



# Customer Information Bulletin

# CIB

CIB #: 01-13

Date: 15 March 2013 Updated 11 October 2013 / 1 May 2014 / 8 August 2018

Subject: Tips & Information for part building with Accura® Xtreme™ White 200 material

1. **Software version:** It is best to use the most current software version. For ProX800, ProX950 and the other SLA products, the current software versions which include *Accura Xtreme White 200* are:

- **Part preparation software:** 3DSprint™ 2.8
- **Part building systems:**
  - ProX800/950: Print 3D Pro V1.0.5443
  - iPro/ViperPro: 3DPrint™ 1.2.4169
  - SLA7000: WINSLA 5.5

To ensure compatibility with newly created build styles, the earliest supported versions are:

- **Part preparation software:** Lightyear™ 1.4 or 3DManage™ 1.2
- **Part building systems:** Buildstation™ 5.4 or 3DPrint™ 1.1

2. **Print 3D Pro or 3DPrint or Buildstation software entries:** Each material on a SLA system uses a specific material entry in the 3DPrint or Buildstation software. The entries contain the values for Dp and Ec used for each material. See the 3DPrint or Buildstation Users' Guides for details. The values for Dp and Ec are shown below.

Recommended Starting Parameters:

	Viper™ HR	Viper™ si <sup>2</sup>	SLA 7000	iPro™ ViperPro	ProX™ 800 ProX950
Dp (mils)	4.6	4.6	4.6	4.6	4.6
Ec (mJ/cm <sup>2</sup> )	8.3	8.3	8.3	8.3	8.3
Baseline Scale Factors (x, y, z)	1.0010/1.0010/1.0000	1.0010/1.0010/1.0000	1.0008/1.0020/1.0000	1.0020/1.0020/1.0000	1.0020/1.0020/1.0000
Baseline Linewidth Compensation Value	0.0125mm (0.0005 inch)	0.0500mm (0.002 inch)	0.0750mm (0.0030 inch)	0.100mm (0.0040 inch)	0.050mm (0.0020 inch)
Recommended vat temperature	28°C	28°C	28°C	28°C	28°C

3. **Build start position and build area:**

Build start position and build area are critical factors for successful part building using Accura Xtreme White 200 material. It was observed that in the “green” state, the material exhibits low adhesion. Users should be careful when preparing parts, using the following instructions:

- a) At build start position, the top surface of the build platform should be 4 layers (0.016” or 0.400mm) above the resin level. That means the platform should not be completely submerged into the resin until after the first 4 layers are complete.
- b) Parts should not be built on the solid metal sections at the edges of the platform because after deep-dip recoating, the material settles very slowly. Supports around the extreme edges of the platform could float, resulting in build failure.



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- 4) **Vat maintenance:** It is recommended that Accura Xtreme White 200 be maintained as follows:
- Resin Stabilization:** Like the other resin types, Accura Xtreme White 200 needs to be stabilized. Please follow 3D Systems Resin Stabilization guidelines to maintain the best performance and prolong resin life.
  - Resin stirring:** Between each build, use the platform to stir the resin for a minimum of fifteen minutes, using the full available z-stroke for your system. Failure to stir this material regularly may result in separation of some of the constituents of the formulation. This separation can result in build related issues including ripples or quilting effects on down facing flat sections and variation in mechanical properties of finished parts. The MINIMUM frequency for stirring is weekly, and if stirring infrequently you should stir for at least 12 hours.  
General stirring instructions are provided below. Please note that each system's stirring method varies slightly depending on software type and version, so only general instructions are provided:
    - Position platform 0.200" below the current resin surface (no need to level the resin)
    - Set stirring velocity, normally 1 to 2 inches per second
    - Set the stirring stroke (negative z distance from stirring start position) to cover the full z-stroke\* for your vat/RDM depth.  
\*Note: avoid stirring to the very bottom, if you suspect there is debris or partially cured material at the bottom of the vat (this is very common). Stirring up that debris or partially cured material can have negative consequences.
    - Set stirring time
    - Start stirring
5. **Part Supports :**
- **General:** Accura Xtreme White 200 supports have been described as "hard and crisp." The default parameters are optimum for successful part building. Modifying supports may cause the build to crash, so proceed with caution if you change support parameters. In some cases, the supports may be crowded on some parts and may require editing.
  - **Support removal:** It is preferable that supports are removed prior to UV post cure, to avoid damaging the part surface.
6. **Hatch Overcure:** Hatch overcure has been optimized to maximize build speed. It is highly recommended that the hatch overcure values not be reduced from default. However, you can increase hatch overcure to increase part hardness, or decrease the hatch overcure to increase build speed. Hatch overcure should not be increased or decreased more than 0.001" (0.025mm).



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7. **Down facing surfaces:** The default build style has been developed and optimized for the best down facing surfaces. The support spacing was also reduced from more standard 0.300 to 0.250 inches to prevent the “quilting” effect (down facing surfaces sagging between support lines). Also note that quilting can be more pronounced when relative humidity (RH) is below 50%. If you see this effect with low ambient RH, tighten support spacing to 0.2 inches, and make sure you are stirring the material regularly.
8. **Recoating:** The default sweep speed is set to 1 ips. It was observed that during recoating, sweeping at 2 inches/second causes uneven top surfaces due to dewetting. Though 2 ips sweeping can be successful, if the solidified cross section of parts are greater than 2 square inches, 1 ips is the recommended sweep speed.
9. **Viper HR mode part building:** When building parts in the HR mode on a Viper si<sup>2</sup> SLA system, we recommend building in the “sweet spot”, which is the 5”x5” area at the center of the vat. If parts are built outside this “sweet spot”, the risk of part failure does increase.
10. **Part cleaning:** Parts must have excess material removed prior to post-curing.
  - a. Drain excess material from the parts for 10-15 minutes to remove most of the uncured material.
  - b. Immerse parts in TPM and agitate for a minimum of 20 minutes (maximum 90 minutes). Time required will depend on geometry. It’s important to make sure the parts are thoroughly clean, or excess material will get cured into crevices or onto surfaces, affecting part resolution and/or accuracy. Parts may be cleaned on the platform, or off the platform.
  - c. Remove parts and drain excess TPM back into your tank.
  - d. Rinse parts with water, using water spray to fully remove TPM and excess diluted material.
  - e. Air dry parts. You may use compressed air (low pressure) to dry the part and remove liquid from crevices.
11. **Post-curing:**
  - We recommend removing supports before post-curing parts, to avoid damaging the part surface.
  - Most geometries are self-supporting, but use good judgment based on your specific parts to determine if additional support is required during the post-curing operation. Take care when orienting parts in the post-curing apparatus to avoid sagging or other deformation.
  - Take care to avoid excess post-during time, as this can adversely affect part color. Post-curing for 30 minutes each side is recommended.