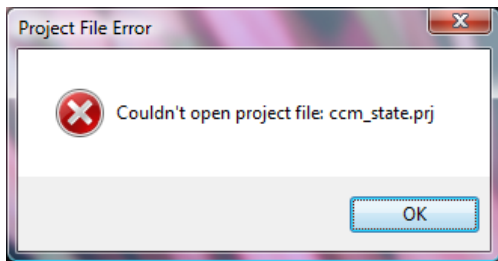


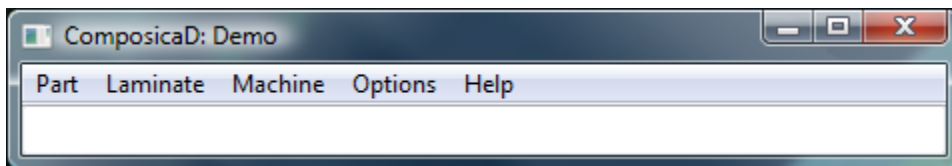


Instructions for Installing the ComposicaD™ Demo Version 1.8

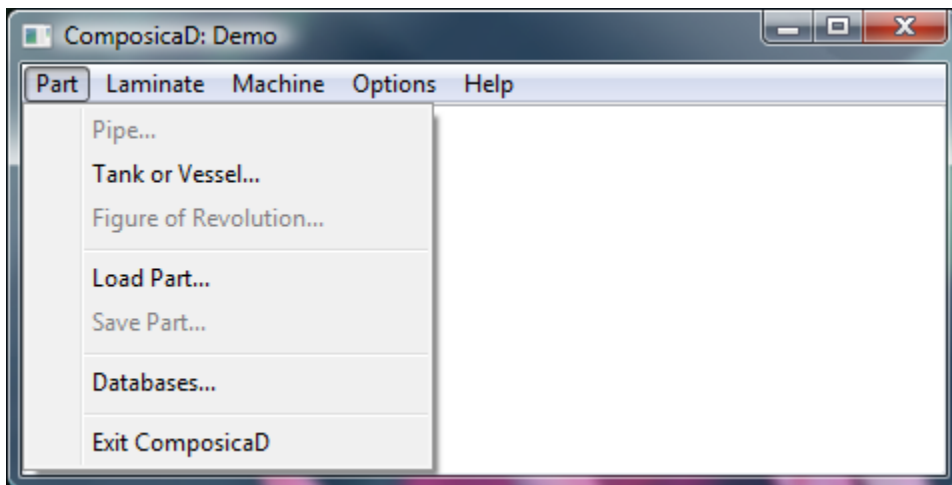
1. Create a directory called ComposicaD on your hard drive
2. Unzip all of the files and directories in the .zip file you downloaded into the ComposicaD directory you created
3. Run ComposicaD by double clicking the ComposicaDm.exe file
4. A message box will appear:



5. Click OK
6. The main ComposicaD Menu bar will appear

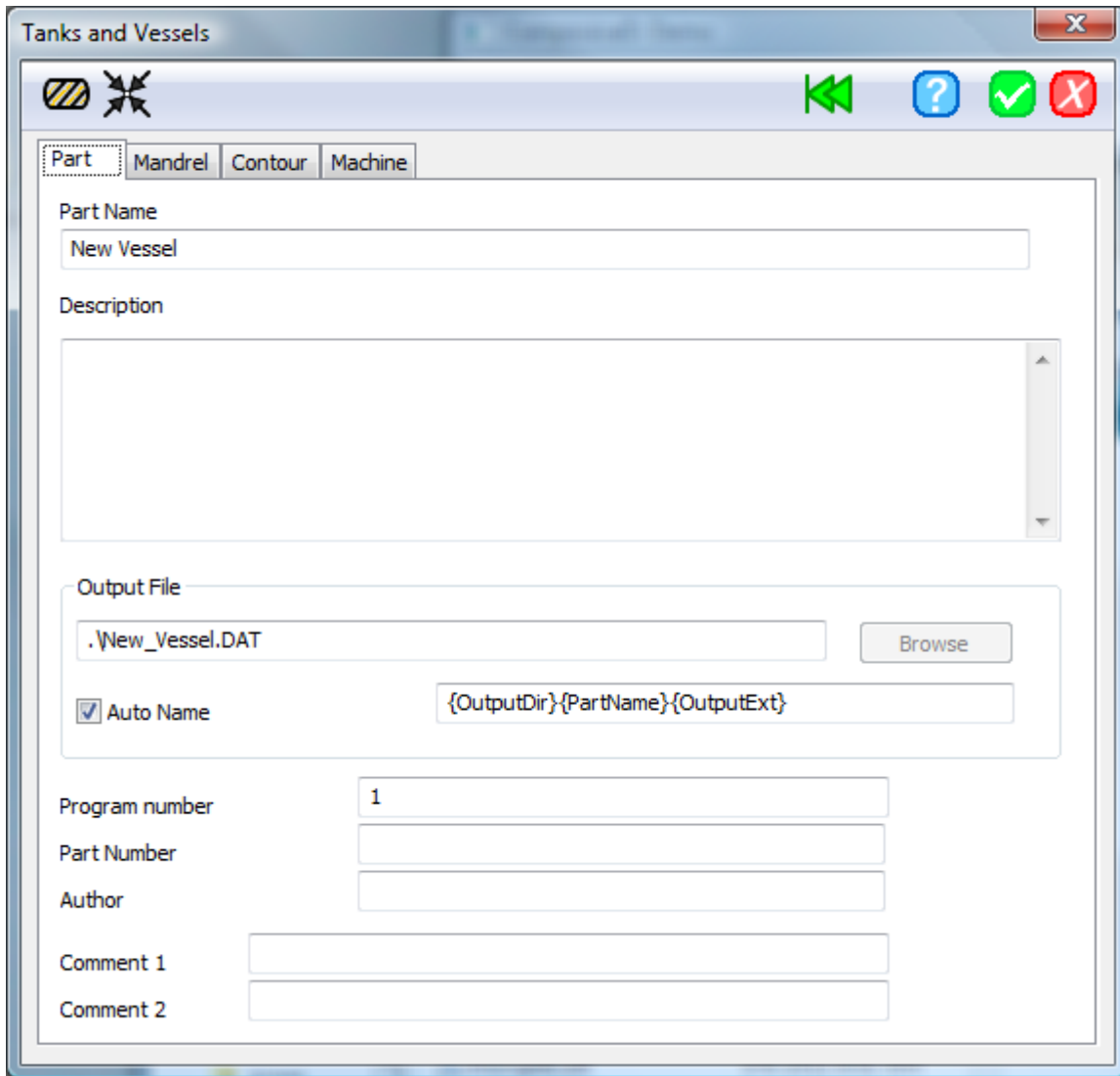


7. Go to the Part Menu

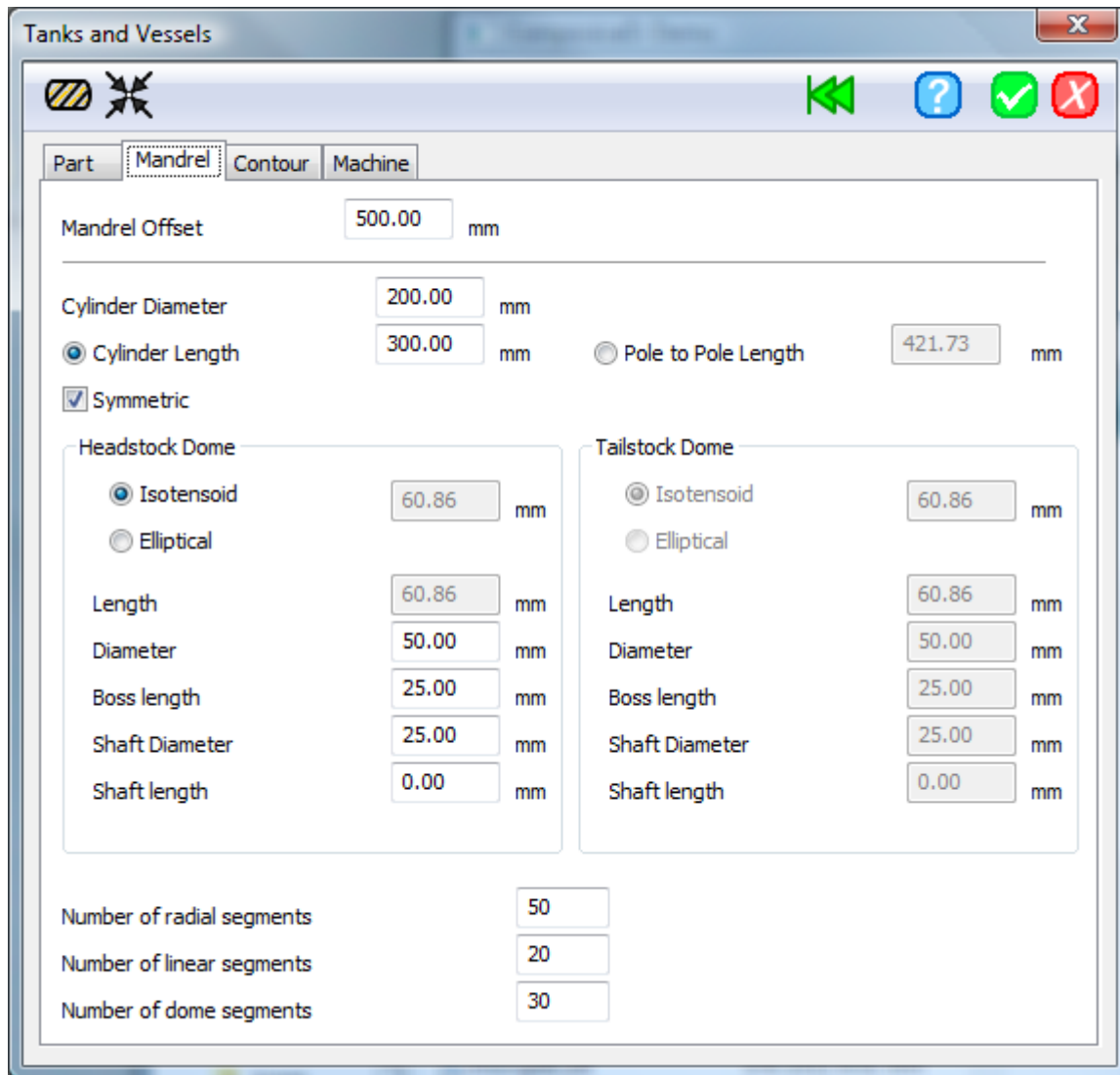


and click Tank or Vessel...

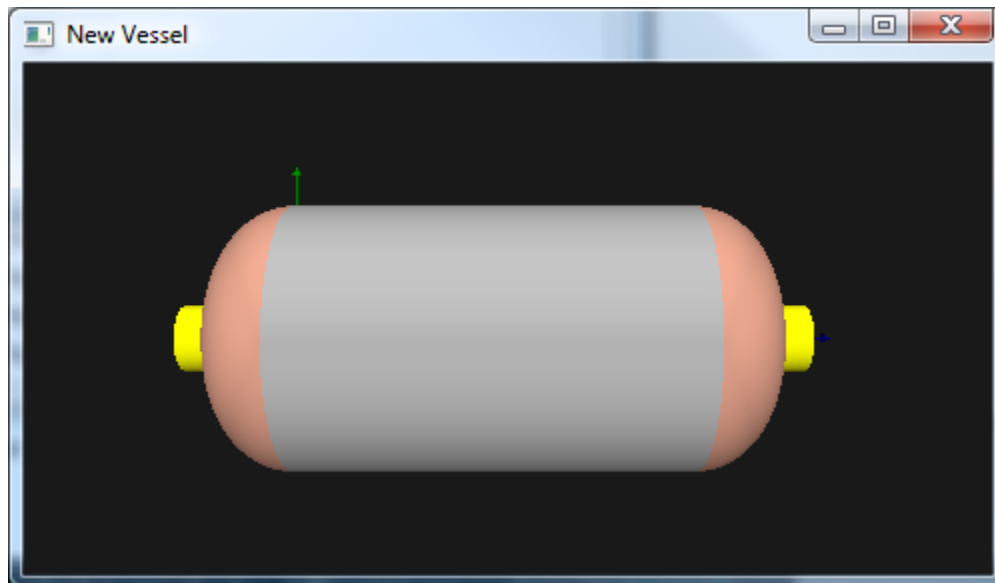
8. The Tanks and Vessels Dialog will appear:



Enter the Part Name and any other information. Use the Browse Button to select an output file name and directory or click Auto Name to have Compositcad pick a name. The Demo Version does not actually write this file, but it needs the name anyway. Click on the Mandrel Tab.

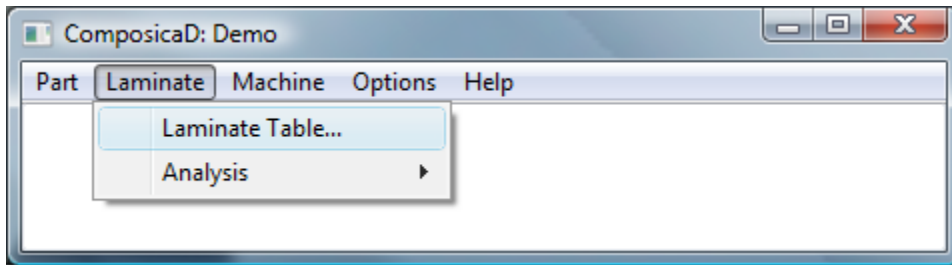


Enter the mandrel dimensions. Click the Display button  The mandrel will be displayed:

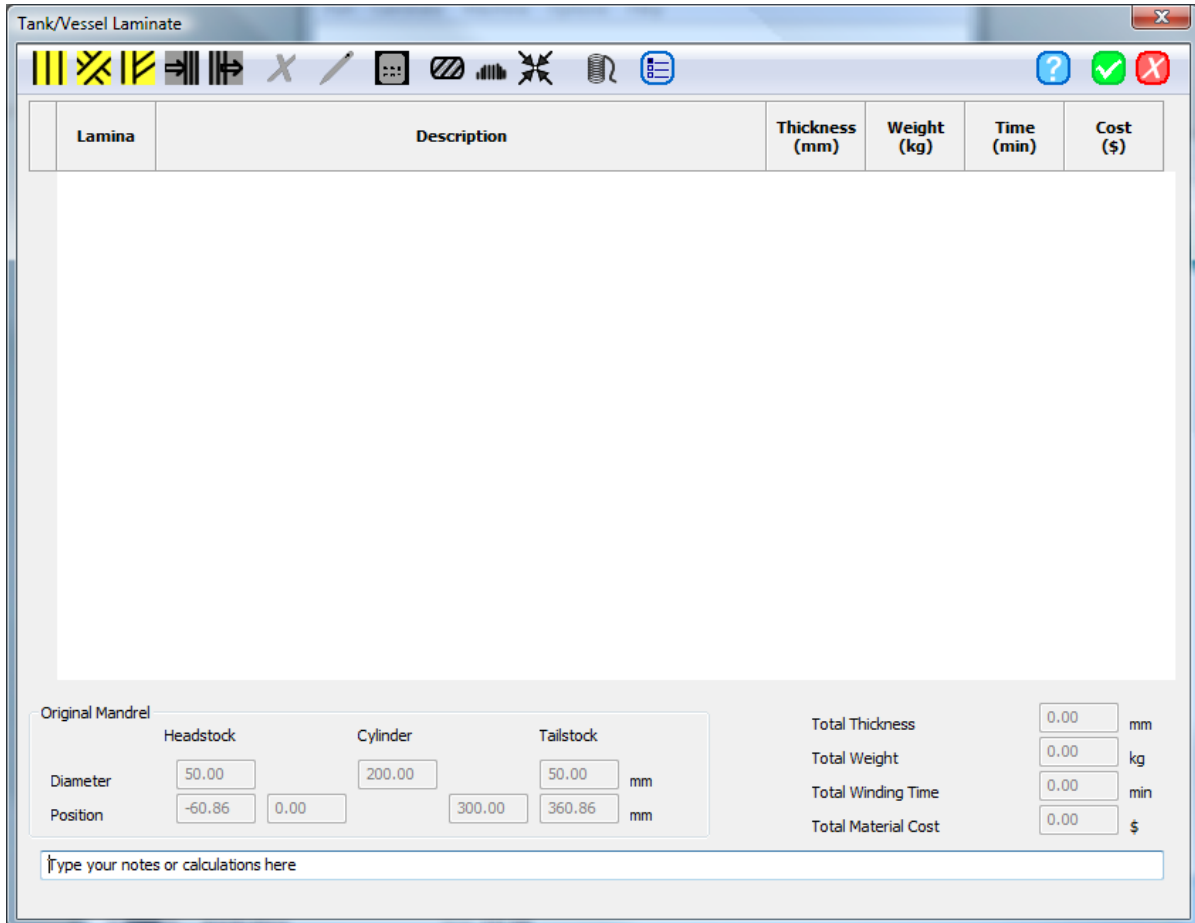



9. Click the Green Check Box  (the Save and Close Button).

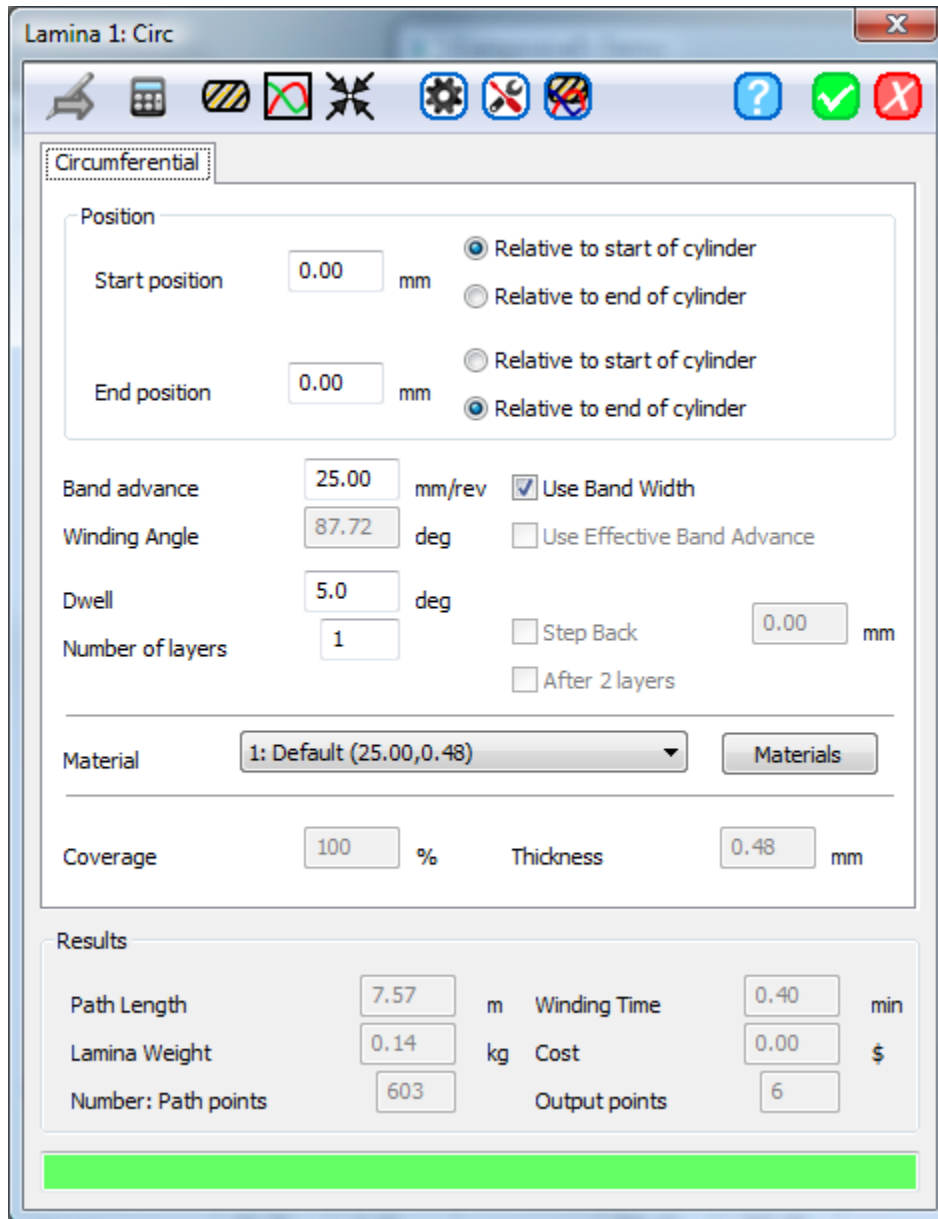
10. Go to the Laminate Menu and select Laminate Table...



11. The Laminate Table will appear:



12. Click the Circ button  – this will pop up the Circumferential Dialog:



Lamina 1: Circ

Circumferential

Position

Start position: 0.00 mm Relative to start of cylinder Relative to end of cylinder

End position: 0.00 mm Relative to start of cylinder Relative to end of cylinder

Band advance: 25.00 mm/rev Use Band Width

Winding Angle: 87.72 deg Use Effective Band Advance

Dwell: 5.0 deg

Number of layers: 1 Step Back (0.00 mm) After 2 layers

Material: 1: Default (25.00,0.48)


Coverage: 100 % Thickness: 0.48 mm

Results

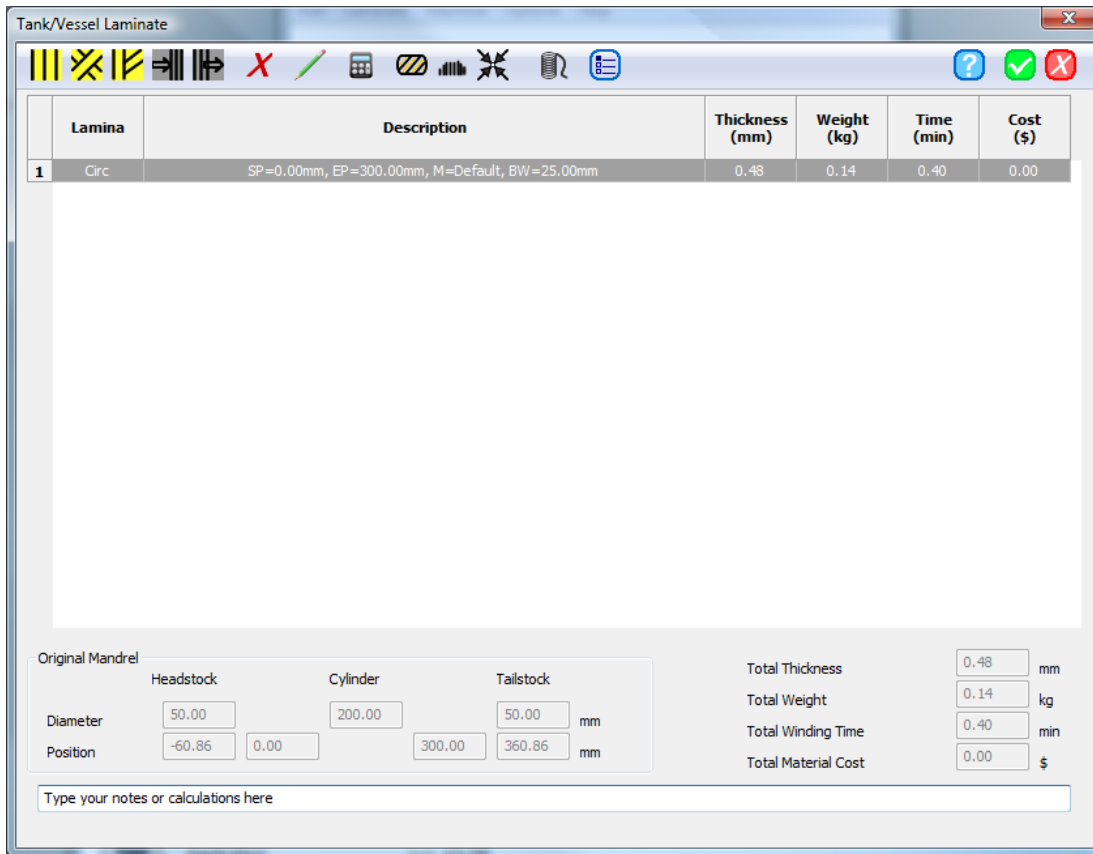
Path Length: 7.57 m Winding Time: 0.40 min

Lamina Weight: 0.14 kg Cost: 0.00 \$

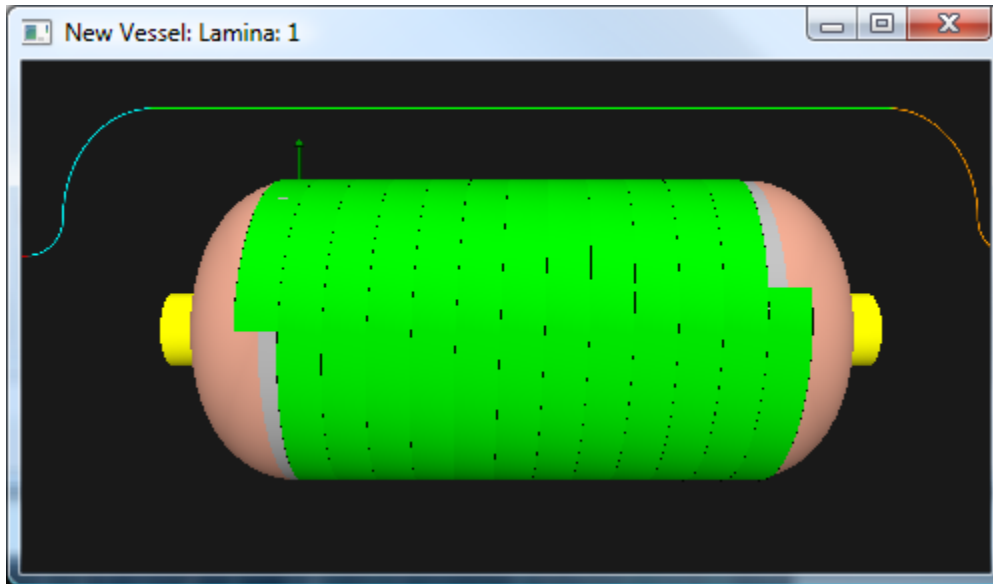
Number: Path points: 603 Output points: 6

13. Click the Green Check  – this will produce a Circ pattern from one end of the cylinder to the other and save it in the Laminate Table.

14. To see the pattern, select the lamina from the Laminate Table by clicking on the row,

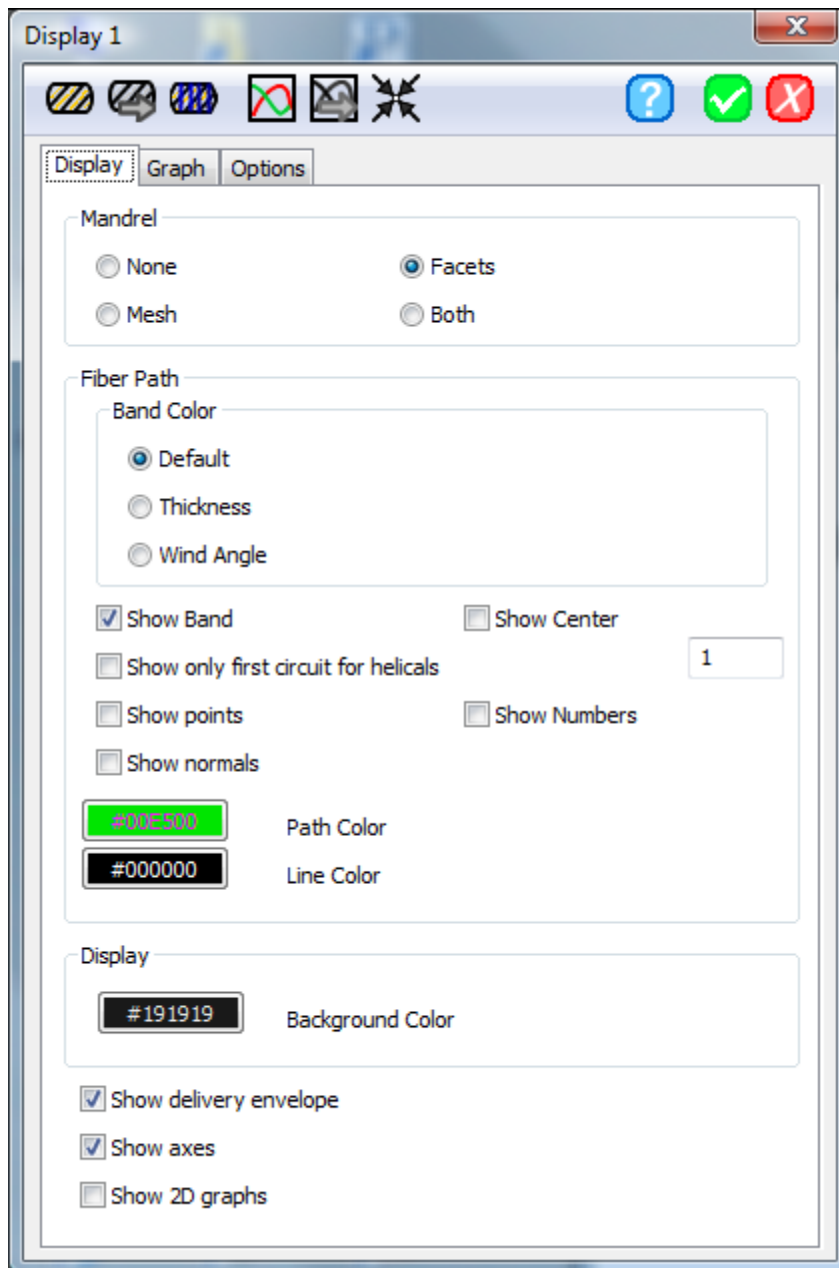


then click the Display Button . The pattern path will be displayed:



Within the Path Display, the image can be zoomed by holding both mouse buttons and moving your mouse and it can be rotated by holding the right mouse button and moving the mouse. Select the center by left clicking.

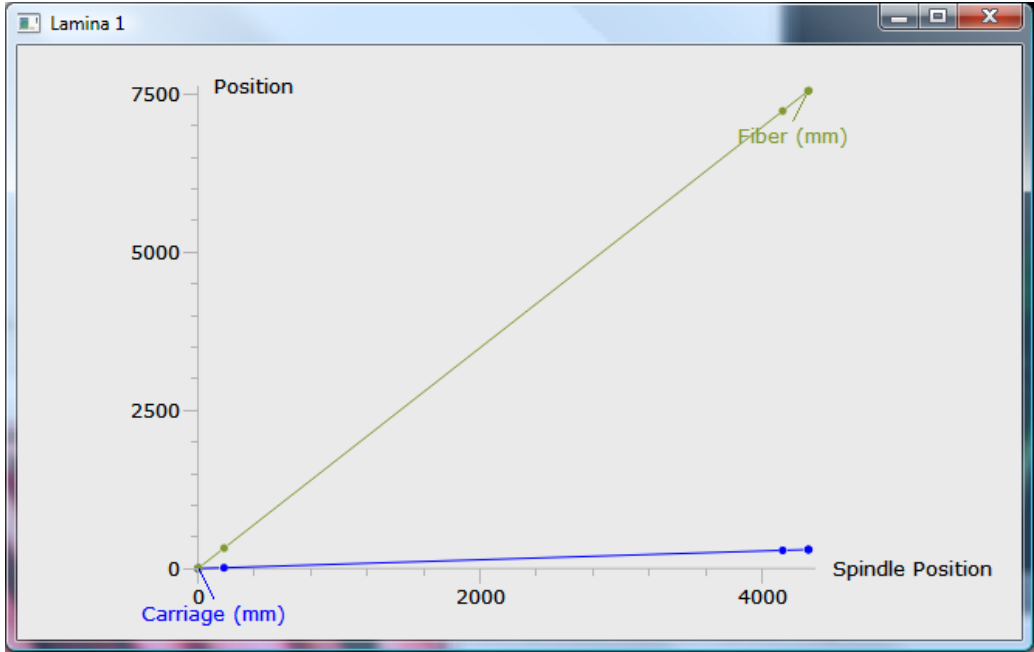
The Display / Graph Dialog will also be displayed:



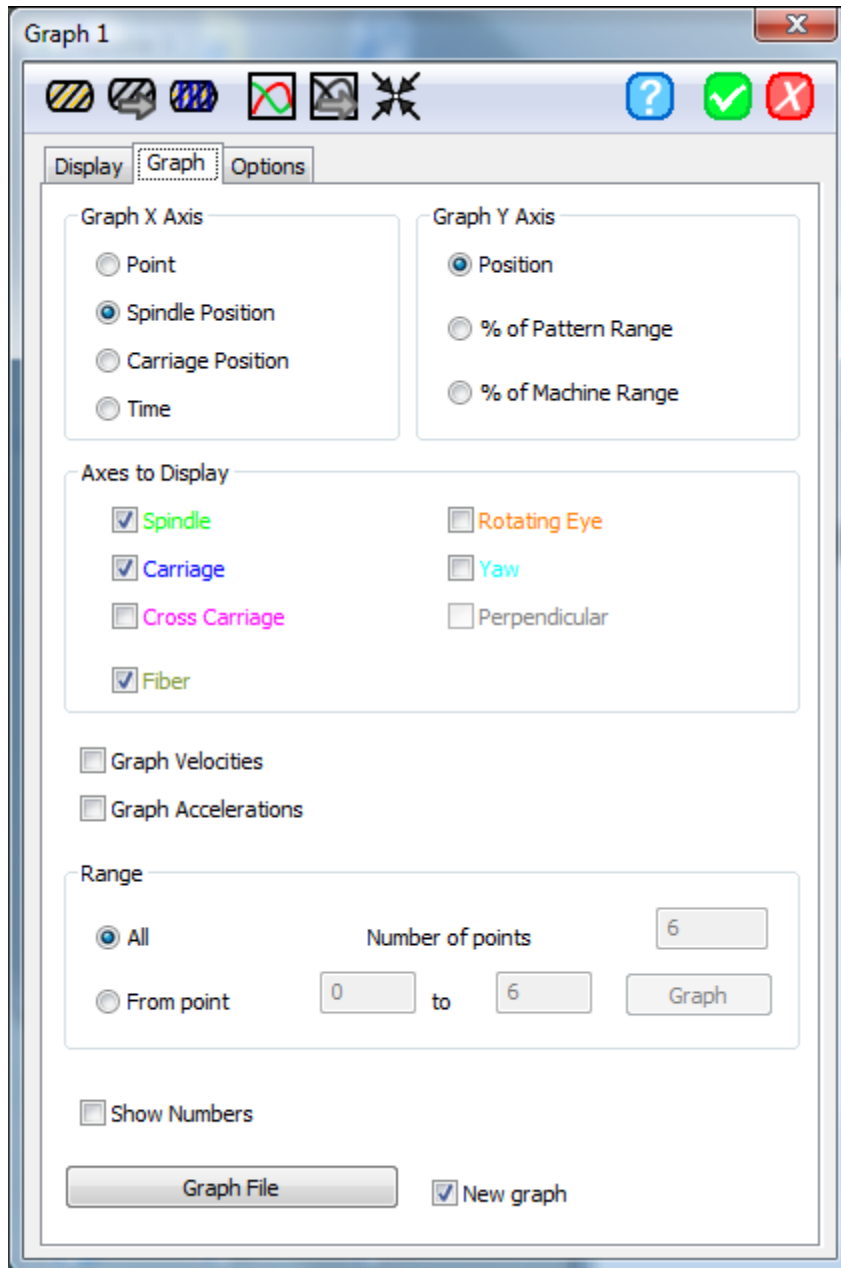
15. The Display / Graph Dialog can be used to manipulate both the path display and the graph display.


To redisplay the part click the display button . Clicking the Green Check, saves the current options.

16. To display the pattern graphs hit the graph button .



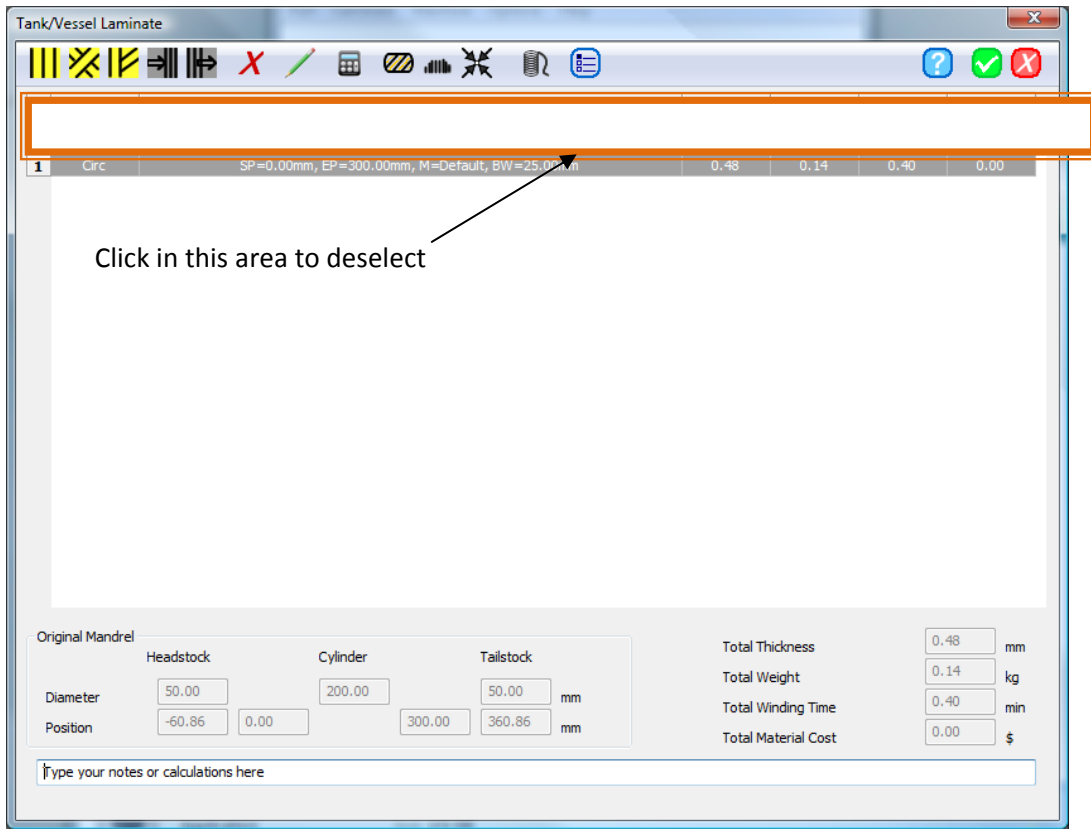
Use the Graph Tab to change the options for displaying the pattern graph:



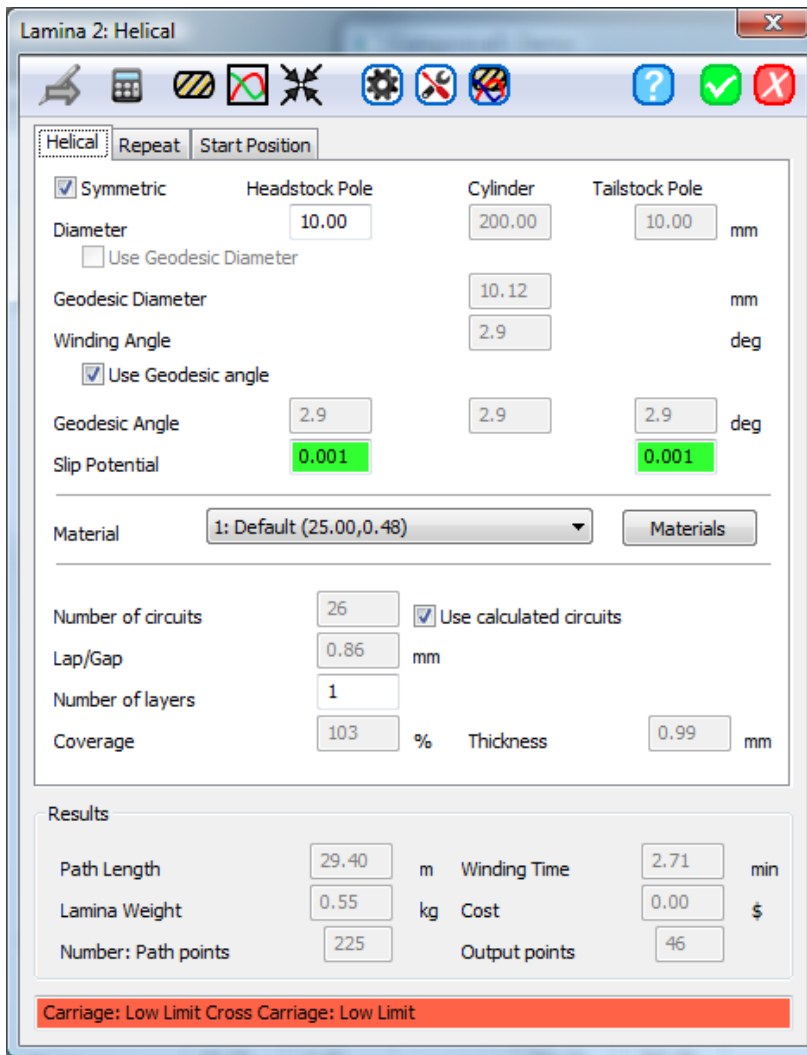
17. The Close Displays Button  closes all of the path and graph displays.

18. The Display Next  and Graph Next  buttons will display the path or the graph for the next lamina in the table.



19. Deselect the Circ Lamina by clicking in the table title area

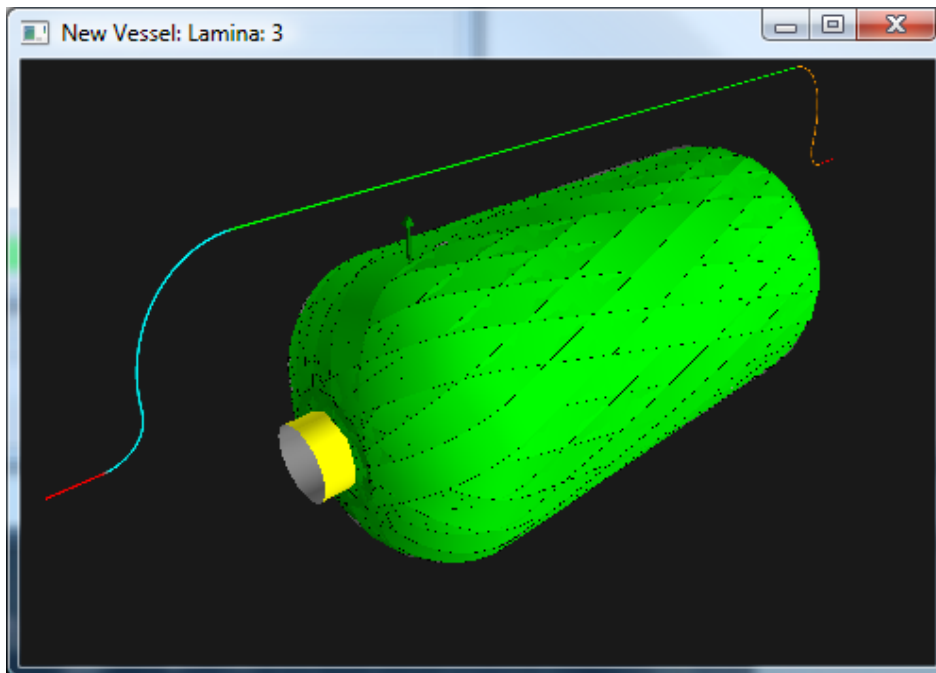


Click the Insert Helical Button . The Helical Dialog will pop up.

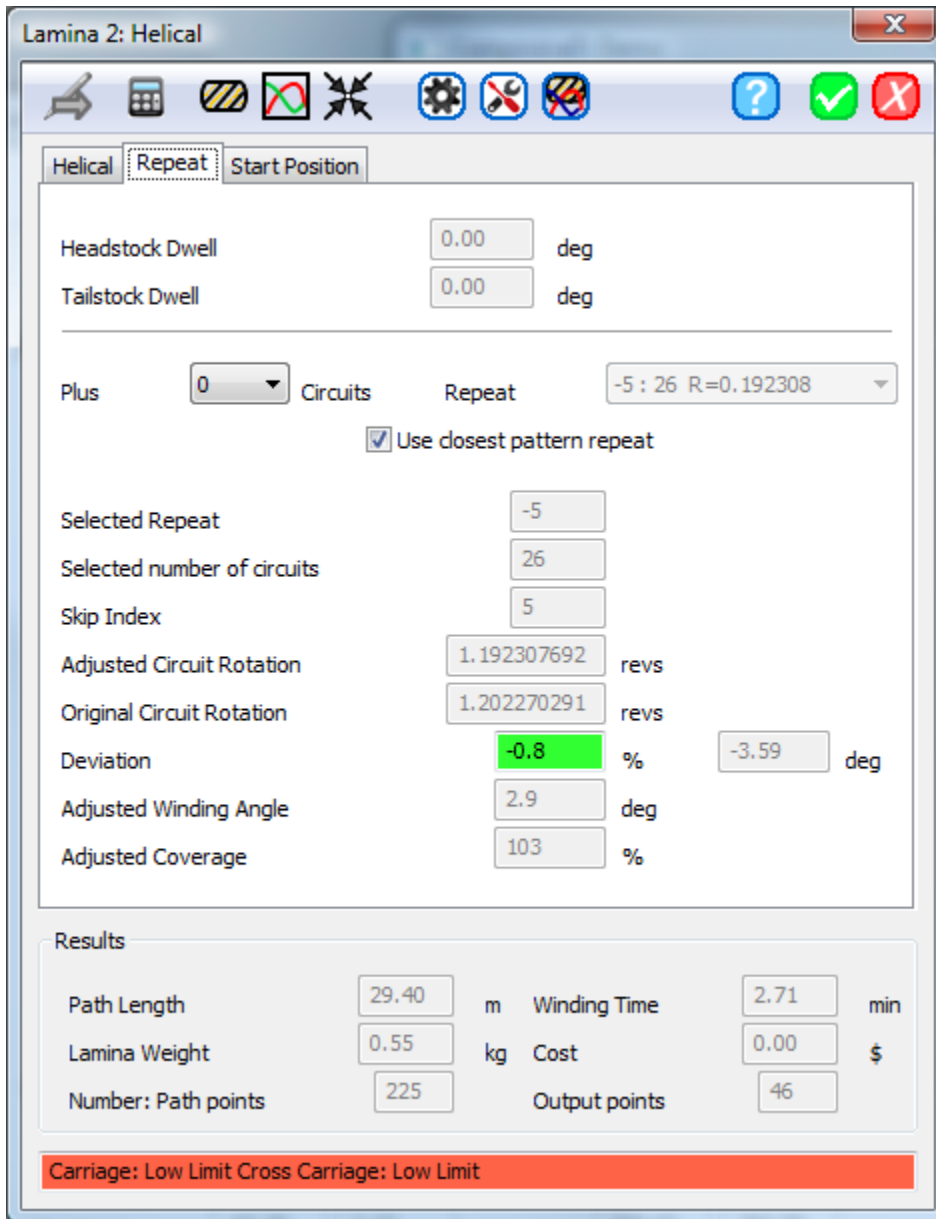


Set the Headstock Pole size to 50 mm.

20. Click the Calculate Button . This will generate a Helical Lamina. Click the Display button  to view:

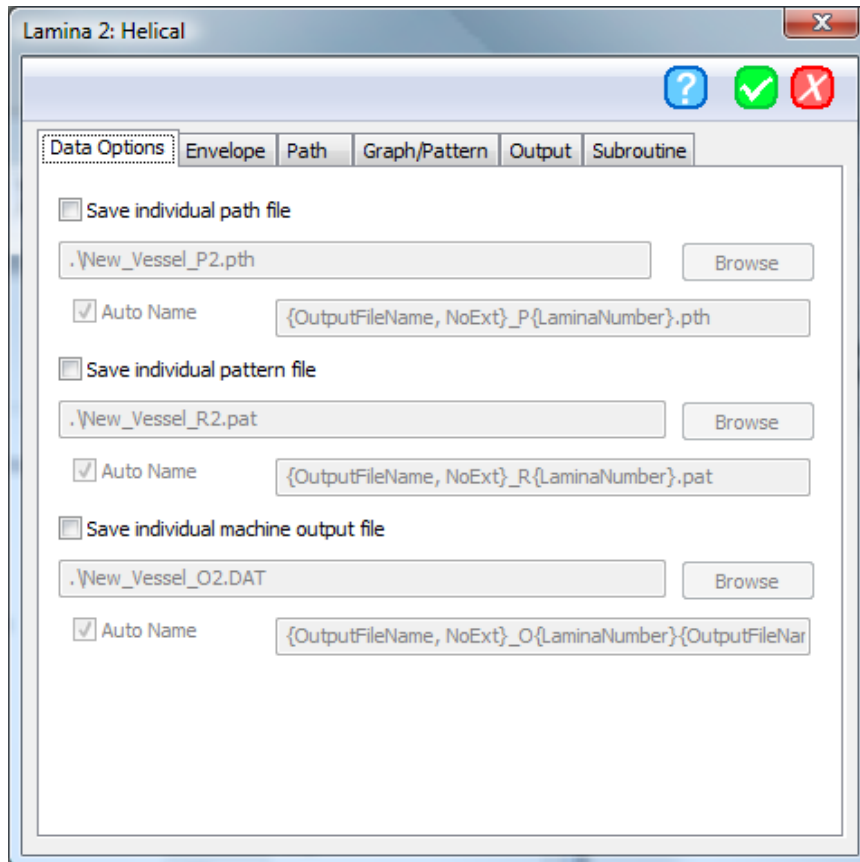


21. You may set various options for the Helical Path via the other Helical dialog Tabs – such as the Repeat Tab:

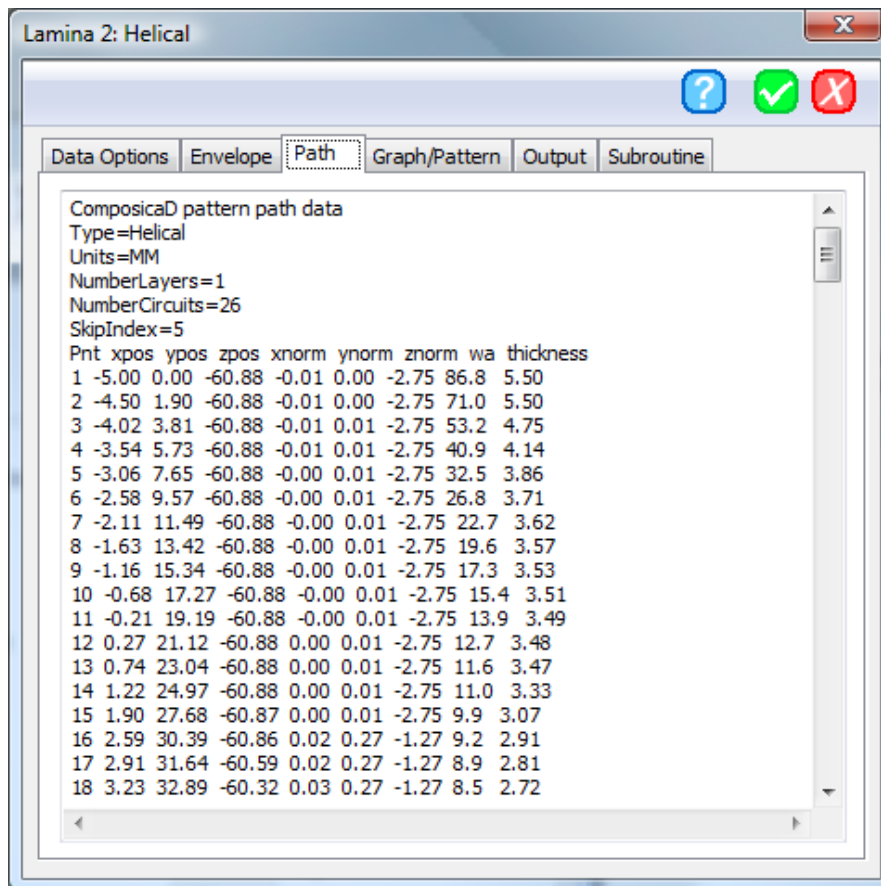


22. When the 'Use closest pattern repeat' box is checked, Compositcad will find the best match to the natural pattern rotation. You may adjust the Plus circuits drop down to allow Compositcad to add up to 3 circuits to the calculated circuits to allow for a closer pattern adjustment. The Deviation box will display green if the pattern deviation forced by the repeat adjustment is less than 5%, but will be yellow or red for higher deviations.

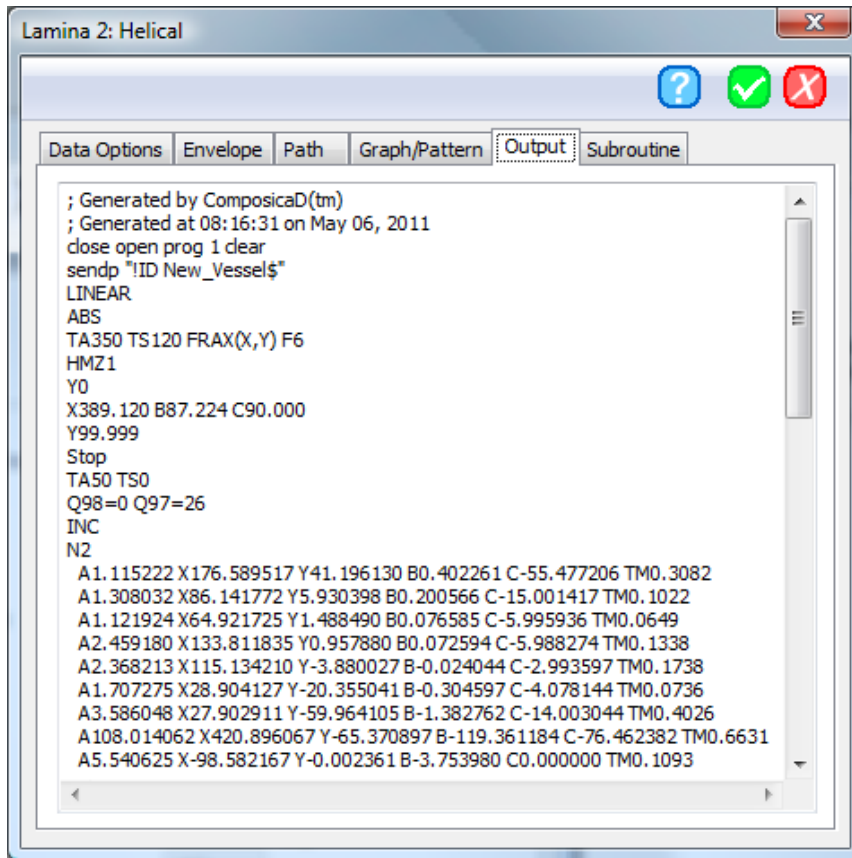
23. Click the Data Options  button to view the lamina data:




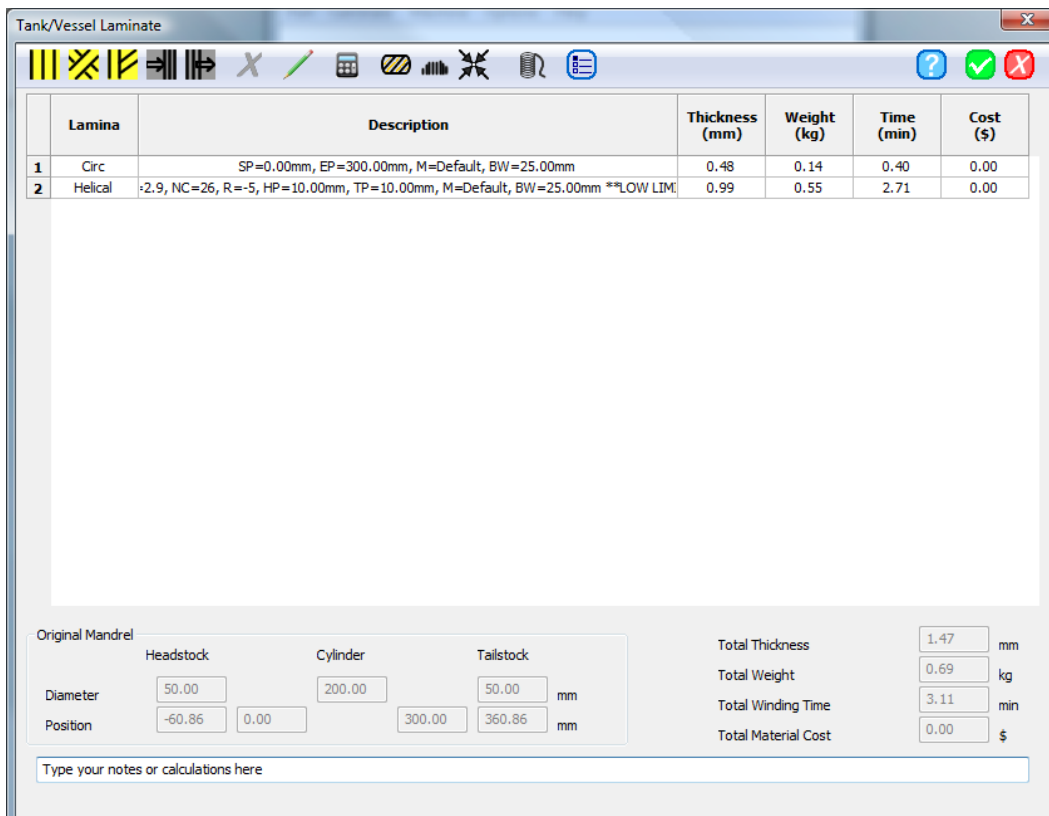
24. Click the Path tab to see the path data:



25. Click the Output tab to see the machine output data file (setup for a PMAC type controller in the demo):



26. Click the Green Check  to save the Helical Lamina into the Laminate Table.



27. Select the Helical Lamina by clicking the row

Lamina	Description	Thickness (mm)	Weight (kg)	Time (min)	Cost (\$)
1	Circ SP=0.00mm, EP=300.00mm, M=Default, BW=25.00mm	0.48	0.14	0.40	0.00
2	Helical -2.9, NC=26, R=-5, HP=10.00mm, TP=10.00mm, M=Default, BW=25.00mm **LOW LIM	0.99	0.55	2.71	0.00


Click the row to select a lamina

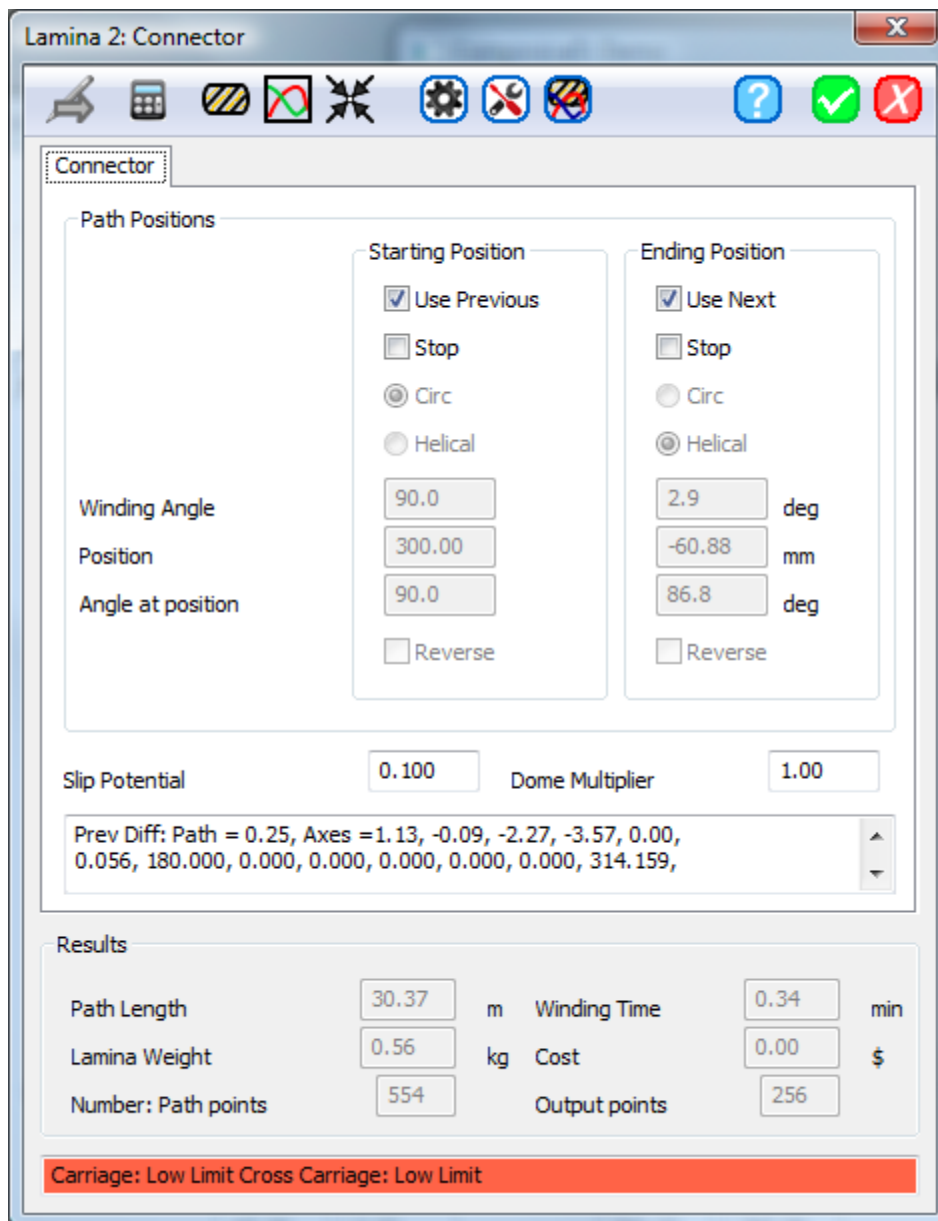
Original Mandrel

	Headstock	Cylinder	Tailstock	
Diameter	50.00	200.00	50.00	mm
Position	-60.86	0.00	300.00	360.86 mm

Total Thickness: 1.47 mm
Total Weight: 0.69 kg
Total Winding Time: 3.11 min
Total Material Cost: 0.00 \$

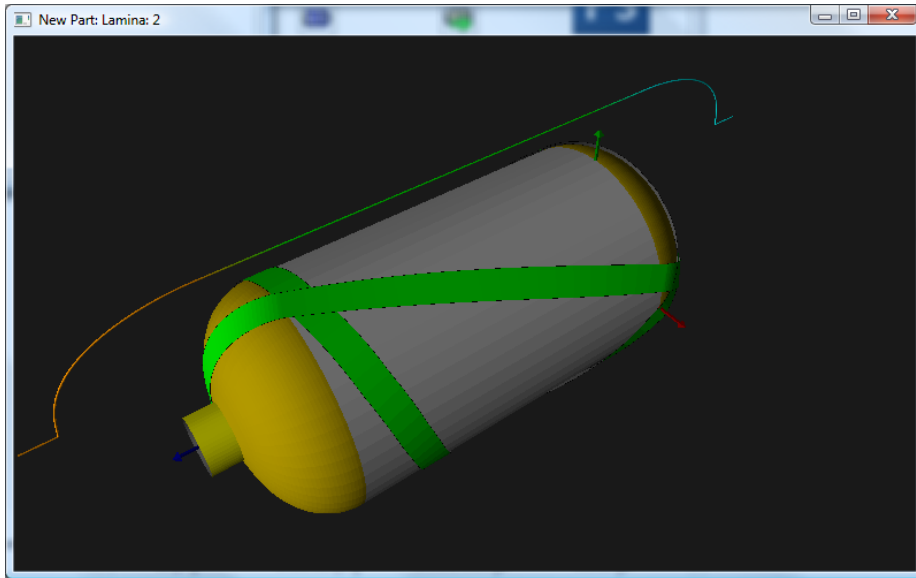
Type your notes or calculations here

28. Now click the Insert Connector  to insert a connector path between the Circ and Helical paths. The Connector dialog will pop up




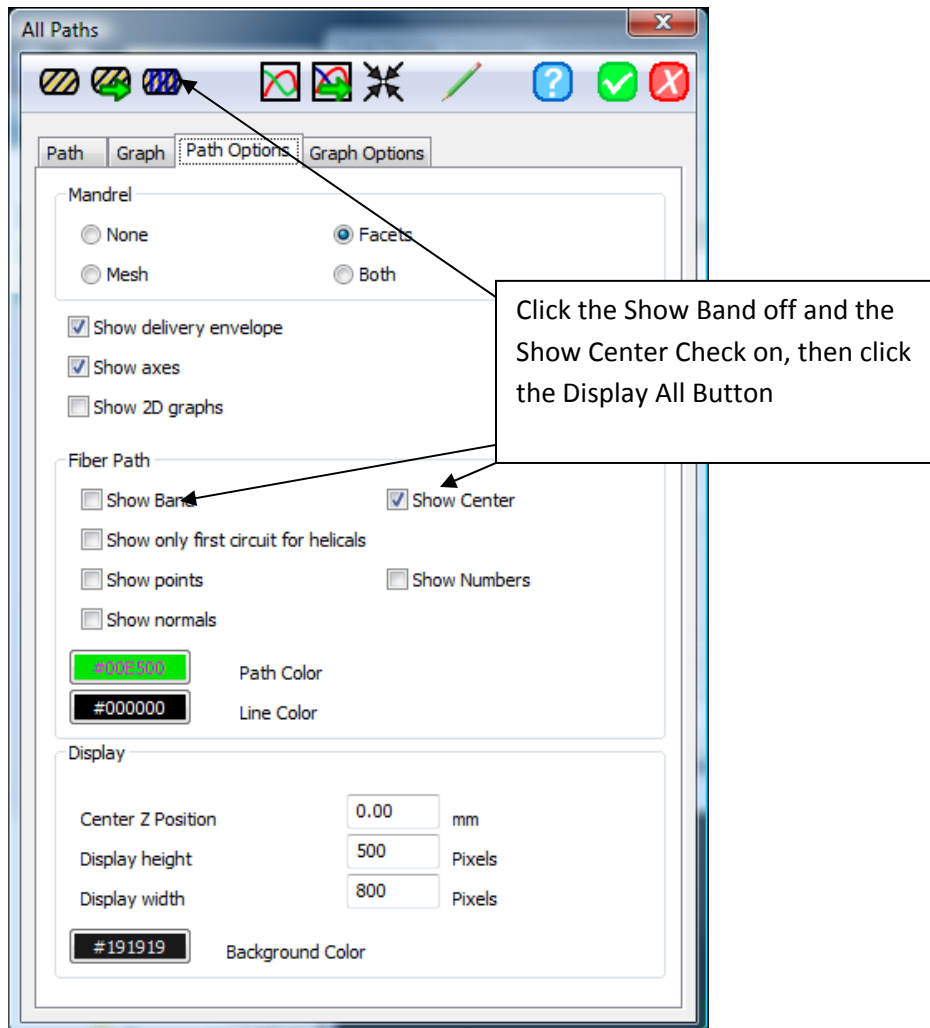
The red bar at the bottom shows that the carriage and cross carriage are outside the machine limits that are programmed in the demo.

29. Click the Calculate button then the Display button to generate the Connector:

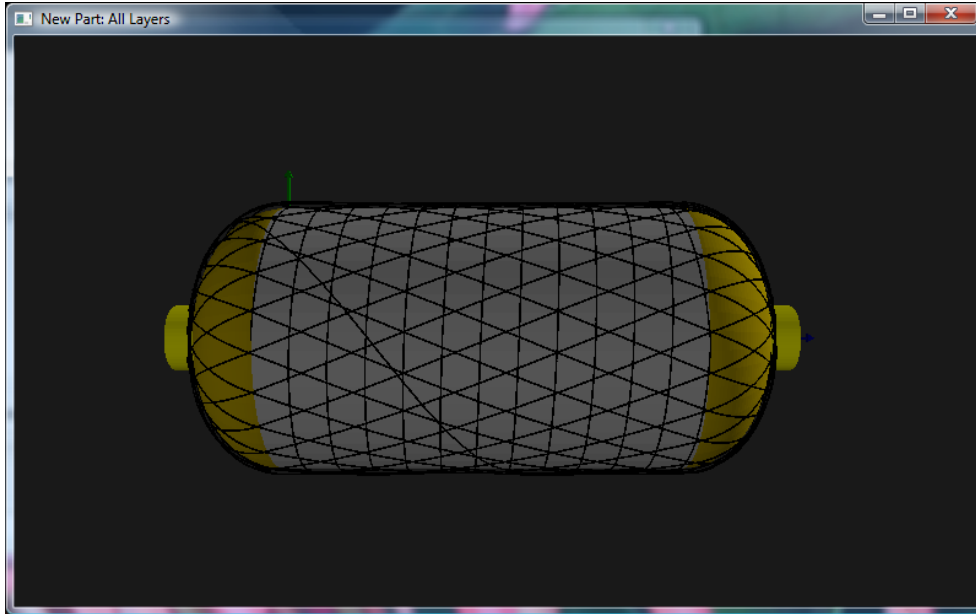


Click the Green Check to save the path.

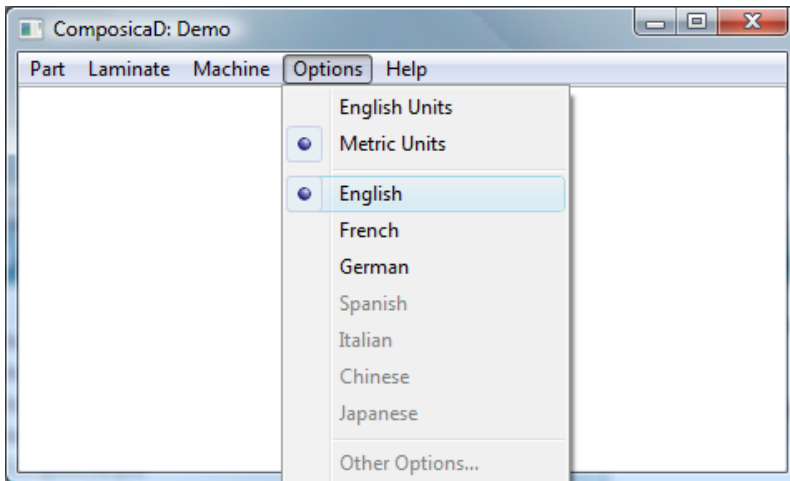
30. Make sure no lamina are selected (by clicking in the table title bar) and then click the Display  button. This will display all of the paths. Use the Display Options tab in the Display dialog to only show the center of the fiber band. This will allow you to see the paths on the mandrel:



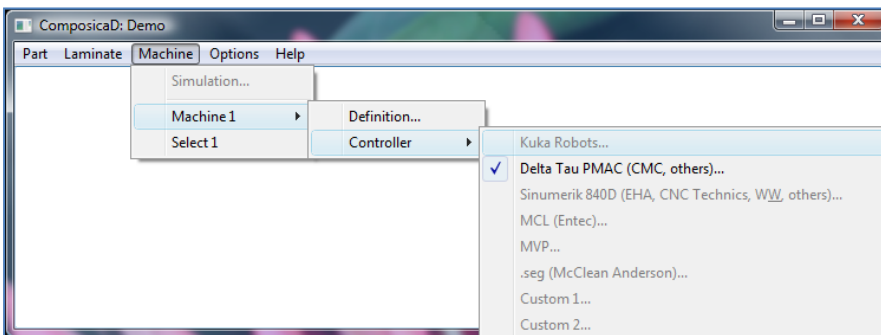
31. Click the Show All Paths button  to display all of the paths:




32. The program Options for Language and Units are set via the Options Menu:

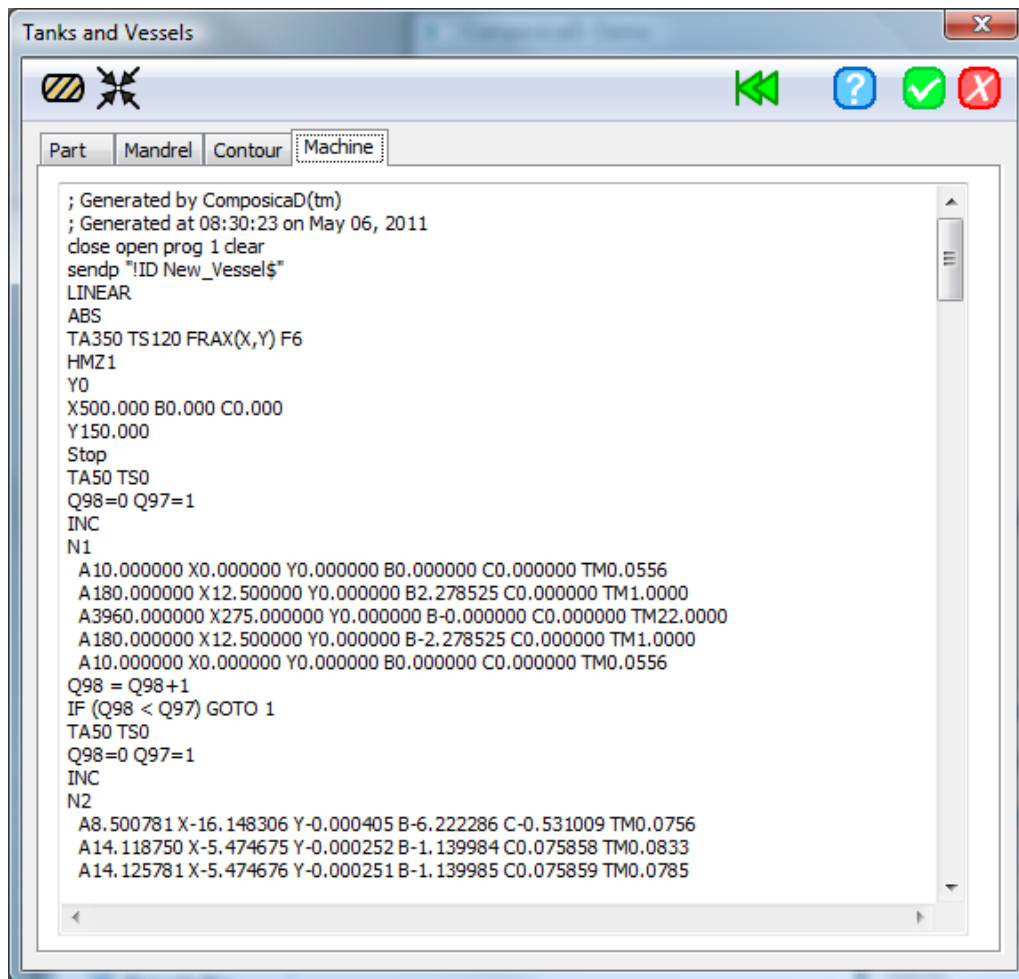


33. The Demo Version has only one Machine output – set to a PMAC (Delta Tau) machine controller.



34. To see the Machine Outputs select click Select 1 – a check mark will appear beside it. Go to the

Laminate Table and click the Calculate Button . This will calculate all of the patterns. Go to the Part Menu – click Tank or Vessel and click the Machine Tab in the Tanks and Vessels Dialog:



to see the actual machine output for the 3 combined patterns.

35. Materials are adjusted using the Material Dialog. To access it click the Materials Button in the Helical or Circ Dialog:

The screenshot shows the 'Lamina 3: Helical' dialog box with various settings. The 'Materials' button is located on the right side of the dialog, next to a dropdown menu showing '1: Default (25.00,0.48)'. A callout box points to this button with the text 'Click the Materials Button to adjust Material properties'.

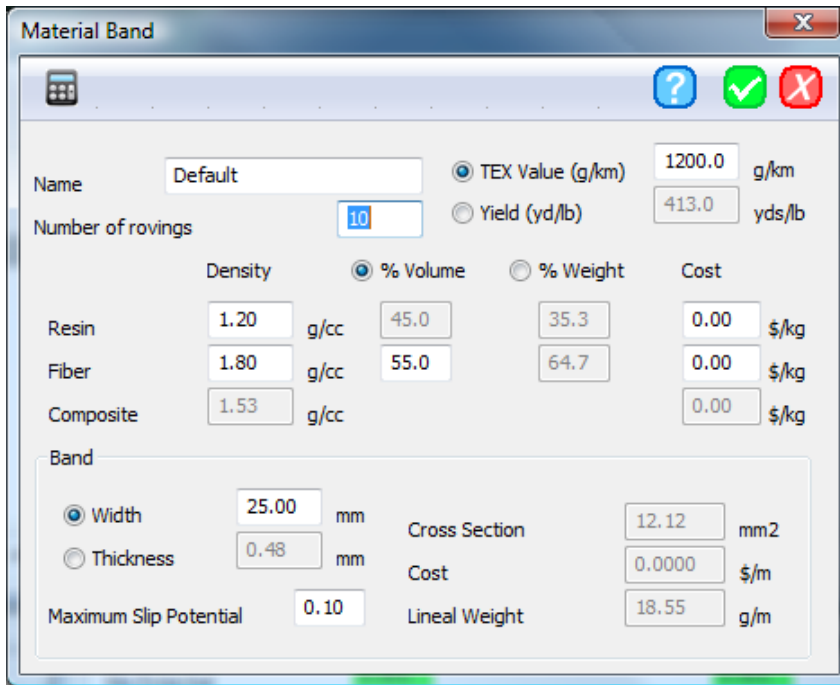
The Materials Table will pop up:

The screenshot shows the 'Materials' dialog box with a table containing material properties. The table has the following data:

	Name	Band Width (mm)	Band Thickness (mm)	# Rovings	TEX (g/km)	Fiber Fraction (%)
1	Default	25.00	0.48	10	1200	55.0


Below the table is a text input field with the placeholder text 'Type your notes or calculations here'.

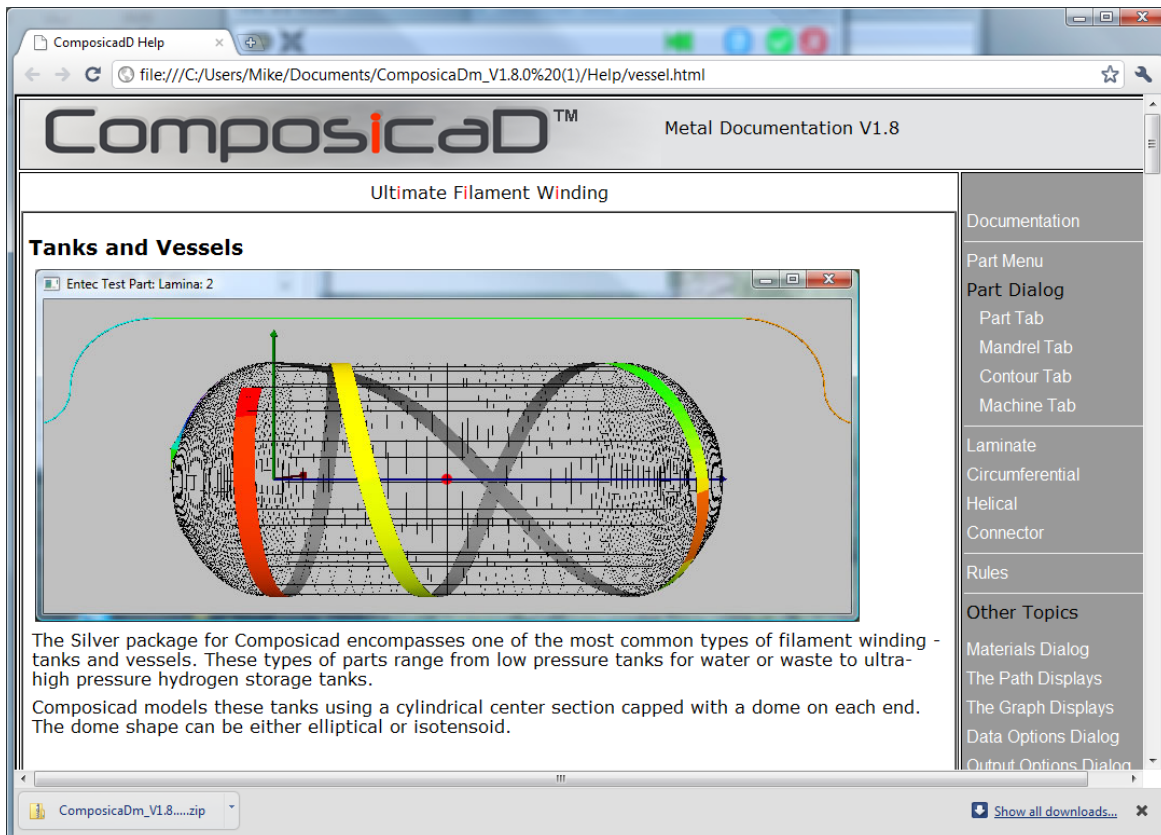
Double click on the Default Material row and the Material Dialog will pop up:



The Demo Version of Compositcad only allows for one material, but you can edit it here. These properties are used in Compositcad for various things like part weight, part cost, etc.

36. Compositcad saves a program state file (the `ccm_state.prj` file that was not found when Compositcad was first started). This file is typically stored in the directory were Compositcad is executed from. It saves all of the program state – part and laminate information – so you can exit Compositcad and return to the same point when it is restarted.

37. Click the Help button  on any dialog to pop up the help system:



Compositcad help is in html format and uses your browser as a viewer.

Notes:

The Demo Version is a working version of the Silver package – Tanks and Vessels. In the Demo Version you cannot save any file data and the number of paths is limited to three. Material choice is limited to one.

Composicad is still under development and new versions are expected to be produced in the future as bugs are fixed and new features are added. Please check the Composicad web site for information on the latest release of Composicad and the Demo Version of Composicad.

We welcome your comments, suggestions and bug reports. Please send them to info@seifert-skinner.com or use the Comment Form in the user Area on www.Composicad.com.

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