How to install this update?

Replace your earlier version of ReSSA+.exe with the one included in this download. You can use Windows Explorer to copy the file in this zipped download.

The default directory of ReSSA+ installation is:
C:\Program Files (x86)\ADAMA\ReSSA+

List of Changes in each Update:

Update 0.175:
Detection of 'thin' vertical soil layers (e.g., simulating piles) has been refined. It is relevant for the second and third wedge. Simulation of piles, a stiff and slender vertical inclusion, is a common geotechnical approximation. However, such simulation requires subjective judgement and therefore should be used conservatively by experienced designers.

Update 0.174:
Tabulated X, Y values of reinforcement as related to quantities were corrected. This correction was needed only in Imperial (English) Units. It is noted that the reported quantities are correct.

Update 0.173:
Display and printed graphics related to very steep sloping toe was corrected. This correction has no effects on computed results.

Update 0.172:
In addition to displaying the locus of Tmax for each layer, now you can also display the critical slip circle generating each Tmax. This instructive visualization demonstrates that in some cases (e.g., short and/or widely spaced reinforcement), the locus of Tmax is not defined by a trace of a singular slip circle but rather dictated by the specific data related to the problem. Hence, unlike global stability, internal stability (baseline solution) deals with possible local overstressing.

Update 0.171:
ReSSA+ displays a warning of potential numerical inaccuracy if a segment of a slope surface is steeper than 89.9 degrees. This warning was unnecessarily triggered in embankments considering the side opposite to the direction of failure. It has been fixed.

Update 0.17:
Horizontal displacement at the face of the slope can now be estimated in the baseline solution. This *approximated* displacement is based on simplified calculations resulting from elongation of each reinforcement layer considering its tensile modulus. This approximation is a consequence of the limit state methodology used to assess the reinforcement tensile load distribution in internal

stability. Furthermore, to make the presentation of results in the baseline solution less ‘busy’, access to several buttons enabling an access to additional insightful results have been consolidated into one major screen.

Update 0.16:
Common design methods assume in internal stability that minimum Fs for back-end and front-end (or connection load To) pullouts are a function of Tmax. Such an assumption is unnecessary and, in fact, is generally incorrect. Since the baseline solution in ReSSA+ determines along each layer the distribution of reinforcement force needed to render a limit state, we now can calculate the minimum Fs values corresponding to pullout. Update 0.16 allows the user tor retrieve a table in the baseline solution in which Fs as well as Tmax and their associated locations are presented for each reinforcement layer.

Update 0.152:
Upon selecting Option 1, 2, or 1+2 in 2-part wedge, running 3-part wedge could crash. This problem has been fixed.

Update 0.151:
Selecting the option to rerun at a single elevation in 2-part wedge corrupts the results obtained in the previous run for the entire system. This problem has been fixed. Also added is the option to run 2-part wedges only on selected reinforcement layers. Such an option eliminates runs along secondary layers where slide may not be likely while such runs may render locally statically inadmissible result; it is a fast way of getting rid of ‘noise’.

Update 0.15:
The option to calculate the horizonal seismic coefficient for yield acceleration, k_{h-y}, was added. It considers in 2-part wedges (Spencer) extending along the full length of each reinforcement layer as well as along the base of the reinforced soil mass. The coefficient k_{h-y} could be useful in assessing seismic displacements stemming from Newmark’s method; however, ReSSA+ does not calculate such displacements. ReSSA+ suggests some available references which use the yield acceleration (or critical acceleration, a_c) together with the peak acceleration to assess the resulting seismic displacement.

Update 0.141:
Two notes were added. One note suggests a procedure for nearly vertical walls which could be numerically challenging. It relates to the baseline solution leading to the Tmax distribution. The second note relates to capturing the safety map using Windows’ Snipping Tool. Both notes popup in relevant locations. Also, one of the algorithms associated with the search domain for Bishop was modified to improve accuracy for near vertical walls. However, the added notes are still relevant and could be important when large seismicity exists.

Update 0.14:

1. In the baseline solution, Fs(x) against pullout is now plotted to scale for rear pullout and front pullout. One realizes that pullout Fs(x) is not constant but rather a function of location along each reinforcement layer. This graphical presentation in results could be instructive.
2. In specifying the Pullout Resistance at Rear-End (Tr-o) of each reinforcement (due, for example, to a deadman) – which increases the pullout resistance – there could be an error when using Imperial Units. That is, if the table containing the specified resistance is accessed only once, the results are OK. However, repeated access to this table will increase the originally specified values. Tjis phenomenon is obvious as the numbers change for no apparent reason. This problem has been fixed.
3. Converting files generated by ReSSA(3.0) to ReSSA+ had altered the X-ordinates of surcharge loads. This conversion has been fixed.

Update 0.13:

Two columns were added in the tabulated results in top-down analysis. These columns show the long-term connection strength, CoSt, specified in Global Stability as well as the ratio of CoSt divided by the top-down calculated required connection load, To.

Update 0.12:

1. In some cases, the effects of facing units in Global Stability was accounted properly, usually underestimating its impact on stability. This problem has been fixed in ReSSA+ Update 12.
2. In top-down results, the summary table showing LTDS and Tmax includes now a column showing the ratio of LTDS/Tmax. This ratio signifies the current factor of safety on the strength for each reinforcement layer.

Update 0.11:

1. Data file exported by MSEW(3.0) (*.RSA) for zero-batter wall had some distortion when conducting the top-down (internal stability) analysis. This problem has been fixed in ReSSA+.
2. Shear strength of facing units and foundation now is applicable for tiered wall systems (previously it was only for the bottom facing unit and foundation).
3. In top-down results, the summary table showing Tmax and To includes now the Long-term Design Strength specified in Global Stability (LTDS). Previously it displayed Tavailable. Showing LTDS and Tmax, side by side, is convenient when assessing the adequacy of the selected reinforcement; i.e., it implies the margin of safety of the potentially specified reinforcement strength.

Update 0.10:

1. In global stability, metallic wire grid can be input, same as in ReSSA(3.0).

2. Data files generated by ReSSA(3.0) can now be read and saved as ReSSA+ files.
3. Numerical converge issue, especially with block facing, has been resolved.
4. Minor cosmetic changes

Thank you for using ReSSA+.
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