

ABSTRACT

AN EXPERIMENTAL STUDY OF THE EFFECT OF SEAWALL SLOPE IN REDUCING SEA WAVE RUN-UP (CASE STUDY OF CIK MAS AYU RIMBA BEACH, SEKAMPUNG, BENGKALIS)

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ABSTRACT

Cik Mas Ayu Rimba Sekampung Beach in Bengkalis is a coastal area vulnerable to the impacts of sea waves, such as erosion and overtopping. This study aims to examine the effect of seawall slope on wave run-up through experimental methods conducted in a laboratory setting. Two seawall slope variations were tested, 1:1.5 and 1:3, using a 1:10 and 1:20 scale model of the existing condition. The seawall models were constructed using gravel and tested in a flume tank under irregular wave simulations based on the JONSWAP spectrum. The results indicate that a gentler slope 1:3 is more effective in reducing wave run-up with overtopping volume 0,002373 m³ compared to the steeper slope 1:1.5. The reduction in wave energy and the volume of water overtopping the seawall is significant, making the 1:3 slope a more optimal design for coastal protection against sea wave impacts.

Keywords: *Cik Mas Ayu Beach, flume tank, overtopping, Seawall, slope, wave run-up.*