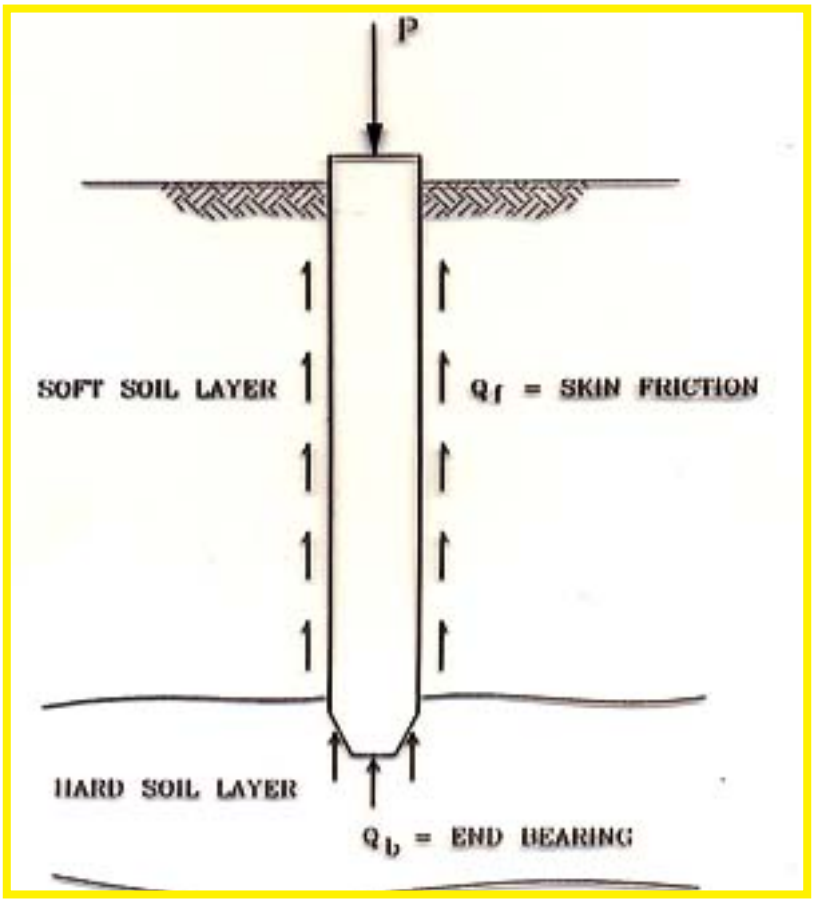
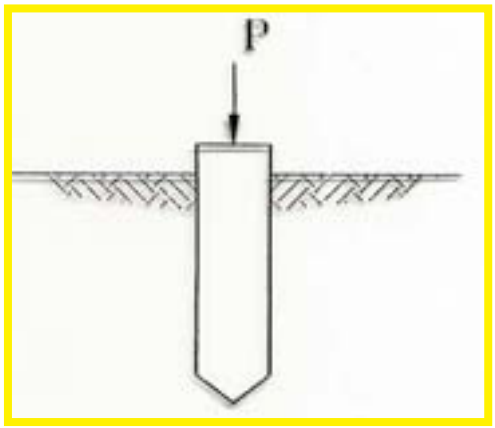
- ***Pile Load Test***
    - To ensure that failure does not occur before the design load (Working Pile)
    - To determine the ultimate bearing capacity of the soil for the design of other pile (Pilot Pile) .
    - To indicate structural soundness of the pile.
    - To determine Load-Settlement behaviour of pile to predict group settlement or defferential settlement of other pile.

- ***Load transfer from pile to soil***



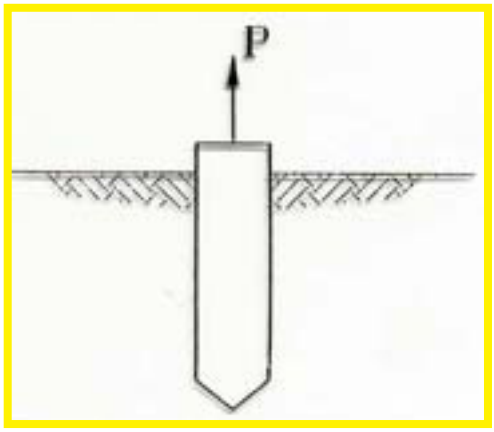
- ***Common type of load test***
    - ***Compression test***

        - Building
        - Bridge
        - Other heavy structure



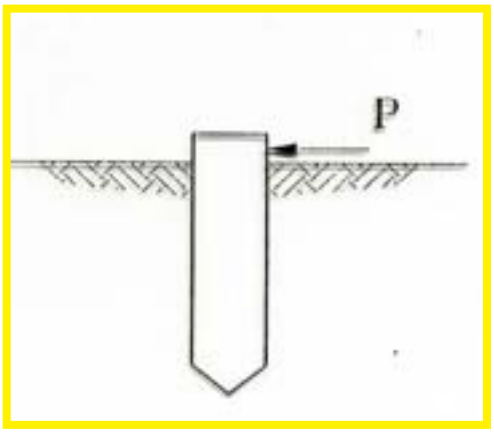
- ***Tension test***

  - Light structure i.e., Frame structure
  - Transmittion line station under wind load



- ***Horizontal load test (Lateral test)***

  - For structure with wind load
  - Structure with earth quake
  - For structure with dynamic load



- ***Comparision test procedure***
  - ***Maintained loading test***

Procedure

Increase the load in stage until the proposed working load is reached and then un-load. Increament of load at each stages will be permitted when rate of settlement is less than 0.25 mm./hr.

Application

For working pile test to determine pile load behaviour in the region of working load with factor of safety.Test need not require to damage the pile.

- ***Constant rate of penetration test (CRP Test)***

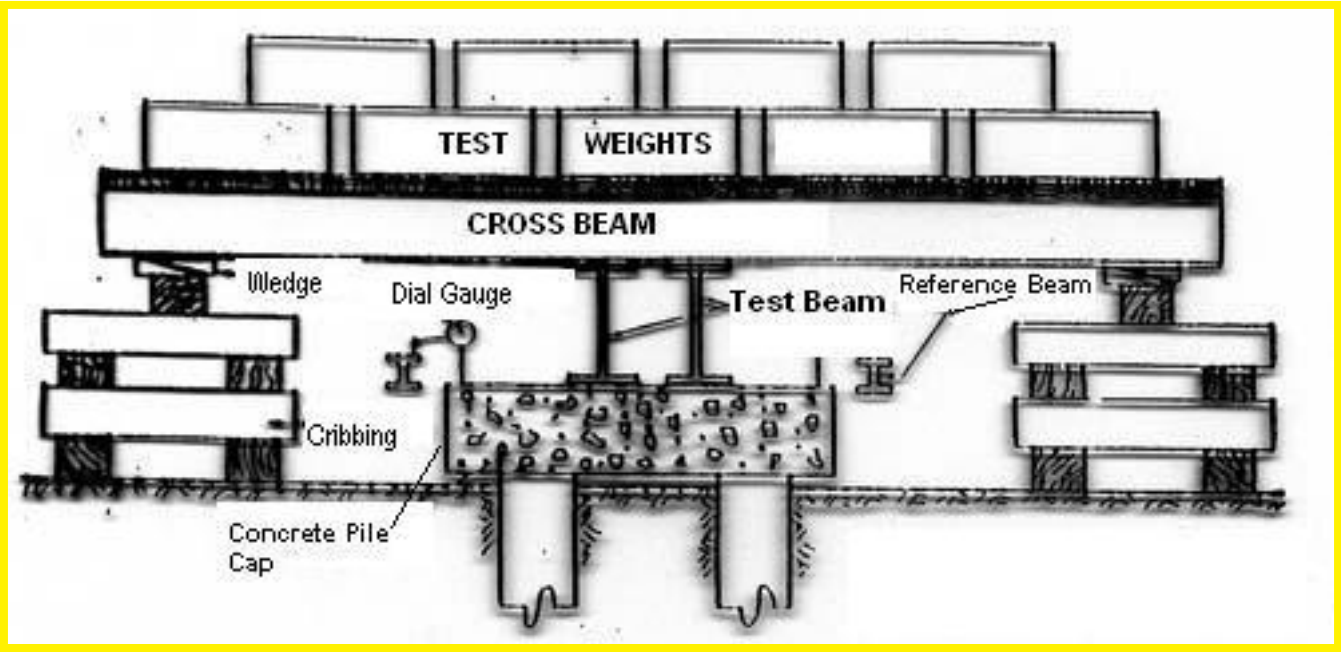
Procedure

Load will be increase by maintaining rate of settlement(Constant Speed) about the same as undrained test in labotory.(0.25-1.25 mm/min.) for cohesionless soil).

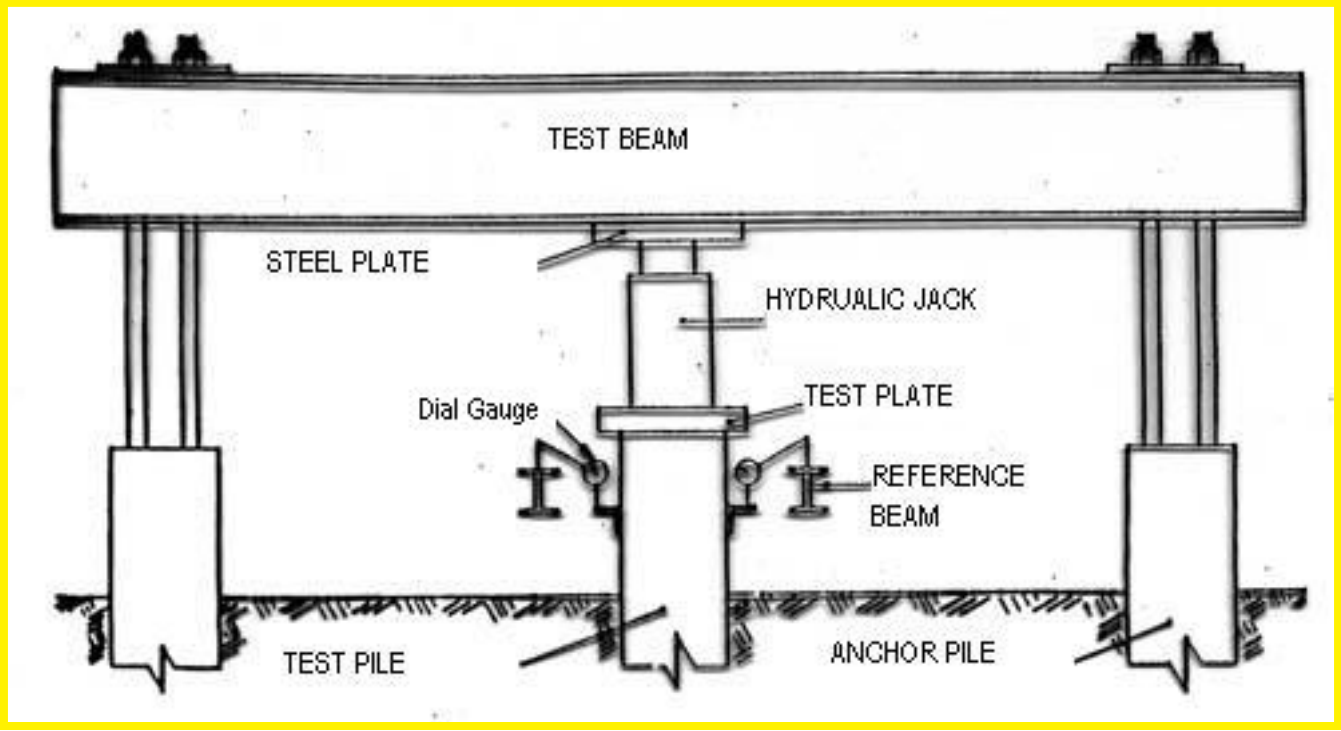
Application

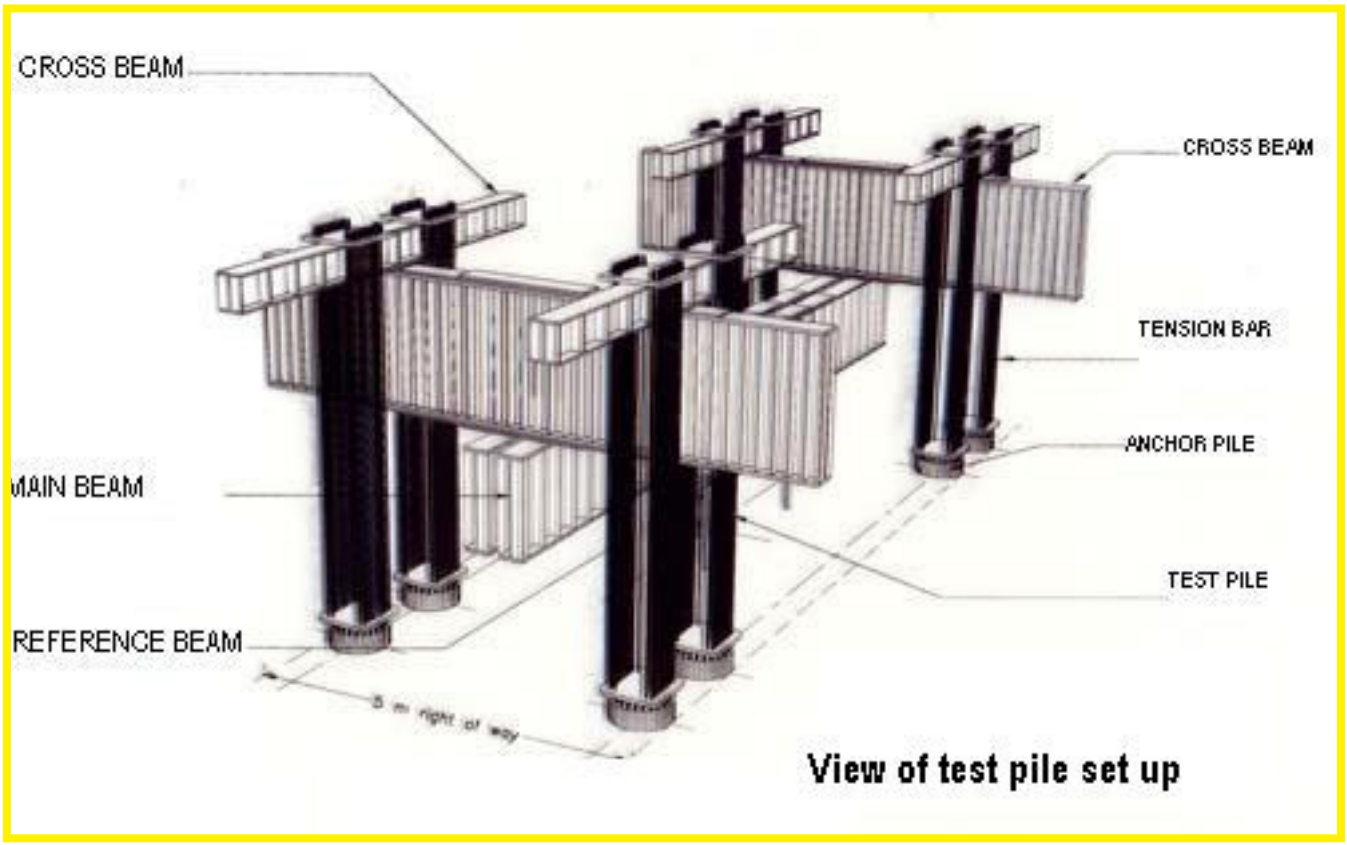
To determint ultimate load of the pile can be damage pilot pile is recommended.

- ***Compression test system***
  - ***Using kentledge system (Dead load)***
    - Load less than 500 tons.
    - No anchorage available or possible for arrangement.
    - Use concrete box, steel or sand as dead load.

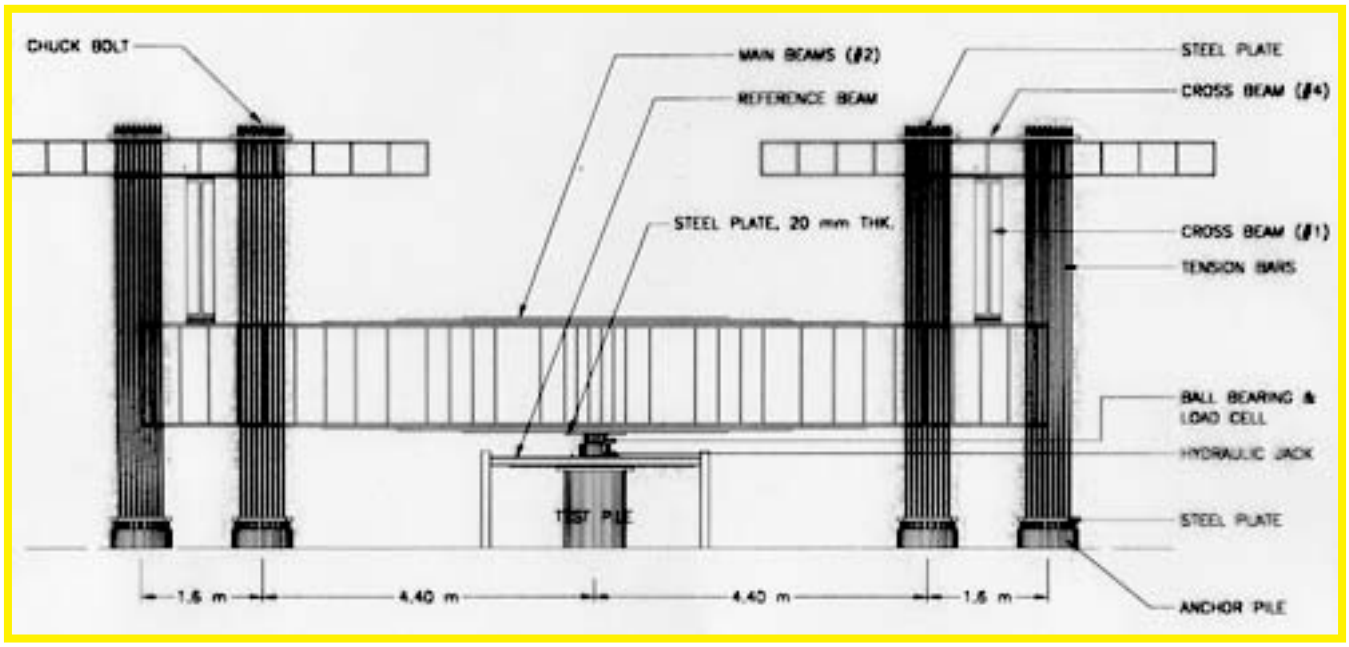


  - ***Using anchorage system***
    - Up to 4,000 tons test applicable
    - Use anchore pile or rock anchore.



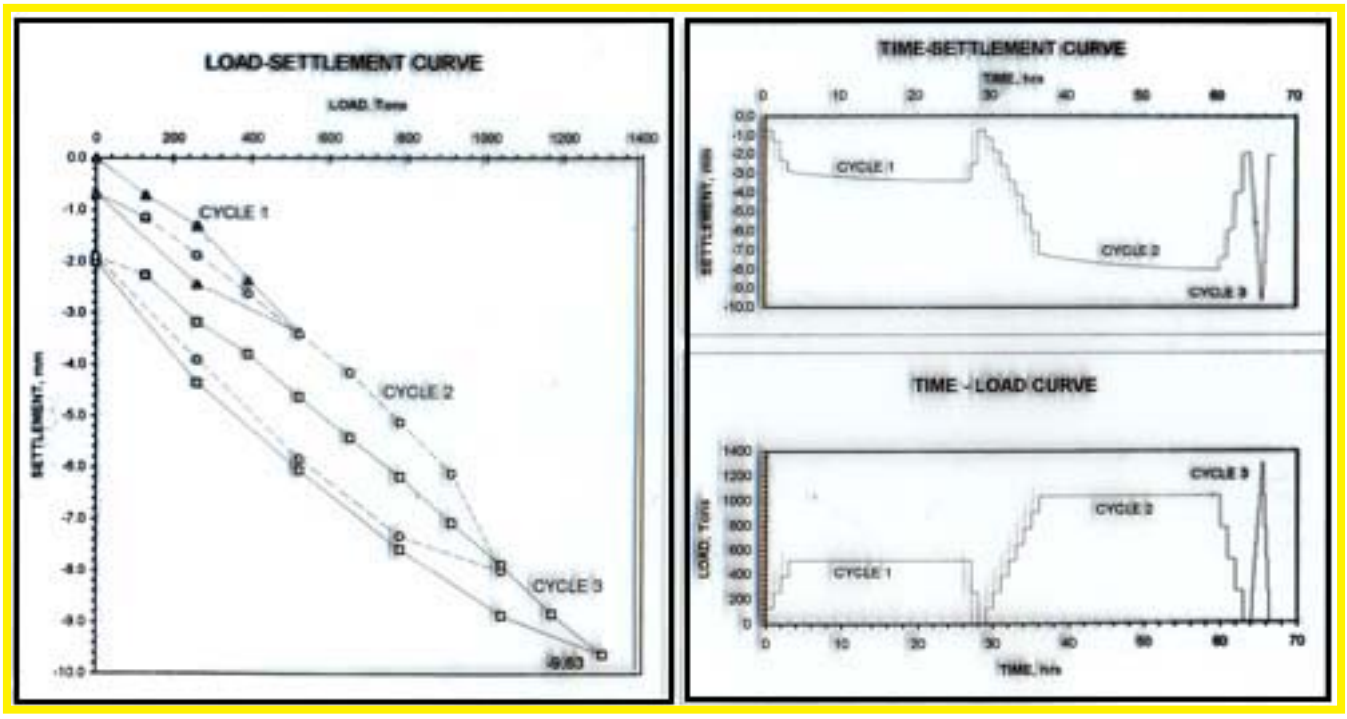


View of test pile set up

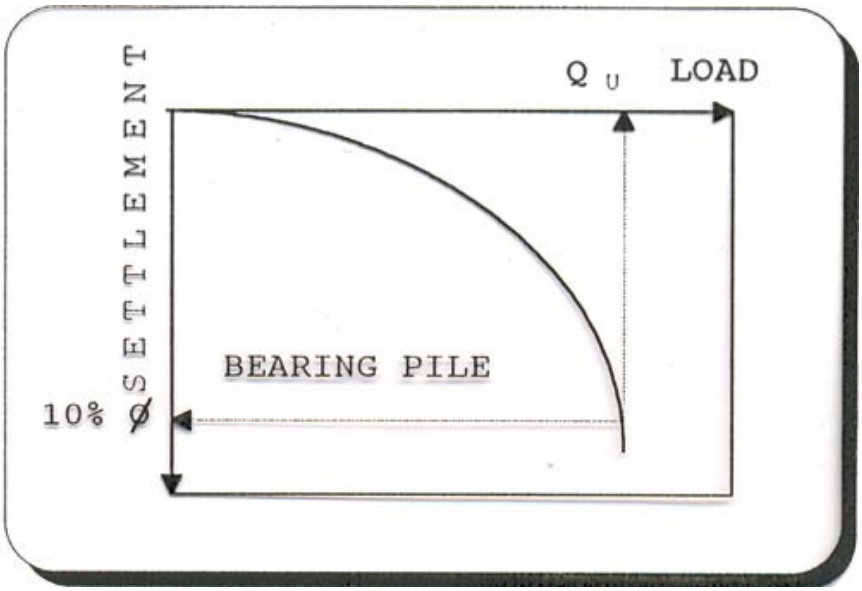


- ***Test result presentation***
  - Load V.S. settlement plot
  - Time V.S. settlement plot
  - Time V.S. load plot

  - ***Load- Settlement - Time relationships of 1.2 m. DIA. x49 m bore pile faculty of Engineering Chulalongkorn University***

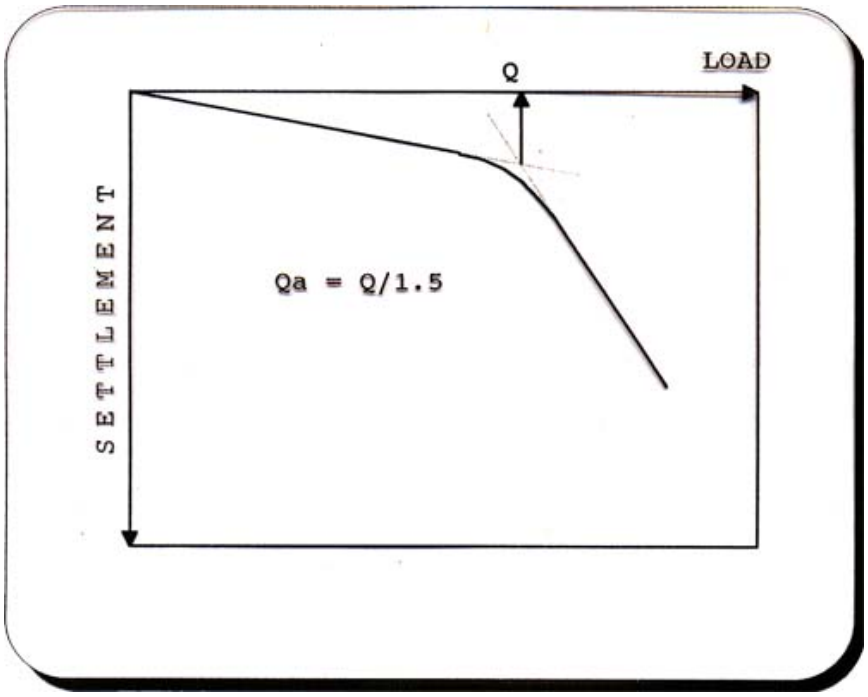


- ***Interpretation of test result***
  - ***Ultimate load of pile.***
    - Load at which settlement reach 10 % of pile daimeter(Bearing Pile)
    - Load at which pile can not take any more load (Friction)
    - In general, structural building are not permitted for settlement greater than 25 mm. for simple beam design

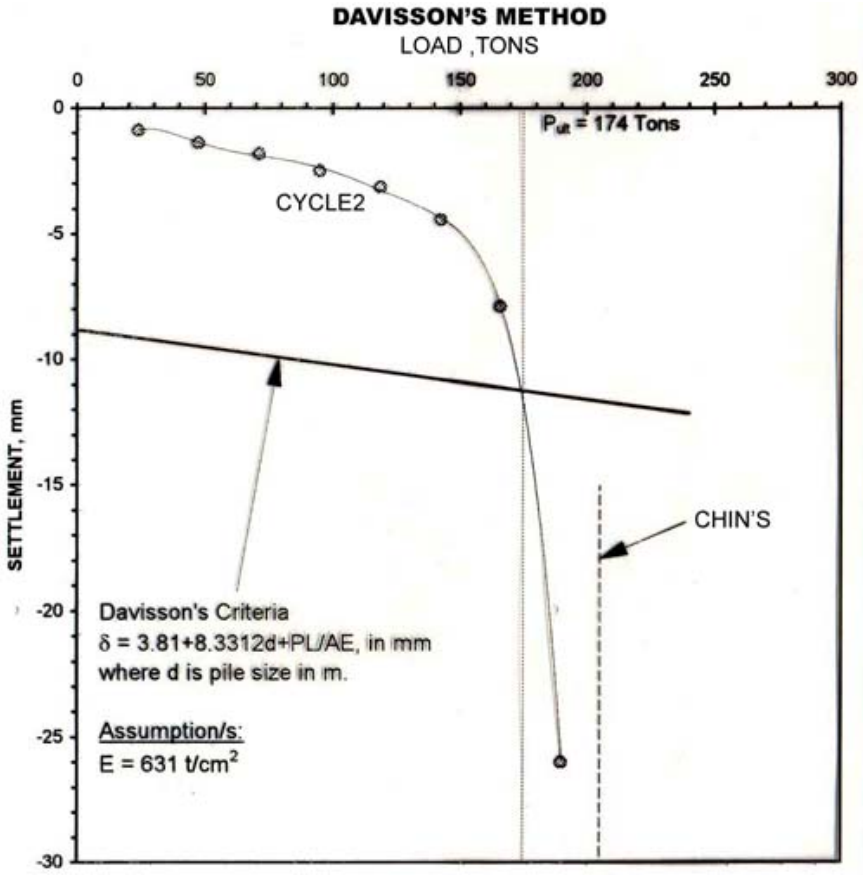


- ***Working load of pile***

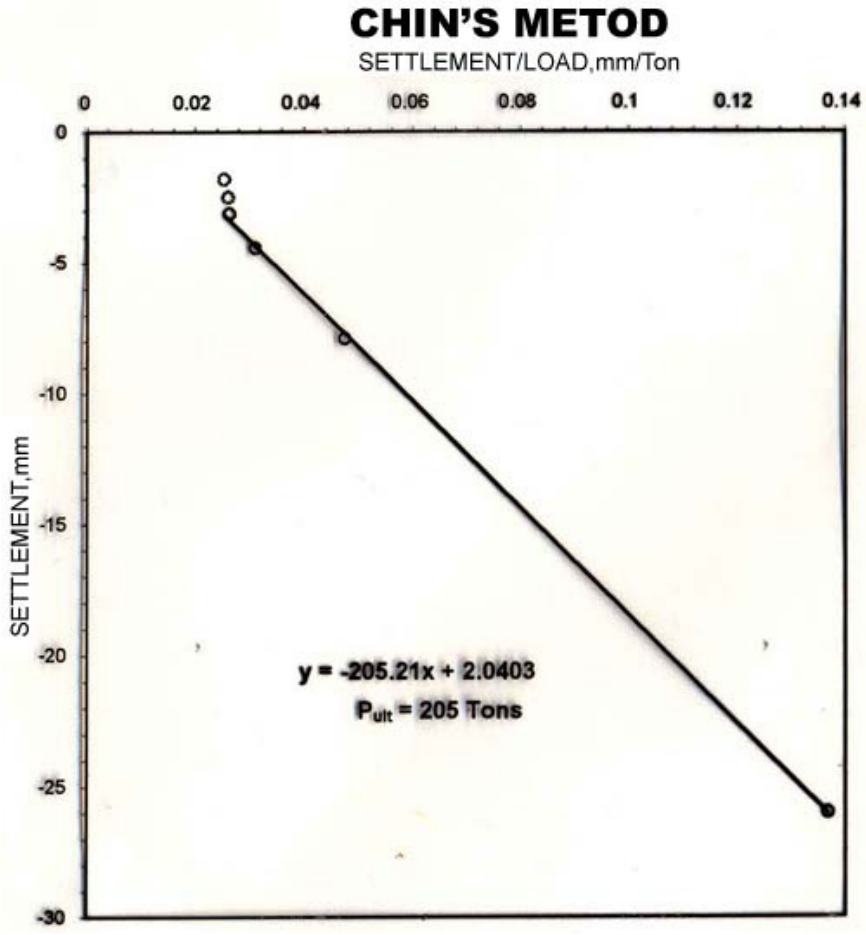
  - Devided ultimate load of pile by factory of safety of 2.5 for bearing or by 2.0 for fraction pile .
  - Intersection point between 2 parts of curve from load V.S. settlement devided by 1.5.
  - In practical settlement at working load is ot allowed more than 6 mm. for bored pile or 4 mm. for driven pile.



- ***Estimated Uktimate capacity of 0.6 m. dia. x25 bored pile Sweet suit hotel(Test#2)***



CHIN'S METOD


SETTLEMENT/LOAD,mm/Ton
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
SETTLEMENT,mm
0
-5
-10
-15
-20
-25
-30
y = -205.21x + 2.0403
Pult = 205 Tons