

## Testing Datasheet No 5

### Pile Load Testing - What each test type should realistically achieve

#### Static

1. The test is carried out to a specified method of applying a static load incrementally to the test pile head and measuring the pile head deflection under the applied load.
2. Static load testing will give information about the deflection versus time and load versus deflection characteristics of the pile.
3. The test results should be presented graphically in the form of load and deflection versus time and load versus deflection. The results should also be presented in tabular form.
4. The load versus deflection curve will provide the pile designer with data to assess the suitability of the pile to support the structure.
5. If the pile fails to meet the specified performance criteria during the test the data can be analysed to indicate the mode of failure.

#### Dynamic

1. The test is carried out to a specified method of applying a dynamic load to the head of the pile using a pile hammer or drop weight. The resulting pile head forces and displacements are measured (or derived from other parameters) versus time and this data is subsequently analysed.
2. If carried out on a driven pile during driving the test will provide information on pile hammer performance, pile driving stresses and the bearing characteristics of the pile during and at the end of driving.
3. If carried out on a driven pile by restriking the pile, at some time after initial driving or on a cast in place pile, the test will give information about expected pile performance under static load.
4. The test results should include the measured (or derived) force and velocity versus time graph, the computed static load versus deflection (and if required the load distribution along the pile shaft and pile end bearing). All test results should be presented graphically and numerically.
5. Depending upon site factors the test can be used on its own or in conjunction with static load testing to assess the suitability of the pile to support the structure for which it was designed.
6. The test also provides information that can be used to interpret pile integrity.

#### Rapid

1. The rapid load test is carried out to a specified method of applying a load to the pile head utilizing a reaction system and a rapid-burning fuel. The resulting pile head forces and displacements are measured versus time and are subsequently analysed using computer software.
2. The test results should include the measured force and velocity versus time graph, and if required the computed static load versus deflection. All test results should be presented graphically and numerically.

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