

Release Notes for SHEARWAL V3.2.4

New/Changed Features in V3.2.4 (since V3.2.2)

- ◆ This is a maintenance release. There are no new features in the program itself but the licensing changed to a web activation model from the hardware key with license file model.
- ◆ Development of V3.2.3 ceased after Beta 27 to accommodate the change in license activation.

Bugs Fixed in V3.2.4

¹ Fixed since V3.2.3 Beta 27

No changes since V3.2.4 Beta 28

- 1524¹ Panel shear reinforcing, A_{vt} and A_{vl} , now are calculated correctly for the load reversal section of the report.
- 1459¹ The wording and default meaning of the check box on the User Information page concerning the ϕ factor in the vertical force balance has been changed. The label is now "Do not use the phi-factor for the vertical force balance." Its default state is unchecked which means the ϕ factor *is used* by default. This is a change from previous versions of Shearwal which did not have the ϕ factor in the force balance (V3.1.0 and earlier) or defaulted to not using it (V3.2.1 and V3.2.2). See BR430 below for V3.2.1.
- 1411 Correctly evaluates V_c and calculates A_{vt} and A_{vl} for Panel Shear when N_u is negative.
- 1366¹ The background color of check boxes and option buttons changes to show when they have focus.
- 1337¹ Panel shear now correctly identifies which of Eq. 11-3 and 11-8 are used. It also now uses all loads in evaluating Eq 11-27 (ACI 318-08); previously only dead load was used.
- 1334 The bar size is corrected in the Help Example 1.
- 1181¹ Improved support for the [DEL] key when entering data in grids such as Distributed Loads and Concentrated Loads.
- 1177¹ The f_{pu} and f_{py} boxes on the Materials Information page now respond to the [Enter] key and move focus to the next box.
- 1176 ϕ for Ultimate Moment is fixed for short pieces.
- 1116 Zero-length distributed load handled correctly (it is ignored).

New/Changed Features in V3.2.2 (since V3.2.1)

- ◆ There are no new features in V3.2.2. This release contains bug fixes only.

Bugs Fixed in V3.2.2

- 1031 Large monitors now have a reasonable default size for the Edit Input window.
- 1059 The ϕ factor for moment is correct now for compression controlled and transition cases for IBC

2009 and IBC 2012. It was stuck at 0.9 for these code revisions.

- 1076 When working stresses about the centroid are in tension at one edge of a precast wall under dead load only, the message no longer has the misleading mention of P/T and is now a Note, not a Warning. For the P/T case that has tension at one edge under P/T + DL, the message is now a Note instead of a Warning.

New/Changed Features in V3.2.1 (since V3.1.0)

- ◆ Added IBC 2006, 2009 and 2012 to the list of building codes and added the appropriate load and ϕ factors. All codes prior to 2000 have been removed.
- ◆ Vertical loads may be specified as distributed or concentrated dead, live, roof live, snow, rain, wind or seismic. Lateral loads may be specified as wind or seismic with an additional lateral earth pressure load.
- ◆ Load cases may now be selected to include either the cases required for the selected building code or cases from a set with user-defined load factors or both.
- ◆ The reporting of M_u and ϕM_n is changed (item 760 below) so that all applied external loads are part of the M_u term and the ϕM_n term includes only the internal concrete and bar forces.
- ◆ An option was added that implements a fundamental change in the vertical force balance used by the strain compatibility calculation (item 430 below). The new version will optionally divide the applied vertical loads term by ϕ when doing the vertical force balance.
- ◆ There is a new window size option to change the size of Edit Input window.
- ◆ The licensing library is updated so you won't get those annoying messages when you start the application.
- ◆ Development of V3.2.0, which was in beta test for about 3 yrs., was discontinued before release. The changes for V3.2.0 are included here for V3.2.1.

Bugs Fixed in V3.2.1

- 221 No longer erroneously shows the message "Input data shows no Live Load, could affect Load Case I". The message didn't turn off even after you fixed the problem.
- 235 A CANCEL option was added to the "Do you want to save current problem?" dialog that you get when you (e.g.) click on File > Open while you have unsaved changes.
- 254 You can now view and print the results for problem files that are accessed using the \\server\share\path syntax. Previous versions crashed when any of the actions that required calculations were requested for a file that was opened with a \\server\share\path name.
- 264 Input form isn't cleared if the selected file doesn't load. That is, the previous problem remains in the input screens if opening a file fails.
- 275 Changes to ϕ factors are saved correctly and will be correctly set when a file is reopened.
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- 345 When you select the current problem from the File > (list) and have made changes to the input data, if you click [Yes] to the question "Do you want to save the current problem?" you will get a Save As dialog.
- 357 Changes to wind load factors are saved correctly and will be correctly set when a file is reopened.

- 411 You can now save a new (blank) problem file without changes.
- 427 If no seismic load is specified on the Lateral Loads page, you will not get a message about S_{DS} being equal to zero.
- 429 Maximum concrete stress and minimum concrete strength checks values are as described in
922 the Help under Unfactored Stresses.
- 430 We've added an option to select an axial (vertical) force balance equation that divides the sum of factored applied vertical loads, P_u , by ϕ before it is used in the force balance calculation. Briefly, previous versions used $T + P_u = C$ as the basic vertical force balance. This new version has an option to use $T + P_u/\phi = C$ as the vertical force balance. The effect of this change is an increase in the compression force of approximately 3% to 10% (for $\phi = 0.9$) and a corresponding increase in calculated moment and shear capacities, M_n and V_n .
- You can find a link to some additional explanation of the change on the News page of our web site, PrecastEngineer.com, under the item that announces the release of this update.
- 541 The message "Neutral axis iteration does not converge" will no longer display after the data that caused the problem has been corrected.
- 542 The correct explanation of the S_{DS} value is now given in the Help and an example was added to clarify the numerical value. If a value greater than 10.0 is entered for S_{DS} , the calculations will not run. If a value greater than 3.0 is entered, a warning dialog appears.
- 583 Shearwal now uses the folder designated by the environment variable APPDATA for the configuration files Shearwal.ini and Shearwal.hst. The folder designated by the environmental variable TEMP is used for temporary intermediate files.
- 576 For concentrated loads and intersecting loads, the units on the distance from the left end are again inches. In V3.1, the distance was specified in feet but that was causing data entry errors since the length of the wall is specified in inches.
- 607 The "Using Help" page explains how to expose the Contents and Search tabs. That explanation was buried on the Help menu page before.
- 634 Shearwal now handles negative loads (uplift) correctly with regard to net vertical forces. If a
943 negative load is the dominate moment-inducing factor, there may still be a problem with the NS flag in the Ultimate Moment section.
- 760 The reporting of M_u and ϕM_n is changed. Previous versions reported only the user-entered moment from the Lateral Loads section of the input as M_u . Any moment due to eccentric vertical loads was included in the ϕM_n term which then represented the capacity of the wall *with specific applied vertical loads* to resist the Lateral Loads. The new version shifts the moment due to eccentric vertical loads into the M_u term.
- The relationship of old moment values to new generally is (with some round-off differences)
- $$\phi(\langle \text{new } M_u \rangle - \langle \text{old } M_u \rangle) = \langle \text{new } \phi M_n \rangle - \langle \text{old } \phi M_n \rangle$$
- You can find a link to some additional explanation of the change on the News page of our web site, PrecastEngineer.com, under the item that announces the release of this upgrade.

- 780 Updated the licensing library so machnm1 messages won't appear at startup. An application
849 manifest now prevents the creation of the "Compatibility Files" copy of the license file,
making license update easier.
- 820 The problems with Panel Shear calculations in previous versions are fixed. The depth and ratio
915 are correctly calculated and the minimums are correctly applied. The wording in the note is
now correct. The Calculation Methods in the Help explain the calculations and refer to the
appropriate sections in ACI 318.
- 821 The option to check unfactored load stresses now will be made for seismic lateral load as well
as wind load. The check which had existed in earlier versions had been removed in version
3.1.
- 908 The lambda (λ) multiplier is now used consistently for lightweight concrete in the Sliding
Friction, Shear Friction and Panel Shear equations. There is an entry for lambda on the
Materials Info page so the user can interpolate values for lambda based on the particular
lightweight concrete mix used.
- 933 The program now will issue a warning if concentrated loads are beyond either end of the
piece. The report will be generated regardless.
- 955 The Help now correctly states that there is a check for maximum shear stress of 2.5 ksi for
joint shear Sliding Friction Only (Method 1). In previous versions of the Help, the statement
indicated the check was for Method 3, the Lesser of Sliding Friction or Max. Shear Stress. In
fact, that check has always been performed for Method 1.
- 960 $V_{n,max}$ in ACI 318 Sect. 11.9.3 (11.10.3 for earlier) is now checked.
- 962 Maximum reinforcement spacing is reported in the Panel Shear section for the minimum
reinforcement case in ACI 318 Sect. 14.3.
- 966 The Intersecting Loads option has been removed. It was deemed to have too high of a
possibility to be misused by those who don't fully understand the issues with this type of load
(basically, when intersecting loads are engaged and what magnitude should be used for them).
- 203 Added a table for entry of partial distributed loads and removed the old Uniform Load entries.
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- 975 Added load types to allow complete investigation of the load cases specified in the IBC. Now
vertical loads may be dead, live, roof live, snow, rain, wind or seismic.
- 976 Changed the way load cases are selected so that when the option to use load cases from the
building code is selected, all load cases that contain the specified lateral load type are checked.
An option to use load cases with custom load factors remains.
- 985 Added option to change the Edit Input window size.

Known Issues in V3.2.4

- 1320 Changing the Display Text Size through Control Panel \ Appearance and Personalization \
Display can upset the scaling of some controls on the InputData form.

- 1258 Allow maximum flexibility in selecting load cases by making all standard and user load cases individually selectable.
- 948 Working stress should be reported for mixed reinforcement cases.
- 810 Add an automatic check for bar rupture strain. Calculate a capacity at maximum strain.
- 560 Add a button to locate warnings in View Results so the user doesn't have to search for them.
- 408 There should be a command line option to print a file or maybe some way to batch-print some/all of the files in a folder.
- 310 Add a button to the Toolbar that activates the context sensitive Help.
- 149 Insert/delete from grids with a context menu so user doesn't have to shift everything manually.