Performance Examination - Soils

Standard Method of Test for Unconfined Compressive Strength of Cohesive Soil (AASHTO T 208-15)

Candidate Name: _____ **NICET ID:** _____

Apparatus	Trial 1	Trial 2
Compression Device		
Hand operated, mechanical, or hydraulic		
platform weighing scale equipped with screw-jack-activated load yoke		
Hydraulic loading device		
Deformation Indicator		
Such as a dial indicator, LVDT, or another measuring device		
Graduated to 0.02 mm (0.001 in) or better		
The range of travel at least 20% of specimen length		
Sample Extruder		
Hand operated, mechanical or hydraulic; capable of extruding the soil core from the sampling tube in the same direction of travel in which the sample entered the tube		
Length of travel at least equal to the required untrimmed test length of the sample and permits the extrusion to occur in one operation without resetting the piston or extrusion mechanism		
Operated at a relatively uniform rate, causes negligible disturbance of the sample		
Dial Comparator (or another suitable device) For measuring specimens to nearest 0.1% of the measured dimension		
Timer Indicates elapsed time to the nearest second		
Balance Readable to 0.1% of specimen mass		
Equipment for Drying Water Content Samples As specified in T 265		
Water Content Containers Resistant to corrosion, disintegration, and weight change, with close-fitting lids		
Oven Maintains 110 ± 5 °C (230 ± 9 °F)		
Miscellaneous Specimen trimming and carving tools, remolding apparatus, undisturbed specimens		

Procedures	Trial 1	Trial 2
Undisturbed Specimens		
1. Specimens handled carefully to prevent disturbance, changes in cross-section, or loss of water content. Carved specimens prepared, whenever possible, in a humidity-controlled room.		
2. Any small pebbles or shells removed when carving or trimming.		

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Procedures (continued)	Trial 1	Trial 2
3. Voids on specimen surface filled in with remolded soil obtained from trimmings.		
4. When pebbles or crumbling result in excessive irregularity at ends, specimen capped with a minimum thickness of plaster of Paris or similar material. *Notes: Specimens may be sealed with rubber membrane, thin plastic coatings, or coating of grease or sprayed plastic immediately after preparation and during the entire test. Also, if the specimen is capped, mass and dimensions should be determined before capping.*		
5. If entire specimen not used for water content, representative cuttings taken and placed in covered container.		
6. The water content of cuttings determined according to T 265.		
Remolded Specimens		
1. Prepared from either failed undisturbed sample or the disturbed sample.		
2. If the failed undisturbed sample, wrapped in thin rubber membrane and material worked thoroughly with fingers to assure complete remolding.		
3. If remolding, care taken to avoid entrapped air, obtain uniform density, remold to the same void ratio as undisturbed specimen and preserve natural water content.		
Compacted Specimens		
1. Prepared to predetermined water content and density required.		
2. After forming specimen, ends trimmed perpendicular to the longitudinal axis.		
Specimen Size		
1. Specimen diameter at least 30 mm (1.3 in).		
2. Largest particle in test specimen smaller than 1/10th specimen diameter, or for specimens having a diameter 72 mm (2.8 in) or larger, largest particle size smaller than 1/6th specimen diameter.		
3. Height-to-diameter ratio between 2 and 2.5.		
4. Average height and diameter of the specimen determined to 0.1%.		
5. Minimum of 3 height measurements taken 120° apart.		
6. At least three diameter measurements taken at quarter points of height.		
7. Mass of specimen determined to 0.1%.		
8. Specimen centered on bottom platen of the loading device.		
9. Loading device adjusted so upper platen just makes contact with the specimen.		
10. Deformation indicator zeroed.		
11. The load applied to produce axial strain rate of 0.5 to 2% per minute, at a constant rate.		
12. Specimen height 0.5% of height 2% of the height.		

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Procedures (continued)	Trial 1	Trial 2
13. Distance traveled elapsed time rate (distance/time).		
14. Load, deformation, and time values recorded at sufficient intervals to define the stress-strain curve (usually 10 to 15 points are sufficient).		
15. Loading continued until load values decrease with increasing strain, or until 15% strain is reached.		
16. The rate of strain chosen so that time of failure does not exceed about 15 minutes.		
17. Strain rate for testing sealed specimens may be decreased, if desired. Also, higher or lower strain rates may be used if materials are either soft or brittle.		
18. Water content determined using the entire specimen, unless cuttings were taken.		
19. Photo or sketch made of the specimen at failure, showing slope angle of failure surface if the angle is measurable.		

First Attempt: Pass: _____ Fail: _____ **Second Attempt:** Pass: _____ Fail: _____

Exam Administration: Remote _____ In-Person _____

Comments:

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Examiner Name: _____ **Examiner Signature**: _____ **Date:** _____