

# Componeers Vs Porcelains

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**Abstract:** *Componeers are prefabricated composite veneers used as an esthetic solution for discolored, fractured, or congenitally malformed teeth etc. They combine the superior esthetic of ceramic veneers, and the bondability to tooth structure of composite veneers. These enamel shells are cemented with the same composite resin they are made from, which has the potential of making the complete restoration as a mono block unit. It represents an innovative approach that bridges ceramic veneers and direct composite veneering and overcomes the limitation of either approach. This article gives a brief review of these recently introduced componeers and a comparison between componeers and porcelain veneers.*

**Keywords:** Componeer, esthetic, veneer, composite, porcelain

## 1. Introduction

Designing beautiful smiles has been a challenge for many years and the “invention” of dental veneering has been a crucial feature of this challenge. While the “invention” of veneering anterior teeth by Dr. Pincus [1] was presented in 1937, it became more popular in the mid-seventies, using three different approaches: direct bonding using resin composites, prefabricated composite veneers and indirect, custom-made porcelain veneer [2].

In the late 1970, early 1980s this technique was followed and improved by L Rochette [3]

Dentistry has changed dramatically over the past 30 years. It has been an evolutionary development catalysed by various factors. As we already know there are lots of other options for achieving a beautiful smile such as: full metal-ceramic restorations, all-ceramic restorations and other direct techniques.

Traditional metal-ceramic restorations have predictable strength and a history of long term success, but typically less than ideal esthetics.

Veneering is the trend of these last years and both professionals and patients have to choose between ceramic veneers and composite veneers. If the indirect technique is used we do have to consider the extra cost of these restorations and also the time spent to prepare them.

Nowadays, direct techniques have improved a lot with the new generation of composites giving us the possibility to use the pre-fabricated composite veneer systems. This kind of veneers (Mastique®, Caulk) was explored about 35 years ago, using a methyl-methacrylate matrix and large glass fillers, such as used in resin composites but with limited success due to technological limitations and poor surface qualities [4].

In our everyday routine all of us get patients with that one single crooked tooth, gaps between teeth, with discolored teeth. We generally offer them porcelain laminates and veneers which all patients cannot afford. We all know that imperfect front teeth can impact one’s self-esteem and sense of self-worth. All of us would love that million-dollar smile

of a Hollywood/Bollywood actress. This flashy smile of these actors and actresses are generally a result of those porcelain laminates/veneers. These porcelain veneers usually are quite expensive for the general population.

As technology improves everyday we now have a new class of pre-fabricated composite veneers with improved properties.

Pre-fabricated composite veneers have been recently introduced. Componeer. (Coltene, Altstätten, Switzerland) pre-fabricated veneers are thin composite shells (0,3 mm cervically and 0,6-1 mm to the incisal edge). These prefabricated veneers are made of pre-polymerized nano-hybrid composite resin, Synergy D6 (Coltene). The veneers are cemented with the same hybrid composite resin that they are made from, which has the potential of making the complete restoration as a mono block unit. These veneers can be trimmed and bonded to the tooth structure using direct hybrid composite resin. One-Coat Bond (Coltene), is the dentine adhesive included in the system, which is used to bond the prefabricated composite shells to the tooth structure, using an etch and rinse bonding strategy.

## Componeers

For many years, color, shape, and structural and positional abnormalities of anterior teeth have led to important esthetic problems for patients. A lot of treatment options has been described to resolve the esthetics concerns of patients, which include procedures, such as ceramic veneers, all ceramic crowns, metal ceramic restorations, as well as direct composite veneering.[5],[6] From the mid-1970s, boosted by the development of adhesive materials and techniques, various concepts have emerged.[6] The most conservative approach for correcting tooth shape is direct resin composite veneers, because it can be achieved without removal of tooth structure.[5],[6] The tooth can be easily reshaped and polished using these veneers, especially in the emergence angle of the crown. In addition, this treatment is less expensive compared to ceramic veneers. However, a composite veneer abrades and discolors with time. Indirect ceramic veneers, another conservative option, possess high abrasion resistance and good color stability.[7] Although ceramic veneers are expensive than direct composite veneering, they provide superior esthetics and a more natural appearance. The limitations associated with ceramic veneers are techniquesensitive laboratory preparation and

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they are time consuming. Despite this, adhesive strength of the ceramic to the composite cement layer remains low, and this is the region where most failures occur. Therefore, an alternative treatment, which combines the superior esthetic of ceramic veneers, and the bondability to tooth structure, such as direct composite veneers, is required. Componeer represents an innovative approach that bridges between ceramic veneers and direct composite veneering and overcomes the limitation of either approach. It represents a high quality, long-lasting esthetic restoration, i.e., both conservative and cost-effective. The shiny and naturally designed surface adds a look of vitality to the restoration. Precontoured enamel shells with excellent color stability, no laboratory procedure, cost-effectiveness provide an added advantage. There is no difference in modifiability compared to a direct composite veneer and, however, its ease of application makes it extraordinarily time-efficient. However, unlike ceramic veneer, they can be easily repaired. Componeers are manufactured from nanohybrid composite that ensures excellent homogeneity and stability of the enamel shells. The extremely thin veneer (0.3 mm) allows conservation of tooth structure. The micro-retentive inner surface ensures a lasting bond, therefore, conditioning of the veneer is not required, making it a milestone in veneers.[8],[9]

## 2. Clinical Case Selection

The case selection is done with proper diagnosis, X-rays, and appropriate treatment planning and getting informed consent of the patient. The procedure is usually painless, however, to avoid any sensitivity/pain minimal anesthesia may be necessary. We can use componeers as a solution for:

- 1) Caries treatment such as extensive cervical and interdental caries, discolouration of enamel, and slight malposition
- 2) Optimisation of old restorations such as extensive old and insufficient restorations
- 3) Attrition, abrasion, erosion. Edge-to-edge occlusion with abraded and broken anterior teeth with old restoration.
- 4) Tooth fracture. Loss of 1/3 of anterior tooth by fracture.
- 5) Extending incisors. Slightly shortened incisal edge with moderate malposition
- 6) Malposition. Extensive malposition with crowding
- 7) Cosmetic correction. Intrinsic, non-bleachable yellow discolouration teeth
- 8) Discolouration. Extensive discolouration of enamel and dentine, cervical lesions
- 9) Anatomical malformation. Unevenly shaped teeth, conical tooth, diastema and malposition

### Componeers Vs Porcelains

Componeers are resin material similar to composite resins used in dentistry. They are thin shells of precured resins; unlike porcelain which contains silica and is similar to glass. Its mechanical strength is much lower than that of porcelain and surface hardness is lesser than porcelain. Vice versa, though porcelain is superior to componeers; porcelain is highly likely to break and get crushed whereas componeers are generally unbreakable. Porcelain has higher chance of chipping off than componeers. Similarly, though the surface hardness in porcelain is more, however, the polishability of porcelain is higher with the result of a glossy appearance.

Componeers are polishable too as they are similar to composite resins. However, as far as esthetics is considered, porcelain is superior though componeers are at par with porcelain. For porcelain veneers or laminates, at least 2 mm to 3 mm of tooth surface would have to be reduced as the porcelain themselves are about 1 mm thick. However, the componeers are thinner shells about 1 mm in thickness and hence, tooth reduction on the labial surface would be around 1 mm or so for componeers. Hence, the tooth reduction on the labial surface is lesser for componeers than porcelains. The proximal sides would have to be at right angles for porcelain, making sure the proximal line angles are parallel to each other. In a componeer, however, the proximal line angles can be rounded off as any modification can be done using composites while finishing. The cervical margin for porcelain can be given supragingivally, gingivally, or subgingivally whereas for the componeers, the cervical margin finish line should be given gingivally or supragingivally. Cervical finish line/ margin for porcelains, we prefer butt joint with straight fissure bur and for componeers a chamfer margin is preferable. Bevels have to be placed for both componeers and porcelain (esp likely to chip off with presence of any sharp margins, line angles, or point angles). Though componeers do not chip off, it is essential to place bevels taking esthetics into consideration. Componeers can be finished off with similar shade of composites. Due to this fact, they are highly polishable, hence, rendering high level of esthetics at par with porcelains. Componeers are as attractive as porcelain, especially as is easy to polish. They are esthetically pleasing and used for smile designing giving the patient a new smile. Componeers usually is a one visit procedure whereas porcelain takes a couple of sittings. No laboratories involved, so lab time and expenses get reduced. Tooth reduction with componeers is minimal and more conservative than for porcelains. Tooth can be shaped, trimmed size, and reduced as desired. For porcelain, the shade, the size, the shape, the polish, and glaze are all determined by the laboratories whereas here, the dentist can make the choice and finish it to his and patient's satisfaction. Porcelain can break, get crushed, chip-off, fracture and are unrepairable, whereas componeers can be refixed and repaired and are unbreakable. Even mild discoloration can be masked with a similar shade composite. Less expensive than porcelain with high esthetics can give many patients a new smile.

## 3. Conclusion

Even though porcelain is brilliant glossy with a permanent finish, since it is expensive, it cannot be afforded by many. Patients should have different treatment options. Componeers may be the solution to an average working class population. They have considerable advantages for the dentist such as:

- easy and efficient to use
- only one session required
- quality dental restorations with excellent aesthetic results
- no impressions or laboratory necessary
- optimum customization (choice of colour, highlighting shape and structure)
- economical for dentists and patients due to high success

rate and efficiency

- they can be repaired intraorally in one session

We should see veneering from a different perspective, and as we do know we have different kinds of patients and different clinical cases. When we compare veneering systems we should take in consideration what the patient wants and what we think is best for them. Using composite veneers rather than porcelain veneers or vice versa is a clinical decision that requires careful examination, diagnosis, and esthetic professional skill. As a lot of studies have been made for porcelain veneers, there is still a large gap to fill with information and recent studies for prefabricated composite veneers.

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