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spMats v10.00 - Upgraded December 2020
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New Features:

1. Implemented a new user interface featuring:

   a. New start screen and file menu with project options, a list of most recently used files and links to online resources

   b. Flexible toolbar with two sizes; regular and small, for easy and fast access to commands and options

   c. Left panel for defining and editing object properties, displaying and modifying project and solver information and providing access to various display options

   d. 2D and 3D view controls for efficient zooming, panning and rotating of models and contour diagrams

   e. Support for multiple viewports with adjustable viewport configurations

2. Implemented a new objective modeling and meshing system featuring:

   a. Structural grids and dimensioning system

   b. Separate definitions dialog for defining and editing materials, object properties, loads and load combinations

   c. Auto generate load combinations based on selected design code and defined load cases

   d. Commands for drawing of slabs and assignment of columns, piles, restraints, loads and nodes

   e. Automatic definitions of objects based on use in the model

   f. Dynamic input for manually entering dimensions during model creation for accuracy and precision

   g. Support for model creation and editing with new commands like Move, Duplicate, Align, Offset, Split and Combine

   h. Provided drawing aids such as Snap, Drawing Grid, Ortho and Object Snap for modelling and editing

   i. Introduced options to resize and toggle on/off model items and objects

   j. Introduced automatic meshing based on user allowed mesh size and circle segments

3. Support for importing .ma8 files into spMats v10.00 with:

    a. Option to merge similar elements when number of elements is less than or equal to 2000

    b. Option to add structural gridlines at column locations during import

4. Introduced new tables module for viewing and exporting input and output data featuring:

    a. Program input and output data in formatted and sortable data tables

    b. An explorer panel to organize contents in tree view for easy navigation between data tables

    c. Option to export data tables in .txt, .csv and .xlsx formats

5. Introduced new reporter module for generating, viewing, exporting and printing reports, featuring:

    a. Program results output in formatted tables, improved headings and titles including a report cover page and table of contents

    b. Option to preview the report in pdf/word or text formats

    c. An Explorer panel to organize contents in a tree view for easy navigation between data tables

    d. Ability to automatically or manually add model and contour diagrams

    e. Option to include/exclude parts of the input/output to customize the report

    f. Options to export the customized report in .docx, xlxs, .pdf, .csv or .txt formats

    g. Options for print settings including paper size, orientation, margins and range

    h. Ability to print the report in .docx, .pdf, or .txt formats

6. Upgraded the Print/Export module to facilitate printing and exporting of model and contour diagrams; with:

    a. Option to preview the diagrams to be printed/exported

    b. Options for print settings including paper size, orientation, margins and range

    c. Options to print the diagram, export it in emf and bmp formats, export it to the clipboard or add it to the text report.

7. Introduced a new model templates module that includes predefined template category groups for fast creation of frequently encountered models

Enhancements

1. Upgraded contour views to provide the following:

   a. New smoother contours with greater color range

   b. Contour values displayed when cursor hovered over a contour region

   c. Ability to show the deformed shape of the model

   d. Enhanced zoom, pan, rotate and various other display controls

   e. Enhanced display of node and element labeling

2. Upgraded data Import/Export

   a. Updated the import format of data files for Grids, Loads and Load Combinations for easier handling

   b. Added the ability to export Grids, Loads and Load Combination Data

3. Added the ability to select different units for the same quantity and adjust decimal places for quantities as desired

4. Added the ability to set the desired units as default program units

5. Grouped all program settings in the Settings dialog for easy access

6. Improved 3D render of the model

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spMats v8.50 - Updated August 2018
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New Features:
1. Introduced a new CTI file export module to enable column and/or pile sections to be exported as CTI files to be analyzed by spColumn.
   (a) Provided option for export column and/or pile sections for Investigation or Design
   (b) Provided option for Material properties, No. of bars, Bar size and Clear cover
   (c) Provided option for different Bar sets
   (d) Provided option to eliminate duplicate loads, if any, in the exported columns.

Enhancements:
1. Provided additional web-based resources and online help options in the Help menu
2. Added new option in right-click menu in Assign/Properties and Assign/Restraints tabs for showing Columns and Piles.

Resolved issues:

1. Resolved the issue in which the Delete Results option cleared all results even when No was selected in the dialog box.
2. Resolved the issue of missing Licensed to and License ID information in report header when the print button in Reports tab of Solve Toolbar was used to generate the report.
3. Fixed the issue in which the program crashed while trying to run the solver again after having printed a report.
4. Resolved the issue of unnecessary message boxes showing up after the Ok or Cancel buttons of Grid Setup dialog box is clicked when the Coordinate textbox is empty.
5. Fixed the table headers for Pile and Spring definitions in output to show correct units for spring constants.

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spMats v8.12 - Updated April 2016
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1. Added online help feature
2. Updated license activation protocols

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spMats v8.11 - Updated Feb 2016
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Resolved issues:
1. Resolved an issue regarding missing pasted 'My' values within Concentrated Loads tab under Define Menu

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spMats v8.10 - Updated July 2015
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Code Features:
1. Added support for ACI 318-14 code in English and Metric units
2. Added support for CSA A23.3-14 code in English and Metric units

Enhancements:
1. Optimized file storage operations for models stored on network servers
2. Optimized display speed of contour maps and test reports for large models

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spMats v8.01 - Updated May 2015
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Resolved issues that for some models with slaved nodes could cause the program to:
   1. Assign nodal slaving to incorrect degrees of freedom as reported in Input Echo

2. Produce results not satisfying equilibrium check
3. Fail during solution due to matrix factorization issues deeming the model unstable

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spMats v8.00 - Upgraded June 2014
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New Features:
1. Incorporated a new (64-bit) finite element engine increasing solver capacity (six times) and substantially speeding up the solution for large and complex models
2. Introduced additional capacity allowing up to 26 basic load cases (A-Z)
3. Introduced additional program capacity allowing up to 65,025 nodes and 64,516 elements with a minimum of 8GB of available memory
4. Introduced spreadsheet (grid) controls for input of loads and load factors
5. Introduced a new results section reporting reaction values for restraints, soil, spring, piles, and slaved nodes
6. Introduced a new results section reporting the mat center of gravity with a load and reaction equilibrium check
7. Introduced warning message during solution and graphical indication for elements where soil pressure is exceeded
8. Introduced a warning message during solution when steel design of some elements failed
9. Introduced a warning message during solution when concrete punching shear capacity is exceeded
10. Introduced a new input-output file management scheme where the output, stored in a model subfolder, is separated from input resulting in substantially reduced input file size
11. Added solver criteria to control, in uplift conditions, the minimum percentage of active pile and springs in addition to the minimum ratio of soil contact area

Enhancements:
1. Limited the maximum allowed displacement solver option to service load combinations only
2. Increased soil allowable pressure limit for input to 1,000 ksf [48,000 kN/m2]
3. Introduced on-screen direct display of solver messages reporting solution status and progress
4. Implemented context-sensitive links from the program to the manual replacing on-line help
5. Prevented inadvertent assignment of a restraint and nodal slaving for the same degree of freedom at the same node
6. Modified contour value intervals for steel area contour maps to disregard values in elements where steel design failed

Resolved issues:

1. Corrected thickness definition reporting in Input Echo section to accurately indicate which thicknesses are assigned
2. Corrected scaling of columns displayed in the 3D model view to accurately reflect column size with respect to model dimensions and other elements of the model
3. Removed status indicators from the left hand side menu buttons to avoid confusion associated with solving seemingly incomplete models
4. Corrected reporting of Envelope reactions for piles in uplift condition so that zero reaction values are shown for disengaged piles to match values reported under service load combinations
5. Resolved an issue with importing loads from text files to allow up to 255 loads per load case
6. Resolved a grid display issue so that gridlines are displayed on contour maps regardless of the model
7. Resolved an issue with inadvertent unit conversion of input data after a specific sequence involving unit change followed by file saving and opening
8. Corrected graphical presentation of service level soil pressure contours to eliminate averaging of soil pressures at nodes connecting elements with dissimilar soils or elements with and without soil (refer to detailed description online under documentation tab)
9. Limited gridlines spacing to 0.001 ft for US and 0.001 m for metric unit system to prevent potential problems with numerical solution
10. Resolved a display issue to remove nodal load and restraint assignments when elements are deleted
11. Resolved an issue with unexpected element and nodal assignments after a specific sequence of removing and adding elements and gridlines

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spMats v7.52 - Updated July 2013
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1. Resolved issue with contour map displaying values for reinforcement areas not matching correct text results in some cases of failed reinforcement design

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spMats v7.51 - Updated May 2012
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Resolved issues:
1. Corrected reporting of load assignment in load definition sections of Input Echo
2. Resolved issues with program crashing during printout in some cases
3. Revised reporting of solver warnings to increase clarity and consistency
4. Revised default load combination factors predefined in the input file templates to better reflect code provisions and recommendations

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5. Added a warning message asking the user to verify load combinations after code selection is changed
6. Updated installation procedure for systems with 64-bit version of Windows 7
7. Applied minor editorial corrections to the manual and online help

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spMats v7.50 - Upgraded November 2011
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Code Features:
1. Added support for ACI 318-11 code in English and Metric units

New Features:
1. Added an option to import input data (grid coordinates, loads, load combination) from text files
2. Provided default definitions and default assignments to facilitate and speed up model generation
3. Added an option to account for pile embedment depth in punching shear calculations

Enhancements:
1. Revised graphical display to show reinforcement design results even if design of some elements failed
2. Added an option for displaying load label when annotating applied loads in graphical view
3. Added drag and drop option to open and load mats input files
4. Eliminated resetting of cursor position when editing long lists of loads and load combinations
5. Improved handling of view settings when switching between various windows
6. Revised and improved the Manual and Help documentation
7. Improved several items related to input in Design Parameters window and printouts from View Results window

Resolved issues:
1. Resolved issue with opening spMats manual from program help menu on Windows Vista and Windows 7
2. Resolved issue with Data Conversion Failed error message caused by temporary filename format
3. Resolved several issues related to program output, installation, and checking for updates

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spMats v7.02a - Updated May 2010
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Updated user documentation and resolved miscellaneous license activation issues.

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spMats v7.02 – Updated June 2009
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Resolved several display, help system and results printing related issues, improved data file saving, naming, and backup.

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spMats v7.00 – Upgraded April 2009
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Code Features:

1. Added support for ACI 318-08 design standard in English and Metric units
2. Improved support for CSA A23.3-04 design standard
3. Updated Lambda factor calculations for lightweight concrete for consistency with ACI and CSA standards as well as other programs in StructurePoint's suite.

Enhancements:

1. Provided export capability of program views to DXF files for easier integration with drafting and modeling software.
2. Provided easier and faster access to software manual directly from the Help menu.
3. Enhanced output to provide additional analysis details of foundation piles in tension.
4. Moved the "include self-weight" check box to the load combinations window. For convenience.
5. Added ability to display labels for subset of nodes assigned with loads, piles or restraints.
6. Enhanced output by including an option for project header and improved output layout.
7. Improved grid line manipulation and numbering when lines are deleted and consistently allowed 3 decimal places for manual entry and generation of grid line coordinates.
8. Added feature to graphically illustrate magnitude and location of applied loads.
9. Added feature to show nodal coordinates in lieu of node labels.
10. Renamed pcaMats, also formerly known as PCAMATS, as **spMats** to better relate and support the registered trade name of the publisher, StructurePoint, formerly PCA's Engineering Software Group.

Resolved Issues:

1. Corrected a feature to allow print analysis results for a selected range of nodes and elements.
2. Improved the ability to open certain model files created with version 5.20 of spMats.
3. Addressed the "converting results" error in certain foundation model files.
4. Addressed negative impact of double clicking the run button on the data files.
5. Modified input data file to save defined model general information.
6. Corrected the input echo text report to show the magnitude of point and surface loads as well as provided certain missing print blocks.
7. Corrected situations where punching shear is not performed or results are not displayed for certain ultimate load combinations.
8. Corrected situations when moment contours display led to program run error in certain model files.
9. Corrected situation where contour map labels where missing when running in Windows Vista.
10. Improved and updated the program manual.

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pcaMats v6.51 – Updated March 2008
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1. Resolved issue with English unit values displayed on contour maps when metric system was selected

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pcaMats v6.50 – Upgraded February 2008
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Code Features:

1. Added support for ACI 318-05 design standard

2. Added support for CSA A23.3-04 design standard

Enhancements:

1. Provided capability to display column and piles to scale in 3D view and assignment windows

2. Improved visualization of slab by adding thickness boundary lines

3. Expanded all first level nodes in the GUI tree view for easier navigation

4. Improved text and graphical print capability

5. Provided keyboard shortcuts to commonly used menu commands

6. Provided additional settings for 3D View and 2D View (assign and contour) graphical windows

7. Provided pop-up menu shortcuts to some of the graphical window settings

8. Provided capability to print and copy to clipboard selected portions of text results

9. Provided default file name for printing results to a file

10. Save Results option is now checked by default

11. Provided capability to check for program updates online from Windows or program environment

12. Revised contour maps color assignment for moment envelope and reinforcement to reflect the upper bound

Resolved Issues:

1. Resolved issue with resetting object colors to black

2. Resolved issue with incorrect pile reactions with large number of piles definitions

3. Resolved issue with inconsistent node numbering in some cases

4. Resolved issue with shifted load labels in the GUI tree view

5. Added missing column and pile information in the printout

6. Removed *.msg files from the list of recently opened files under File menu

7. Corrected calculation of steel area in transition zone for ACI codes

8. Corrected maximum reinforcement ratio for CSA standards

9. Eliminated unnecessary resetting of 3D view window

10. Eliminated punching shear results from service load combinations results

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pcaMats V6.10 - 06-10-2005
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1. The lshost.txt file now accepts multiple entries. Each entry has to be on a separate line. License manager will try these entries one by one until a valid license is found. As an entry, server name, server IP address, "no-net" or "LAN" can be used. "no-net" means that a standalone license will be used if it is available. "LAN" will make the license manager to look for a license in the local area network (within the subnet only).

2. The Help|About box displays now detailed licensing information including: license type, license expiration, license server, and license ID.

3. The order of soil definitions in the Define|Properties|Soil window now always matches the order of soil selections in the Add/Edit Pile window. Mismatch could affect the calculated value of pile constant.

4. Rx and Ry are no longer implicitly assigned to an unrestrained node from which a Dz restraint is attempted to be removed. This implicit assignment was not visible in the graphical interface but could be noticed in the text output.

5. Correct spring labels and constants are now displayed in table A7.

6. The limit value for all loads has been increased up to 1.0E09.

7. The value of the automatically calculated Young modulus of concrete for CSA code and metric units is now correctly displayed in MPa instead of ksi.

8. The default Object colors in the Options|Display menu are now correctly initialized during installation.

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pcaMats V6.09 - 04-28-2004
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Bug fixed and improvements:

1. Contour maps for all load combinations are now displayed correctly.

2. The values displayed in the moment contour maps for SI unit system have been corrected to show as kN-m/m instead of kN-m/ft.

3. The values displayed in the reinforcement contour maps for SI unit system have been corrected to show as mm^2/m instead of mm^2/ft.

4. The missing MODIFY button has been added to permit direct modification of pile spring constants.

5. The About box is displayed at startup when program is detecting a license.

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pcaMats V6.08 - 02-16-2004
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Bug fixed and improvements:

1. Minor corrections in the interface including:
    - Grid color can be changed;
    - File names are no longer capitalized;
    - Default file name is provided in the Save As dialog box;
    - The About dialog box displays licensing information.

2. A bug causing incorrect node numbering in some rare cases has been fixed.

3. Handling grid line coordinate changes has been improved in order to keep assigned thickness, load, supports, etc.

4. E-licensing (licensing through the internet) capability is added.

5. Quick start up guide ("pcaMats Quick Start Guide.pdf") has been updated to provide information on e-licensing.

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pcaMats V6.07 - 10-22-2003
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Bug fixed and improvements:

1. Surface loads defined in metric system are now interpreted correctly.

2. The precision of unit conversion factors is increased.

3. A bug has been fixed which in versions 6.05 and 6.06 would produce temporary files (*.dat) in the data folder when there were piles defined in the problem. All the files named like "DataName.MA6 - PILE= # LC= #.dat" can be safely removed from the data folder.

4. Manual file ("pcaMats manual.PDF") has been updated.

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pcaMats V6.06 (10-01-2003)
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Bug fixed and improvements:

1. pcaMats can be run from a network server.

2. Temporary files are now stored in local system temporary directory instead of tmp subfolder of the program folder.

3. Punching shear results are now saved and read correctly.

   Important: Data file format has changed. pcaMats v 6.06 will read data files from previous versions but previous versions will not read data files saved by version 6.06 and next.

4. A bug has been fixed that in certain cases would crash pcaMats when "Parsing results" during analysis.

5. Help file has been updated.

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pcaMats V6.05 (09-18-2003)
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Bug fixed and improvements:

1. Bugs have been fixed that would change load location after deleting or adding load entries in the define menu.

2. Bug has been fixed that would crash pcaMats when "Parsing results" during analysis

3. Multiple item delete bug has been corrected.

4. Node numbering bug has been fixed.

5. A "No" button has been added to Spring/Pile overwrite message box

6. Number of nodes is explicitly checked not to exceed 10,000.

7. Improved punching shear check procedure has been implemented.