

Particle Size Effect on Shear Strength of Granular Materials in Direct Shear Test

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Abstract : The effect of particle size on shear strength of granular materials are investigated using direct shear tests. Small direct shear test (60 mm by 60 mm by 24 mm deep) were conducted for particles passing the sieves with opening size of 2.36 mm. Meanwhile, particles passing the standard 20 mm sieves were tested using large direct shear test (300 mm by 300 mm by 200 mm deep). The large direct shear tests and the small direct shear tests carried out using the same shearing rate of 0.09 mm/min and similar normal stresses of 100, 200, and 300 kPa. The results show that the peak and residual shear strength decreases as particle size increases.

Keywords : particle size, shear strength, granular material, direct shear test

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