

## A.2 Pseudo Static Pile Load Tester

The load test by the Pseudo Static Pile Load Tester (PSPLT) is carried out by means of dropping a heavy mass (25.000 kg) with a coiled spring assembly from a predetermined height onto a single pile. After the hit, the mass bounces and is caught in its highest position. Catching the bouncing mass makes larger drop heights possible and avoids further hindrance to the test and the measurements.

The instrumentation for the test consists of a load cell and an optical displacement measuring device. The load cell is placed on top of the pile. It is almost identical to the one used during static load tests. Pile head displacement is recorded with the optical device mounted on a tripod at a distance of approx. 10 m from the pile. This tripod is equipped with a geophone to monitor vibrations of the tripod during the test. All measured signals are immediately processed by a computer and presented in relevant graphs.

The mass effects of the coiled springs in the PSPLT are minimized by using additional rubber springs and by creating a time delay between subsequent coils hitting the base plate. The spring stiffness is order 8 MN/m, but in fact a non-linear spring was installed.

The execution of a test is as follows: the PSPLT is brought to the test site by a low-loader. It moves on its tracks to the test pile, whose pile head has previously been prepared. When the rig is positioned and the measuring devices are attached the test starts. First a static load test is carried out with the weight of the drop mass. Then subsequently a number of rapid loads are deployed to the pile by dropping the mass from increasing heights onto the pile. With the output of results a quasi-static load-settlement curve is produced. Then the next pile can be tested. It is possible to load-test a significant number of piles per single working day. With proper preparations on the test site and the pile heads more than 10 piles daily have been tested.

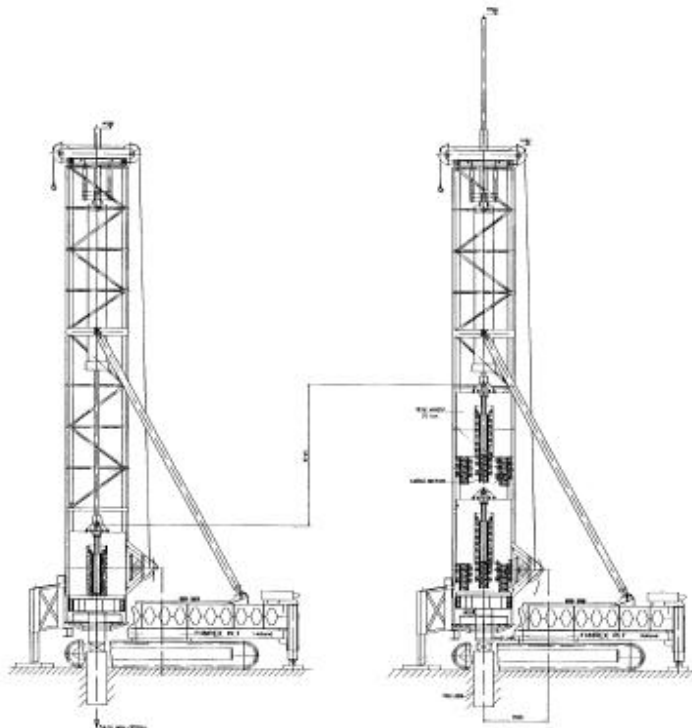


Figure A2-1 Sketch of the PSPLT

**Reference**

Schellingerhout, A.J. ; Revoort, E.

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In: "Proc. 5th Int. Conf. Appl. Stress-Wave Theory to Piles, Orlando, Sept. 1996", Gainesville, Univ. Florida, Dep. Civ. Eng., 1996, pp. 1031-1037