



Customer Information Bulletin

CIB

CIB #: 17-03
 Date: 19 July 2017
 Status: Non-confidential

Subject: Tips & Information for part building with Accura® 60 material

1. **Software version:** It is best to use the most current appropriate software version for your system type, to ensure compatibility with newly-created build styles.
2. **Printer control and part preparation software entries:** Each material on a SLA system uses a specific material entry. This is entered in the printer Control Code or 3DPrint software. See Users' Guide for details. Recommended starting parameters are shown below.

	Legacy Systems (Viper™, SLA 350/3500, 5000, 7000)	ViperPro™ Systems	iPro™8000/9000 Systems	ProX® 800/950 Systems
Dp (mils)	6.3	6.3	6.3	6.3
Ec (mJ/cm2)	7.6	7.6	7.6	7.6
Default Scale Factors (x, y, z)	1.002, 1.002, 1.000	1.003, 1.003, 1.000	1.003, 1.003, 1.000	1.003, 1.003, 1.000
Default Linewidth Compensation Value	0.125 mm (0.005")	0.075 mm (0.003")	0.075 mm (0.003")	0.075 mm (0.003")
Recommended vat/MDM temperature	28°C	28°C	28°C	28°C

3. **Support overcure and strand thickness:** Support structures made in Accura 60 material have been described as "hard and crisp." Though the parameters result in strong supports, the supports are still reasonably easy to remove from the parts. The default parameters were developed because Accura 60 material needs to be held well by the supports. Though parameters can be reduced to result in easier support removal, you will likely experience more curl and even the potential for build crash, if you weaken the supports. So proceed with caution if you change support parameters.
4. **FAST™ style:** In general, the FAST style is about 30 - 45% faster than the EXACT™ style. The actual difference in throughput is dependent on your system type, part geometry, laser power and system type. Note that this increased throughput comes at the cost of accuracy and surface finish of final parts. The FAST style will not be appropriate for every geometry. The FAST style for this material is 0.100 mm (0.004 in) layer thickness, so it achieves excellent speed along with the same Z resolution as the EXACT style. Note that the EXACT style for Accura 60 resin is already comparable in speed to FAST styles for other similar resins. Use of 0.125 mm (0.005 in) or 0.150 mm (0.006 in) layer thickness is not recommended. Building in thicker layer thickness for solid parts may cause upfacing and/or sidewall surface defects.
5. **QuickCast™ style:** To achieve a good balance of part quality, strength, and drainage, the QuickCast build style has been set up to use 2 additional borders. If you find that finishers tend to break through the skin when removing supports, you may wish to increase to 3 additional borders. This will affect drainage, but may facilitate higher part yield depending on part geometry and skill of the finishers.

May be distributed

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6. **Use of post-hatch delay (PHD):** The styles for this resin are set up using PHD in most cases. Reducing PHD should be done with caution, as this may affect surface finish.
 - On all systems, reducing PHD may result in “fuzzy” sidewalls. If you observe fuzzy sidewalls on any geometry, increasing PHD may be an appropriate course of action. This was observed only rarely during the Beta program, but you may encounter this with your specific geometries. Another option is also effective, and may be used to maintain best throughput, depending on part geometry. Adding two additional sweeps (to 3 sweeps) can also maintain excellent sidewall quality. Note that “sidewall” can mean *angled* surfaces as well as vertical sidewalls.
 - Sidewall anomalies may appear with bulky parts (individual part cross section greater than 4 square inches) on larger systems. When building bulky parts on these systems, you may need to increase PHD from 15 seconds to 30 or more seconds to achieve the best surface finish. The styles allow PHD to be set from zero to 60 seconds.
7. **Near-flat downfacing features:** For some systems, a special EXACT build style has been developed to minimize downfacing border and surface delamination for Near Flat Inclined Downfacing surfaces. This style should be used when surfaces are sloped at an angle of less than 20 degrees from horizontal. You may use this style for the whole part if you wish, or just for the region with the very shallow angle. This file is named (as example): Part_Accura60_EXACT_0040in_NFLT.sty.
8. **Trapped volumes:** Accura 60 material does not require a special trapped volume style.
9. **Part Clarity:** Accura 60 parts are typically very clear. However, make note that:
 - There will be batch-to-batch variation in the product over time. This will result in a range of clarity, from very clear to slightly cloudy. In order to maximize the clarity, users should minimize the amount of solvent exposure to parts during cleaning. As you can imagine, residue from prior cleaning operations can result in a film which obscures the natural clarity of this material. Therefore, it is important that parts are washed in fairly fresh or clean solvent. A light brushing with a soft brush in the solvent will also assist in removing any non-clear residue. For the clearest possible parts, a light coat of a clear spray lacquer can be used (clear coat). This helps mask layer lines and other blemishes.
 - The material has a blue hue, which becomes more intense as the part cross-section becomes thicker.
10. **Liquid Material Color:** This material includes components which, over time, can agglomerate/clump together and become visible as colored “specks” in the resin, typically bluish specks. This is due to liquid material age or storage conditions. If this is observed, simply mix the material as described below:
 - For material in bottles: Shake or stir the material in the bottle for 10 minutes, shaking by hand or using a drill motor and blade (e.g., paint stirrer).
 - If this is observed in the vat or MDM: Stir using the elevator stir function for a minimum of 1 hour.

If you have questions about this process, contact your regional customer support center. The regional contact information can be found on the 3D Systems website, www.3DSystems.com.