

STRENGTH AND BEAUTY: THE ROLE OF FIBER REINFORCED COMPOSITES IN MODERN DENTISTRY

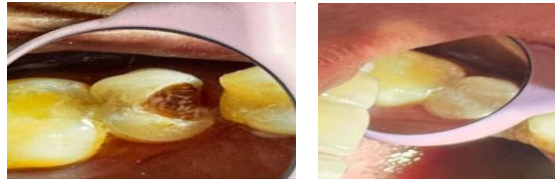
Fiber reinforced composites are cutting edge materials which provide enhanced structural integrity and flexibility, making them ideal for a variety of dental applications, from restorative procedures to prosthetics.

FORMS OF FIBER REINFORCED COMPOSITES:

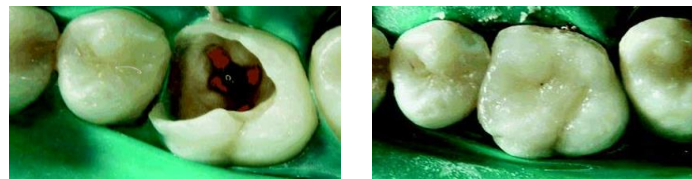
- Glass fibers
- Carbon fibers
- Aramid fibers (Kevlar)
- Polyethylene fibers
- Silica fibers
- Ceramic fibers (Zirconia)
- Polyethylene Naphtalate fibers
- Polyether ketone fibers

APPLICATIONS OF FIBER REINFORCED COMPOSITE IN DENTISTRY:

1.) Direct and Indirect restoration:



3.) Post endodontic restoration:



2.) Crowns and Bridges



4.) FRC Posts:

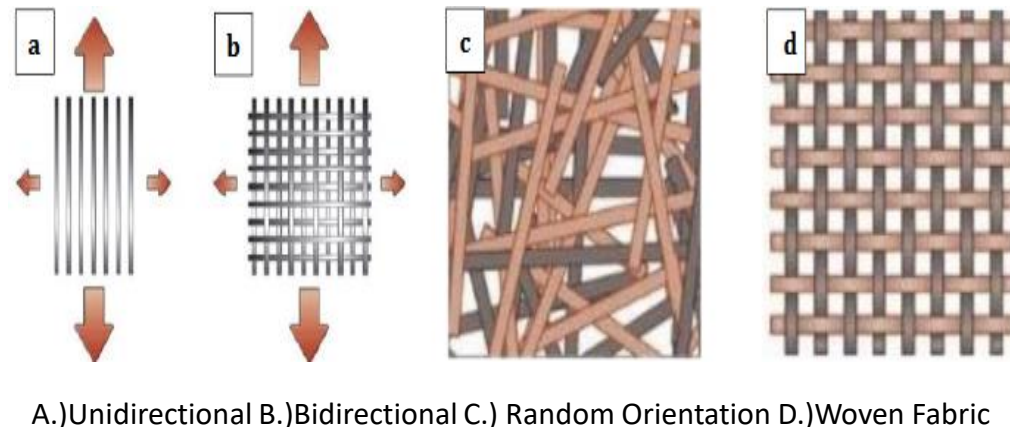


ADVANTAGES:

- ✓ Aesthetic Appeal
- ✓ Minimal invasiveness
- ✓ Biocompatibility
- ✓ Strength and Durability
- ✓ Elasticity
- ✓ Ease of use
- ✓ Metal free

ALIGNMENT OF FIBRES:

- 1.) Unidirectional Alignment
- 2.) Bidirectional Alignment
- 3.) Random Orientation
- 4.) Woven Fabric
- 5.) Laminated Layers
- 6.) Pre Impregnated Fibers



RECENT ADVANCES:

- 1.) Improved Fiber Alignment
- 2.) Hybrid Composites
- 3.) Nanofiber Reinforcement
- 4.) Light Curable Composite
- 5.) Enhanced Adhesion
- 6.) Aesthetic Enhancements

DISADVANTAGES:

- ✓ Bonding Issues
- ✓ Microbial Adhesion
- ✓ Cost
- ✓ Limited longevity
- ✓ Technique sensitivity
- ✓ Post operative sensitivity