

SOIL IDENTIFICATION IN THE AREA BEHIND THE BREAKWATER ON THE COAST OF THE NEW STRAIT

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ABSTRACT

This study aims to identify the types and physical characteristics of sedimentary soils in the area behind the breakwater at Selat Baru Beach, Bengkalis. This area is a coastal zone that is vulnerable to sedimentation and abrasion, so understanding soil properties is crucial to support coastal infrastructure planning and sustainable environmental management. The research methodology included a field survey and the collection of nine soil samples, which were then tested in the laboratory using specific gravity tests, sieve analysis, hydrometer tests, and Atterberg limit tests. The results showed that most of the soils were classified as fine-grained, dominated by silt and clay fractions with values passing through the No. 200 sieve exceeding 50%. The average specific gravity values ranged from 2.21–2.64, indicating a content of fine particles and light organic matter. Plasticity tests indicated low plasticity with an average plastic limit value of 9.66%. Visually, the soils were divided into three main groups: coarse sand, watery organic soil, and silty soil. These findings provide an important basis for technical decision-making and geotechnical risk mitigation in coastal areas. Plasticity Chart (PI) = 25.62%. The point is above the A-Line, so according to the USCS, this soil belongs to the inorganic clay group with moderate to high plasticity (CL).

Keywords: Soil identification, Pantai Selat Baru, sedimentation, laboratory testing, breakwater, soil physical characteristics.