

**FINAL YEAR PROJECT REPORT
BACHELOR OF ENGINEERING (HONS.) (CIVIL)
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SHAH ALAM, SELANGOR**

**CALIBRATION OF WAVE BASIN
(WAVE ABSORPTION)**

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ABSTRACT

This project is intended to calibrate the wave basin located in the Hydraulics Laboratory, Faculty of Civil Engineering, Institut Teknologi Mara, Shah Alam. The calibration is essential in order to define the possible modeling limits on wave characteristics for future works.

This project will study the effectiveness of using aggregate (Quarrystone) and square hollow timber “crate” as compared to the condition without absorber (no absorber) under the following conditions ;

- a) Varying amplitudes
- b) Varying testing times

Test has shown that aggregate is a good absorber material compared to the square hollow timber “crate” and no absorber.

The report recommends suitable amplitudes, testing time intervals and effective ranges for a fixed depth of 0.32m, wave frequency of 1.325sec (0.755Hz) and absorber material of aggregate.

CHAPTER 1

INTRODUCTION

1.1 General

Waves in the coastal regime are reflected by beaches, coastal protective structures and floating or submerged solid bodies. The reflected waves interact with the incident waves field and contribute to the characteristics of the waves fluid and the flow field beneath the waves.

The reflected waves will also be affected by tides, currents and waves action on coastal and estuarine morphology, beach formation and littoral drift. The interaction of the structures with the sea bed and currents results in local erosion. The study of forces exerted by all types of waves under different conditions, form an important area of research in connection with the design of off-shore and coastal structures.

Understanding and quantifying the physical processes of wave action is important to the field of coastal engineering if we are to extend our present coastal engineering design capabilities.

The wide scope of study as well as the scale of engineering works and operation at sea involves various aspects of wave hydraulics that requires complex numerical modeling. Physical modeling of prototype waves and structures is major tool in coastal studies.

The degree of schematization required in mathematical models make them a useful tool particularly in studies of coastal engineering problems and effect on