

Analysis of the Diametral Masonry Core Shear Test Specimen

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Abstract:

An analytical investigation was performed of the stress distribution in the diametral shear test. Using closed form and finite element analysis the effect of the following variables on the shear stress distribution were evaluated: angle between bed joint and load, sensitivity to small errors in positioning, width of the loaded circumference and the brick-mortar modulus ratio. Results illustrate the significant non-linear distribution of normal and shear stress along the failure surface. The width of the loaded circumference did not have a significant effect on results. The ratio of brick to mortar modulus E_b/E_m , was shown to reduce non-linearities as the ratio increased from 1.0 to 10.0.

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