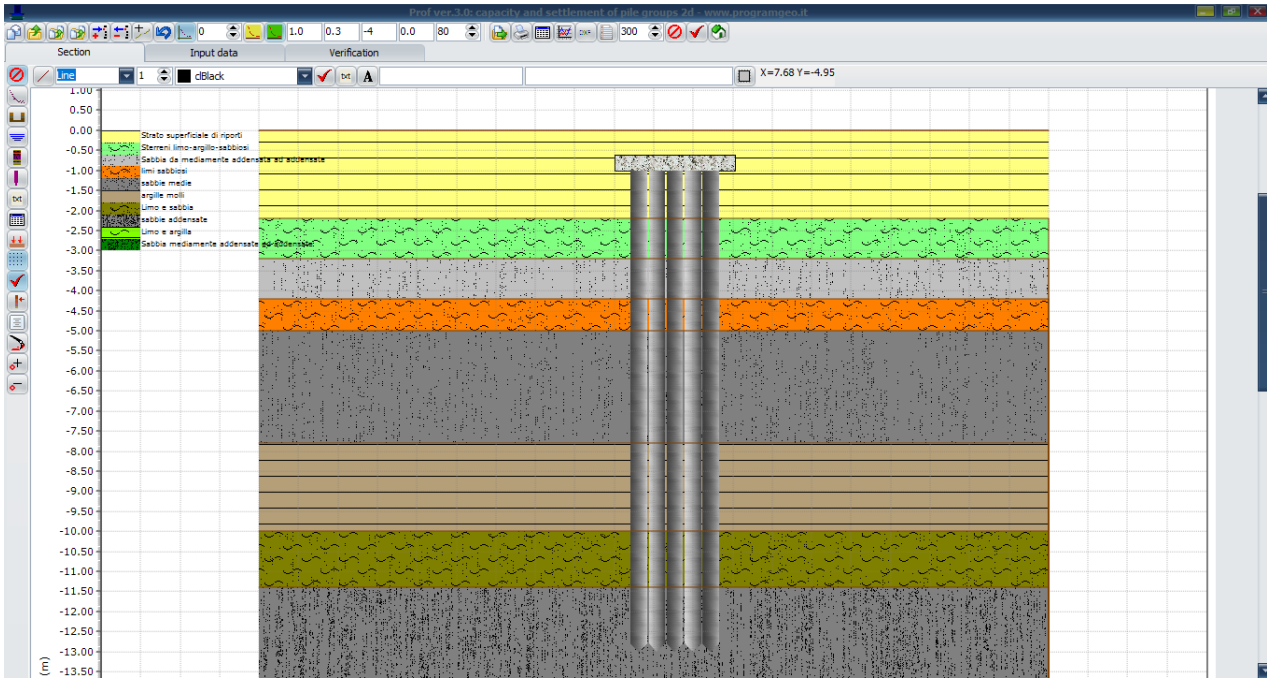
Program Geo: applied geology software

Prof ver.3:

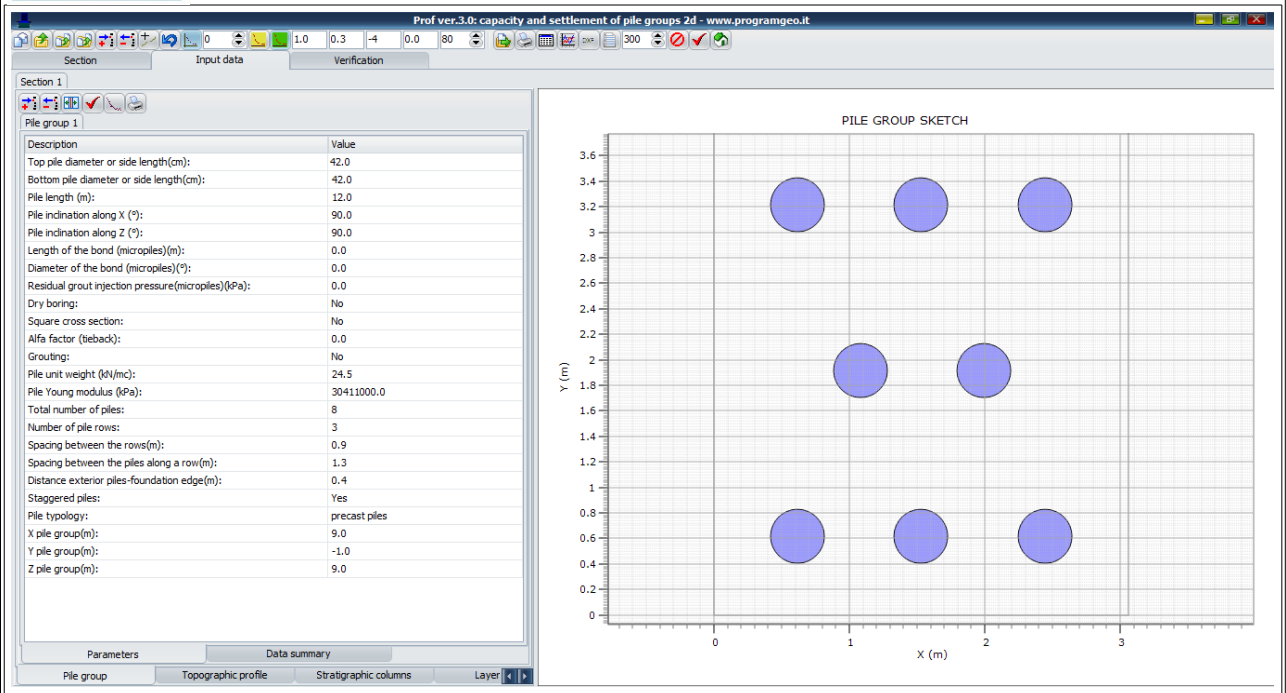
capacity and settlements of pile groups
portata e cedimenti di palificate

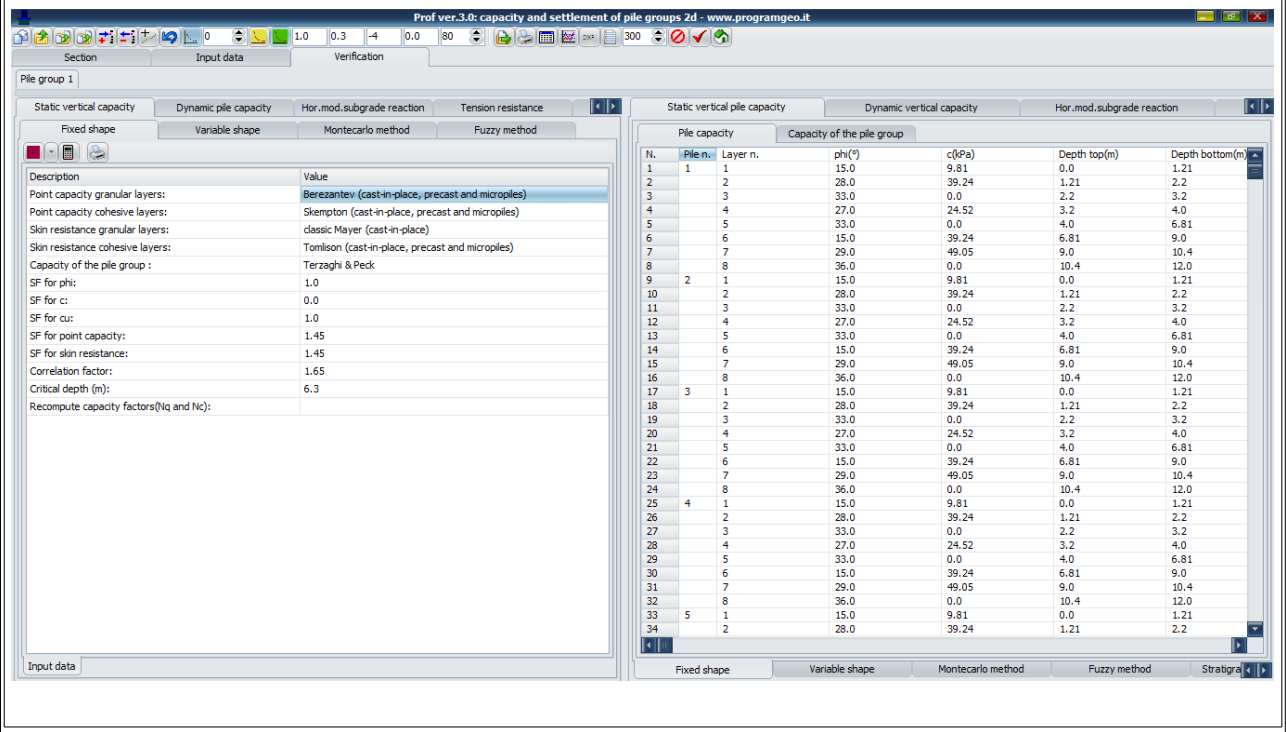


Vertical capacity of piles by static formulas
Precast piles
Granular soils
Normally consolidated or slighty overconsolidated cohesive soils (O.C.R.<4)
Overconsolidated soils(OCR≥4)
Cast-in-situ piles
Granular soils or overconsolidated cohesive soils (OCR≥4)
Normally consolidated or lightly overconsolidated cohesive soils (OCR<4)
Micropiles
Tiebacks
Schneebeli
Bustamante Doix
Negative skin friction
Efficiency of a pile group
Tension resistance of piles
Vertical pile capacity by dynamic formulas
Pile-load tests
Horizontal modulus of subgrade reaction (Kh)
Buckling verification
Piles subjected to moment and laterally loads
Cohesive soils
Granular soils

Distribution of the loads over the pile group
Corrections to be applied in seismic conditions
Kinematic effects
Inertial effects
Settlements of the pile group
Depth distribution of the loads
Settlement assessment

Portata verticale da formule statiche
Pali infissi
Terreni granulari
Terreni coesivi normalmente consolidati o leggermente sovraconsolidati(O.C.R.<4)
Terreno sovraconsolidati(OCR≥4)
Pali trivellati
Terreni granulari o coesivi sovraconsolidati (OCR≥4)
Terreni coesivi normalmente consolidati o leggermente sovraconsolidati(O.C.R.<4)
Micropali
Tiranti
Schneebeli
Bustamante Doix
Resistenza laterale negativa
Efficienza di un gruppo di pali
Resistenza allo sfilamento
Portata verticale da formule dinamiche
Prove di carico
Svergolamento di pali snelli
Modulo di Winkler orizzontale (Kh)
Portata di pali soggetti a carichi orizzontali e momenti
Terreni coesivi
Terreni granulari
Distribuzione dei carichi sul gruppo di pali
Correzioni da applicare in condizioni sismiche
Effetti cinematici
Effetti inerziali
Cedimenti di una palificata
Stima della distribuzione dei carichi in profondità
Calcolo dei cedimenti


Prof ver.3.0: capacity and settlement of pile groups 2d - www.programgeo.it
Section
Input data
Verification
Section 1
Pile group 1
Description
Value
Top pile diameter or side length(cm):
42.0
Bottom pile diameter or side length(cm):
42.0
Pile length (m):
12.0
Pile inclination along X (°):
90.0
Pile inclination along Z (°):
90.0
Length of the bond (micropiles)(m):
0.0
Diameter of the bond (micropiles)(°):
0.0
Residual grout injection pressure(micropiles)(kPa):
0.0
Dry boring:
No
Square cross section:
No
Alfa factor (tieback):
0.0
Grouting:
No
Pile unit weight (kN/mc):
24.5
Pile Young modulus (kPa):
30411000.0
Total number of piles:
8
Number of pile rows:
3
Spacing between the rows(m):
0.9
Spacing between the piles along a row(m):
1.3
Distance exterior piles-foundation edge(m):
0.4
Staggered piles:
Yes
Pile typology:
precast piles
X pile group(m):
9.0
Y pile group(m):
-1.0
Z pile group(m):
9.0
Parameters
Data summary
Pile group
Topographic profile
Stratigraphic columns
Layer
PILE GROUP SKETCH
Y (m)
X (m)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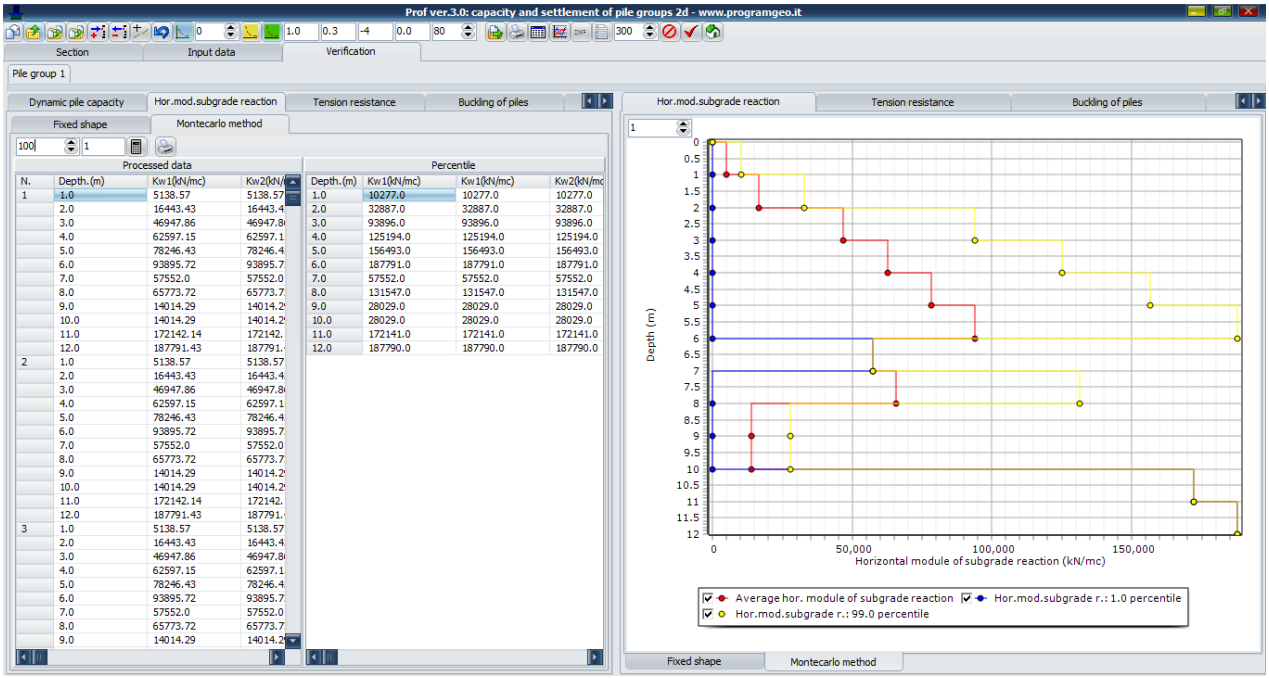
Section
Input data
Verification
Pile group 1
Static vertical capacity
Dynamic pile capacity
Hor.mod.subgrade reaction
Tension resistance
Fixed shape
Variable shape
Montecarlo method
Fuzzy method
Description
Value
Point capacity granular layers:
Berezantev (cast-in-place, precast and micropiles)
Point capacity cohesive layers:
Skempton (cast-in-place, precast and micropiles)
Skin resistance granular layers:
classic Mayer (cast-in-place)
Skin resistance cohesive layers:
Tomlison (cast-in-place, precast and micropiles)
Capacity of the pile group :
Terzaghi & Peck
SF for phi:
1.0
SF for c:
0.0
SF for cu:
1.0
SF for point capacity:
1.45
SF for skin resistance:
1.45
Correlation factor:
1.65
Critical depth (m):
6.3
Recompute capacity factors(Nq and Nc):
Input data
Static vertical pile capacity
Dynamic vertical capacity
Hor.mod.subgrade reaction
Pile capacity
Capacity of the pile group
N.
Pile n.
Layer n.
phi(°)
c(kPa)
Depth top(m)
Depth bottom(m)
Fixed shape
Variable shape
Montecarlo method
Fuzzy method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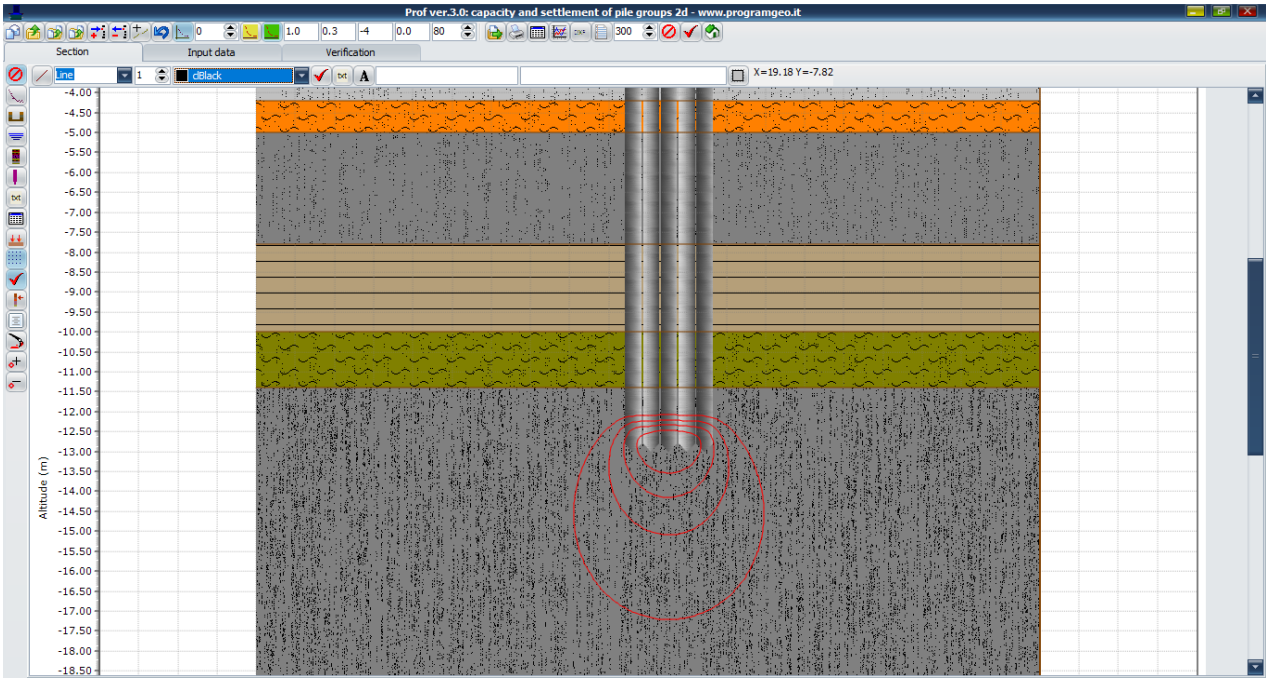
Section
Input data
Verification
Pile group 1
Dynamic pile capacity
Hor.mod.subgrade reaction
Tension resistance
Buckling of piles
Fixed shape
Montecarlo method
Processed data
Percentile
N.
Depth.(m)
Kw1(kN/mc)
Kw2(kN/mc)
Depth (m)
Horizontal module of subgrade reaction (kN/mc)
Average hor. module of subgrade reaction
Hor.mod.subgrade r.: 1.0 percentile
Hor.mod.subgrade r.: 99.0 percentile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Section
Input data
Verification
Altitude (m)