SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

Indian Geotechnical Society – Student Chapter

A Report on

Familiarization of WP4C Dewpoint Potentiometer

Date: 16th September, 2022, Friday

Time: 2.00pm to 3.00pm

Location: Geotechnical Engineering Lab, Saintgits College of Engineering

Report Prepared by,

Arathy K S

Secretary, IGS – Student Chapter

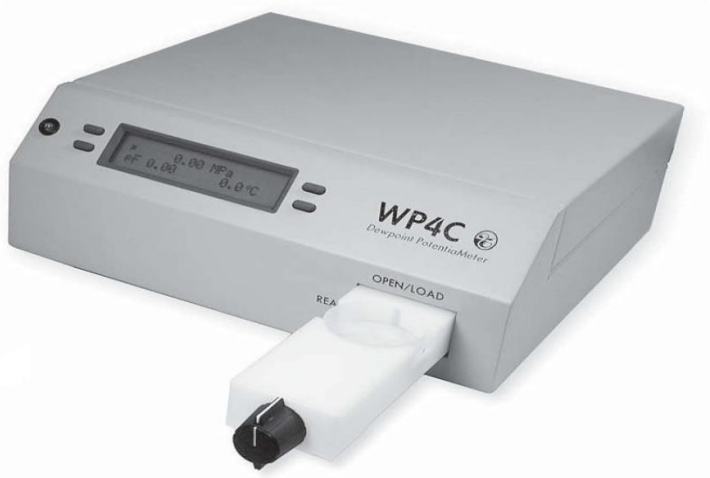
ACKNOWLEDGEMENT

We take this opportunity to acknowledge our beloved Principal Dr. Josephkunj Paul C (Saintgits College of Engineering, Autonomous), Dr. Reebu Zachariah Koshy (HOD, Department of Civil Engineering) for giving us the opportunity to learn on the equipment. We also thank Er. Hanna Paul (Assistant Professor, Department of Civil Engineering), Faculty-in-charge, IGS Student Chapter who arranged this program for us.

INTRODUCTION

The program aimed at learning the equipment introduced to the Geotechnical lab of Saintgits College of Engineering under the guidance of Er. Prasanna Venkatesh (PhD Scholar, NIT Trichy)

"WP4 – WATER POTENTIAL METER (DEWPOINT POTENTIOMETER)"



The WP4C is a very important equipment used for research in the area of unsaturated soil mechanics. It can be used to measure the water potential of any porous material. It's typically used to analyze soil, soilless substrates, plant material, and seeds.

A total of 11 students from Third semester M.Tech Geomechanics and Structures had attended the Program.

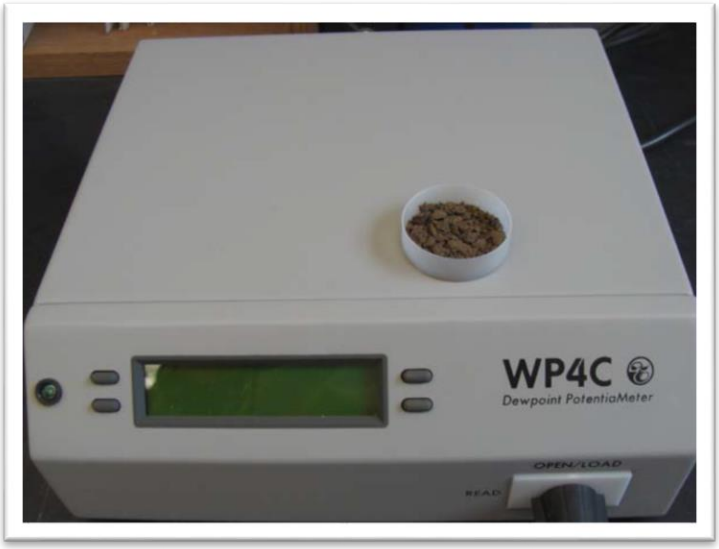
INFORMATIONS ACQUIRED FROM THE PROGRAM:

A dew-point potentiometer measures relative humidity of air above soil sample and soil suction is calculated trough Kelvin equation. This measurement technique is an indirect measurement of total suction.

Soil suction is defined as the state of the soil when it is under reduced pressure. It is measured in terms of the height of the water column (h) suspended in the soil.

Operation:

The sample is placed in a round sample cup (4cm in diameter and 1cm tall) and set the cup in the lexan sample drawer, slide in the drawer and turn the knob to seal the chamber. After about 5 minutes, the WP4C will beep and show your final water potential reading.



Applications of Dewpoint Potentionmeter:

- Soil moisture Characteristics
- Expansive soil Characteristics
- Leaf water potential
- Seed priming
- Root zone water potential profiles

WP4C Dewpoint Potentiometer

Explanation by Er. Prasanna (PhD Scholar, NIT Trichy)

CONCLUSION :

From the class taken by Er. Prasanna Venkatesh (Ph. D Sholar, NIT Trichy), we got to know about the use and application of Dewpoint potentiometer and the behavior of unsaturated soils under suction.