

ABSTRACT

Road infrastructure is arguably the most critical of all public assets when it comes to facilitating economic growth. A good road network is critical for any nation to grow by opening up more areas for stimulated economic growth. However, road construction and rehabilitation require a constant supply of viable materials, some of which are pretty expensive. Therefore, there is need to come up with viable, yet cheaper alternatives. In this investigation, locally available red soil was blended with quarry waste fines in different proportions to create a suitable improved subgrade material. The objectives of this study were to: experimentally determine the geotechnical properties of locally available red soil with respect to pavement construction, determine the properties of the various blend material proportions, determine the optimal blend to be used for heavily trafficked pavements, and estimate the expected reduction in pavement construction compared to using gravel. The research adopted an experimental research design. From the findings, quarry waste improved the geotechnical properties of red soil and the blend material was suitable for subgrade construction. The blend was also cheaper than using alternatives such as gravel. The study recommends the use of quarry waste in civil engineering works because of its suitable properties