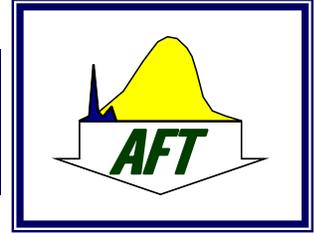


Applied Foundation Testing



Drop Hammer Dynamic Testing by AFT

Introduction:

AFT's mission is to provide our clients the best solution to their foundation testing needs. In some cases Static (ASTM D1143) or Statnamic (ASTM D7383) load tests are simply not the best fit for a project. This is why AFT developed a dynamic test system for cast-in-place piles, drilled shafts, or driven piles.

Design:

- Test capacities up to 2,000 tons (higher loads available upon special request).
- Ram weights from 8 kips to 47 kips.
- Drop heights from less than 1 foot to 8 feet.
- Ram lifted by hydraulic rams for each drop (crane not needed to lift the ram for drops).
- Hydraulic ram lifting allows precision drop heights.
- Precise ram impact alignment produces highly uniform impact force.
- Hydraulic leveling feet with 18 inches of travel means easier site prep.
- Simple to assemble and disassemble.

Conforms to ASTM D4945 (High-Strain Dynamic Testing of Deep Foundations).



Contact **APPLIED FOUNDATION TESTING** for further information and costs

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- Tampa, Florida
- Miami, Florida
- Pensacola, Florida
- Birmingham, Alabama
- Baton Rouge, Louisiana
- Raleigh, North Carolina



Drop Hammer by AFT (Continued)

Testing

AFT's dynamic test system involves impacting the top of the foundation with a large ram weight causing it to experience displacement. The foundation response during the impact is measured with accelerometers and strain gages attached to the foundation or a load cell for some cases. During the test AFT uses a PDA® device to record the measurements.

The data obtained is evaluated by AFT engineering personnel in the field and then further analyzed with CAPWAP® software.

Test Results Include:

- Estimated mobilized capacity.
- Estimated resistance distribution.
- Integrity evaluation.
- AFT provides a comprehensive report.



AFT DROP HAMMER SUCCESS

Interstate I-49 Caddo Parish, Louisiana

AFT used our SmartDrop System on a 66 inch diameter drilled shaft for an interstate bridge project in Louisiana (LADOTD). A 47 kip ram was used to confirm an ultimate capacity of 1,150 kips with a permanent displacement of 0.50 inches. AFT used CAPWAP analysis to account for the non-uniform nature of the pile and to evaluate capacity.

AFT DROP HAMMER SUCCESS

What if your drilled shaft has a column on it and it has not yet been accepted?

AFT solved this problem by using our SmartDrop system to test a 66 inch diameter drilled shaft with a 20 foot tall, 48 inch diameter column in place on top of it. Proof loading the drilled shaft was necessary due to an anomalous condition at its bottom. AFT used a drop hammer ram weight of 47 kips to confirm an ultimate capacity of 1,375 kips with a permanent final displacement of 0.20 inches. The Contractor stacked crane mats to support the drop hammer and reach the column top. AFT also used CAPWAP to account for the non-uniform pile model and evaluate capacity.

