

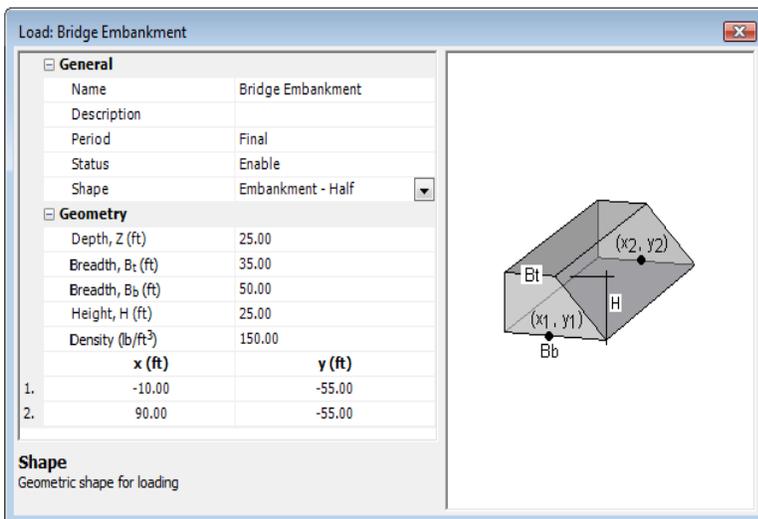
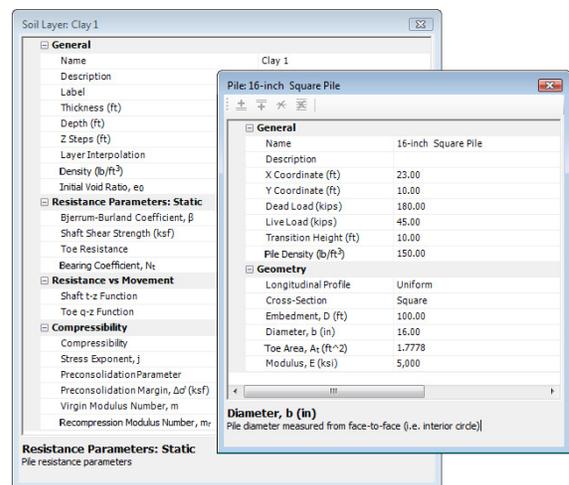
## UniPile 5.0

UniPile is an application for the design of piles and pile groups using effective stress (Beta-analysis), total stress (alpha-analysis), or SPT/CPT/CPTu methods: Eslami and Fellenius (CPTu), Schmertmann and Nottingham (CPT), deRuiter & Beringen (Dutch CPT), Bustamente (LCPC CPT), Decourt (SPT), O'Neill-Reese (SPT), and Meyerhof (SPT). UniPile considers bearing capacity, residual load, pile group settlement, negative skin friction, drag load, and downdrag. Aspects of drivability for input to WEAP and analysis of residual load are also included. It also simulates the load-movement response of a test pile in a static loading test performed by a conventional head-down test or bidirectional cell (O-Cell).

### Soil and Pile Data

All input data are presented and edited using an Excel-type grid and cell system. UniPile 5.0 can have up to 25 soil layers. Soil strength parameters, soil compressibility, as well as pore pressures, can vary from layer to layer and within each layer.

UniPile accepts piles of all types, shapes, and sizes including driven piles and drilled-shafts.



### Loads and Excavations

Stress changes can be from a combination of point, line, circular, triangular, rectangular, polygon, or embankment type loads.

Stress distribution is calculated according to Boussinesq, Westergaard, or 2(v):1(H) methods and combines the effects of loading and unloading.

UniPile 5.0 is compatible with Microsoft Windows 8, Windows 7, Windows Vista, Windows XP SP3, and Windows 2000.

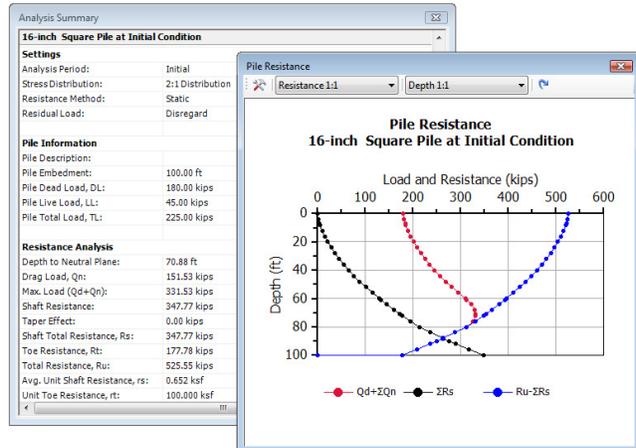
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All results are presented in tabular and graphical form that can be exported to Excel format or tab-delimited text format for further manipulation and reporting. All input and results may be entered in either Customary US or SI units and be toggled back-and-forth at any time.

### Pile Capacity

UniPile 5.0 calculates pile resistance according to beta (effective stress), alpha (total stress), SPT, CPT, or CPTU methods. Calculation of neutral plane, dragload, transition zone, shaft resistance, and toe resistance is presented in tabular and graphical form. The results include input for WEAP bearing graph and drivability analyses.

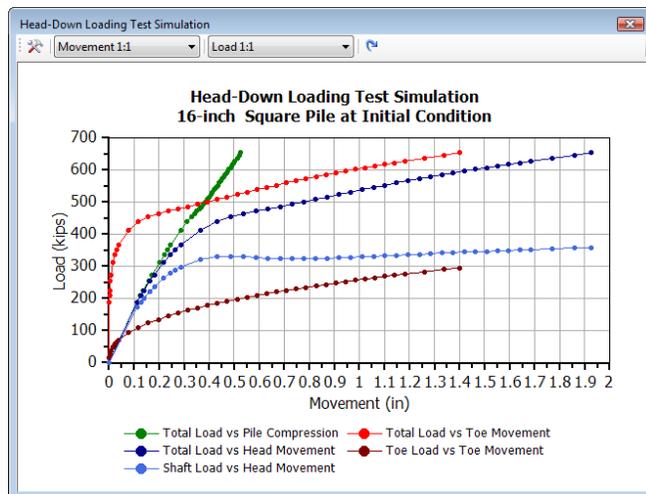


### Pile Settlement

Pile settlement (single pile group) is determined using conventional  $C_c-e_0$  approach, E-modulus, or Janbu tangent modulus methods as applicable to each individual soil layer. Pile compression and settlement of the pile are also computed and presented in a tabular and graphical form.

### Loading Test Simulation

Simulate the load-movement behaviour of the pile in a static and bidirectional loading test by choosing appropriate t-z functions for each soil layer, such as Hyperbolic, Ratio, Hansen-80%, Zhang, and Exponential, or User Defined. The simulation uses the calculated shaft and toe capacities and is particularly useful when back-calculating results of a static loading test.



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