

Comprehensive 3D Printer Settings for CrownPro Resin and TempCrown Resin Across Popular Printer Models

When using **CrownPro Resin** and **TempCrown Resin**, achieving the right balance between exposure time, layer height, and speed is critical for accurate and durable prints, particularly for dental applications. Below is a simplified guideline for these resins, focusing on key settings that work well for most 3D printer models.

General Recommendations for CrownPro Resin and TempCrown Resin Settings

| Setting | CrownPro Resin Setting | TempCrown Resin Setting | Notes |
|------------------------------|------------------------|-------------------------|--|
| Layer Height | 0.05 mm | 0.05 mm | Both resins work well with this layer height for detailed prints. |
| Bottom Layer Count | 4 | 4 | 8 layers ensure strong adhesion to the build plate. |
| Exposure Time (Normal Layer) | 6-9 seconds | 6-9 seconds | Ideal exposure time for fine details without over-curing. |
| Bottom Exposure Time | 60.0 seconds | 60.0 seconds | Sufficient time for bottom layers to ensure strong adhesion. |
| Transition Layer Count | 4 | 4 | Smooth transition between bottom and normal layers. |
| Transition Type | Linear | Linear | Linear transition helps in smooth bonding between layers. |
| Transition Time Decrement | - | - | No decrement specified; a linear transition works fine here. |
| Rest Time Before Lift | - | - | No rest time before lift, which can speed up the printing process. |
| Rest Time After Lift | - | - | No rest time after lift for more efficient printing. |
| Rest Time After Retract | - | - | No rest time after retract, reduces downtime between layers. |
| Bottom Lift Distance | 3.0 mm | 3.0 mm | Standard bottom lift distance for good adhesion and minimal pull. |
| Lifting Distance | 2.0 mm | 3.0 mm | Adequate lifting distance to ensure proper print separation. |

| Setting | CrownPro Resin Setting | TempCrown Resin Setting | Notes |
|-------------------------|------------------------|-------------------------|---|
| Bottom Retract Distance | - | 0.5 mm | Small retract distance to avoid excess resin leaking during printing. |
| Retract Distance | - | 0.5 mm | Similar to bottom retract distance to minimize resin waste. |
| Bottom Lift Speed | 90.0 mm/min | 90.0 mm/min | Slower bottom lift speed for stable adhesion. |
| Lifting Speed | 250.0 mm/min | 250.0 mm/min | Standard lift speed to maintain precision and print integrity. |
| Bottom Retract Speed | 250.0 mm/min | 250.0 mm/min | Faster retract speed for bottom layers to avoid resin contamination. |
| Retract Speed | 90.0 mm/min | 90.0 mm/min | Slower retract speed to minimize stringing and leakage. |

Key Differences and Considerations:

1. Exposure Time (Normal Layer):

- Both **CrownPro Resin** and **TempCrown Resin** have a normal layer exposure time of **6.0 seconds**, which is ideal for maintaining print detail while avoiding over-curing. This ensures you get crisp details, which is crucial for dental prints.

2. Bottom Exposure Time:

- The **62.0 seconds** for **bottom exposure time** is appropriate for both resins, ensuring strong adhesion to the build plate. This prevents the print from detaching during the process, especially for dental models.

3. Layer Count:

- Both resins are set to **8 bottom layers** to ensure solid adhesion to the build plate. This is typically enough for most dental models.

4. Transition Layer Count:

- Both resins use **4 transition layers**, which provides a smooth transition between the bottom layers and the rest of the print. This helps reduce the risk of layer separation and print defects.

5. Rest Time:

- Neither resin has any specific **rest time before lift, after lift, or after retract** set, which can help to speed up the printing process. However, ensure that this doesn't cause issues with adhesion or quality in your specific printer setup.

6. Lift and Retract Distances:

- The **bottom lift distance (3.0 mm)** and **lifting distance (2.0 mm for CrownPro and 3.0 mm for TempCrown)** are standard for both resins, ensuring good print quality and preventing prints from sticking too much to the build plate.
- For **TempCrown Resin**, you might want to use a higher **lifting distance (3.0 mm)** to ensure smooth separation between layers.

7. Retract Speed and Lift Speed:

- The **bottom retract speed** and **lifting speed (250 mm/min)** are set relatively high, but they are necessary to ensure proper handling of resin, especially when moving between layers. A slower retract speed of **60 mm/min** for regular retracts is typical for reducing stringing and leaks.

Suggested Tweaks Based on Printer Models:

- **For Mono Screen Printers (e.g., Anycubic Mono X):**
 - These printers usually require slightly shorter exposure times. If you notice over-curing, reducing the exposure time by **0.5–1.0 second** may help.
- **For Larger Printers (e.g., Phrozen Sonic Mega 8K):**
 - Consider increasing **bottom exposure time** to **80-120 seconds** for better adhesion due to the larger build volume.

Conclusion:

The settings provided for **CrownPro Resin** and **TempCrown Resin** are designed to ensure stable prints with good adhesion, detail, and efficiency. However, you should test these settings with your specific printer model and resin batch to ensure optimal results. Adjustments to exposure times, lift speeds, and retract settings may be necessary depending on the type of printer and the intricacies of the resin you are using.