites, the upper soil strata predominantly comprised silty clay or silty sand, both of which exhibit low bearing capacity and are susceptible to significant settlement under structural loads. Sites located in Uttar Pradesh, Bihar, and Punjab, which fall under Seismic Zone IV, are particularly prone to liquefaction. This poses a substantial risk to foundation stability during seismic events, necessitating specialized ground improvement techniques.

### • The solution

To address the geotechnical challenges of mitigation of liquefaction potential, excessive settlement and low bearing capacity at various project sites, a robust ground improvement solution was implemented by using vibro stone column (by bottom feed or top feed methods) and vibro compaction.

## Application

Liquefaction Mitigation,  
Settlement Control & Bearing  
Capacity enhancement

## Technique

Vibro Stone Column  
Vibro Compaction

## Market

Infrastructure

## Client

Adani Agri Logistics Limited

## Main contractor

Keller Ground Engineering  
India Private Limited

## Contract Value

NA

## Keller business unit (s)

Keller Ground Engineering  
India Pvt. Ltd