

Special Research Title	Wave Transmission Coefficient of the Wave Screen Case Study at Pilot Station
Credits	6
Candidate	Mr. Kumpanart Chewapreecha
Advisor	Prof. Dr. Chaiyuth Chinnarasri
Program	Master of Engineering
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Department	Civil Engineering
Faculty	Engineering
B.E.	2554

Abstract

This research investigates the wave transmission coefficient of the wave screen installed at a pilot station in Samuth Prakarn. The objectives are to determine influence factors, to develop equation use to predict its performance, and to determine its effectiveness.

In this research study, field data were obtained and analyzed. It was found that wave transmission coefficient (K_t) which was determined from the ratio of wave height behind wave screen to wave height in front of wave screen (H_t/H_i) depended on wave characteristics, sea climate, and wave screen physical properties. The screens worked well in shallow water but the results fluctuated when the ratio of water depth to wave length (h/L) approached 0.5 which was the threshold for deep water. Empirical formula developed within the scope of measured wave and physical properties of wave screen installed at the pilot station shows that K_t is proportional to the distance between wave screens and the water depth and inversely proportional to the square of wave period and draft. Coefficient and constant parameters in the equation depend on both approach angle and number of wave screens. Accuracy of the predicted formula, at 95% confidence, was better than 84.2%. Regarding to wave-screen effectiveness, the majority of data (50%) were in a range between 60.5 – 81.1 %. The average was 66.8%.

Keywords: Breakwater / Field Measurements / Gulf of Thailand / Port / Wave Screen / Wave Transmission Coefficient