

Vent modeling

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The current work presents the results of vent modeling. The Finite Element code was derived for modeling 2D vents. Equations for porous fluid flow were combined with both Mohr-Coulomb and Von Mises failure criteria for elastoplastic rheology of the solid matrix. Results of modeling were compared with an experiment. During the experiment it was found out that there are basically three types of the crack behaviour that can occur during the injection of the Air into the sand with different sand moisture: two of them are shear bands with sufficiently different angle of cone orientation and the third one is Dome-like structure. The aim of the modeling is to understand and predict the different behaviours of the fracture in order to compare it to the nature.