IIS UNIVERSITY OF TOKYO
GDM

# Cyclic wetting and drying test in modified direct shear apparatus

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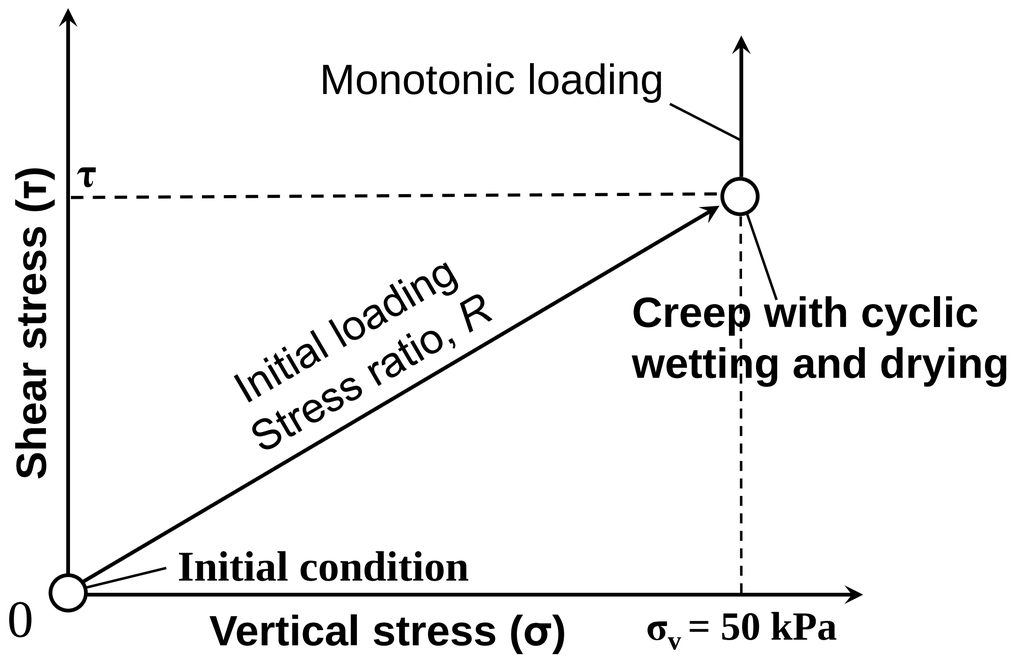
Shear box size : 20 cm * 20 cm * 9.14 cm

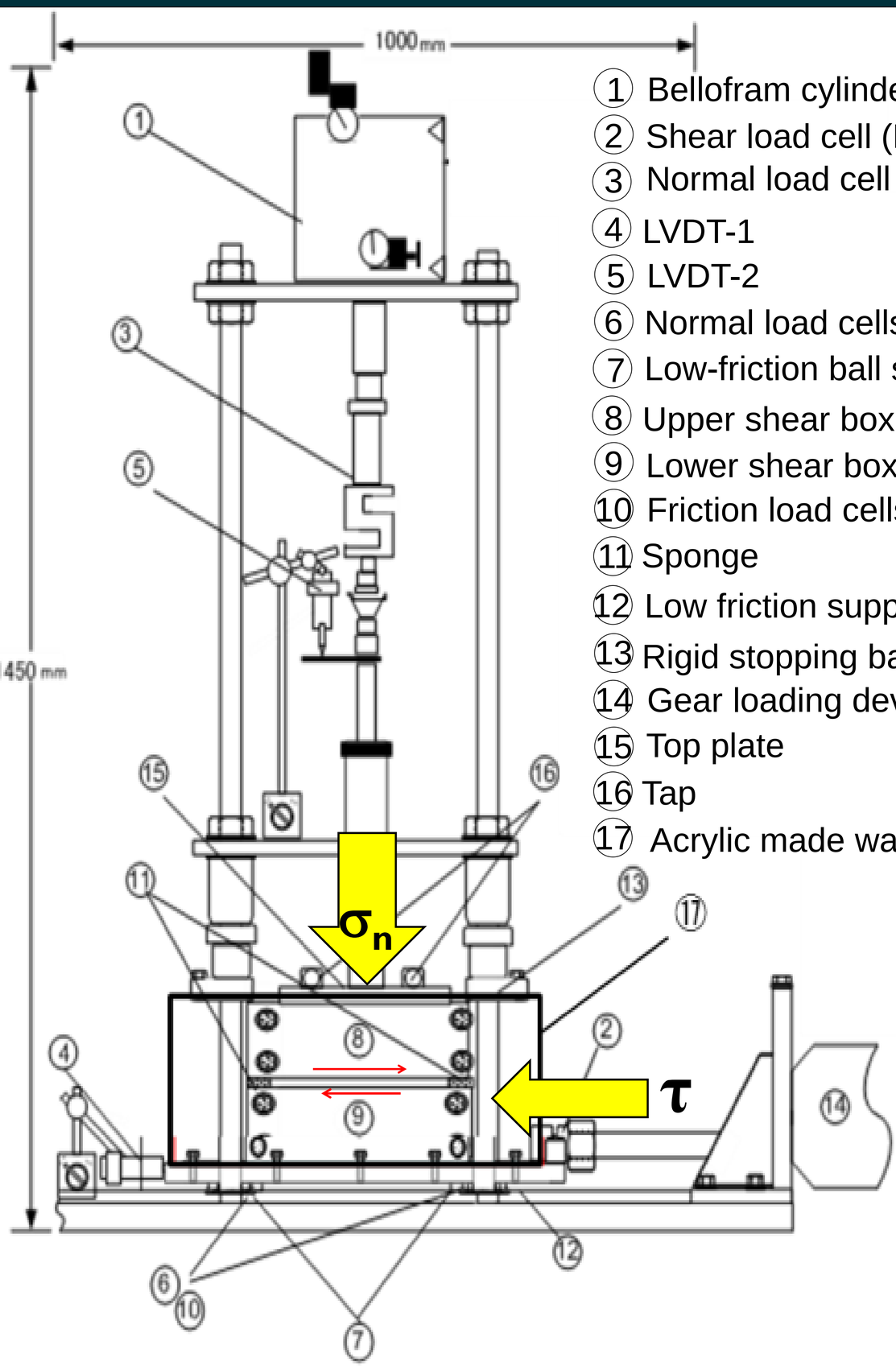
**Stages of Loading**

1. **Initial loading**
2. **Creep loading with cyclic wetting and drying**
3. **Monotonic loading**

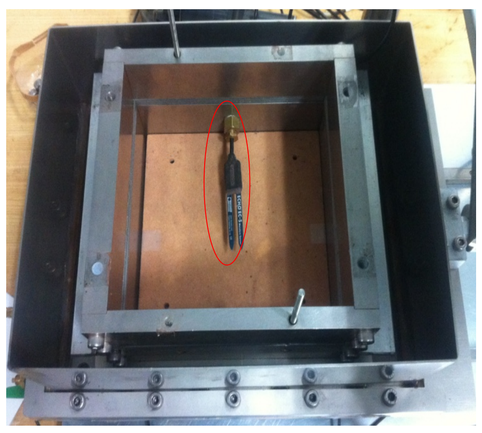
1. Initially both shear and normal stresses are applied to the dry specimen gradually maintaining prescribed stress ratio, $R$ (= $\tau/\sigma_v$) with $\sigma_v$ (= 50 kPa).
2. After the prescribed $\tau$ and $\sigma_v$ (= 50 kPa) values are reached, these values are kept constant. Then,
   a. The wetting is carried out by pouring the distilled water from the bottom of the lower shear box.
   b. The drying is carried out by removing water from specimen , covering specimen with Silica gel and dry air pumping.
3. Finally, after the third wetting and deformations stabilization, a monotonic shear loading is applied at a constant rate of 0.2 mm/min under constant $\sigma_v$ until the specimen's residual state was reached.



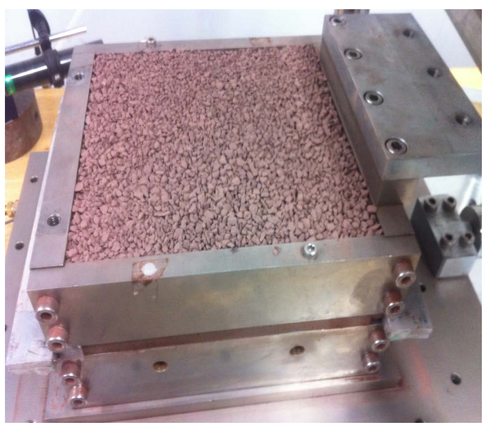

Stress path




Modified direct shear apparatus



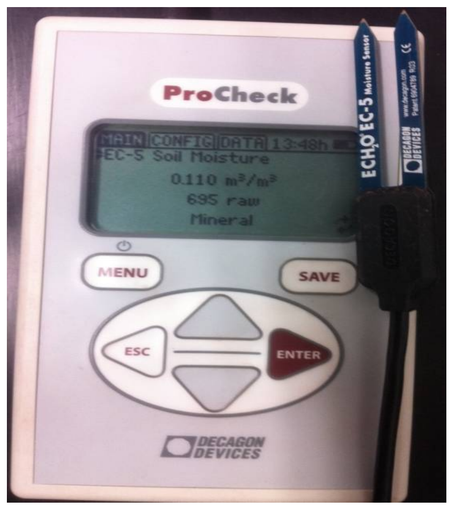
Moisture sensor in shear box



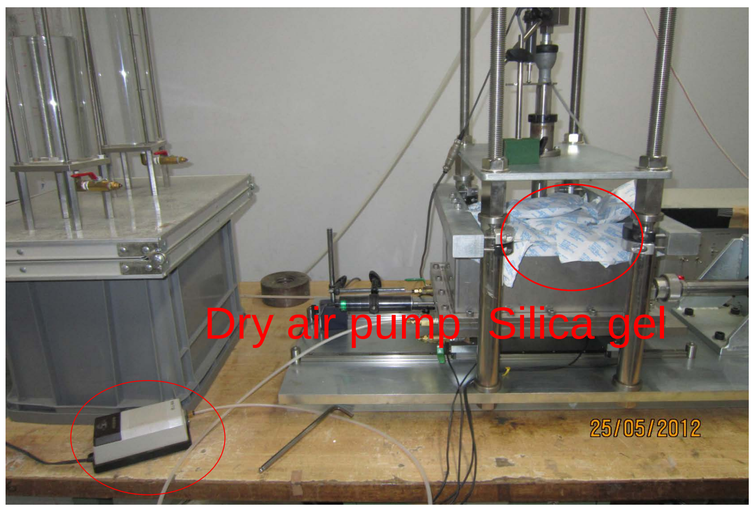
Shear box with Crushed mudstone

covering by Silica gel

covering by vinyl sheet




Pro-check to display sensor value




Overall view of experimental setup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