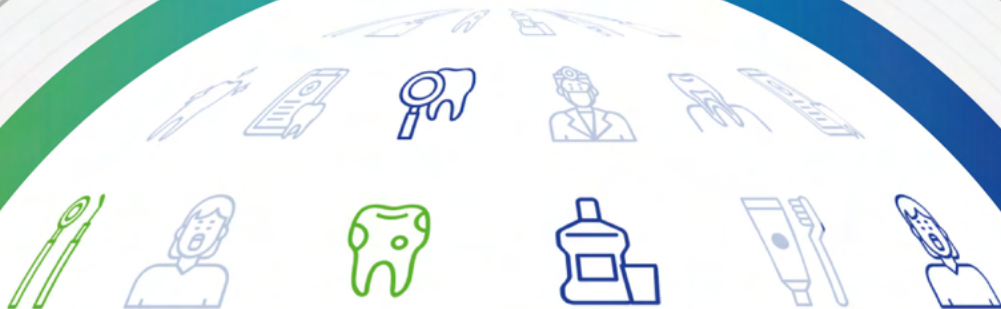


SPIDENT

Clinical Report

EsCem[®]

Self-Adhesive Resin Cement



www.spident.co.kr

Apple Story



You're the Artist

Hands of an artist create something unimaginable.
When they work for people's sake, it could be more valuable.
You are the artist, not only dentist when you take care of people.
SPIDENT will be your partner at the moment with passion.

Introduction

SPIDENT CO., LTD. was founded in 1997 and we established R&D center in November 2004. Our manufacturing lines are certified by CE (MDD), FDA and ISO. SPIDENT CO., LTD. independently operates all the processes of R&D, quality control, product design & marketing, and finest customer services, aiming at your 100% satisfaction. Our strength lies in ideal quality with ideal price. This allows us to export over 90 countries at the moment.

History of SPIDENT

- **1997 Establishment**
 - Spident Co., Ltd. establishment
- **2010 The growth process**
 - Certified CE, ISO 9001, ISO 13485, FDA
 - Launched chemical products to overseas market
 - Established R&D Center
 - Awarded in recognition of \$1M in exports
- **2013 Overseas Branch**
 - SPIDENT USA INC. branch establishment
- **2014 Development**
 - Awarded in recognition of \$5m in exports
 - Launched NOP Needle
- **2015 Vacu-Mixer**
 - Launched Vacu-Mixer (World First Cordless Auto Impression Mixer)
- **2016 Glass Ionomer**
 - Research & Development of GIC (First manufacturer in Korea)
- **2017 20th Foundation Anniversary**
 - Selected as Global Strong Company
- **2018 Overseas Factory**
 - Established a factory in China
- **2019 Further Growth**
 - Awarded in recognition of \$10M in exports



SPIDENT Apple Story

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The print and picture on this paper should not be used without the prior written permission.

SPIDENT Apple Story 🍏🍏🍏

Clinical Report

EsCem[®]



CONTENTS

CASE PRESENTATION ----- 05

Clinical application of various prosthesis
using EsCem

Clinical applications of various prosthesis using EsCem

Prof. Chan Park,

Department of Prosthodontics, School of Dentistry, Chonnam National University

Introduction

Resin cement is a mixture of a resin matrix and a filler composed of fine inorganic particles, and is widely used for cementation of gold crowns, fixed partial dentures, and zirconia and ceramic restorations.

Because it has lower filler content and lower viscosity than restorative resins, resin cement has lower solubility and higher tensile strength than RMGI (Resin Modified Glass Ionomer Cement), which is widely used in existing clinical trials, resulting in high micromechanical bonding strength.

Recently, self-curing resin cement is preferred by many dentists with its various advantages, such as a reduced chair time, and with its improvements on the existing resin cement by overcoming the shortcomings, such as the thickness of cement, margin leakage due to resin shrinkage, and pulp irritation.

EsCem®



EsCem® is dual-cured self-adhesive resin cement. It contains MDP, an adhesive monomer, to improve chemical interaction and durability with the tissue. EsCem® shows strong adhesion to tissues as well as various indirect restorations, such as zirconia and all-ceramic. It does not require pre-treatment. It is easy to handle and has radiopacity.

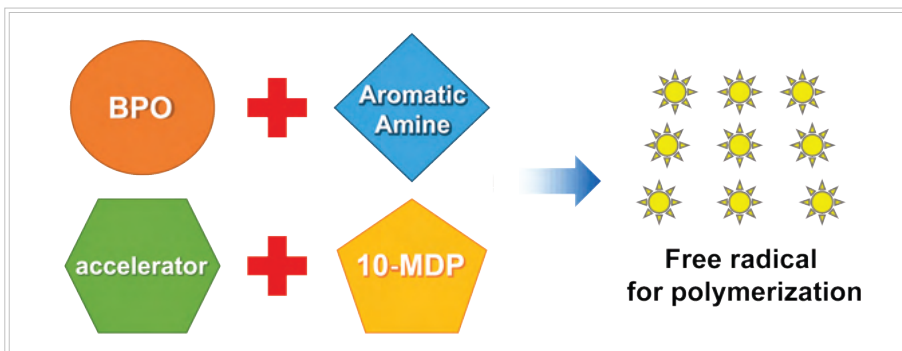
Indication

- ① Final cementation of all-ceramic, composite or metal inlays, crowns, and bridges
- ② Final cementation of posts and screws
- ③ Final cementation of all-ceramic, composite or metal restorations on implant abutment

Double Effect Initiator Self-curing technology

-D.E.I. self-curing technology catalyst system

>> Better polymerization for higher mechanical properties and higher bonding



[Figure. 1] D.E.I. self-curing technology catalyst system

-Esthetics

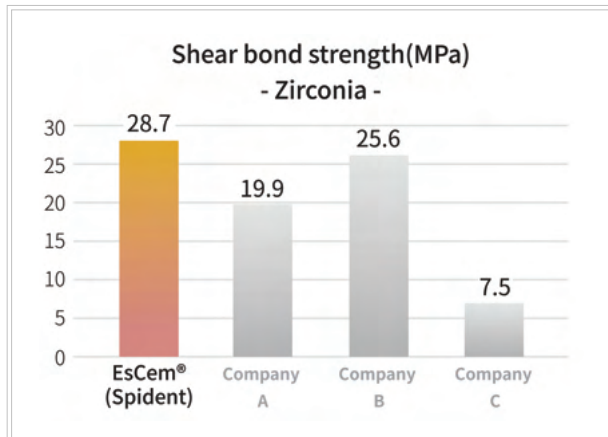
>> Excellent color stability

Two-year accelerated aging in distilled water at 60°C				Store in 37°C coffee for 10 days			
EsCem®	Company A	Company B	Company C	EsCem®	Company A	Company B	Company C
							
							

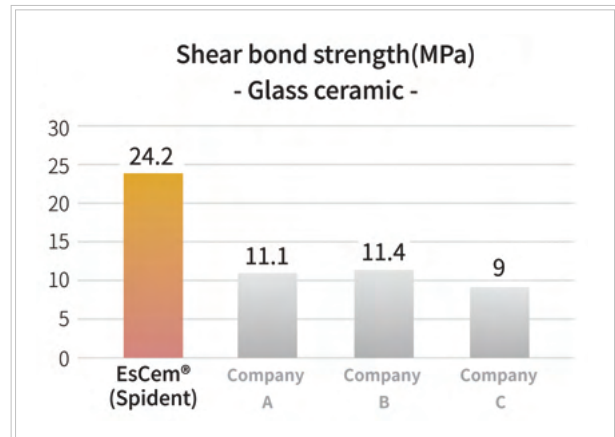
[Figure. 2] Excellent color stability

-Powerful adhesive strength

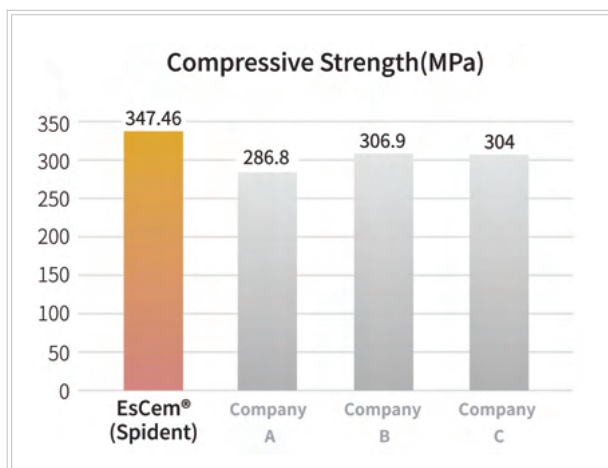
>> High bond strength to all indirect restoration without treatment



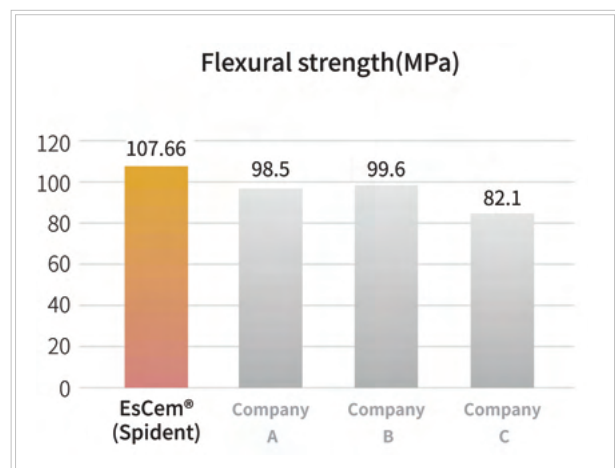
[Figure. 3] Shear bond strength_Zirconia



[Figure. 4] Shear bond strength_Glass ceramic



[Figure. 5] Compressive strength



[Figure. 6] Flexural strength

-Easy removal of excess

>> Excellently easy to remove excess material with tack curing

*Self Cure : Wait 1' to 1' 30"



[Figure. 1] Tack cure for 1 second



[Figure. 2] Remove excess cement



[Figure. 3] End Result

Clinical Case

Clinical case "Surgical Guide"



[Figure. 1] Surgical guide production with 3D printer



[Figure. 2] Bond the metal ring with resin cement



[Figure. 3] Tack cure for 1 second and remove excess cement

Clinical case "Resin Core Cementaion"



[Figure. 1]



[Figure. 2] Inject resin cement into the root canal



[Figure. 3] Core build-up using fiber post and resin core products

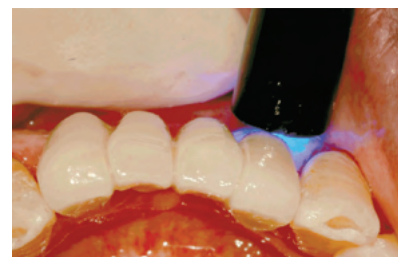
Clinical case "PFM Bridge"



[Figure. 1] After preparation



[Figure. 2] Apply an appropriate amount of cement inside the bridge crown



[Figure. 3] Tack cure for 1 second



[Figure. 4] Remove excess cement

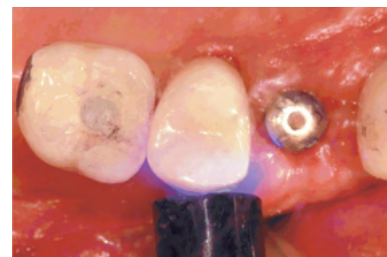
Clinical case "Zirconia Single Crown"



[Figure. 1] After preparation



[Figure. 2] Apply an appropriate amount of cement inside the Zirconia crown



[Figure. 3] Tack cure for 1 second



[Figure. 4] Remove excess cement

Clinical case "Zirconia Bridge Crown"



[Figure. 1] Custom abutment installation after implant surgery



[Figure. 2] Apply an appropriate amount of cement inside the Zirconia bridge crown



[Figure. 3] Tack cure for 1 second and remove excess cement



[Figure. 4] End Result

Case Report

Let's take a look at clinical cases using Self Adhesive Resin Cement Escem launched by Spident.

Use of cement for restoration of gold crown

The cements used for gold restorations are ZPC (Zinc Phosphate Cement), ZOE (Zinc Oxide Eugenol Cement), Polycarboxylate cement, GIC (Glass Ionomer Cement), RMGI (Resin Modified Glass Ionomer Cement), Resin cement, etc. In the early days, ZPC or ZOE cement were frequently used. They had thin film thickness, adequate compressive strength and retention. However, with the development of materials, clinicians have been requesting cement that is more comfortable and has particularly strong retention. Consequently, RMGI or Resin cement that meets these needs is currently most used in everyday dental clinic.

I also use these two types of cement the most. The most distinctive difference between the two is their retention ability. Resin cement has stronger retention than any other cement, so it must be used in situations where this property is required. For example, if the length of the crown is short, the patient's occlusal force is strong, or there is bruising/abnormal occlusal interference, resin cement needs to be used.

However, since resin cement has a strong retention ability, if residual cement remains in the subgingival area, it can have a very harmful result for gingivitis. Therefore, when using resin cement, the clinician must cleanly remove the remaining cement and, if necessary, go through the process of confirming it with an X-ray photograph.



[Figure. 1] X-Ray Image

This is a case in which a patient visited the hospital for gold crown restoration of the second molar of the mandible (Fig. 1). Usually, when preparing the second molar, the length of the crown is very short and strong occlusion force is generated, so it is suitable to use resin cement.

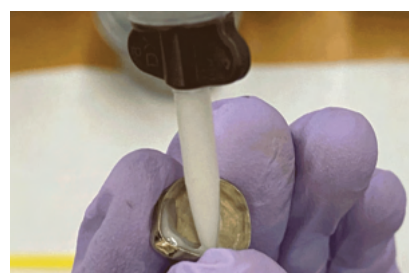
After preparation, I checked the retention force, etc. while looking at the gold crown restoration made, and decided to use a resin cement (Fig. 2). As explained above, it is very important to cleanly remove the resin cement, which can be performed easily and smoothly with flowable resin cements. In the case of Spident's EsCem, which I used, it has excellent flowability compared to other companies' products, so it was well suited. Furthermore, it seemed to bring very good results in clinical practices because there was almost no case where excessive cement was clumped in one place. I asked the assistant to apply an appropriate amount of cement inside the gold crown (Fig. 3-1).



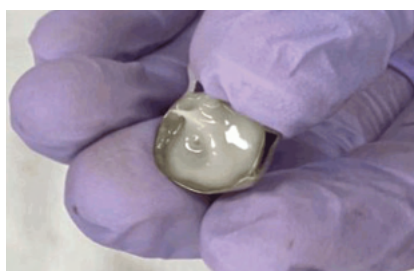
[Figure. 2-1] After preparation



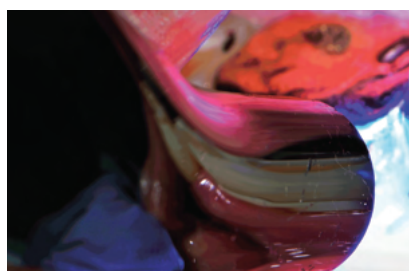
[Figure. 2-2] The gold crown restoration



[Figure. 3-1] Apply an appropriate amount of cement inside the gold crown



[Figure. 3-2]



[Figure. 4] Temporarily place the gold crown in its original position and check if the excess cement comes out



[Figure. 5] End Result

Anyone can use Spident's Escem easily by simply squeezing and extruding it with a little pressure (Fig.3-2). Temporarily place the gold crown in its original position, and check if the excess cement comes out (Fig.4). The method of removing excess resin cement is the key point of this clinical process, and I usually go through the process of slightly hardening the excess cement using a light curing for 1-2 seconds while pressing the gold crown firmly. Then it can be easily removed with an explorer. This requires some proficiency, so you may need to practice on a laboratory cast and model. When rapidly removing excess cement, focus more on removing the cement on the invisible interproximal side than on the visible part. After the cement is removed, carefully check the excess cement with a curette or dental floss, and, if necessary, use radiographs (Fig.5). Resin cement is the cement with the strongest retention currently used in clinical practice, and I believe satisfactory results will be obtained for a long period of time.

SCRП (Screw and Cement Retained Prosthesis) Implant prosthesis setting method

Implant prosthesis are largely divided into Screw type, Cement type, and SCRП (Screw-Cement Retained Prosthesis) type that mixes them. Among them, I very much prefer the SCRП type, which has all the advantages of the screw and cement types.

The screw type is always removable by a doctor, and it is easy to repair when a problem occurs during its use. On the other hand, since it does not allow any errors when making prosthesis for the impression taking and/or process of making in laboratories, it may not be fully fastened, causing problems during a long-term maintenance. It is the cement type that overcomes this shortcoming.

Since the cement type literally maintains the prosthesis with cement, it has the advantage of overcoming the errors from laboratories depending on how much the cement is being used. In other words, the prosthesis can achieve a passive fit. However, if permanent cement is used, subsequent definitive delivery is impossible for both doctors and patients, and therefore the prosthesis cannot be remade.

I will briefly explain the setting process of the SCRP type with all of the above-mentioned advantages (possibility of future detachment, overcoming errors from laboratories when the prosthesis is being made).

This is a patient who came to the hospital with a healing abutment after the implant 2nd surgery (Fig.1). First, attach the custom abutment as usual and, if necessary, check the radiograph (Fig.2). After confirming the appropriateness of fit, the screw hole area is blocked with cotton, etc. This serves to prevent the inflow of resin cement in the future (Fig.3).

The requirements of cement when setting the implant prosthesis are as follows.

1. It must be dual-cured considering the thickness and depth of the prosthesis.
2. It should have good flowability, so it will not interfere with the prosthesis fit.
3. It should have excellent adhesive strength.
4. It should not affect the shade during esthetic prosthesis.

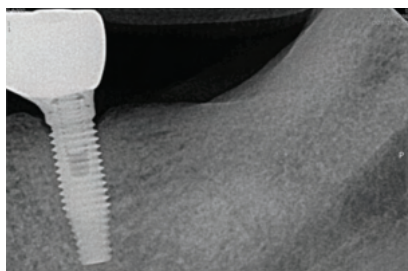
I myself used a self-adhesive resin cement called EsCem from Spident. In particular, this product has excellent flowability and has the advantage that it can be used comfortably without requiring special treatment (Fig.4).

Insert an appropriate amount of resin cement into the prosthesis (Fig. 5). Subsequently, insert the prosthesis inside a patient's mouth. If it is judged that the placement has been made at a correct location, remove the cotton inserted into the screw hole with an explorer, while pressing the prosthesis to prevent the position from changing (Fig. 6). You can check the cotton and the resin cement that comes with it on Fig. This leaves the space around the screw, which allows a clinician to use a screwdriver to remove the screw afterwards. Once this process is completed, have the patient bite the gauze tightly so that the prosthesis does not float. In the case of EsCem, the setting time is 5 minutes, so during this time, have the patient bite taking with appropriate occlusal force to set it in the correct position (Fig. 7).

After the setting time, remove the prosthesis with a screwdriver. Due to the resin cement, the abutment and crown come out as one piece (Fig. 8). Observe from various angles and check if there is any excess cement around the abutment margin and remove it cleanly. Escem, with its excellent flowability, can be used conveniently because you can easily remove most of the cement when it's inside the mouth. After the cement is removed, fix the screw using a screwdriver and confirm that the occlusion is the same as the first one (Fig. 9).



[Figure. 1] Healing abutment after the implant second surgery



[Figure. 2] X-Ray Image



[Figure. 3-1] Attach the custom abutment



[Figure. 3-2] Close the screw hole with cotton



[Figure. 4] Using EsCem for crown setting



[Figure. 5] Apply an appropriate amount of cement inside the zirconia crown



[Figure. 6] Remove the cotton



[Figure. 7] Instruct the patient to hold the crown tightly with gauze



[Figure. 8] Due to resin cement, the abutment and crown come out in one lump



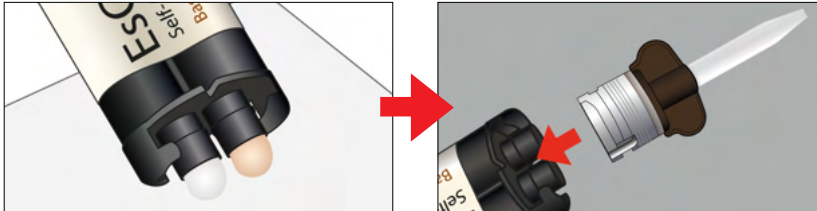
[Figure. 9-1] Remove the extra cement



[Figure. 9-2] After the cement is removed, try again in the mouth by fixing the screw using a screw driver

※ Precautions for use

Before placing the mixing tip, extrude a small amount of pastes to ensure even flow from the syringe.



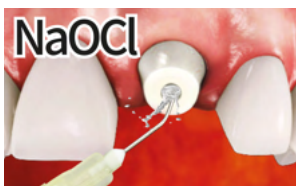
When to use ADHESIVE PRIMER?



1	Tooth	Adherend Materials	Retentive preparation
		Metal Zirconia	×
		Ceramics, Fiber Post Hybrid ceramics Composite	○ Silane
2	Tooth	Adherend Materials	Non-retentive preparation
		Metal Zirconia	○ Zirconia Primer
		Ceramics, Fiber Post Hybrid ceramics Composite	○ Silane

CEMENTATION GUIDE

for metal, ceramic, fiber posts, and cast post and cores



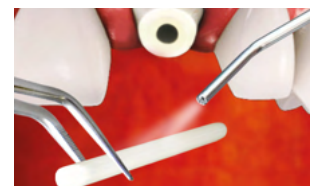
1. Use NaOCl or EDTA (Do not use H₂O₂) to chemically clean the post space.



2. Clean and rinse the post space, then thoroughly dry using paper points.



3. Prepare the fiber post according to the manufacturer's instructions.



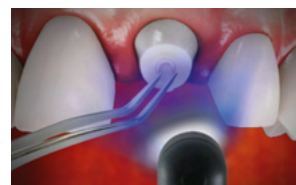
4. Dry with air.



5. Apply EsCem® directly into the post space. Insert the post immediately into the post space within 1 minute after EsCem® application.



6. Continue to maintain proper pressure making sure the post remains in place and remove excess EsCem®.



7. Light cure each surfaces for 20 seconds (LED 1200mW /cm²).



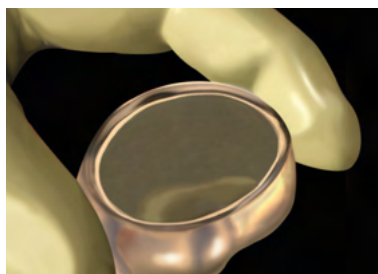
8. Let the material set for 4 minutes.

CEMENTATION GUIDE

for all inlays, onlays, crowns, bridges. (Metal, Gold, PFM)



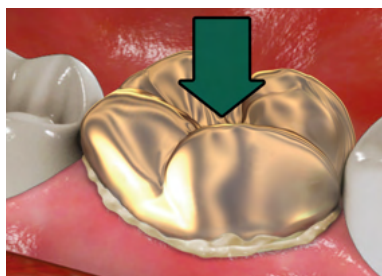
1. Clean, rinse and thoroughly dry the prepared tooth.



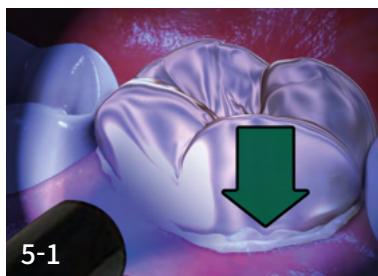
2. Prepare the restoration according to the manufacturer's instructions.



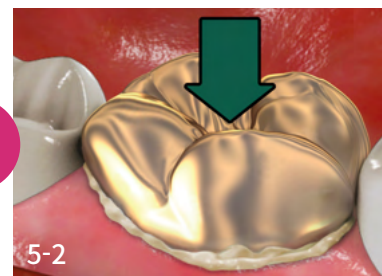
3. Place the mixing tip and apply EsCem® directly into the restoration.



4. Seat immediately and maintain proper pressure.

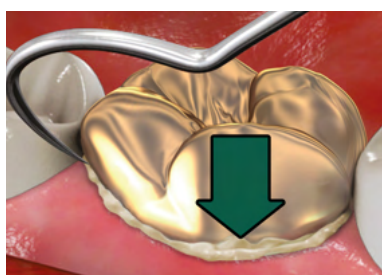


5-1. Tack cure 1 to 2 seconds using curing light to remove excess material.

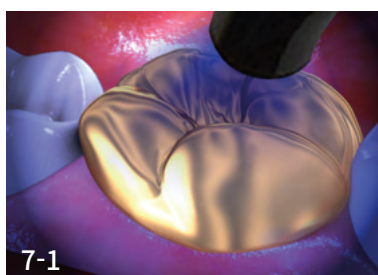


5-2. Keep proper pressure until it reaches gel paste for 60 seconds.

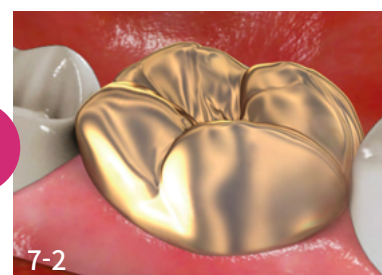
OR



6. Remove excess EsCem® while maintaining proper pressure.



7-1. Light cure each surface for 20 seconds(LED 1200mW /cm²).



7-2. Let the material set for 4 minutes in case the light didn't pass through the crown.

OR

CEMENTATION GUIDE

for all inlays, onlays, crowns, bridges. (Zirconia)



1. Clean, rinse and thoroughly dry the prepared tooth.



2. Prepare the restoration according to the manufacturer's instructions.



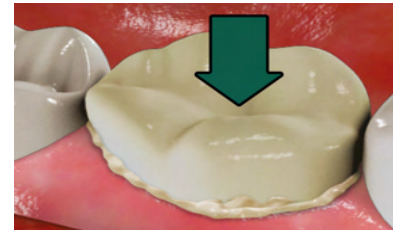
3. 50µm Alumina Sand blast with 0.4 MPa Pressure.



4. Rinse and Dry.



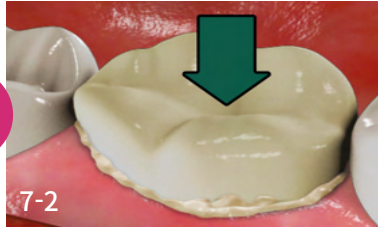
5. Place the mixing tip and apply EsCem® directly into the restoration.



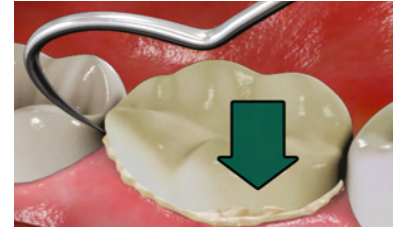
6. Seat immediately and maintain moderate pressure.



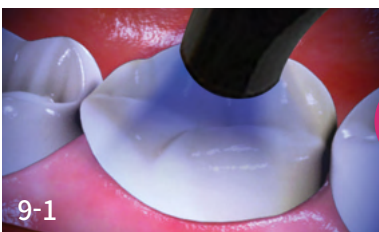
7-1. Tack cure 1 to 2 seconds using curing light to remove excess material.



7-2. Keep proper pressure until it reaches gel paste for 60 seconds.



8. Remove excess EsCem® while maintaining proper pressure.



9-1. Light cure each surface for 20 seconds (LED 1200mW /cm²).



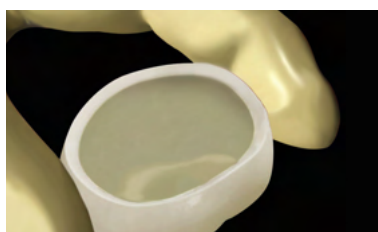
9-2. Let the material set for 4 minutes in case the light didn't pass through the crown.

CEMENTATION GUIDE

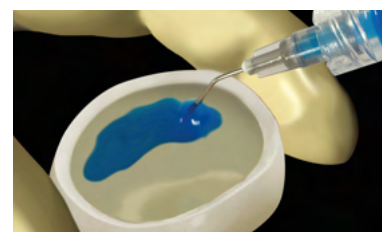
for all inlays, onlays, crowns, bridges. (Glass Ceramic)



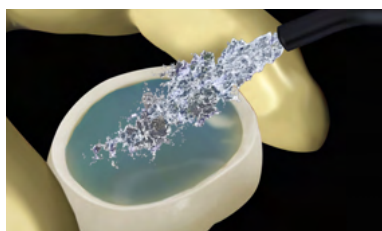
1. Clean, rinse and thoroughly dry the prepared tooth.



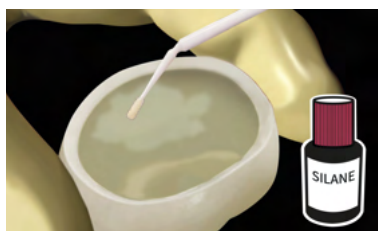
2. Prepare the restoration according to the manufacturer's instructions.



3. Etch with hydrofluoric acid.
 - Lithium disilicate (e.max) : 20s etch with 5% HF.
 - Leucite ceramic (Empress) : 60s etch with 5% HF.
 - Feldspathic ceramic (Ceramco) : 120s etch with 9% HF.



4. Rinse and Dry.



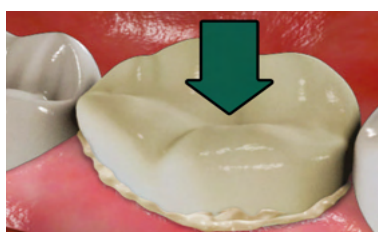
5. Apply Primer.



6. Dry with air.



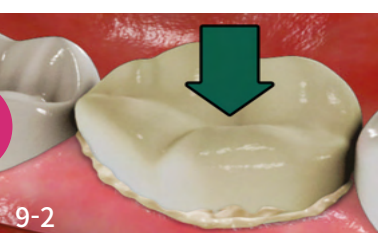
7. Place the mixing tip and apply EsCem® directly into the restoration.



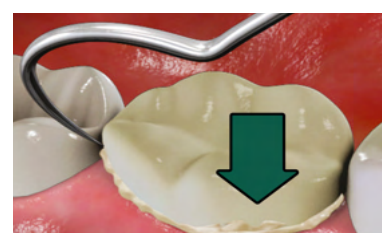
8. Seat immediately and maintain proper pressure.



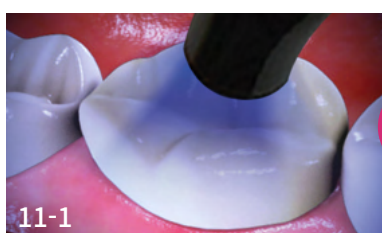
9-1. Tack cure 1 to 2 seconds using curing light to remove excess material.



9-2. Keep proper pressure until it reaches gel paste for 60 seconds.



10. Remove excess EsCem® while maintaining proper pressure.



11-1. Light cure each surface for 20 seconds (LED 1200mW /cm²).



11-2. Let the material set for 4 minutes in case the light didn't pass through the crown.

A decorative circular graphic at the top of the page, featuring a thick green arc and a thinner blue arc. Inside the arcs are various dental-related icons in white and green, including a tooth, a person's head, a dental chair, a toothbrush, a dental X-ray, a dental mirror, a dental probe, a dental scaler, a dental drill, a dental chair, a dental X-ray, a dental mirror, a dental probe, a dental scaler, and a dental drill. The background is a dark blue gradient with a subtle pattern of white dots and lines.

SPIDENT Clinical Report



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