STABILITY OF SANDBAGS AS VERTICAL BREAKWATER TOE PROTECTION WITH VARIATION OF SLOPE AND HEIGHT

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ABSTRACT

In deep water, vertical breakwater is preferred as port protection from wave attack. Generally, vertical breakwaters use rock rubblemound as a toe protection, however because of limited rock availability and their costs are also relatively expensive, the rocks can be replaced by sandbags. In addition, sands readily available in coastal areas, therefore the use of sandbags can reduce the construction cost of the vertical Breakwater. The stability of sandbags as a toe protection to substitute rocks is studied in this report.

This study uses 2-D physical model tests. The influenced of variation of regular wave height (H), wave period (t), slope (α) and height of sandbag toe protection, (d) on the stability of sandbag is examined.

Test results show that the stability of sandbags mostly influenced by ratio of freeboard to water depth (hb/hs), and slope foundation (α). The highest stability occurs on gentle slope.

Key words : vertical breakwater, rubblemound, sandbags, stability of sandbags