

## ***Troubleshooting Guide***

<b>PROBLEM</b>	<b>KNOWN CAUSES</b>	<b>SOLUTIONS</b>
Opaque is separating off the metal substructure	Under-fired opaque	The opaque should have an eggshell sheen after firing. Increase the temperature until this is achieved. Verify the accuracy of the oven and calibrate as necessary.
Opaque is bubbling	Insufficient dry time	Use at least 6 min. for powder opaque and at least 6-8 min. for paste opaque.
	Heat rate is too high	Heat rate should be 55°C/min. (100°F/min.) If this does not work, continue to lower the rate as necessary.
Opaque is pooling at the margin area of the coping/framework	Incompatible opaque	The high temperature of the porcelain is likely to be too high and the opaque is “running.” Double check the firing schedule and what opaque was used. Verify the accuracy of the oven and calibrate as necessary.
During build-up, porcelain tends to “slump” or “lose its shape”	Too much moisture	Dry the porcelain more before applying it. If using water, try build-up liquid instead.

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Bubbles in porcelain	Metal finishing was not done correctly. There is likely to be trapped air in the metal surface	Follow the manufacturer recommendations for properly preparing the frameworks.
	Trapped air during build-up	If the bubbles do not show metal, this means air was trapped during build-up. Build-up was done too quickly or in too large of chunks.
Green/Gray Discoloration of Porcelain	Framework alloys with too high a content of silver and/or copper can lead to discoloration	Check the manufacturer specs on the alloy you are using. There should not be higher than a 5% content of silver or copper.
After firing, the porcelain is losing its shape/is slumping/has an overly shiny appearance	Over-fired porcelain	Verify that our recommended firing temperatures were used for the first bake. Decrease the high temperature as necessary until the proper appearance is achieved. If necessary, decrease hold time. Verify the accuracy of the oven and calibrate as necessary.
“Tearing of porcelain”	Dry time is too short	Dry time should be 6 min. as a minimum

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Milky Appearance	Too much moisture during build-up	Dry the porcelain mixture more before adding to the build-up.
	Vacuum was released too early OR applied too soon	Follow the proper settings on our firing chart. Try releasing the vacuum 1°C below the high temperature.
	Re-wetting dried porcelain with more build-up liquid	Only distilled water should be used for re-wetting dried porcelain.
An underglazed or dull/rough surface is present after the glazing cycle	First bake was under-fired	Verify that our recommended firing temperatures were used for the first bake. Increase the high temperature as necessary until the proper appearance is achieved. If necessary, increase hold time. Verify the accuracy of the oven and calibrate as necessary.
Separation of add-on porcelains from underlying porcelain	Insufficient dry time	Dry time should be 6 min. as a minimum.

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Cracks/Fractures in Porcelain	Sharp edges in coping	In framework design, never have sharp edges/corners.
	Insufficient metal support	Have at least 1mm. of space beyond opaqued alloy in all areas. Try not to go beyond 3 mm. of porcelain in any areas.
	CTE incompatibility between porcelain and alloy	Double check the appropriate data on the CTE of the alloy you are using for your substructures. Try to use alloys that are at the most 1.0 higher than the listed CTE value for Prismatic UniPack.