



Overview

Keller successfully executed ground improvement works using vibro stone columns for Toppan Specialty Films (TSF), reaffirming its expertise and long-standing client relationships. Building on its earlier success in 2016 at the same site—then under the name M/s Max Specialty Films Keller had installed in totality approximately 50,000 m² of vibro stone columns using the bottom feed (dry) method to support the foundation of BOPP film structures.

- **The project**

M/s Toppan Specialty Films Limited has proposed expanding the current BOPP plant in Ropar, Punjab. They have enlisted M/s Structwel Designers & Consultant Pvt Ltd as the structural consultant for this expansion. Additionally, M/s Toppan has engaged M/s Keller Ground Engineering India Private Limited to implement ground improvement using vibro stone columns with the dry bottom feed method. The structures proposed for ground improvement include the Main BOPP Plant Line area, Canteen Building, Raw Material Store, and Warehouse Building.

- **The challenge**

The proposed facilities were located adjacent to existing warehouse areas, in Seismic Zone IV, where the soil was anticipated to liquefy during an earthquake. This posed a significant challenge, with potential for liquefaction-induced settlements in addition to static settlements from superimposed loads.

- **The solution**

The subsoil profile comprises silty clay to clayey silt in the top 3 to 4 meters, transitioning to loose to medium dense silty sand below. Liquefaction and to enhance the foundation support for our structures. The Vibro stone columns were designed to achieve Safe bearing capacity of 15t/sqm with post construction permissible settlements of ≤ 40mm.

Application

Liquefaction Mitigation,
Settlement Control & Bearing
Capacity enhancement

Technique

Vibro Stone Column

Market

Industrial

Client

Toppan Specialty Films
Limited

Main contractor

Keller Ground Engineering
India Private Limited

Contract Value

Keller business unit (s)

Keller Ground Engineering
India Pvt. Ltd