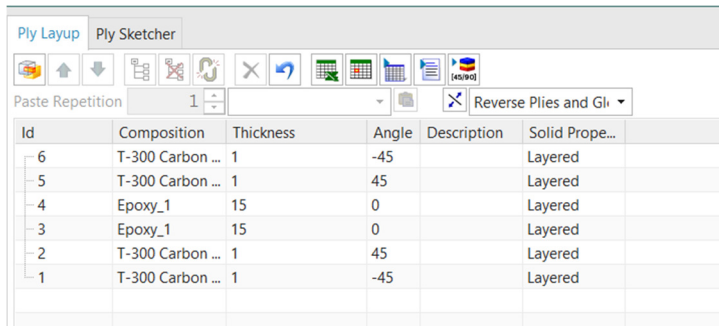


3D Mesh laminates sandwich a core with two or more plies each side

### Steps

- Create dependent meshes (remember which is the master ☺)
- Create a 2D collector type Laminate



The screenshot shows the 'Ply Layout' window with a table of laminate layers. The table has columns for Id, Composition, Thickness, Angle, Description, and Solid Properties. The layers are numbered 1 through 6, with alternating carbon fiber and epoxy plies.

Id	Composition	Thickness	Angle	Description	Solid Properties
6	T-300 Carbon ...	1	-45		Layered
5	T-300 Carbon ...	1	45		Layered
4	Epoxy_1	15	0		Layered
3	Epoxy_1	15	0		Layered
2	T-300 Carbon ...	1	45		Layered
1	T-300 Carbon ...	1	-45		Layered

Figure 1 Part of laminate modeller

- Assign this collector to the master mesh.
- Fill laminate

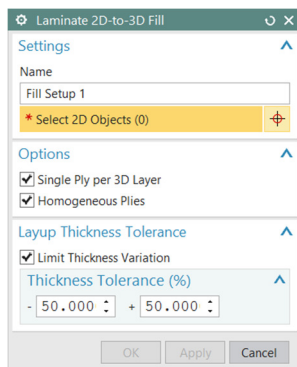


Figure 2 Selecting single ply per 3D layer, Limit Thickness variation

This is for each ply, but I want the outside plies eg. The carbon to remain constant and only the core to adapt the size to fill the volume between the two meshes.

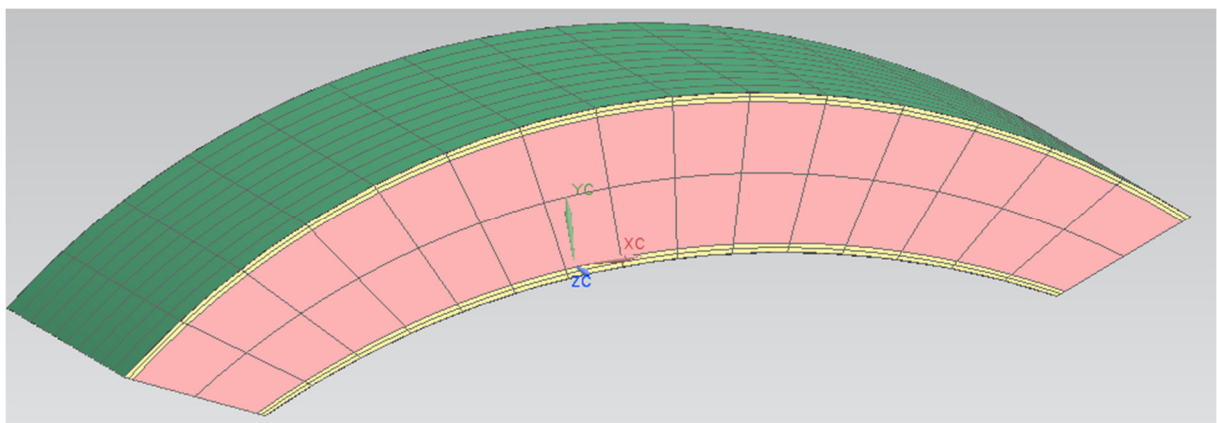



Figure 3 Result from the actions taken above

It should be possible to adapt the ply thickness individually.

## Where do I find it?

### Laminate 2D-to-3D Fill dialog box

Application	Advanced Simulation
Prerequisite	You must work in the FEM.
Command Finder	Fill Laminate 
Menu	Insert → Laminate → Fill
Simulation Navigator	Right-click the <b>Laminate Inflation</b> node→ <b>Fill Laminate</b>

### Ply Thickness Tolerance dialog box

Application	Advanced Simulation
Prerequisite	You must work in the FEM.
Simulation Navigator	Right-click a <b>ply</b> node→ <b>Edit Ply Thickness Tolerance</b>

Figure 4 Manual indicating how to modify individual plies (apologies for the highlight was searching through the manual)

But I cannot find a ply node to right click it. I hope I do not overlook it.

ply_fem.fem	Displayed &...	D...
3Dmesh_voorbeeld_vleugel.prt		
Polygon Geometry		(Filter : Off)(Sort : Off)
Polygon Body (2)		
Polygon Body (3)		
Mesh Controls		
2D Collectors		
ThinShell(1)		(Filter : Off)(Sort : Off)
2d_mesh(2)	Element cou...	
Master_sheet_laminate		(Filter : Off)(Sort : Off)
2d_mesh(1)	Element cou...	
3D Collectors		
Laminate2-Fill		(Filter : Off)(Sort : Off)
Laminate2-Ply1	Element cou...	
Laminate2-Ply2	Element cou...	
Laminate2-Ply3	Element cou...	
Laminate2-Ply4	Element cou...	
Laminate2-Ply5	Element cou...	
Laminate2-Ply6	Element cou...	
Layups		
+ Layup Offset		
+ Material Orientation		
Zones		
+ Laminate1		
+ Laminate2		
+ Laminate2 - Fill		
+ Laminate Inflation		

Figure 5 Part of the simulation navigator