

## **A STUDY ON SPECIMENS SIZE EFFECT ON SHEAR STRENGTH PARAMETERS OF BASALT AGGREGATES FOR UNBOUND LAYERS**

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### *ABSTRACT*

Due to the paramount importance of granular layers in unsurfaced or thinly surfaced roads, several researches on the strength-stress-strain behavior of unbound aggregates have been carried out at the Federal University of Rio Grande do Sul, Brazil. Initially, shear strength, resilient modulus and permanent strain under repeated loading tests were performed on "small" cylindrical specimens (20.0 cm x 10.0 cm). Then, new triaxial equipment was designed and assembled allowing for the test of "large" specimens (50.0 cm x 25.0cm). This paper compares the results of shear strength tests carried out in "small" and "large" specimens. Test results are analyzed according to Mohr-Coulomb model. It may be observed that shear strength parameters are quite similar, the larger specimens presenting higher values of  $c'$  and similar values of  $\phi'$ . The new triaxial equipment for large specimens makes possible to obtain parameters for characterizing the behavior of coarse aggregates and estimating pavements performance regarding shear failure of granular layers.

*KEY WORDS:* Unbound aggregates, shear strength, specimen size