Stratasys®
3D Printers and
Production Systems

| CAD ☐ | Insight ■ | Finishing ☐ | Maintenance/System ☐ | Skill Level ■■☐ |

When processing parts for sparse fill interior build style, slightly sloping part geometry's that are created with an air gap between the outer contour and the rest of the part cause the outer contour to not attach to the rest of the part or "delaminate". Sometimes repositioning the part will eliminate this problem, or there is a method to correct the air gap using the custom groups feature in Insight.

CREATING A SPARSE FILL

Step 1
After slicing, building supports, and creating toolpaths, inspect the slice file layers to look for the air gap (figure 1).

Note: It is best to view each layer in shaded mode to detect the air gap.

Step 2
If, after inspecting the slice file, detect the air gap between inner and outer walls of the part, it may be possible to correct the problem by rotating the part. If the geometry of the part allows an orientation that eliminates the sloped surface from the z-plane, then rotating the part will correct the problem. Figure 1 was rotated 90 degrees along the y-axis, then reprocessed (sliced, build supports, create toolpaths, figure 2).

In some cases it may be necessary to incrementally rotate the part in X or Y by several degrees even though it may create a rough bottom and/or top surface because it will no longer lay flat (figure 3).

Step 3
If a different orientation will not solve the air gap problem, another method is to create custom groups for the slice layers with the air gap (figure 4). The part in figure 4 has been processed with default sparse parameters. A custom group has been created (Group 1) and the individual layer has been placed in the custom group. The parameters for the custom group have been set to: contour style has been changed from perimeter only to contours to depth, the depth of contours set to 0.08 inches, and the air gap between rasters has been changed to 0.10 inches.

The result is the air gap between the outer contour and the part is gone (figure 5). This method can be applied if rotating the part is not an option.

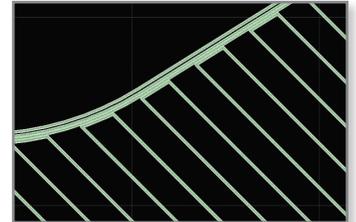**Note: The 5 layers before a part feature is visible (at the top), should not be modified.**
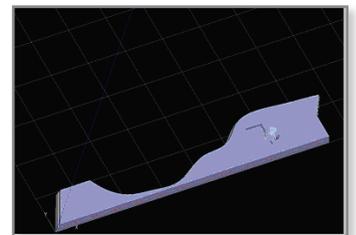

Figure 1: Air Gap Problem 1
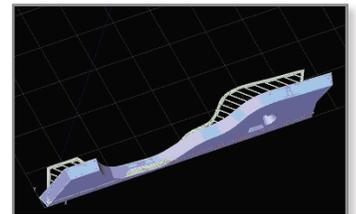

Figure 2: Use New Orientation 1

Figure 3: Use New Orientation 2
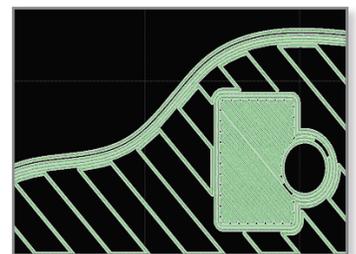
Figure 4: Air Gap Problem 2

Figure 6: Solid Wall No Air Gap

Fortus®
3D Production Systems
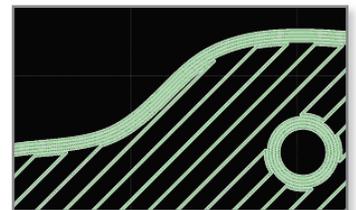
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