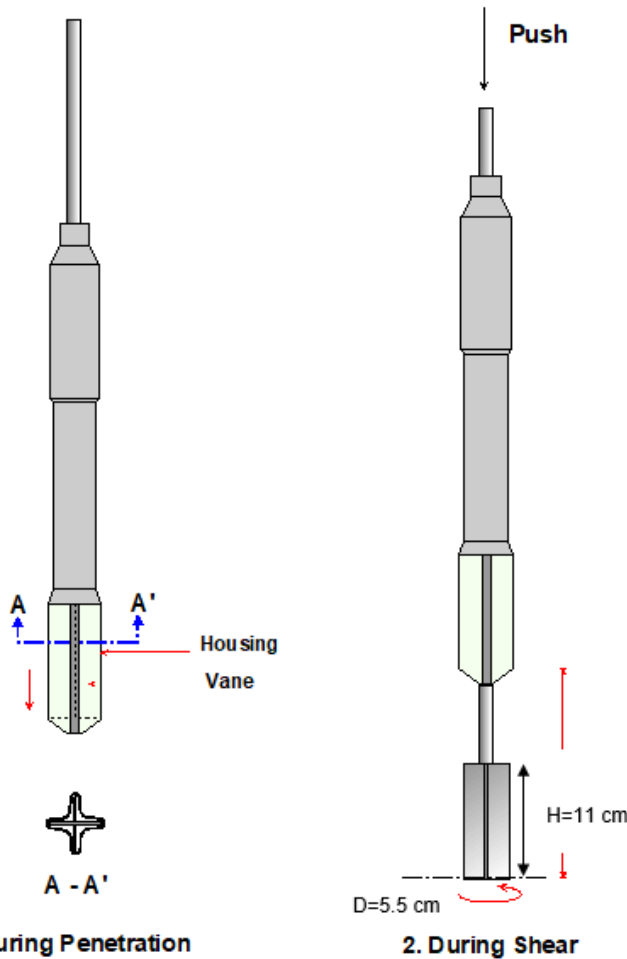


Schematic of Vane Shear Test Equipment



The Vane Shear Test (VST) is an in-situ method for determining the peak and remoulded undrained shear strength of cohesive soils. The VST involves pushing a four-bladed vane into undisturbed soil and slowly rotating it from the surface to determine the torque required to shear soil in cylindrical surface. The vane rod should be rigid enough to transfer load during the test. For, proper determination of soil strength friction of vane rod and instrument should be accounted for. This method is mostly useful for determining in-situ shear strength of soil where sample for laboratory test cannot be obtained. The test is carried out as per ASTM D2573 standards.

The vane consists of four-bladed vane with tapered ends, the height of vane being two (2) times the diameter. The vane is connected to the surface by steel torque. The diameter of the rod is sufficient enough to apply load and is rigid enough such that it does not exceed elastic limit under stressed condition. The coupling is done so that there is no possible tightening when torque is applied during the test. The vane housing is advanced to required depth and torque at the rate of $0.1^\circ/\text{s}$ is applied and the maximum torque is recorded. Then, the vane is rapidly rotated with 10 revolutions to determine the remoulded strength.

The test is moderately rapid and economical. The results can be used to correlate with various other tests and design methods. It is most advantageous to obtain properties of sensitive clays which are characteristically difficult to obtain for lab tests.

Results

