

ITEM 17551. 5020 M - STATIC AXIAL COMPRESSIVE LOAD TEST

DESCRIPTION

Under this work, furnish all testing materials, equipment and labor necessary to properly perform static pile load tests on piles where indicated in the plans or where ordered by the Engineer, and prepare a load test report as required under Construction Details.

Perform the work in accordance with the requirements of the latest version of ASTM D 1143: Standard Test Method for Piles Under Static Axial Compressive Load. Engage a professional engineer, licensed and registered to practice in New York State, to design the loading system and procedures.

Definition of Terms:

Load Test Acceptance
Criteria:

The slope of the pile deflection curve at twice the allowable design load is less than a slope of 0.15 mm per kN of applied load, according to the load versus gross settlement curve determined by the Static Pile Load Test.

Design Load:

The load permitted on a pile.

MATERIALS

These are as required by the most recent version of ASTM D 1143. Construct the jack stand of steel with machined edges so that the surfaces are square.

CONSTRUCTION DETAILS

Provide the following submittals to the Engineer for approval by the D.C.E.T.S. least thirty (30) days prior to commencing Static Load Test Procedures:

1. Details of the load application and reaction system.
2. Details showing the deflection measurement apparatus and set-up, including that required for determining telltale movements.
3. Load cell, jack, and pressure gauge, calibration curves, determined by an independent laboratory.
4. Certifications for all structural components.

Design a load frame and reaction system that can apply a load of 4 times the design load.

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Perform each test in accordance with the requirements of the latest version of ASTM D 1143, except as modified by this specification, as follows:

Sections 3.2.2 and 3.2.3 both apply. Use a calibrated load cell, jack, and pressure gauge for each test.

Firmly embed all supports for the reference beams and wires in the ground at a clear distance of not less than 3 m from the test pile. Locate reaction piles or anchors at least 3 m away from the test pile.

Do not use driven piles or dead load to provide a reaction force.

Ensure that bearing surfaces are trim and level for optimum bearing contact between load test components.

Apply the load in accordance with Section 5.6- Quick Load Test Method for individual Piles. Apply the load in increments of 10% of the required test load shown on the Plans. The time interval between load increments is 5 (five) minutes. Do not use Section 6.4 for measurement procedures.

Take and record the readings of time, load, and settlement immediately before and after the application of each load increment. Continue applying load increments until twice the pile design load is reached. Maintain the full test load for 10 minutes, with readings recorded at 2-1/2, 5 and 10 minutes. Remove the test load in 4 approximately equal decrements with 5 minute intervals between decrements.

Prepare a load test report according to the requirements in Appendix C of FHWA manual entitled "Static Testing of Deep Foundations," Publication No. FHWA-SA-91-042.

METHOD OF MEASUREMENT

Payment will be made for each test prepared, conducted, and documented as required by this specification.

BASIS OF PAYMENT

The unit price for each test includes the cost of all equipment, materials, and labor necessary to successfully complete and document each test.