

Features of RetWall

RetWall is an Excel spreadsheet for the analysis of Retaining Walls subjected to lateral and vertical loads. Using its analysis results, the wall stem and its base can be sized to have adequate stability and strength for resisting applied loads.

RetWall helps save design time by avoiding cumbersome hand calculations. It does not aim to predict the real behaviour which may differ from that generally assumed in routine calculations. RetWall is therefore a tool to complement the design steps for sizing and detailing such structures.

Features

- ◆ A wall diagram is included showing wall shape, levels of back fill, front fill, water and induced ground pressures in the vertical and horizontal direction. This permits check of input data and comprehension of analysis results at a glance.
- ◆ Wall thickness can be uniform or varying with its front face tapered.
- ◆ A parapet above the earth surface can be included in the analysis.
- ◆ To improve resistance against horizontal sliding, a nib below the base slab can be provided.
- ◆ Surcharge can be applied above the soil surface.
- ◆ Water table height can be specified to include the influence of water pressure.
- ◆ A line load of N_w kN/m length above the soil surface can be applied.
- ◆ A point load of N_p in kN acting over a width b m can be applied.
- ◆ Partial load factors and Factors of Safety against sliding and overturning can be specified to suit design needs.
- ◆ Angle of repose in degrees is specified to calculate coefficient of active pressure k_a and the coefficient of passive pressure k_p .
- ◆ Coefficient of friction is specified to calculate sliding resistance.
- ◆ A summary of loads is displayed to show loads included in the analysis at a glance.
- ◆ An easy to use database facility is included within the template file. Data for more than 3000 different retaining walls and or loading cases can be stored in a single Excel file.
- ◆ The Data is kept in the worksheet STORE that is visible to the user. Using the spreadsheet features of Excel, data in this file can be generated for new walls and or modified for existing ones.
- ◆ The template has virtually no user interface. The printed Output matches the Screen Display. Knowing how to use Excel and the ability to verify results as a designer is sufficient for using RetWall.
- ◆ Shaded cells in the spreadsheet signify User-Input and un-shaded cells signify Spreadsheet-Results. This permits easy checking at a glance by the users and the checkers of the RetWall output.