

geoPEN Software

The geoPEN software package has been written to calculate the penetration resistance of a conventional spud can in accordance with ISO 19905-1 (2012).

The software has been written with ease of use in mind and is able to analyse a user defined spud can geometry and a wide range of soil conditions. A series of screens guide the user through the data input process including soil profile, spud can geometry and input variables such as load spread factor.

On completion of the analysis, a load penetration graph is displayed and a full set of input and output data are displayed and saved as an ASCII file to allow checking, and for final presentation.

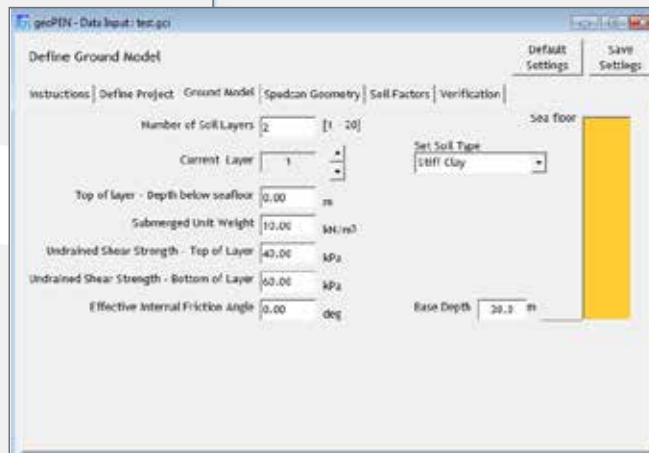
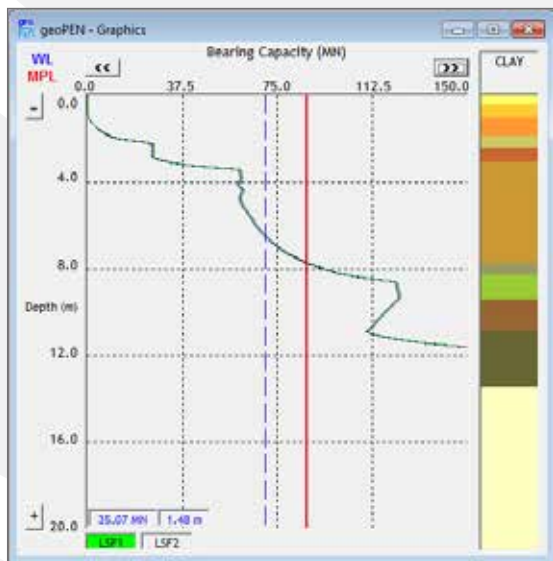
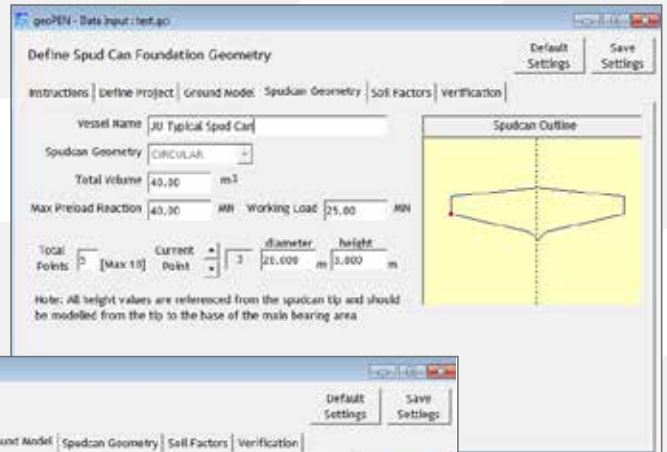
geoPEN is available on an annual license.

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geoPEN is a joint development by Geomarine and Steve Kay (Consultant)



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geoPEN Details

The geoPEN software follows the recommendations of ISO 19905_1 (2012) and comprises a Windows® front end with analysis being performed by a Fortran kernel. A summary of programme capabilities is:

Input data for soil layers up to a maximum of 20 layers;

1. Soil layers defined by user with up to 20 layers possible, depth range of soil layers defined by top and based;
2. Soil properties to be defined by user with soils. Soils considered to be either CLAY (defined with an undrained shear strength, $s_{u,r}$, at top and base of each layer) or SAND defined with an angle of internal friction, Φ' . Soils cannot be modelled with a $c' - \Phi'$ strength;
3. Spud can geometry to be defined by user. The programme is designed model conventional spud cans with either a flat base or a conical tip. It is not suitable for modelling a closed ended tube, or a spud can with skirts;
4. Four prime failure modes are considered:
 - a) General shear in sand (Equation A.9.3-8);
 - b) General shear in clay (Section A.9.3.2, linearly increasing shear strength, with modifications by Houlsby and Martin, 2003);
 - c) Squeezing of clay (Equation A.9.3-10, A.9.3-10, user defined a_s ; and b_s default to 5.0 and 0.33 respectively)
 - d) Punch through from overlying sand or clay into sand or clay (Section A.9.3.2.6, Young and Focht, 1985, load spread method. Load spread can be user defined between 3 and 5);
5. Backflow above the spud can is user defined and the potential for this is not within the programme;
6. The output is presented graphically and as text within the viewer. An ASCII file is created for graphing of results and final presentation.

Protection

The programme is protected by a USB dongle; The input output software does not require the dongle to review files, but no analyses can be ran without the dongle;

Disclaimer:

The Product is provided as is, and, to the maximum extent permitted by applicable law, without warranty of any kind, express or implied, including but not limited to any warranties of merchantability, fitness for a particular purpose, and/or in relation to any warranty of performance or results. For the avoidance of doubt, no guarantee is offered that the Product will provide accurate results to a given problem, nor should any such guarantee be inferred from any documentation supplied. Further, Geomarine and its sub contractors accepts no responsibility for the application of the results derived from or created by the Product to any given problem.



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