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Short Communication

The State of the Use Heat Pressed Core Ceramic Materials for All Ceramical Restorations

Gerasimos Filippatos* and Aspasia Sarafianou

Department of Fixed Prosthodontics, Athens University School of Dentistry, Athens, Greece

***Corresponding Author**: Gerasimos Filippatos, Department of Fixed Prosthodontics, Athens University School of Dentistry, Athens, Greece.

Received: March 18, 2022; **Published:** March 31, 2022

The replacement of metallic framework by a reinforced ceramic core in the historical development of all ceramic restorations followed continuous improvements regarding the

1. Laboratory procedures
2. Improvement of light transmission
3. Marginal fit.

The replacement of rather opaceous Aluminum reinforced ceramic cores is done by the heat pressed core ceramic materials. This is achieved by manufacturing a homogenous restoration from semi translucent material providing:

1. Semi translution
2. Opalescence
3. Good fit
4. Easier laboratory procedures
5. Improved strength.

Recently introduced glass ceramic systems are produced by the heat pressing technique.

Restorations may be completed on a color matched die by the application of stains and glazes of alternatively cut back and veneered with thermally compatible ceramics before glazing.

By that way systems can be used for single all ceramic restorations anteriors or premolars, onlays, inlays, veneers and small bridges until second premolar.

For historical reasons those systems are categorized as the below:

1. Cerestore
2. Dicor

3. Cerapearl
4. IPS Empress
5. IPS Empress 2
6. Finesse all ceramics.

For better understanding of the main mechanism we present a lithium disilicate core ceramic material.

IPS Empress 2 is a lithium disilicate glass ceramic material that is fabricated through a combination of the lost wax technique.

A glass ceramic ingot of the desire shade is heated at 920 C and pressed into an investment mold under vacuum pressure.

In the same manner we can use a leucite reinforced ceramic material that it shows the new generation in glass ceramic heat pressed core materials Emax.

The framework is veneered with fluoroapatible based veneering porcelains Emax Ceram, resulting in a semi translucent restoration with enhanced light transmission.

It is very interesting to calculate the shear bond strength in between the glass ceramic core and the fluorapatite veneering material E max Ceram.

The strengthening mechanism is reinforced ceramic core material, leucite reinforced ceramic, is attributed to the higher percentage volume reduction of leucite particles compared to the surrounding glass matrix upon cooling.

Volume 21 Issue 4 April 2022