



## ABSTRACT

Road damage, particularly structural damage in Tugu Merah-Seget section in Sorong regency, West Papua occurs annually with high intensity. This road crossed marsh area with  $\pm 2$  m clay layer and less good selected fill material and high rainfall. This research tried to use local material as one of attempts to subgrade stabilization to improve physical property of the less good soil, so it can be used to support above paving layer structure.

In this research clay soil used was that of Tugu Merah-Seget road section in Sorong regency, West Papua province and gravel sand. The clay and gravel sand was mixed with ratios of 1:1, 1:2, 1:3, 1:4, and 1:5. Then the mix was subject to some tests such as granule size analysis, Atterberg limits, proctor standard compaction, bearing capacity (CBR) and unconfined compressive strength).

Result of the research identified that the soil is clay (A-7-5) according to AASHTO classification and CH soil, which is inorganic clay with high plasticity or fat clay according to unified classification. Result of test using soaked CBR showed that soil load bearing capacity increase after mixing with gravel sand, with results of 2.05%, 4.49%, 6.98%, 6.55%, and 9.00%, respectively.

**Keywords:** stabilization, clay, sand gravel, bearing capacity