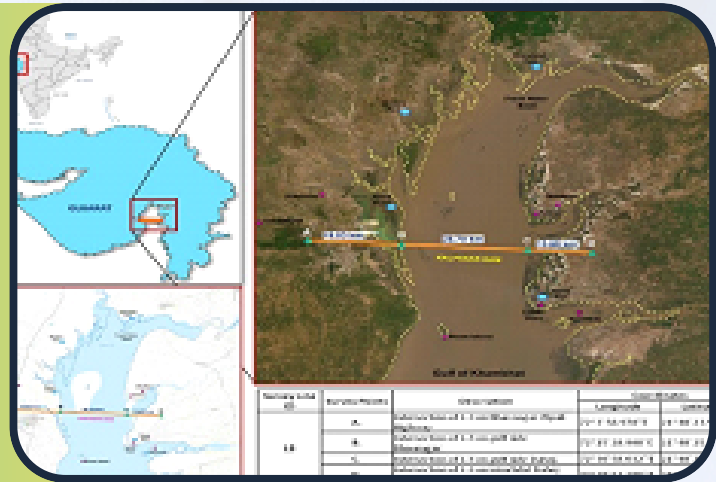




DESIGN OF SEASIDE DYKE FOR THE KALPASAR PROJECT, GUJARAT



STUDY OVERVIEW

The project involves building a 26.7 km long main dam with extensions on both sides into shallow tidal flats. The total length, including extensions, will be nearly 59 km. The aim is to create a freshwater reservoir for irrigation, drinking water, and industrial purposes.

APPROACH

- To determine optimal designs, tests were conducted in a wave generation basin that simulates different water levels and wave heights.
- Two types of prefabricated concrete blocks, Accropode™ II and XblocPlus, were evaluated for use as armor units on the seaside dyke.
- A maximum design water level of +8.765 meters relative to mean sea level (MSL) was considered.
- The design offers protection against a maximum significant wave height of 8.10 meters.
- CWPRS has designed cross-sections based on wave flume studies to safeguard the main dam of the Kalpasar Project in Gujarat, India.

KEY FINDINGS

1. CWPRS has designed a seaside dyke using both Accropode™ II and XblocPlus blocks in a range of sizes, from 0.5 to 14 cubic meters.
2. The dyke will feature a seaward slope of 1:1.33, with designs accommodating various seabed levels from +5.0 meters to -25.0 meters relative to mean sea level (MSL).
3. The elevation of the parapet wall will vary between +12.0 meters and +19.0 meters relative to MSL.

IMPACT

The research facilitates designing of a robust and efficient seaside dyke to safeguard the main dam of the Kalpasar Project from wave action, ensuring the long-term viability of this large-scale water resource initiative.

