SAFE v21.1.0 Release Notes

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Notice Date: 11-August-2023

This document lists changes made to SAFE since v21.0.0, released 05-April-2023. Items marked with an asterisk (*) in the first column are more significant.

Data Files
Enhancements Implemented

*	Ticket	Description
	9333	An enhancement has been implemented where high strength steel materials per JGJ/T 483-2020 standard have been added to the Chinese material library.
	9623	The Indian frame section library has been updated where numerous new double-angle and double-channels sections have been added to the library. Additionally, (1.) The overall depth for one of the existing sections (ISMC250) has been corrected. The depth was incorrectly listed as 350mm instead of 250mm in the XML library. (2.) Missing section properties have been added for some of the existing frame sections. Previously, the missing properties for the affected sections were being calculated internally by the program when importing the section.

Design – Slab
Enhancements Implemented

*	Ticket	Description
	9737	An enhancement has been implemented where the pattern live load factor has been exposed so that it can be modified, if necessary. Previously, the factor was internally set to be 0.75 and could not be changed. The pattern live load factor can now be accessed under the Factors tab on the form for concrete Design Preferences (menu Design > Concrete Slab/Beam Design > View/Revise Preferences).

Installation and Licensing
Enhancements Implemented

*	Ticket	Description
	9531	The version number has been changed to 21.1.0 for a new intermediate release.

Results Display and Output
Enhancements Implemented

*	Ticket	Description
*	9825	An enhancement has been made to speed up display of strip forces, strip force tables, and concrete slab design on models with many load combinations.

User Interface
Enhancements Implemented

*	Ticket	Description
	9775	An enhancement has been implemented to allow drawing of objects in the graphical user interface using a snap-only option. This option, accessed using the command Draw > Draw Using Snap Only, is turned off by default. When enabled, object(s) may be drawn only if the cursor snaps to an item. This option can be used in combination with various snap options to accurately control placement of objects in the model. Snaps may be set using the command Draw > Snap Options.

API
Incidents Resolved

*	Ticket	Description
	9739	The documentation for the Application Program Interface (API) functions cSapModel.GetPresentUnits, SetPresentUnits, GetPresentUnits_2, and SetPresentUnits_2 was edited to clarify that the API present units are independent of the units displayed in the GUI. There has been no change to the behavior of the API.

Design – Slab
Incidents Resolved

*	Ticket	Description
	9751	An incident was resolved for the BS 8110:1997, Hong Kong CP 2013, and Singapore CP 65:99 slab design codes where the "Shear Failure" message could be erroneously displayed for strip design when the slab/mat had significant torsion. Note that torsion design is not performed for the strips.
	9772	An incident was resolved where default load combinations generated for design were using an Sds factor of 0.5 when an earthquake load pattern was present in the model. Now the default load combinations do not include the Sds factor for models created in SAFE. This affected all ACI 318 design codes.
	9826	An incident was resolved for concrete slab design where punching-shear check results were not available for the Russian SP 63.13330.2012 code.
	9829	An incident was resolved for concrete slab design where flag "Ignore Beneficial Pu in Slab Design?" in the design preferences was not implemented for FEM design. Axial tension was always included while axial compression was always ignored for FEM slab design, which could produce a conservative slab design.

Detailing
Incidents Resolved

*	Ticket	Description
	9679	An incident was resolved where slab detailing results were was not able to be displayed for certain models where walls were meshed within a story.

Documentation
Incidents Resolved

*	Ticket	Description
	9596	The SAFE analysis Verification Example 16 document was updated to include the beta2 factor for long-term cracked analysis, and Figure 16-5 was updated to reflect the actual values used in the Example 16 model. No results were affected.

External Import and Export
Incidents Resolved

*	Ticket	Description
	9706	An incident affecting the import of DXF files as floor plans was resolved. Layers containing block inserts in the DXF file were not listed in the list of layers from which to import Columns in the "DXF Import - Floor Plan" form. As a result, block inserts could not be imported. The issue affected SAFE v20.1.0 through v21.0.1. Results agreed with the model as imported.
	9813	An incident was resolved where the DXF import was not working if only points (no line or area objects) were present in DXF file.

Loading
Incidents Resolved

*	Ticket	Description
	9633	An incident was resolved where non-uniform distributed loads on null lines may have given unnecessary load loss warning messages.

Results Display and Output
Incidents Resolved

*	Ticket	Description
	9595	An incident was resolved to fix the snap in DirectX graphics mode when displaying crack-width results, and to remove spurious black lines that were present when displaying crack-width results in Standard graphics mode.

Structural Model
Incidents Resolved

*	Ticket	Description
	9562	An incident was resolved where wall meshing set to "Auto Meshing" would sometimes not work if previously is had been set to "m x n" meshing.

User Interface
Incidents Resolved

*	Ticket	Description
	9561	An incident was resolved where the total number of bars could not be specified when drawing the slab rebar. The default value of 4 bars was always being used irrespective of the user-specified number.
	9815	An incident was resolved where the maximum and minimum soil pressure values displayed in the status bar for multivalued load cases and combinations did not match the soil pressure contour values shown in the GUI or the soil pressure values in the database table. The contour values and those shown in the database were correct.
*	9822	An incident was resolved where drawing a tendon in the graphical user interface while tendon display items (such as tendon vertical profile control points and tendon vertical profile values) were turned on in the display options could cause the vertical profile form not to display or cause the software to terminate abnormally.