

## A Study on the Pressure Void Ratio Relationship for Waste Material

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**Abstract :** Climate change is one of the biggest issues facing communities. Increasing population, growing economies, rapid industrialization are the main factors triggering it. On the other hand, the millions of tons of waste have generated by the period of rapid global growth not only harm to the environment but also lead to the use of valuable lands around the world as landfill sites. Moreover, it is rapidly consuming our resources and this forcing the human population and wildlife to share increasingly shrinking space. In this direction, it is vital to reuse waste materials with a sustainability philosophy. This study was carried out to contribute to the combat against climate change, conserve our natural resources and the environment. An oedometer (consolidation) test was performed on two waste materials combined in certain proportions to evaluate their sustainable usage. Crushed brick (BD) was mixed with rock powder (RP) in 0, 5, 10, 20, 30, 40, and 50% (dry weight of soil). The results obtained revealed the importance of the gradation of the material used in the consolidation test. It was found that there was a negligible difference between the initial and final void ratio of mixtures with brick dust added.

**Keywords :** waste material, oedometer test, environmental geotechnics, sustainability

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