

SSAB Infrastructure products

The screenshot displays the SSAB software interface for pile design. The main window is titled "Empty steel pile" and shows various input parameters and results.

Input Parameters:

- Pile type: RR75/6.3
- Steel grade: S4402H
- Corrosion: 2.0 mm
- Permanent load part: 0.50
- Soil parameters and initial deflection:
 - Undrained shear strength: $c_{uk} = 5.0$ kPa
 - Coefficient of subgrade reaction: $A = 50.0$
 - Coefficient of ultimate earth pressure: $B = 9.0$
 - Initial deflection of pile: $L_{cr} = 300$
 - Radius of curvature of the pile: $R = 96$ m
 - Critical buckling length of the pile: $L_{cr} = 2.56$ m
- Structure type: $E_{I,eff} = 111$ kNm²

Structural resistance of the pile:

- Buckling, soil: $F_{d,s} = 168$ kN
- Buckling, pile: $F_{d,p} = 221$ kN

Geotechnical resistance:

- Piling class: PTL3
- Is pile structure stiff: No
- Dimensioning principle: PDA
- Intended value of the geotechnical capacity: $R_{c,d} = 186$ kPa
- Friction piles or length of the piles are varying: No
- Piles rest reliable on the bedrock or when using dynamic load test with signal matching: No
- Amount of tested piles: $n = 30$

Geotechnical resistance determined by end of driving criteria:

- $R_{k,geo,max} = 547$ kN
- Correlation coefficient $\xi_s = 1.500$
- Mean value of dynamic load tests ≥ 335 kN
- Correlation coefficient $\xi_d = 1.250$
- Minimum value of dynamic load tests ≥ 301 kN
- $R_{c,m}(Mean)/R_{k,geo,max} = 61.2$ %

Design value for compressive resistance:

$F_{t,d} \leq 167.6$ kN

Soil Profile Table:

Top [mm]	Bottom [mm]	Type	Weight γ'	c_{uk} [kPa]	ϕ'
0	5000	Cohesive	18.0	10.0	-
5000	10000	Friction	18.0	-	35.0

Graphs: A graph showing the capacity of cross-section with a vertical axis from 0 to 21 and a horizontal axis from -100 to 100. The graph displays a curve representing the pile's capacity, with a red line indicating the design value.

Tools for Designers

RRPILECALC

RRPileCalc is a design program for SSAB steel piles. Eurocodes as well as National codes and instructions are applied in the end-bearing pile design.

All SSAB steel pile sizes

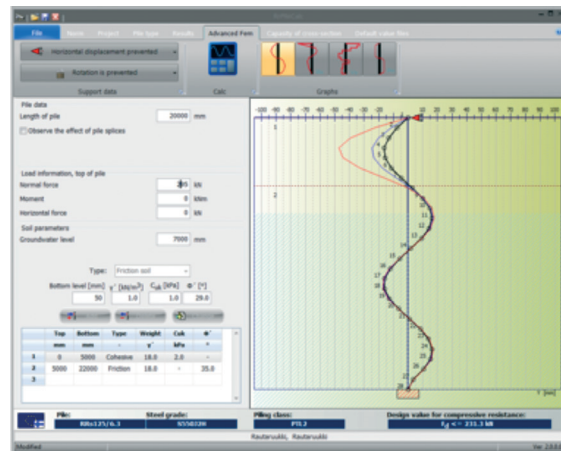
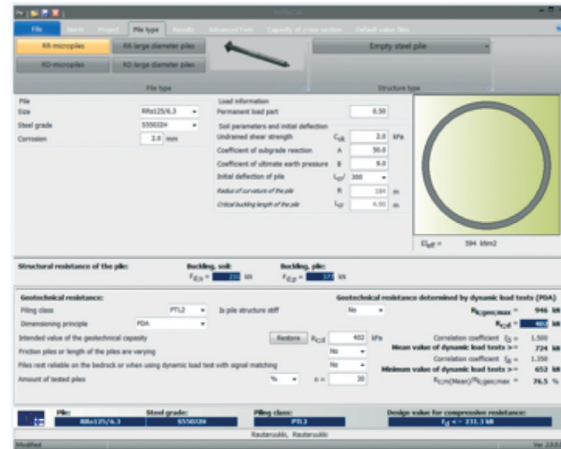
All RR, RRs, RD and RDs pile sizes (RR75...RR/RD1200) are available as steel pipe piles, concrete filled steel piles, reinforced composite piles or steel core piles.

One program for pile design according to Finnish, Swedish or Norwegian codes

RRPileCalc calculates the pile resistance according to Finnish, Swedish or Norwegian National piling codes.

Advanced FEM

Advanced FEM routine provides more accurate method to determine the second order bearing capacity and displacements of a single pile using variable soil conditions and arbitrary load combinations. In addition to vertical load also moment and lateral loading can be applied. Also the pile support at the pile head and toe can be altered freely.



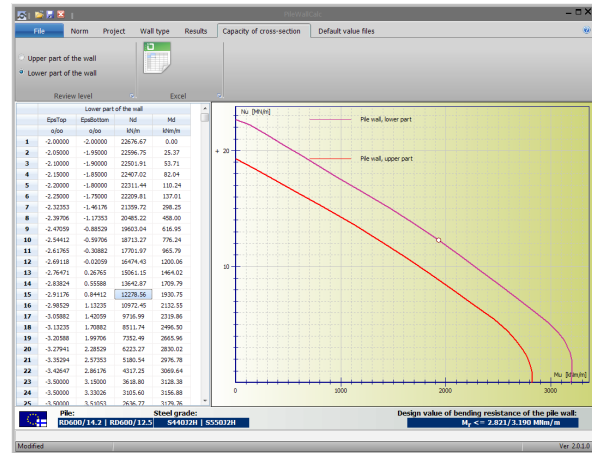
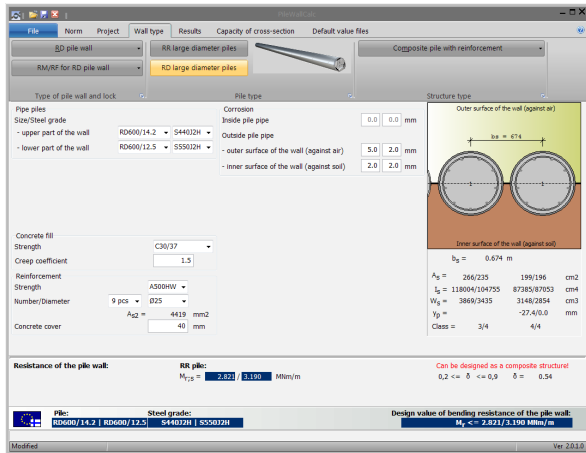
Novapoint GeoCalc

Retaining wall library contains all the applicable RD pile wall sizes and cross-section parameters.



Tekla Structures

Ready-made components for SSAB micropiles, large diameter piles and RD pile wall.



PILEWALLCALC

PileWallCalc is a design program used to calculate the design resistances of retaining walls. RD pile walls, Combi walls and Zig-zag combi walls are included in the program.

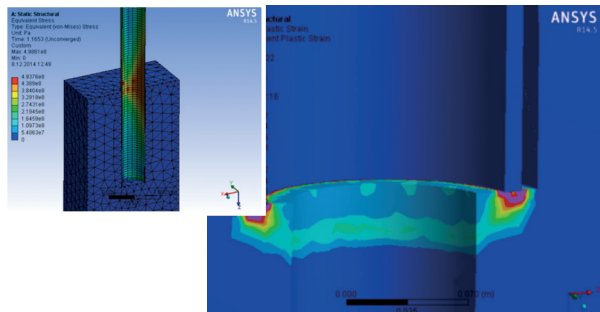
Available steel pile sizes

RD pile sizes RD220...RD1200 are available for RD pile wall. Large diameter RR/RD pile sizes (RR/RD400...RR/RD1200) are available for Combi walls and zig-zag Combi walls.

All piles are available as steel pipe piles, concrete filled steel piles, reinforced composite piles or steel core piles.

Eurocodes and National Annexes

The calculations are done according to Eurocodes and National Annexes. At the moment the National Annexes of Finland, Sweden and Norway are included in the program.



DEMANDING FEM -ANALYSIS

In special cases the staff of SSAB infra technical support can analyze structures and solutions by applying the 3D FE analysis.

- Behaviour of piles, interaction between pile and soil as well as pile and foundation interaction
- Stability and resistances of piles, foundations and adjoining structures
- Case specified solutions

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SSAB

Harvialantie 420
FI-13300 Hämeenlinna, Finland

Tel. +358 20 5911

www.ssab.com/infra

The SSAB logo consists of the letters 'SSAB' in a bold, blue, sans-serif font. The letter 'S' is the largest and most prominent, followed by another 'S', then 'A', and finally 'B'. The letters are closely spaced and have a slight shadow effect.