



SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution



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Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF CIVIL ENGINEERING

19CEB301- SOIL MECHANICS

III YEAR V SEM

UNIT 2 – SOIL WATER AND WATER FLOW

Topic 7 : Quick Sand Condition



QUICK SAND CONDITION





PRINCIPLE



- ❖ Condition where pressure due to weight of soil is equal to upward pressure of water
- ❖ Effective stress becomes zero
- ❖ Soil becomes loosened and behaves like a liquid
- ❖ Occurs only in cohesionless soil





WHY NOT IN CLAY SOIL ?



- ❖ In clays the shear strength of soil does not get reduced to zero even when the effective stress becomes zero, due to its cohesion.
- ❖ Hence, quicksand condition does not occur in clays



SIGNIFICANCE



- ❖ Quick sand can not support the weight of man or animal and it behaves like a liquid with a unit weight about twice that of water
- ❖ A person can easily float in it with about one third of his body out of quick sand



QUICK SAND CONDITION





ASSESSMENT



- ❖ What is quick sand condition?
- ❖ When quick sand condition is observed?
- ❖ Why it is not seen in clay soils?



REFERENCES



- ❖ Coduto, D.P., “Geotechnical Engineering Principles and Practices”, Prentice Hall of India Private Limited, New Delhi, 2002
- ❖ McCarthy D.F., “Essentials of Soil Mechanics and Foundations Basic Geotechniques”, Sixth Edition, Prentice-Hall, New Jersey, 2002
- ❖ Das, B.M, “Principles of Geotechnical Engineering”, (fifth edition), Thomas Books/ cole, 2002



THANK YOU