

$$E = f(\sigma'_m) = \frac{\sigma'_1 + \sigma'_2 + \sigma'_3}{3}$$

$$\tau = c' + \sigma' \tan \phi'$$

eski bilgiler.

$$\frac{\Delta H}{H_0} = \frac{\Delta e}{e} \Rightarrow \Delta H = \frac{c_c}{1+e_0} N_0 \log \left(\frac{\sigma' + \Delta \sigma'}{\sigma'} \right)$$




Purpose of Site Investigations:


- Type of foundation
- Geotechnical design parameters
- Settlement
- GWT
- Construction problems
- Adjacent structures
- Environmental problems

General Rules for depth of drilling;

- Reach to "Stable" Layer
- Depths where consolidation of sublayers are negligible
- Bedrocks (if possible)

Method of Site Investigations:

- Trial Pits
Max 4-5 m, Sides should be sloped or supported ...
- Shaft and hand/ups 

- Borings
- i) Percussion Boring: Heavy drilling bit, chopped soil is brought by water
 - ii) Mechanical Augers: 
 - iii) Hand Portable Auger
 - iv) Wash boring: Water circulation
 - v) Rotary drilling

- Sampling: a) Disturbed b) Undisturbed

$$C_A = \frac{\text{Area of Sampler}}{\text{Open Area}}$$

$$C_A < 10\%$$

- i) grain size
- ii) LL, PL
- iii) G_s
- iv) Organic Content
- v) Soil Classification

$$C_A > 10\%$$

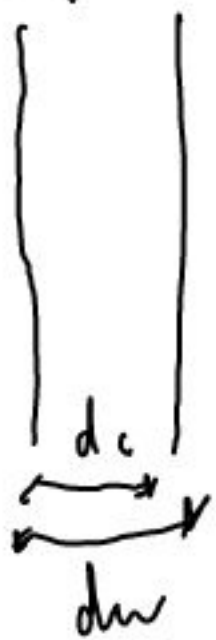
- i) all on left
- ii) Consolidation
- iii) Shear strength
- iv) Permeability

Open Drive Sampler: internal Thin wall Sampler

$$\text{Area ratio} = \frac{d_w^2 - d_c^2}{d_c^2}$$

$$C_A \approx 10\%$$

$\phi 35-100$
F102 Class VD Sple



Split Barrel Sampler:

$C_A = 100\%$
SPT Sampler
Disturbed

$$N_{1,60} = N C_N C_E C_B C_R C_S$$

\downarrow
 $\sigma = 1 \text{ atm}$

\downarrow
 $\left(\frac{100}{\sigma'_{du}} \right)^{0.5}$

\downarrow
 $\frac{ER}{60}$

\downarrow
 1.0