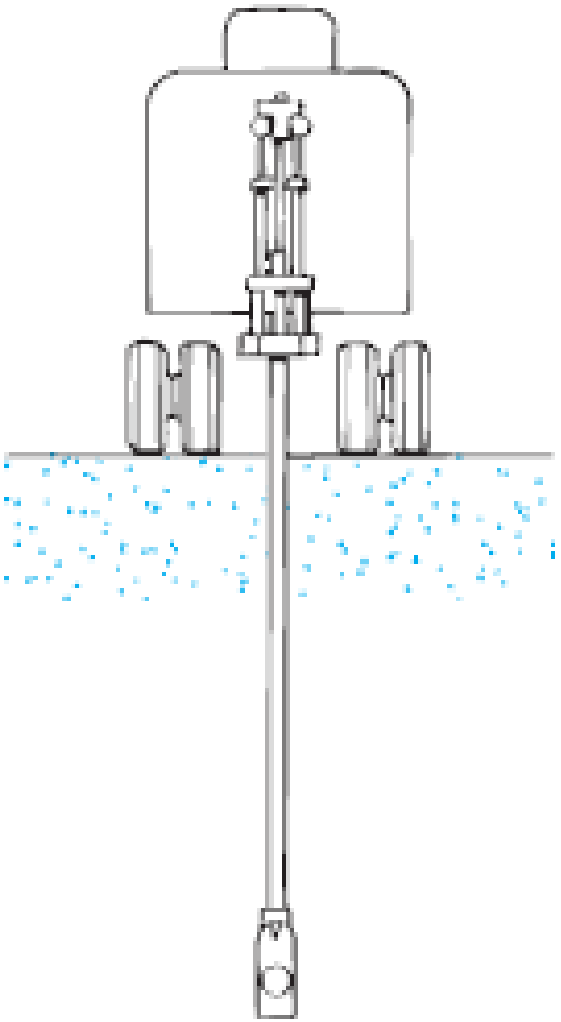
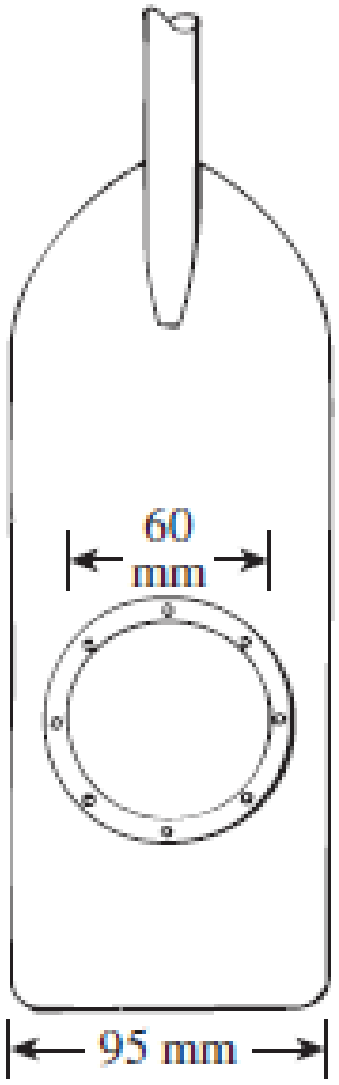
In Situ Tests

- SPT (Standard Penetration Test) N
- CPT (Cone Penetration Tests) q_c
- In Situ Vane T
- Pressuremeter Test V,P
- Dilatometer Test P
- Plate Loading Test Q

Dilatometer Test




60
mm
95 mm

- deformation and strength

K_0

OCR

c_u

E_s

Material index, $I_D = \dfrac{p_1 - p_o}{p_o - u_o}$ *[contact pressure (p_0); expansion pressure (p_1)]*

Horizontal stress index, $K_D = \dfrac{p_o - u_o}{\sigma'_o}$

Dilatometer modulus, $E_D(\text{kN/m}^2) = 34.7(p_1\,\text{kN/m}^2 - p_o\,\text{kN/m}^2)$

$$E_S = (1 - \mu^2)E_D$$

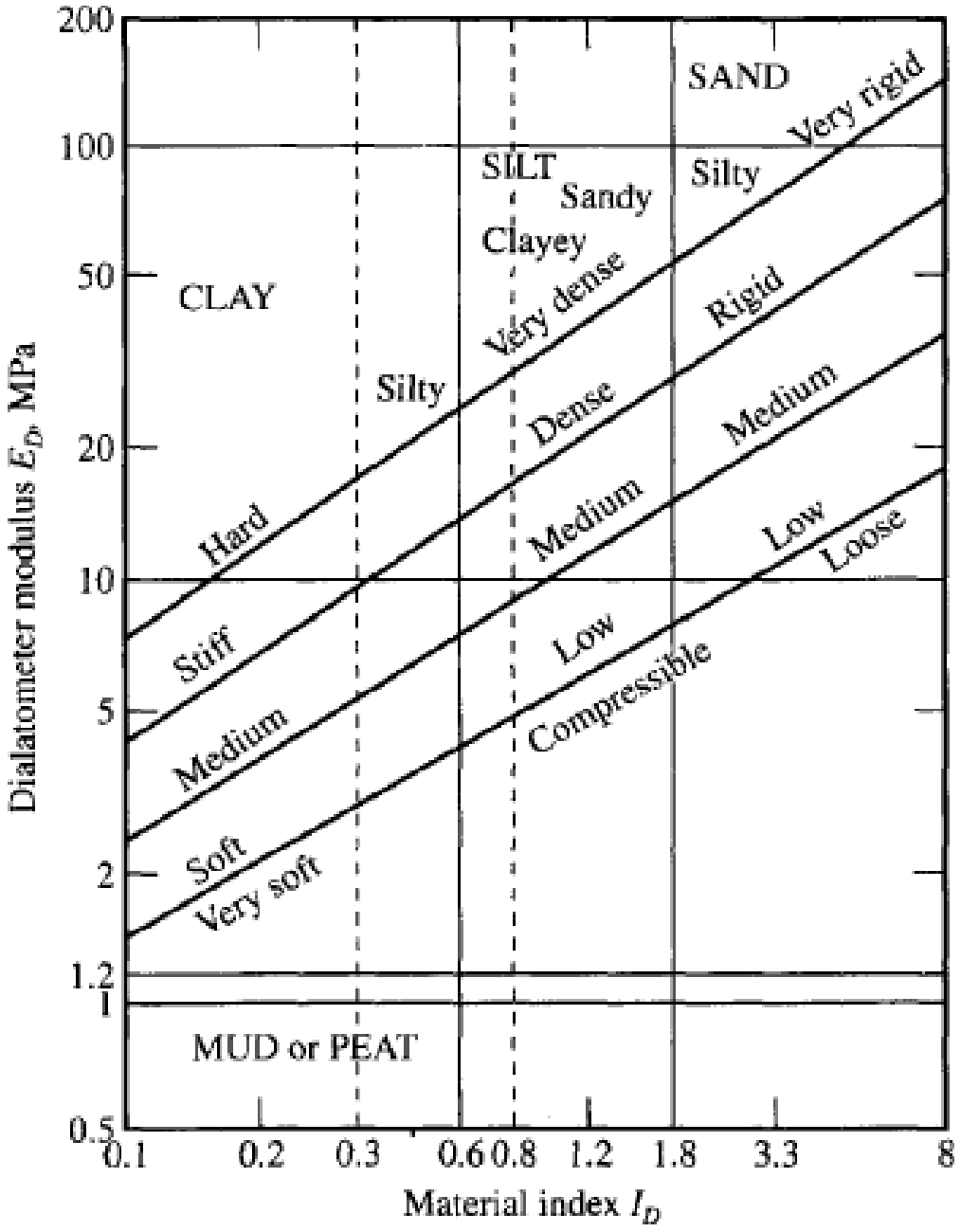
$$K_o = \left(\frac{K_D}{1.5}\right)^{0.47} - 0.6$$

(Marchetti,1980)

$$\text{OCR} = (0.5K_D)^{1.56}$$

$$c_u = 0.35\,\sigma'_0\,(0.47K_D)^{1.14}$$

(Kamei and Iwasaki,1995)



(Schmertmann,1986)