



# Load carrying capacity of Pile:



- ❖ What is ultimate load bearing capacity?
- ❖ What is allowable load and how is it determined?
- ✓ *Ultimate load bearing capacity of a pile is defined as the maximum load which can be carried by a pile and at which the pile continues to sink without further increase of the load.*
- ✓ *The allowable load is the safe load which the pile can carry safely, which can be determined from ultimate load bearing capacity dividing by suitable F.O.S.*

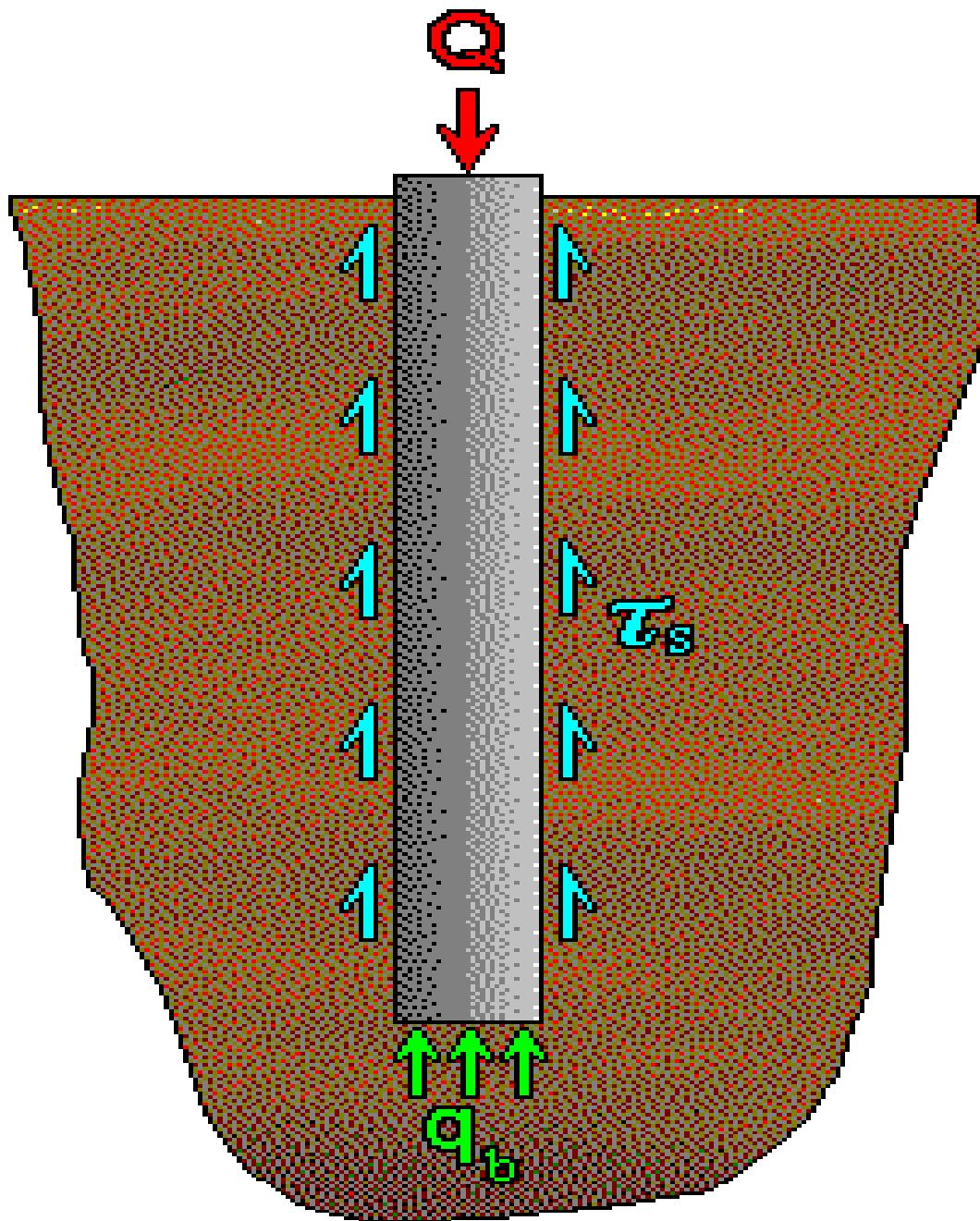




# Methods of determining 'Load carrying capacity'

*The load carrying capacity of a pile can be determined by the following methods:*

- 1) Dynamic formulae
- 2) Static formulae
- 3) Pile load tests, and
- 4) Penetration test





# Penetration Test



- *The result of Dutch Cone Penetration Test can be applied with sufficient accuracy to determine the ultimate bearing capacity of piles in cohesion-less soils.*
- *The following relation may be adopted:*

$$r_p = q_c \text{ and,}$$

$$r_f = 2f_c$$

*where,  $q_c$  = unit resistance of Dutch Cone Penetrometer*

*$f_c$  = static skin friction on the shaft of the penetrometer*