

High Impact

Porosity – This is a common issue with Acrylics... simply put its entrapped air pockets within or on the surface of the acrylic appliance.

1. Material was subjected to heat too quickly. This happens when an appliance is placed straight into boiling water after packing. A good solution is bench set material after packing and place into warm water (around 165F) then bring up slowly (5-10 minute span) to boiling.
2. Material was not packed sufficiently. We recommend that a user trial pack the materials at least twice before final closure.
3. Material was packed too late (after the snap dough stage). High Impact has a short dough time and shorter working time than typical Heat-Cure materials. Best to have acrylic packed within 15-20 minutes of mixing.
4. Make sure the technician soaked the model for at least 10-minutes prior to the packing stage.

Material to Dry – After mixing the Powder/Liquid Dough mixture becomes too dry for ideal packing.

1. Make sure technician did not overmix material.
2. Make sure technician covered mixing bowl immediately after mixing material. Monomer evaporates rapidly in an open container.
3. Might be mixing/packing to many cases at once. Best to reduce the number of cases if this is causing an issue.

Whitening – A whitening effect can sometimes occur on the appliance.

1. Make sure that a proper separating agent (acrylic to plaster release) was applied to model.
 2. Make sure the Separating agent was dry on the stone and any excess was removed.
 3. Make sure stone model was dry after the soaking procedure before separator was applied.
 4. If whitening is subject to a small particular area, it could be a polymer particle that didn't absorb sufficient monomer during the mixing/dough stage.
-

Heat-Cure

Porosity – This is a common issue with Acrylics... simply put its entrapped air pockets within or on the surface of the acrylic appliance.

1. Material was subjected to heat too quickly. This happens when an appliance is placed straight into boiling water after packing. A good solution is bench set material after packing and place into warm water (around 165F) then bring up slowly (5-10 minute span) to boiling.
2. Material was not packed sufficiently. We recommend that a user trial pack the materials at least twice before final closure.
3. Material was packed too late (after the snap dough stage). Best to have acrylic packed within 25-minutes of mixing.
4. Make sure the technician soaked the model for at least 10-minutes prior to the packing stage.

Material to Dry – After mixing the Powder/Liquid Dough mixture becomes too dry for ideal packing.

1. Make sure technician did not overmix material.
2. Make sure technician covered mixing bowl immediately after mixing material. Monomer evaporates rapidly in an open container.
3. Might be mixing/packing to many cases at once. Best to reduce the number of cases if this is causing an issue.

Whitening – A whitening effect can sometimes occur on the appliance.

1. Make sure that a proper separating agent (acrylic to plaster release) was applied to model.
 2. Make sure the Separating agent was dry on the stone and any excess was removed.
 3. Make sure stone model was dry after the soaking procedure before separator was applied.
 4. If whitening is subject to a small particular area, it could be a polymer particle that didn't absorb sufficient monomer during the mixing/dough stage.
-

Pourable

Porosity – This is a common issue with Acrylics... simply put its entrapped air pockets within or on the surface of the acrylic appliance.

1. Material did not have the ideal pressure at time of curing
2. Material was put into pressure pot too late within the curing process
3. The acrylic was poured too late within the mixing stage. Technician should pour immediately after mixing the powder to the liquid.
4. The acrylic was not properly vented when pouring through the sprue holes.
 - a. This can be an issue when using too small diameter for spruing during investing.
 - b. It also can happen if an incorrect number of Sprues are not used when pouring or if material is poured too fast. We recommend a slow and steady Pour through only one sprue hole.
5. Make sure the technician soaked the model for at least 10-minutes prior to the packing stage.

Temperature and Effect on Curing – This material is technically a self-cure material as it only requires very little heat to cure within 20-minutes.

1. If the lab or the material has been stored at a higher temperature than recommended ($74^{\circ}\text{F} \pm 5$) then this can reduce the pouring, setting, and curing time.
2. If the lab or the material has been stored at a lower temperature than recommended ($74^{\circ}\text{F} \pm 5$) then this can increase the pouring, setting, and curing time.

Shrinkage and causes – Shrinkage can occur mainly due to mixing ratios of powder/liquid

1. Excessive shrinkage can be linked to inadequate mixing ratios.
 - a. Rule of thumb- more liquid the greater shrinkage, less liquid the lesser the shrinkage.

Tooth Bond – This is where the teeth are embedded in the acrylic

1. Sometimes Pourable materials have issues with Tooth bonding.
 - a. It's always suggested that technicians add mechanical retention to the teeth. This is usually done by grinding the back of the teeth or inserting small holes into teeth so the acrylic can create better bond.
2. A better tooth bond can also be contributed to adding a tooth bonding agent.
3. Sometimes a bad tooth bond can occur by placing the material into too hot of water while curing.
 - a. We recommend 120-130°F for curing temperature.

Whitening – A whitening effect can sometimes occur on the appliance.

1. Make sure that a proper separating agent (acrylic to plaster release) was applied to model.
 2. Make sure the Separating agent was dry on the stone and any excess was removed.
 3. Make sure stone model was dry after the soaking procedure before separator was applied.
 4. If whitening is subject to a small particular area, it could be a polymer particle that didn't absorb sufficient monomer during the mixing stage.
-

Repair

Porosity – This is a common issue with Acrylics... simply put its entrapped air pockets within or on the surface of the acrylic appliance.

1. Material did not have the ideal pressure at time of curing
2. Material was put into pressure pot too late within the curing process
3. Material was placed into too hot of water when curing.
 - a. We recommend 104-113°F for curing temperature.
4. Make sure the technician soaked the model for at least 10-minutes prior to the packing stage.

Temperature and Effect on Curing – This is a self-cure material and requires no heat to polymerize

1. If the lab or the material has been stored at a higher temperature than recommended ($74^{\circ}\text{F} \pm 5$) then this can reduce the working, setting, and curing time.
2. If the lab or the material has been stored at a lower temperature than recommended ($74^{\circ}\text{F} \pm 5$) then this can increase the working, setting, and curing time.

Shrinkage and causes – Shrinkage can occur mainly due to mixing ratios of powder/liquid

1. Excessive shrinkage can be linked to inadequate mixing ratios.
 - a. Rule of thumb- more liquid the greater shrinkage, less liquid the lesser the shrinkage.

Whitening – A whitening effect can sometimes occur on the appliance.

1. Make sure that a proper separating agent (acrylic to plaster release) was applied to model.
 2. Make sure the Separating agent was dry on the stone and any excess was removed.
 3. Make sure stone model was dry after the soaking procedure before separator was applied.
 4. If whitening is subject to a small particular area, it could be a polymer particle that didn't absorb sufficient monomer during the mixing stage.
-

Orthodontic

Porosity – This is a common issue with Acrylics... simply put its entrapped air pockets within or on the surface of the acrylic appliance.

1. Material did not have the ideal pressure at time of curing
2. Material was put into pressure pot too late within the curing process
3. Material was placed into too hot of water when curing.
 - a. We recommend 104-113°F for curing temperature.
4. Make sure the technician soaked the model for at least 10-minutes prior to the packing stage.
5. If material comes out Hazy this is actually not a whitening issue but due to microscopic porosity.
 - a. This can be contributed by the material hardening before it can be placed within pressure curing vessel. Recommendation is to add a little more monomer if working slowly or better yet to place into pressure curing pot faster.

Temperature and Effect on Curing – This is a self-cure material and requires no heat to polymerize

1. If the lab or the material has been stored at a higher temperature than recommended ($74^{\circ}\text{F} \pm 5$) then this can reduce the working, setting, and curing time.
2. If the lab or the material has been stored at a lower temperature than recommended ($74^{\circ}\text{F} \pm 5$) then this can increase the working, setting, and curing time.

Shrinkage and causes – Shrinkage can occur mainly due to mixing ratios of powder/liquid

1. Excessive shrinkage can be linked to inadequate mixing ratios.
 - a. Rule of thumb- more liquid the greater shrinkage, less liquid the lesser the shrinkage.

Whitening – A whitening effect can sometimes occur on the appliance.

1. Make sure that a proper separating agent (acrylic to plaster release) was applied to model.
 2. Make sure the Separating agent was dry on the stone and any excess was removed.
 3. Make sure stone model was dry after the soaking procedure before separator was applied.
 4. If whitening is subject to a small particular area, it could be a polymer particle that didn't absorb sufficient monomer during the mixing stage.
-

Tray

Porosity – This is a common issue with Acrylics... simply put its entrapped air pockets within or on the surface of the acrylic appliance.

1. Material did not have the ideal pressure at time of curing
2. Material was put into pressure pot too late within the curing process
3. Make sure the technician soaked the model for at least 10-minutes prior to the packing stage.

Temperature and Effect on Curing – This is a self-cure material and requires no heat to polymerize

1. If the lab or the material has been stored at a higher temperature than recommended ($74^{\circ}\text{F} \pm 5$) then this can reduce the working, setting, and curing time.
2. If the lab or the material has been stored at a lower temperature than recommended ($74^{\circ}\text{F} \pm 5$) then this can increase the working, setting, and curing time.

Shrinkage and causes – Shrinkage can occur mainly due to mixing ratios of powder/liquid

1. Excessive shrinkage can be linked to inadequate mixing ratios.
 - a. Rule of thumb- more liquid the greater shrinkage, less liquid the lesser the shrinkage.

Handling – This is tips when working with the material

1. After material has been mixed it is best to place material between two polythene sheets or too wet glass slabs and press to desired thickness.
 2. If material is too tacky then allow material to set longer before handling. Also best to wet fingers before handling.
 3. Before adaptation to model, technician should use Acrylic-Stone Separating agent.
 4. For best adaption to model it's good to start applying the material to palatal region and then working material towards the periphery borders.
 5. If material is ruptured/tore apply some of the excessive material immediately and raconteur before material sets.
-

Soft Reline

Adaption/Bonding – This refers to the Soft liner bonding to the PMMA (acrylic) appliance

1. Bonding detachment is usually due to user error during preparation and processing of material. Here are some tips:
 - a. Technician should wear powder-free gloves. Handling the PMMA surface with hands can cause oily fingers to contaminate prepped surface.
 - b. If the acrylic is brand new, it will need to be roughened up and preferably retention grooves etched into PMMA surface for better adaption
 - c. Adequate primer needs to touch all surfaces where the Soft Reline material will meet the PMMA, and allow to dry for 60-seconds.
 - d. A good bond can also be contributed to flasking at time of processing. This soft-liner performs best using a full closure flask within a press. Reline jigs can be used, however the borders can cause some issues if not performed properly.

Discoloring and/or Odor – This refers to the post cure process while in patient's possession.

1. Discoloring can occur if the patient uses a harsh cleaning agent on liner. We recommend cleaning twice daily under running water with soft brush and mild cleaning solution (neutral pH).
 2. If Odor begins to occur in a relatively short time (1-3 months) after patient's possession, then it could be caused by not sealing the material properly.
 - a. We recommend two coats of Varnish Base & Catalyst on all soft reline surface and allow to dry for at least 5-minutes.
 - b. The odor can also be caused by moisture seeping between the reline and PMMA surface. If this occurs, it should be noticeable to technician/doctor and they should refer back to the bonding steps above.
-