

STRAP 2015

Highlights:

New

Increased program capacity:

The program capacity has been enlarged to 1,000,000 nodes and elements (the main model and each submodel)

New

Walls:

The program now automatically adds nodes to the wall at the location of nodes in attached floor slabs and connects the walls directly to the slab. This eliminates the need to divide long segments, reduces the number of rigid links and improves the accuracy of the solution, particularly in long walls.

New

Wall drawings:

Wall sections with reinforcement may now be drawn.

Detailed List of Enhancements:

General:

- The program capacity has been enlarged to 1,000,000 nodes and elements (the main model and each submodel).
- The program can now handle *RESLTnnn.DAT* files that are larger than 2 GB.
- The following options have been added to node/beam/element selection:
 - all nodes/beams/elements in a circle
 - all nodes/beams/elements in a ring
 - beams: all beams on the same lines as selected beams
 - nodes: all nodes at one end of selected beams.
- Wall selection: walls are now selected by highlighting a segment instead of the end nodes.
- "Print/edit a saved drawing": the Move option has been improved and is now much faster in large drawings.
- "Display":
 - wall numbering and element numbering are now separate options.
- "Remove":
 - "Limit display by coordinate": nodes not in the current display may now be selected.
- Print geometry: beam "release" circles are now always printed with thin lines.
- "About" (in geometry): now displays plug number, maximum number of nodes, whether finite elements are included.

Geometry:**• General:**

- "Check element definition": The program now checks whether
 - submodel "connection points" have a corresponding nodes in the Main model and allows the user to create new nodes at these locations in the Main model.
 - min model nodes in the area of a submodel are attached to connection points.
- Section table: sections not used in the currently displayed submodel are now listed as "-used in a submodel-" (instead of "-not used-")
- Output - submodel connection data table: The "Go to" option now allows the user to select a specific submodel and a node.

• Nodes:

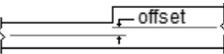
- Unify: the program now unifies the nodes in the Main model and all submodels at the same time.

• Beams:

- x1 local axis: may now be defined in the direction of the closest global axis.

• Walls:

- The program now automatically add nodes to the wall at the location of nodes in attached floor slabs and connects the walls directly to the slab. This eliminates the need to divide long segments, reduces the number of rigid links and improves the accuracy of the solution, particularly in long walls.
- An new "offset" option has been added. Connected segments may now be offset so that they are not connected at their center points. For example, align the faces of segments with different

widths: 

• Copy:

- beams connecting the copies can now be added only at selected nodes.

Loads:

- The algorithm for applying Global Loads to nodes has been improved so that the applied loads are accurate for loads defined on large areas.

Results:

- If moment reduction around columns and/or average moments along a strip are requested, the program now remembers that these options were selected.
- If "geometry only" was selected after results were displayed and then display graphic results are selected again, the program now displays results according to the options previously specified.
- Reactions: for submodels the program displays the reactions at the connection points (graphic display & tables).
- Foundation design: selected combinations only can now be transferred as loads to the foundation design module (e.g. service load combinations only)

Steel:

- The program does not display results for members that were previously designed but now have "illegal sections".
- Updated codes: Canada cold-formed
- Brazil code: composite section design has been added.

Concrete:

- Walls
 - Identical walls can now be specified (similar to identical beams)
 - Wall sections with reinforcement may now be drawn.
- Slab design and drawing:
 - Dividing lines:
 - a chain of nodes may now be selected.
 - walls may now be selected as dividing lines.
 - different dividing lines may now be defined for reinforcement in the X and Y directions.
 - dividing lines at "change of thickness" may now be applied to top and/or bottom reinforcement.
 - The algorithm has been improved so that there are fewer groups of reinforcement and the groups are organised more efficiently.
 - The placement of text on the drawing has been improved.
 - A minimum lap length may now be defined
 - Reinforcement areas to ignore: different limits may now be specified for top and bottom steel.
 - Add reinforcement: the location of the extent line perpendicular to the bar may now be specified by the user and it may be aligned with a similar line.
 - The cover at a slab edge may now be specified (distance to first bar parallel to the edge).
 - the program now extends reinforcement into walls located at the edge of a slab.
 - Bars may now be added where they are not required in one direction only.
 - when slab thickness changes, reinforcement from the shallow section is now extended into the deeper section:

**POSTTEN:**

- A table showing the cable elongations may now be displayed.
- Results along the beam may now be displayed at user-defined distances.
- Composite beams: the section with and without topping are now printed.
- Geometry table: the vertical cable coordinates can now be displayed relative to a zero coordinate specified by the user: top/bottom face of beam/topping.