ABSTRACT

The main objective of this investigation is to determine the tensile strength and the fracture parameters which control the cracking phenomena in soils. In order to lead this, an experimental programme has been carried out and applied in the soil of the Campus Nord, in the Universitat Politécnica de Catalunya (Barcelona, Spain).

To determine the tensile strength a total of 59 tests have been conducted for two different densities and water contents ranging from 11% to 29%, by using direct method equipment with stress controlled.

To determine fracture toughness a total of 31 tests have been conducted by stress controlled compact tension (CT) test, for a constant density but different water contents and initial crack length.

In order to establish a relationship between tensile strength and fracture toughness both tests have been carried out with common values for density and water content.

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