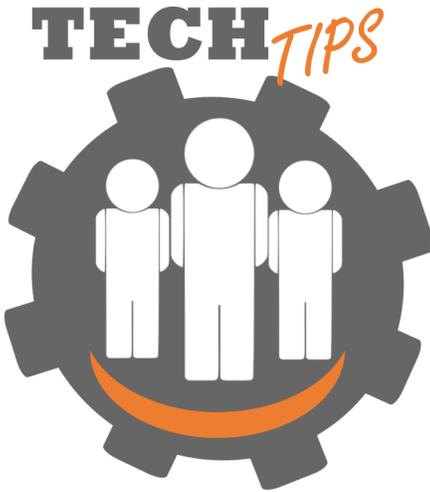


# DENTAL INVESTMENT CRACKING



Dental investment cracking is typically caused by liquid inside the invested ring evaporating too quickly. Build-up of these liquids, in the form of gasses, can remain in the oven and impede the evaporation process.

To avoid this issue, R&R recommends implementing these two important steps:

## 1. Adjust Ramp Rate

- The more rings in the oven, the longer the ramp rate should be. This will allow proper time for liquid, in the form of gas, to leave the ring.

## 2. Correct Oven Venting

- Prior to running actual cases with a new investment, it is recommended to complete a few test cycles using test rings first.
- Changing the normal number of rings loaded in the oven (i.e., two to three more or less than usual) typically should not cause issues. However, if loading more than two or three rings, proper venting is recommended as too many rings can cause cracking due to increased moisture.

- Do not stack rings directly on top of each other in the oven. Do not cover any more than half of each bottom ring to support top rings. Rings should be stacked in an oven as bricks are stacked to build a wall.
- Keep  $\frac{3}{4}$ " around each ring for proper air flow.
- Most ovens have top vents, but not all have door vents. If your oven does not have a door vent, it is acceptable to leave the door open with a  $\frac{1}{4}$ " to  $\frac{3}{8}$ " gap to ensure excess moisture and gasses can escape.  
**NOTE:** Be sure to close the door after the oven reaches 800° F. At this point all expansion has occurred and all gases should be completely released.
- Never open the door during initial burnout. There is no reason to ever open the door unless you are removing the crucible prior to casting. Avoid the temptation to check for exploded rings. Once a ring explodes, it is no longer salvageable.

There are no concrete solutions to prevent all cracking issues. These recommendations will take minor adjustments on your part to achieve successful results. It should be noted that geographic location can also play a part in successful results.



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