

July 30, 2021

### How to install the posted update?

Replace your earlier version of **MSEW+.exe** with the one included in this download. After downloading and unzipping the posted update, you can use **File Explorer** to copy and paste the executable file. The default directory of MSEW installation where MSEW+.exe is residing:

**C:\Programs File(x86)\ADAMA\MSEW+**

### List of Changes in each Update:

**Update 2021.14 (2021-07-30):** When inputting data for bearing capacity in Imperial Units considering a sloping toe, the displayed  $N_s$  is erroneous. However, it is correct in SI Units. It does not affect the bearing capacity calculations and results, either in Imperial or SI Units. The displayed  $N_s$  in the input data screen have been corrected.

**Update 2021.13 (2021-03-30):** When placing an *embedded* footing in the reinforced soil zone (i.e., footing located below upper reinforcement layers), the embedment depth was ignored in calculating eccentricity. While this has no effects on eccentricity calculated below the footing, it would typically result in larger eccentricity along layers above the embedded footing. This has been corrected in update 2021.13.

**Update 2021.12 (2021-02-14):** A calculator to assess the facing stiffness factor,  $\Phi_{fs}$ , factor has been added – see Stiffness Method, Internal Stability LR Factors.

**Update 2021.11 (2021-02-01):** When calculating the factored connection capacity for extensible reinforcement in Simplified AASHTO (2017-2020), MSEW+ used a reduction factor for durability,  $RF_d$ , which is likely higher than the specified value. Consequently, the computed long-term CDR for the connection was smaller than should be. The connection values were corrected in Analysis and Design Modes.

**Update 2021.10 (2021-01-24):** The Coherent Gravity Analysis (CGA) was modified to include two options. Option A is the same as currently implemented [i.e., vertical force component of resultant lateral earth pressure on the reinforced mass,  $F_T \sin(\delta)$ , is ignored in calculating  $R$  and, subsequently,  $\sigma_v$ , while it is considered in calculating eccentricity,  $e$ ]. Option B considers rigorously all force components. In addition,  $K_r(Z)$  distribution ( $K_o$  at  $Z=0$  varies linearly to  $K_a$  at  $Z=6$  m) in Option B starts at the soil surface whereas in Option A it starts at the elevation of the top of the wall. Therefore, for horizontal crest  $K_r$  distribution is the same. The updated program includes detailed explanation and tips.

**Update 2020.21 (2020-12-20):** In Strength results of the Coherent Gravity Method, a column was added to the displayed table showing the eccentricity associated with the calculations of  $T_{max}$  at each reinforcement level. This eccentricity considers the factored loads within the reinforced zone.

**Update 2020.2 (2020-11-25):** When surcharge load is specified, CDR in Strength (AASHTO 2017-2020 Simplified) was inaccurate; this bug has been fixed. A simple, uniform format of all tables was implemented. Printout of some data was corrected/modified.