

Classification of composite according to the method of activation:

1. Chemically-activated composites:

Also they are called self-curing composite resins. Most commonly available as two-paste system composed of a catalyst and base materials. When these two components are properly mixed, the polymerization process is chemically activated. The rate of set is uniform through the bulk of the material causing a gradual increase in viscosity at room temperature. Hence the material has a limited working time, making the technique time sensitive with the increased possibility of air bubble incorporation during mixing of the two pastes and thus affecting the composite physical and mechanical properties.



2. Light-activated composites:

Light activated materials afford a number of advantages over chemically activated ones. The light curable materials are single components, and require no mixing, and so have reduced porosity, and better resistance to wear and abrasion. The working time is virtually that chosen by the clinicians, and the material hardens rapidly when exposed to light. The components of light-activated composites are contained in single paste system. The mixture is supplied in various shades in disposable syringes. These syringes are made of opaque plastic to protect the material from exposure to light.

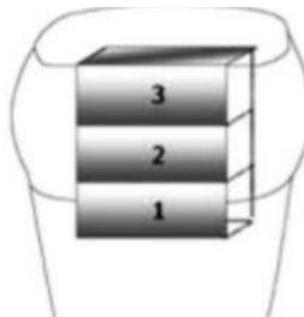


3. Dual cured composites:

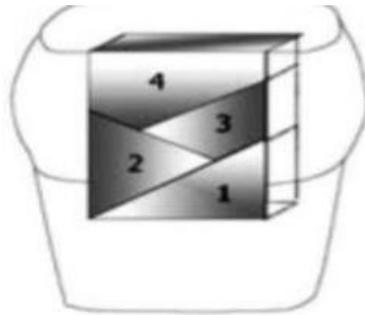
Combine self-curing and light curing materials .The self-curing rate is slow and is designed to cure only those portions that are not adequately light cured specially in the interproximal areas where the access is limited and require special approaches to guarantee adequate light curing energy.

Posterior Composite Placement Techniques Layering (common techniques)

The thickness of each increment of resin composite is not more than 2 mm. Each increment should be fully polymerized before the next one is inserted into the cavity.

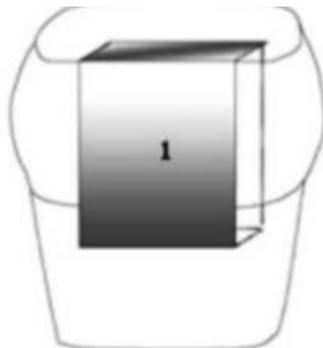


Wedge-Shape Layering (Oblique) In this technique wedge-shaped composite increments are placed and polymerized only from the occlusal surface.



Bulk Technique

Its include one bulk increment (4 – 5 mm) without traditional layering, This is done by special composite resin system that's in different ways.



Traditional Composite vs. Bulk-Fill Flowables vs. Kerr SonicFill



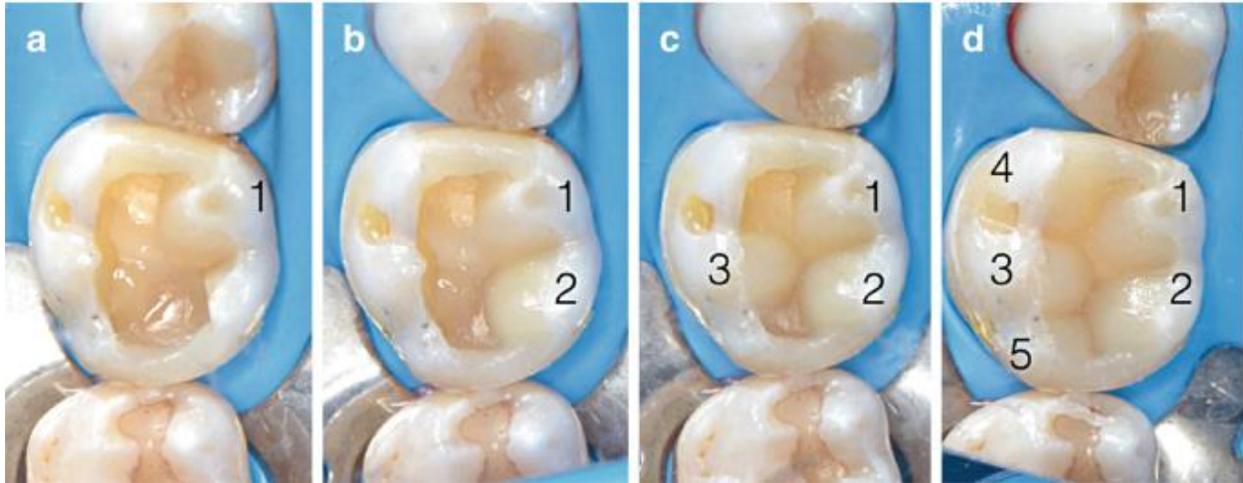
Traditional composites require a time-consuming, moderately complex, multi-step layering technique.



Bulk-fill flowables reduce the number of steps needed, but still require the extra effort of placing a cap layer.



Kerr's SonicFill system is a true, single-step bulk-fill procedure that offers excellent results and dramatically shortens chair time.



Sandwich technique:

In this technique two different materials will be used Glass ionomer or Flowable composite used as liner under composite.

Two sandwich technique available:

1. Closed sandwich technique
2. Opened sandwich technique

Sandwich technique mainly used when the gingival margins extend beyond cement-enamel junction

