

## GridPro v8.0

### List of new features:

1. Faces can be extruded along the given chain of corners, curve or a surface (tubular).
2. A wedge periodic topology when rotated to for full topology now has an option to build blocks at the core instead of creating singularity.
3. The utility “extconn\_topology” can copy the given topology along the defined directions like Linear, X\*Y or X\*Y\*Z.
4. Density button has many advanced features that allow a user to see the edges as groups of densities.
5. Densities can be modified for a collection of edges which are have other values than default ones.
6. Edge density can be modified using a scaling factor - either increasing it by 2/3/4 times or decreasing it by half/quarter.
7. Density values of similar edges (edges which have same density) can be changed from one density value to another.
8. Edges whose density are same can be viewed using the density legend with a click of a button.
9. The length of the topology edges can be adjusted using Edge Length button.
10. Measure the distance between any two surface nodes, corners, edge selection, grid nodes or geometric faces.
11. Save a part of the topology as a template using corner and surface group.
12. Surfaces can be displayed in a translucent way by setting the transparency under Display button.
13. Workplane center can be set to origin, center of the model or topology center.
14. Options to merge two 2D linear surfaces into a single surface is made available.
15. Excluding a single face or a collection of faces is available under wrap Option. manual exclusion using ‘F’ key is also available.
16. The utility, “replace\_surfaces\_text\_processing” which will replace the given ids/file names with new surface file names in the fra file.

## List of functions whose capabilities are improved/modified:

1. Save→Topology→To New Folder is changed to Save→Project.
2. Output the Restart file is made optional by providing a checkbox which is enabled by default.
3. Split→Feature based tool functionality is improved to close the loop and split the surfaces even if the threshold angle is lesser than the input.
4. Split→Selection tool is enhanced to display the invisible cells in grey color.
5. Intersection of surfaces functionality is improved.
6. Validity check algorithm is improved for special cases like analytical surfaces such as sphere and cylinder.
7. Functionality of the wrap layer is enhanced to ignore the internal faces automatically while doing executing the external wrap.
8. Positioning of the wrap layer is improved.
9. Pop up message is shown when the gridding process is failed due to NANs and the corresponding blocks are grouped to Error group.
10. Imperfect faces or badly positioned faces are reported during gridding process and are grouped to Error group.
11. Improved the functionality of Mirror→Periodic tool to retain the property and labels.
12. Weld utility is enhanced to retain the surface labels. It can also take a user-defined output file name.
13. block\_labels\_to\_3d\_properties utility is enhanced to retain the surface labels.
14. Clustering dialog box layout is improved to distinguish the surface id's and labels.
15. New options are included under Fineness Ratio which automatically takes pre-defined values for all other parameters based in the selection.

## Bug Fixes:

1. Fixed a bug in Load→Template where it changes the working directory if the topology is loaded from different directory.
2. Fixed a bug in Load only once option where it fails to remove the duplicated analytical surfaces.
3. Fixed a bug in Intersection of surfaces where it fails to output in certain cases.
4. Fixed a crash in Internal surface when tangent magnification is set to zero.

5. Fixed a bug in Internal surface where it fails to output if the file name has whitespace.
6. Fixed a bug in Internal surface where it fails to list if there are multiple intersections exist between two surfaces.
7. Fixed a crash in Tube when an empty corner group is given as input.
8. Fixed a bug in Group operations where it doesn't switch OFF the buttons if clicked twice.
9. Fixed a bug in backup group where it fails to group the faces after Copy→To surface.
10. Fixed a crash while inserting on edges without blocks.
11. Fixed a bug in Surface by Surface wrap where it fails to output on certain cases.
12. Fixed a crash in Copy→To Surface on certain cases.
13. Fixed a crash while undoing the Rotate→Periodic topology operation.
14. Fixed a bug in Mirror where it fails to add the new surfaces to the group when 'Add to Groups' is enabled.
15. Fixed a bug in translation where it fails to translate below 0.0001 in 2D.
16. Fixed a bug in scaling where it outputs a wrongly scaled topology in 2D.
17. Fixed a bug in rotation where it fails to rotate the 2D linear surfaces.
18. Fixed a crash when Merge edge groups is used in certain scenario.
19. Fixed a bug in Densifier where it was inserting sheets instead of blocks when there is a block inside a block scenario which led to invalid topology.
20. Fixed a bug in Enrich where it fails to execute on periodic cases.
21. Fixed a bug in Heal where it fails to resolve in certain cases.
22. Fixed a crash in Align button when align to surface is executed on a periodic surface.
23. Fixed a bug in Edge Labels where it fails to save it to the fra file.
24. Fixed a crash in Periodic button on certain scenario.
25. Fixed a bug in Periodic button where it fails to output a valid topology if the periodic surface is deleted and recreated.
26. Fixed a bug in Generic button where it fails to open the dialog box for certain scenario.
27. Fixed a bug in Quality check where it fails to update after grid node movement.
28. Fixed a bug in Hex2emb tool where it fails to output on periodic grids.
29. Fixed a bug in Extract where it doesn't assign faces to the 2 sided surfaces.

30. Fixed a bug in Extract where output fra file has surface and corner id's start from 1 instead of 0.
31. Fixed a bug in CGNS higher order export format.