



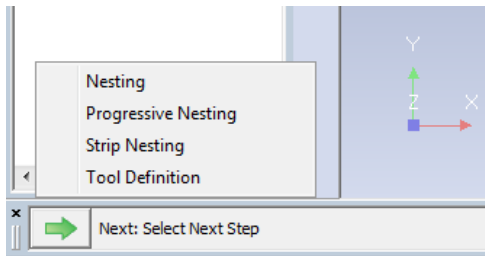
# **FORMINGSUITE 2015 UPDATES & ENHANCEMENTS**

Forming Technologies Inc.  
April 2015

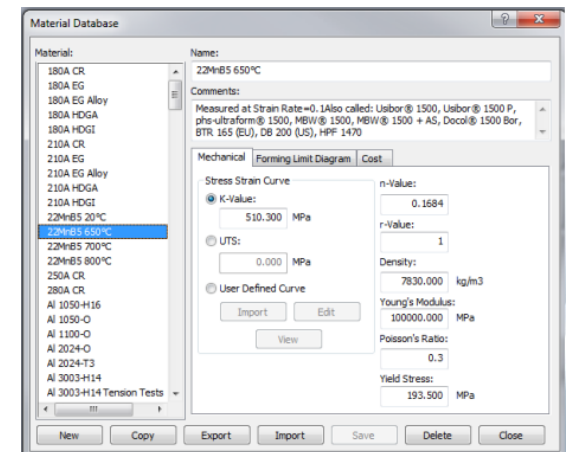


# User Interface and General Updates

- New colour scheme for background and geometry
- New measuring option to measure between center of gravity of surfaces or domains
- Wizard has been updated to provide multiple options where available (eg. Nesting, ProgNest, etc.)



- Added additional materials to default material library courtesy of Salzgitter Flachstahl GmbH in Germany

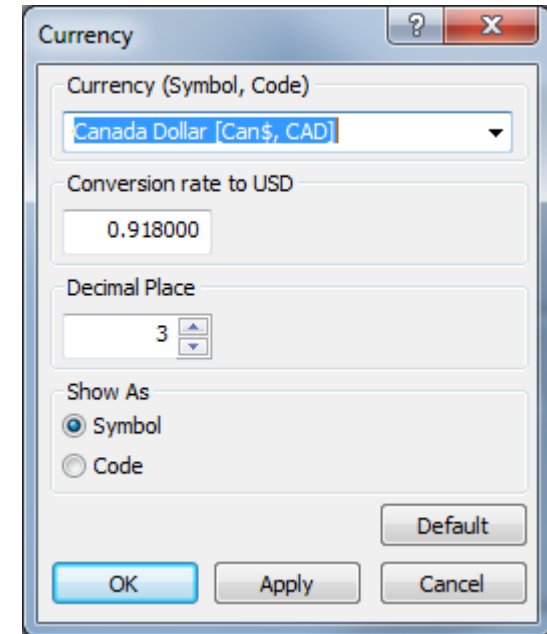


- **Note:** New licenses are required to run FS 2015



## User Interface and General Updates

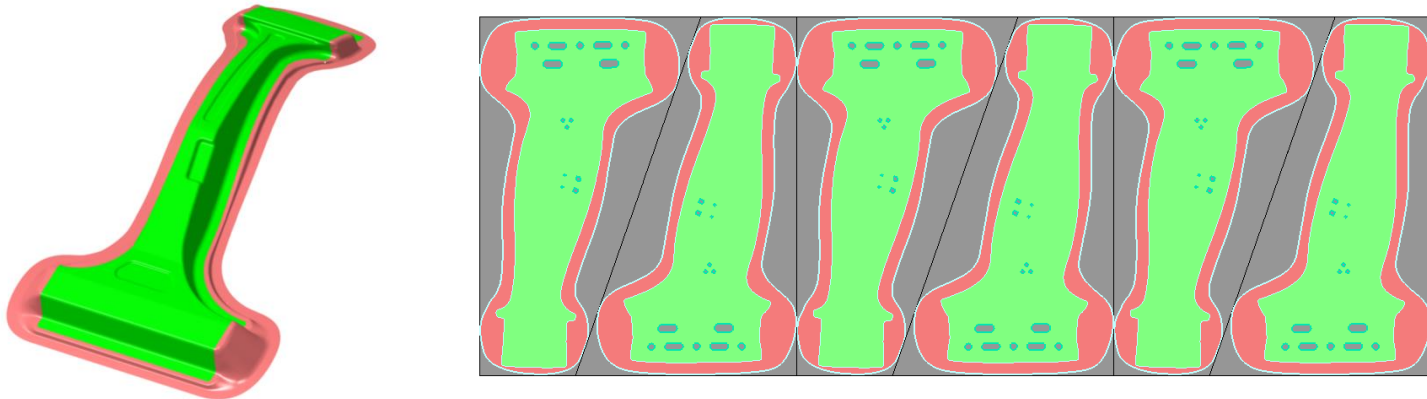
- Currency setting now includes setting for exchange rate vs USD
- Updated native CAD translator libraries – improved support for UG/NX up to V10
- Added option to use 3<sup>rd</sup> party STEP reader for improved handling of newer step formats (AP214, AP242)
- Added new import formats:
  - fsb: SDF export to FASTBLANK
  - fsm: FTI geometry format





## Nesting

- Nesting of geometry created with Sculptured Die Face will consider added addendum as scrap in Part Utilization

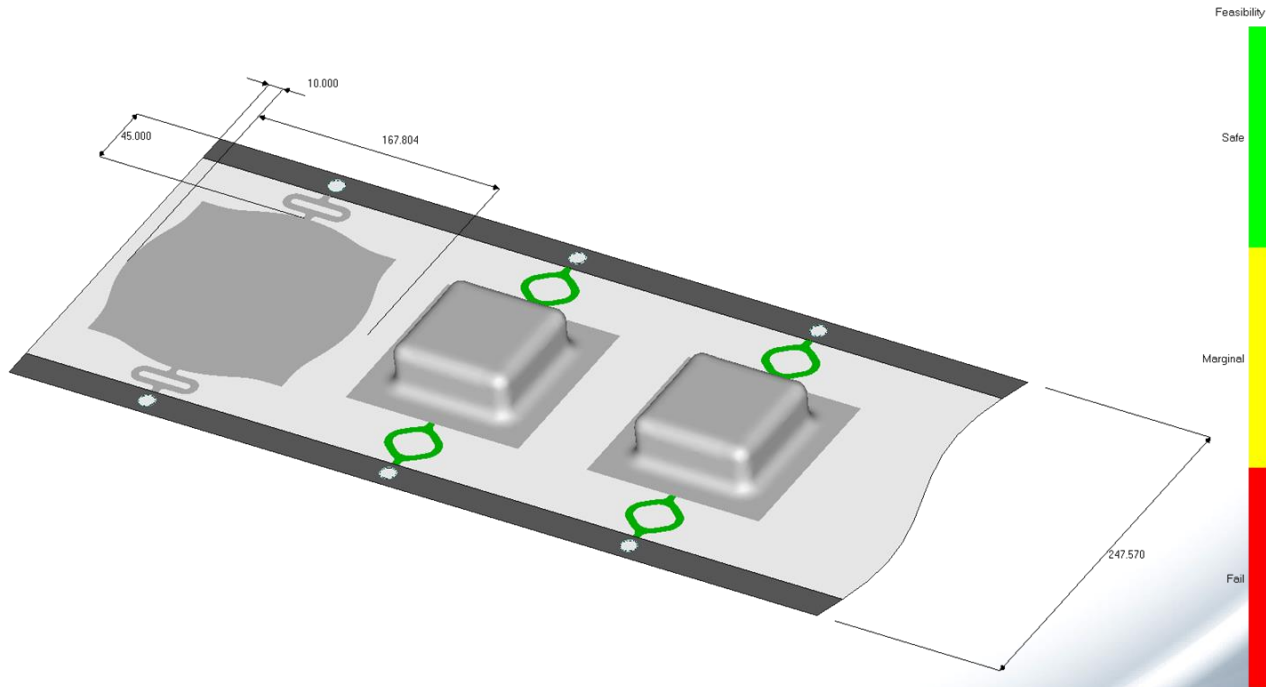


- Nesting solver has been updated to provide higher level of optimization and faster solving
- Nesting settings have been changed - iterations slider has been replaced with Final Optimization On/Off (default is on)
- Added support for two-blank ProgNest layouts to layout editing



# Stretch Webs (Cost Optimizer)

- Added option to flip S-web
- Added new option to simulate and visualize web deformation and feasibility based on part forming displacements
- Added ability to export deformed web outline

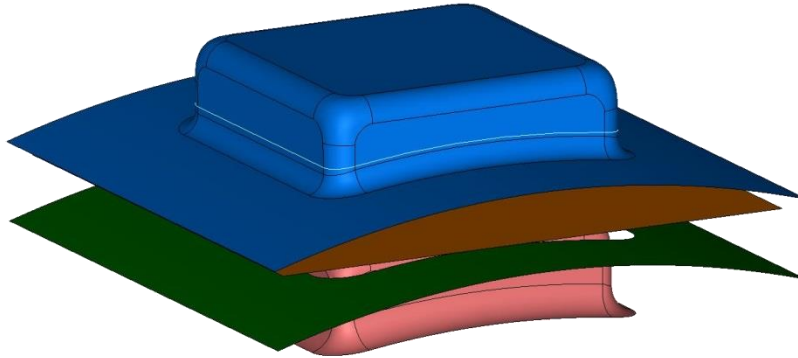




# New Incremental Setup Environment

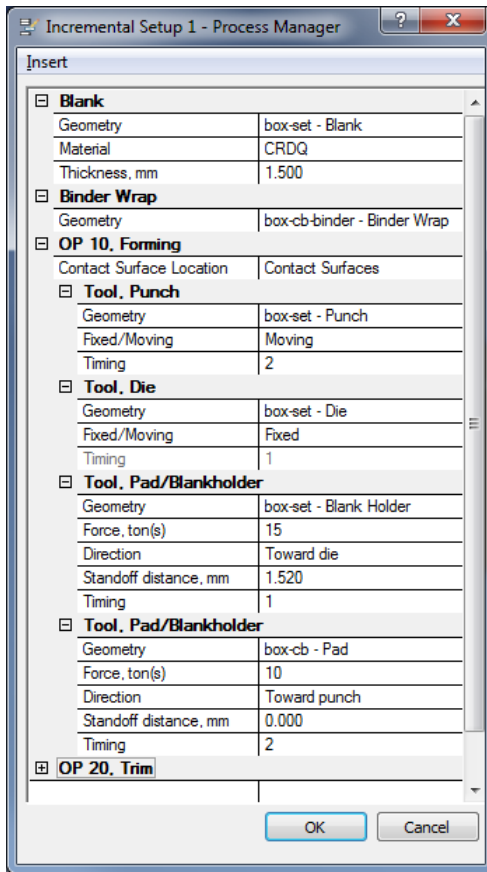
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- Geometry:
  - All geometry is imported up front (blank, tooling, binder, etc)
  - Each geometry is stored as a "Geometry Set" and can be named by the user
  - Multiple files can be imported at once (multi-select with CTRL)
  - Multiple parts can be read in and separated from a single file. Geometry data is automatically sorted into geometry sets based on color of surfaces and connectivity.





# New Incremental Setup Environment



- New unified table for setting up operations and assigning tools
- New process no longer requires separate geometry for process definition and tooling. Tools are assigned directly in setup and tooling workbench was removed.
- Friction can be edited for each operation (default is now 0.12)
- User can now set which tool (punch or die) is fixed and which is moving during simulation
- Blankholder and pressure pad conditions have been combined with option to specify movement direction
- New option to set and edit timing for forming operations (ex. fully close pad before punch moves)
- Final trim operation is now supported
- Operations can now be added on the end of a process as well as between existing operations
- Multiple pads/blankholders with different forces and/or movement directions can be applied



# New Incremental Setup Environment

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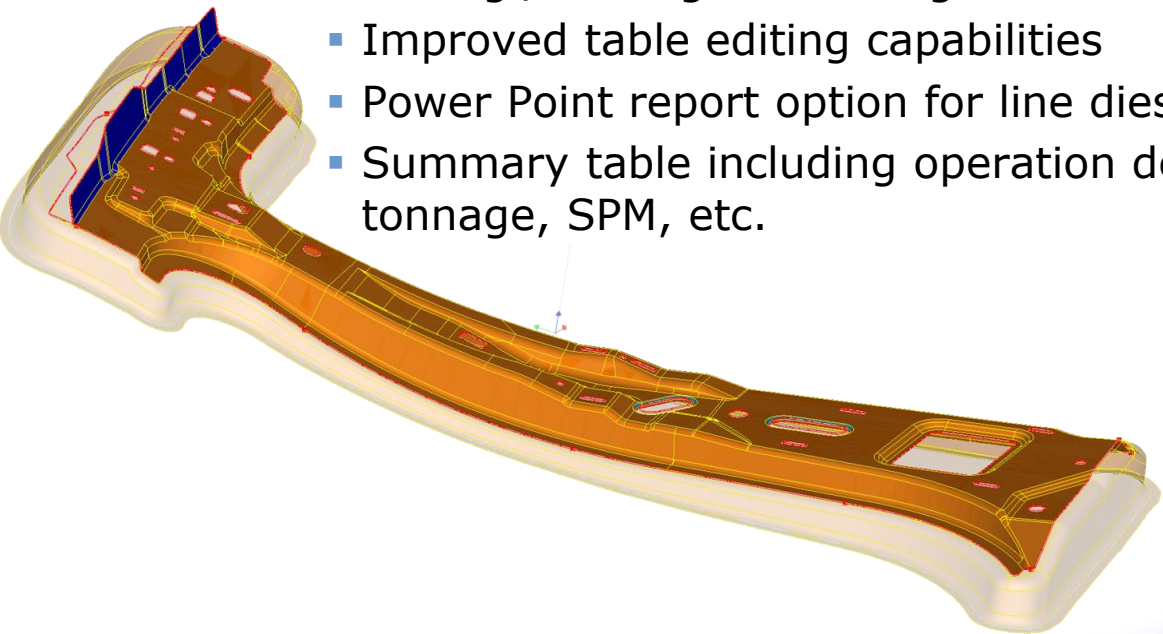
- Blank mesh has been improved to reduce triangles on boundary
- Improved regeneration:
  - Changes to process settings (forces, materials, friction, etc) no longer trigger re-importing of tooling
  - Adding a new operation no longer requires re-solving unaffected portions of the solution





# ProcessPlanner

- Separate workflows for processing of progressive parts and processing of line dies
- Main face selection is automated
- Handling of transfer as well as tandem processing
- Processing of draw developments generated in SDF (only for line dies)
- Introducing press coordinate system to enable part re-orientation and cam direction reporting in rotation angles
- Adding / Editing of trim segments through drag and drop
- Improved table editing capabilities
- Power Point report option for line dies
- Summary table including operation details, die cost, die size, press tonnage, SPM, etc.



Parameters	Process	OP 10	OP 20	OP 30	OP 40	OP 50
Operation Content	Transfer	Draw	Trim Pierce	Trim Pierce Cam Pierce	Trim Cam Trim	Form Flange
No. of Cams	3	-	-	2	1	-
Die Load, lf	488.4	268.8	81.2	93.9	34.7	9.8
Die Energy, kJ	193.30	191.90	0.50	0.57	0.21	0.12
Severity Level	-	Low	Medium	High	Low	Low
No. of Holes - Direct	31	-	11	20	-	-
No. of Holes - Cam	2	-	-	2	-	-
No. of Trim Segments - Direct	12	-	4	5	3	-
Total Trim Length - Direct, mm	3543.8	-	1172.0	1478.9	892.9	-
No. of Trim Segments - Cam	1	-	-	-	1	-
Total Trim Length - Cam, mm	49.0	-	-	-	49.0	-
No. of Flanges - Direct	1	-	-	-	-	1
Total Flange Length - Direct, mm	547.4	-	-	-	-	547.4
Die Size F-B, mm	-	2064.1	2064.1	2064.1	2064.1	2064.1
Die Size L-R, mm	-	1272.8	1272.8	1272.8	1272.8	1272.8
Bed Size F-B, mm	2364.1	-	-	-	-	-
Bed Size L-R, mm	6564.0	-	-	-	-	-
Min Stroke, mm	-	532.1	532.1	532.1	532.1	532.1
Min Shut Height, mm	-	831.4	831.4	831.4	831.4	831.4
Stroke Per Minute (SPM)	12	-	-	-	-	-
Press Burden Rate, US\$ / s	0.175	-	-	-	-	-
Number of Operators	2.00	-	-	-	-	-
Total Die Weight, kg	33014.410	8233.456	6187.264	6215.198	6183.813	6184.679
Total Die Cost (Feature Length), US\$	396568.662	106807.728	64086.072	73963.749	40464.768	41202.064
Die Cost Per Part, US\$	0.793	-	-	-	-	-
Processing Cost Per Part, US\$	1.056	-	-	-	-	-
Material Cost Per Part, US\$	-	-	-	-	-	-
Parts Per Stroke	1	-	-	-	-	-