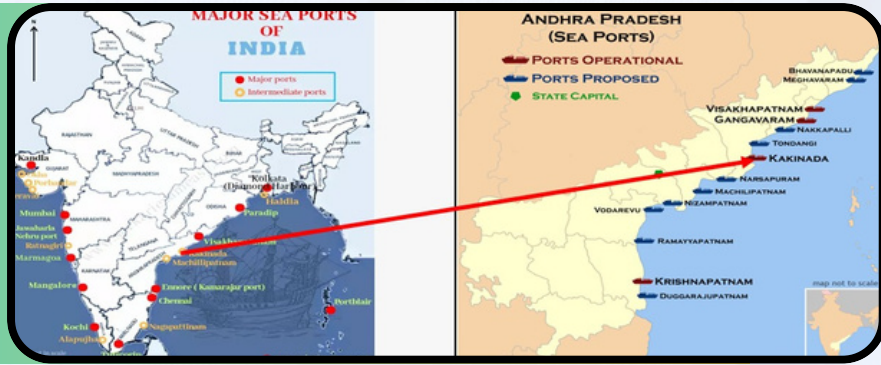




DESK AND WAVE FLUME STUDIES FOR THE DESIGN OF BREAKWATER FOR THE DEVELOPMENT OF GATEWAY PORT AT KAKINADA, EAST GODAVARI DISTRICT, ANDHRA PRADESH, INDIA



STUDY OVERVIEW

The project involves the development of Greenfield Port at Kakinada, East Godavari District. The proposed two breakwaters layout consists of a 589 m long North Breakwater and a 2715 m long South Breakwater. The hydraulic stability of the trunk & roundhead portion of breakwater sections has been confirmed through the 2D & 3D wave flume studies

APPROACH

- Confirmation of hydraulic stability of breakwater sections through 2D wave flume studies for trunk portion & 3D wave flumes for roundhead portion of breakwater by simulating different test matrix.
- The Xbloc concrete armour units used in the breakwater sections.
- The design water level of +2.80 m and the maximum significant wave height of 5.04 m.

2. The hydraulic stability of roundhead portion of breakwater section using 7 m³ Xbloc armour units at -12.0 m sea bed level level have been confirmed through the 2D wave flume studies.
3. The overtopping discharge measured for trunk portion of the breakwater section at -12.0 m sea bed level was about 41 l/s/m and found to be within permissible limit of 50 l/s/m.

KEY FINDINGS

1. The hydraulic stability of trunk portion of breakwater section using 5 m³ Xbloc armour units at -12.0 m sea bed level and 2.5 m³ Xbloc armour units at -5.0 m sea bed level have been confirmed through the 2D wave flume studies.

SIGNIFICANCE

The project facilitates extensive wave flume studies for optimized breakwater cross-sections to ensure the long-term viability for the development of Greenfield Port at Kakinada, AP

