G-CEM ONE™

Universal self-adhesive resin cement
Comprehensive Guide

Simply
The ONE

Smile for the World
Since 1921
100 years of Quality in Dental

Contents

1 Editor's note

One of the most interesting aspects of the dental profession is the combination of art with science. This becomes more attractive in consequence to modern innovations, the merge of the two has become easier, more applicable, and more sought after by practitioners. What brings the art and science more and more together is the simplification of techniques and materials through innovation. Through simple and efficient techniques, and materials, practitioners can achieve qualitative and satisfactory results both in function and aesthetic. Every division of dentistry has moved towards this direction and this is certainly true for indirect restorations.

This innovation is now applied to luting procedures, in restorative composite, multiple shades is available to synthesized shading systems (G-aenial® A'CHORD). The bonding system has been innovated from multiple bottle systems into a Universal single bottle system (G-Premio BOND) and in light curing, a light and rechargeable device (D-Light® PRO) has been developed to challenge heavy and bulky devices.

20 years ago, most indirect work was quite invasive, visible and metal based, where nowadays this is the exception. Practitioners as well as patients seek more and more minimally invasive and highly aesthetic procedures. We have moved from PFM to lithium disilicate and cubic zirconia. We have moved from several patient sessions to one seating treatment plans, due to the CAD/CAM revolution. We have moved from crown and bridge work to more modern solutions like inlays, table tops and veneers. This shift has had to be met by adequate luting solutions.

It is hardly possible for the practitioner anymore to have only one luting agent for all indirect indications and procedures. A typical inventory will have room for:

- A resin modified glass ionomer cement (RMGIC), will be more suited for metal and zirconia, especially because moisture is tolerated and post operative sensitivity is avoided.
- A self-adhesive resin cement, is more suited for aesthetic yet retentive preparations, such as full ceramic crowns. The retention is ensured by the preparation and the aesthetic is ensured by the resin luting.
- Adhesive resin cement is more suitable for cases that are minimally invasive and highly aesthetic, such as inlays or veneers. This luting option ensures both criteria are respected and maintained.

It is necessary that the practitioner is not left without adequate luting options, no matter what the treatment plan is, however having to keep this extended inventory of not only materials but most importantly, protocols, is certainly not practical. Simplicity is of utmost importance, especially since luting is a crucial part of the treatment plan. There are a lot of parameters for the dentist to take into account: viscosity, pre-treatment needs, condition of prepared abutment, working time, tack-cure method, setting time, clean-up method, shade line up, material selection vs. preparation, material selection vs. type of restorations, as some examples.

As a leading solution provider in the luting category, GC has for years focused its research on bringing simplicity in this segment. The aim was to bring to the practitioner a solution that is as ideal as a GIC like GC Fuji PLUS has been for decades to millions of dentists across the world. After years of continuous research, extended discussions with practitioners and leading specialists in the field, we bring forward our universal luting cement: G-CEM ONE.

2 Introduction

We hope you are familiar with a luting cement from GC, and that the first time you saw a GC product, it was a luting agent. It might be that you have been using one of our Fuji options since you began practicing or you might have used some of our resin based cements in the G-CEM range. Whichever product you are familiar with, was the result of years of expertise in this field, where we proudly lead in the past 100 years. At our core and in our Japanese roots is the strive for quality without compromise. As a company providing solutions all over the world, we strive to match this quality with the simplicity demanded for innovation, so that no matter where you practice in the world, our solutions will work for you perfectly.

With the increase in diversity of restorative materials and preparation designs, it became more and more important to have a luting agent that can be used in all indications in a standardized protocol. This type of cement should possess excellent aesthetics as well as high bond strength to be used in all day-to-day cases. Simplification is key within luting to create content for dentists. Considering the very high standard we seek, matching it with simplicity and superb aesthetics is certainly the challenge. However, at GC, we welcome a challenge, because once we succeed, the reward is so much greater; the improvement and simplification of treatment plans for the practitioner, peace of mind for the patient and better smiles for the world!

GC has launched G-CEM ONE, a new universal dual-cure self-adhesive resin cement with high adhesive bond strength, which has a very large indication range thanks to its modular concept. Use it alone for most of the daily work, or use it with the additional tooth primer or adhesive for the non-retentive preparations. The aim is always the same: provide one simple solution for all day-to-day procedures.

G-CEM ONE
A universal self-adhesive resin cement

- Reliable bonding performance to tooth and prosthetic materials
- Excellent self-cure
- Easy clean up
- High aesthetic and marginal quality

Optional

G-CEM ONE Adhesive Enhancing Primer (AEP)
Tooth Primer for G-CEM ONE

- Optional tooth primer for higher bond strength demands. Eg, Non-retentive preparation, Hybrid ceramics composite…
- Strong bonding to abutment tooth and cavity by touch cure feature to accelerate polymerization
- Simply apply and dry
- No light cure needed

Optional

G-Premio Bond
Universal bonding agent

- Optional bonding to be added for higher bond strength demands
- Can be used with all composite families (restoration, core build-up, luting…)
- Apply, dry and light-cure
- Allows for control of working time

G-CEM ONE system has simplified the luting procedure and has standardized all types of restorations and preparations. Innovating the standard that you only need one product for all treatments. This comprehensive guide will explain all the benefits of G-CEM ONE and will guide you through all the scientific data.

3 Composition

Table 01: Function in the material and their clinical relevance of the components in G-CEM ONE syringe and G-CEM ONE Adhesive Enhancing Primer.

G-CEM ONE Paste A

Component	Function	Clinical relevance
Fluoro-alumino-silicate-silicate-glass	Filler	Mechanical strength Radiopacity Film thickness
Urethanedimethacrylate monomer	Resin monomer	Mechanical strength
Dimethacrylate monomer	Resin monomer	Mechanical strength
Silicon dioxide	Adjust viscosity	Flow Mixing ability
Initiator 1	Initiate resin polymerisation reaction	Working/setting time Mechanical strength Bonding ability
Inhibitor 2	Adjust resin polymerisation reaction speed	Working/setting time Shelf life
Pigment	Adjust shade	Shade

G-CEM ONE Paste B

Component	Function	Clinical relevance
Silicon dioxide	Adjust viscosity	Flow Mixing ability Stability
Urethane dimethacrylate monomer	Resin monomer	Mechanical strength
Dimethacrylate monomer	Resin monomer	Mechanical strength
Phosphoric acid ester monomer (MDP)	Resin monomer Bonding to tooth, zirconia and non-precious metal	Self-etching ability Bonding ability
Initiator 1	Initiate resin polymerisation reaction	Working/setting time Mechanical strength Bonding ability
Inhibitor 2	Adjust resin polymerisation reaction speed	Working/setting time Shelf life

G-CEM ONE Adhesive Enhancing Primer

Component	Function	Clinical relevance
Ethanol	Solvent	Stability
Phosphoric acid ester monomer (MDP)	Resin monomer Bonding to tooth, zirconia and non-precious metal	Self-etching ability Bonding ability
Thiophosphoric acid ester monomer (MDTP)	Resin monomer Bonding to precious metal	Bonding ability
4-Methacryloxyethyl trimellitate anhydride (4-MET)	Resin monomer Bonding to tooth	Self-etching ability Bonding ability
Distilled water	Solvent	Self-etching ability
Dimethacrylate monomer	Resin monomer	Mechanical strength
Initiator	Initiate resin polymerisation reaction	Touch-cure ability Bonding ability

G-Premio BOND

Component	Function	Clinical relevance
4-Methacryloxyethyl trimellitate anhydride (4-MET)	Resin monomer Bonding to tooth	Self-etching ability Bonding ability
10-Methacryloxydecanoxy phosphate (10-MDP)	Resin monomer Bonding to tooth, zirconia and non-precious metal	Self-etching ability Bonding ability
Thiophosphoric acid ester monomer (MDTP)	Resin monomer Bonding to precious metal	Bonding ability
Dimethacrylate monomer	Resin monomer	Mechanical strength
Distilled water	Solvent	Self-etching ability
Acetone	Solvent	Stability
Photo initiator	Initiate resin polymerisation reaction	Light-curing ability Bonding ability
Silica fine particle	Filler	Bonding ability

4 Indications for use

As a universal self-adhesive resin cement, G-CEM ONE can be used for a wide range of indications, extending the indications to challenging situations when using additionally G-CEM ONE Adhesive Enhancing Primer or G-Premio BOND:

1. Cementation of all types of all ceramic, resin and metal-based inlays, onlays, crowns and bridges.
2. Cementation of metal, ceramic, fiber posts, and cast post and cores.
3. Cementation of all ceramic and composite veneers.
4. Final cementation of crowns and bridges on implant abutments.

The use of G-CEM ONE Adhesive Enhancing Primer or G-Premio BOND will be guided by the retention of the preparation. G-CEM ONE is ideal for use for crown & bridge work. For non-retentive preparations such as for veneers, using G-CEM ONE Adhesive Enhancing Primer or G-Premio BOND is advised.

Table 02: Explanation of G-CEM ONE Adhesive Enhancing Primer or G-Premio BOND usage according to preparation retention

Adherend	Retentive preparation	Non retentive preparation
Metal, Zirconia, Ceramics, Fiber posts	Not needed	✓
Hybrid ceramics, Composite	✓	✓

For more information on indication & material selection, please refer to the corresponding instructions for use.

GC developed a **Luting App & a Luting Guide** which will provide guidance to select the most appropriate luting cement and describe each luting step.

5 Features and benefits

G-CEM ONE is a truly universal self-adhesive resin cement, with high bond strength and excellent self-curing ability. G-CEM ONE can be used for a wide range of indications, including challenging non-retentive clinical situations thanks to the optional adhesive step, using G-CEM ONE Adhesive Enhancing Primer or G-Premio BOND.

Self-adhesive resin cement with integrated 10-MDP and optional full-adhesive application

- One product available for all luting procedures
- **Clinical benefit:** reduced inventory of a dental practice

Two simplified bonding procedures

- Optional tooth primer (Adhesive Enhancing Primer) accelerates the setting in reaction to secure and increase the adhesion
- Optional bonding agent (G-Premio BOND) enhances the adhesion and allows for the control of the working time
- **Clinical benefit:** maximum ADHESION in case of challenging situations (table-tops, CAD/CAM restorations, RBFPD)

Excellent wear & discolouration resistance plus high intrinsic colour stability

- Homogenous distribution of fine fillers in comparison to other resin cements provides high wear resistance
- Filler distribution, low water sorption and highly polymerized hydrophobic cement matrix provide discoloration resistance
- **Clinical benefit:** long-lasting ESTHETIC cementations (Veneers, anterior restorations) with invisible margins

Strong dark-cure = chemical-cure (= self-cure) polymerization

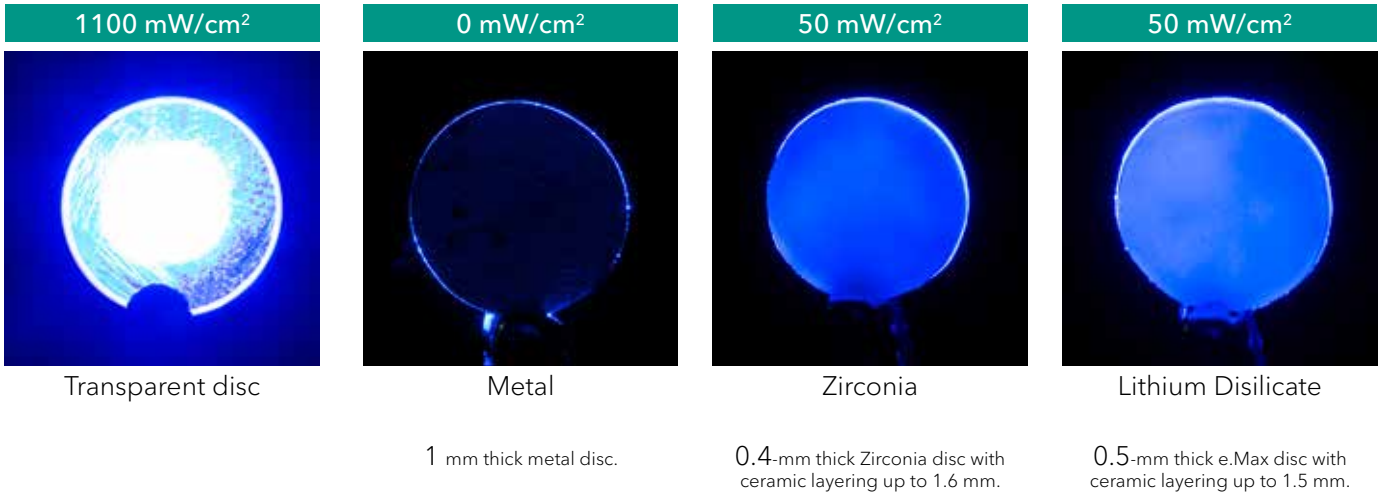
- High radical generation ability even without light
- **Clinical benefit:** positive impact on degree of conversion, flexural strength and bond strength in dark-cure mode

6 Scientific research on G-CEM ONE

6.1 Self-curing ability for Universal applications

6.1.1 Importance of self-curing properties in luting material

In many clinical situations, for example metals and zirconia restorations, light cannot pass through the restorative material. In these cases, the setting of the cement relies purely on self-curing.



Source: Pereira et al., Sao Paolo University, Brazil

Figure 1. Visualization of Light transmission through different substrates.
Source: Pereira et al., Sao Paulo University, Brazil

Prosthetics apart from metal also greatly reduce the light intensity.
As demonstrated above, chemical polymerization for these restorations is essential without relying on light irradiation.

6.1.2 Self-cure technology in G-CEM ONE

The explanation of G-CEM ONE self-cure technology

Firm polymerisation depends on the quantity of radicals. Therefore, using highly effective polymerisation initiators is very important for resin cement. In general, Peroxide and reducing agents are needed for the generation of radicals

Figure 2. Radical formation explanation in conventional resin cement

In the case of G-CEM ONE, besides peroxide and reducing agents, a catalyst which effectively promotes radical generation is added in G-CEM ONE syringe.

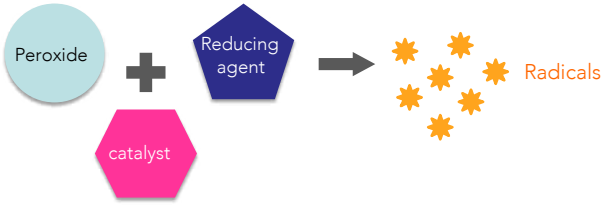


Figure 3. Radical formation explanation in G-CEM ONE syringe

Setting reaction of self-adhesive is based on methacrylate monomers and initiators (peroxide & reducing agent). They promote the generation of radicals, leading to polymerisation.
G-CEM ONE strong self-curing technology generates radicals much more strongly and in higher quantity for a high self-polymerization effect.

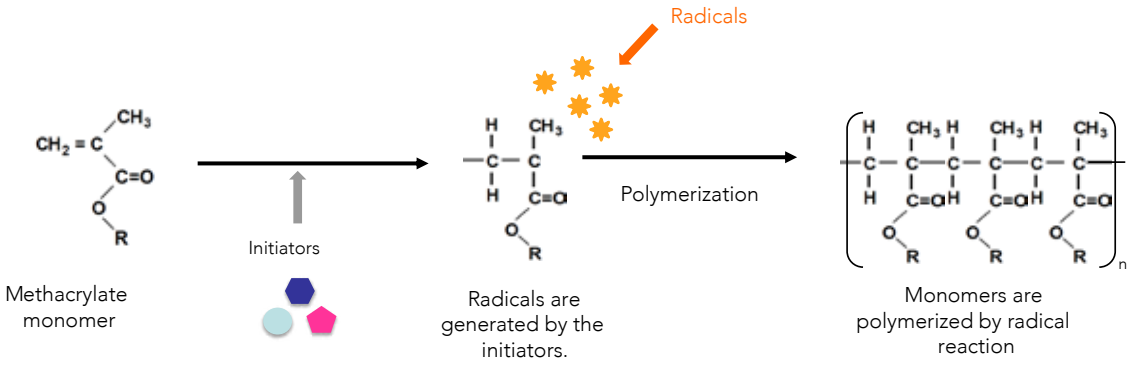


Figure 4. Self-adhesive resin cement self-curing explanation in G-CEM ONE syringe

Radical generation

Test method: 5 min after the kneading was started, the radical amount in the cement paste at 37°C was measured using ESR (JES-X310, manufactured by JEOL Ltd.). The measurement result was calculated by dividing the peak intensity of the methacrylic group by the Mn peak.

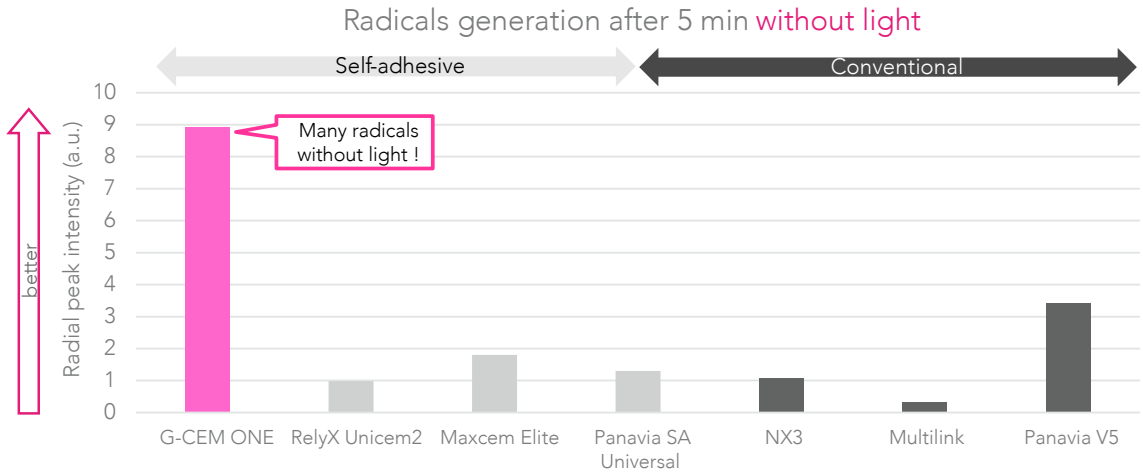


Figure 5. Radical generation after 5 min with light irradiation for G-CEM ONE in comparison with competitors

This affirms G-CEM ONE syringe demonstrates a high radical generation ability, even without light. This is an essential feature for a resin cement while using restorative materials with low light transmission.

Polymerisation degree

Test method: Cement has been filled in an acrylic mould of Ø10mm, with a thickness of 2mm. After which a load was applied on cement to press and flatten, in order to regulate the volume.
For self-curing: polymerisation at 37°C, 100%R.H. for 1 hour. While for light-curing: light irradiation was performed. The specimens were immersed in 37°C water for 24 hours.
Results were measured by FT-IR (ATR method) and the polymerisation rate of polymerized resin cement specimens was calculated by comparison of C=C bond and reference bond intensity.

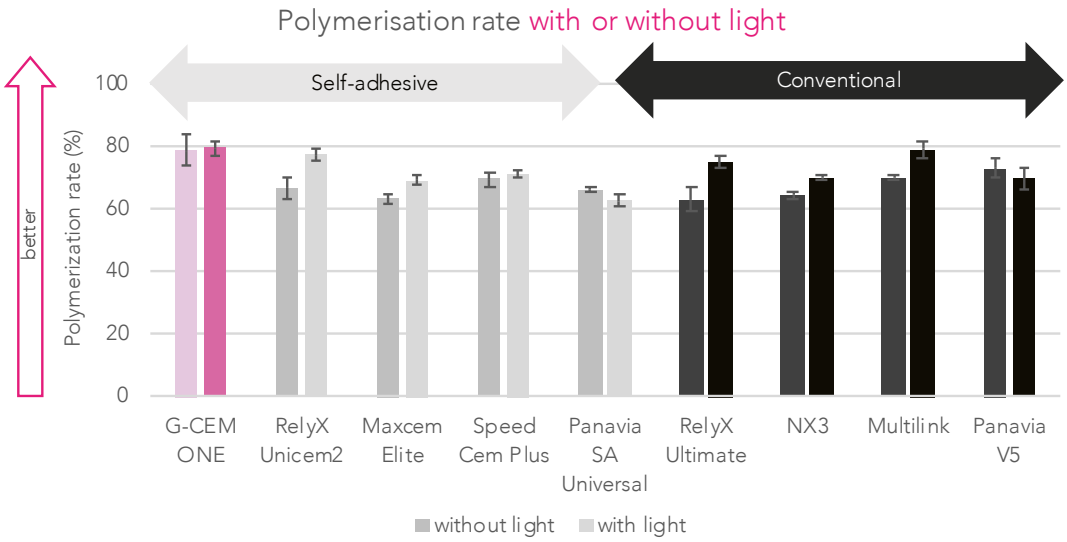
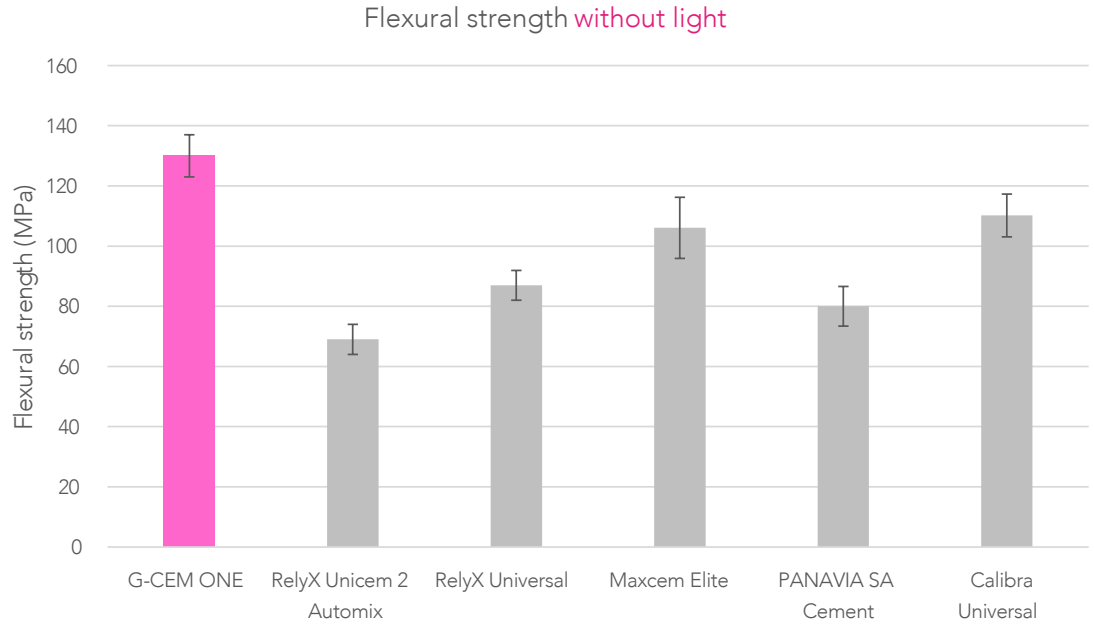


Figure 6. Polymerisation rate in % with or with light of G-CEM ONE in comparison with competitors

The above data demonstrates that the polymerisation rate of G-CEM ONE syringe is high, and even higher than most of resin competitors, which guarantee excellent curing under opaque restorations. High rate of polymerization positively impacts flexural strength.



3-point flexural strength according to ISO4049:2019 (without light)

Figure 7. Flexural strength (MPa) of G-CEM ONE without light in comparison with competitors

6.1.3 Bond strength to various substrate in self-cure mode

Shear bond strength to Enamel & Dentin

Test method: Bovine enamel and dentin specimens were polished with P600 SiC paper. The gold specimens were polished with P120 SiC paper and sandblasted with 0,4MPa Alumina. No chemical pre-treatment was applied. The bonded area was 3mm in diameter and 100µm thickness, attached with Teflon tape. Stainless steel rods were cemented with the respective cement. Pressure was applied with 10N for 10 sec. Excess cement was removed without light irradiation and specimens were stored at 37°C for 1h (self-cure mode).

Shear bond strength was measured at 24 hours from start of mix. Thermocycling was measured after 24 hours immerse in 5°C and 55°C water for 30 sec each for 5.000 times.

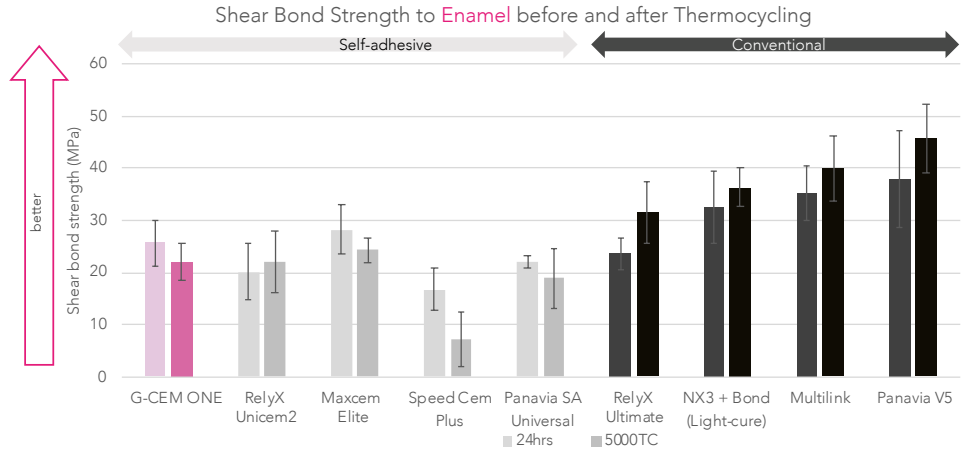


Figure 8. Shear bond strength to bovine enamel before and after thermocycling for G-CEM ONE syringe and competition

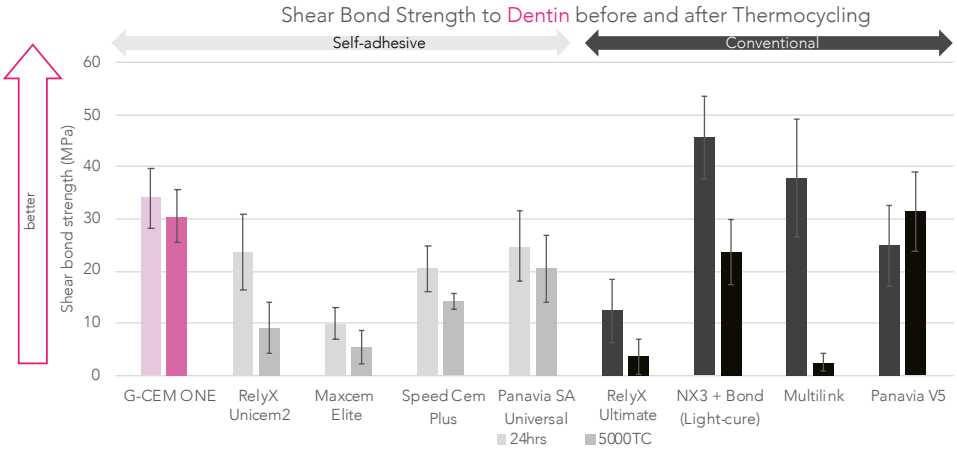


Figure 9. Shear bond strength to bovine dentin before and after thermocycling for G-CEM ONE syringe and competition

The above data demonstrates a high and stable bond strength both on enamel and on dentine compared to other products used in this test.

Shear bond strength to restorative materials:

Test method: The Zirconia and gold specimens were polished with P120 SiC paper and sandblasted with 0,4MPa Alumina. The Lithium Disilicate specimens were polished with P320 SiC paper and etched 20 sec with 9,5% hydrofluoric acid. The hybrid ceramic CERASMART specimens were polished with P320 SiC paper and sandblasted with 0,15MPa Alumina.
The bonded area was 3 mm in diameter and 100µm thickness, attached with Teflon tape. Stainless steel rods were cemented with the respective cement. Pressure was applied with 10N for 10 sec. Excess cement was removed without light irradiation and specimens were stored at 37°C for 1h (self-cure mode). Shear bond strength was measured at 24 hrs from start of mix. Thermocycling was measured after 24 hrs immerse in 5°C and 55°C water for 30 sec each for 5.000 times.

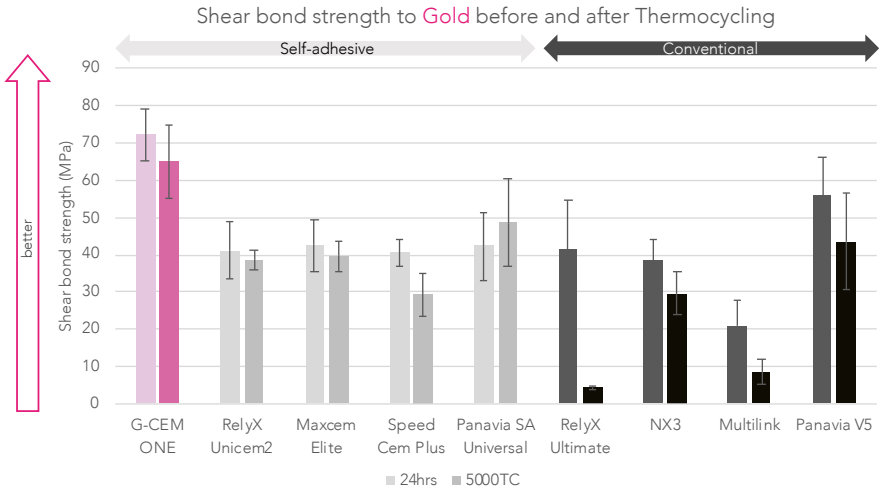


Figure 10. Shear bond strength to Casting Gold M.C. type3 before and after thermocycling for G-CEM ONE syringe and competition

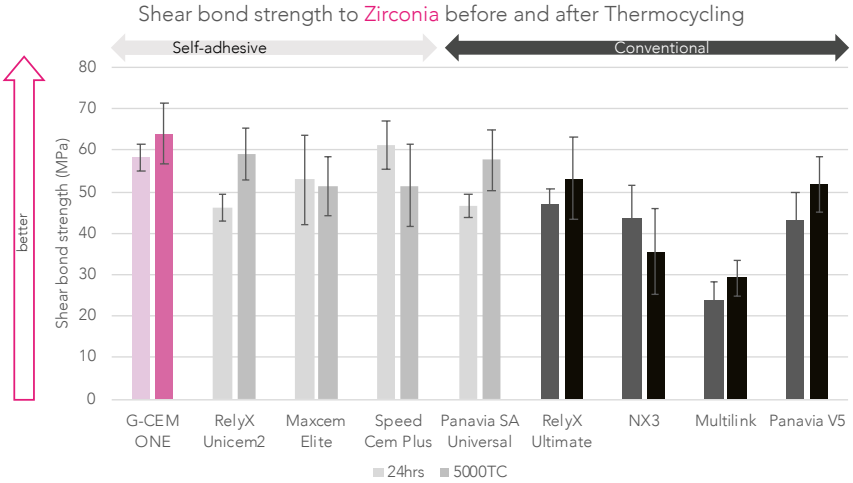


Figure 11. Shear bond strength to Initial Zirconia Disc ST before and after thermocycling for G-CEM ONE syringe and competition

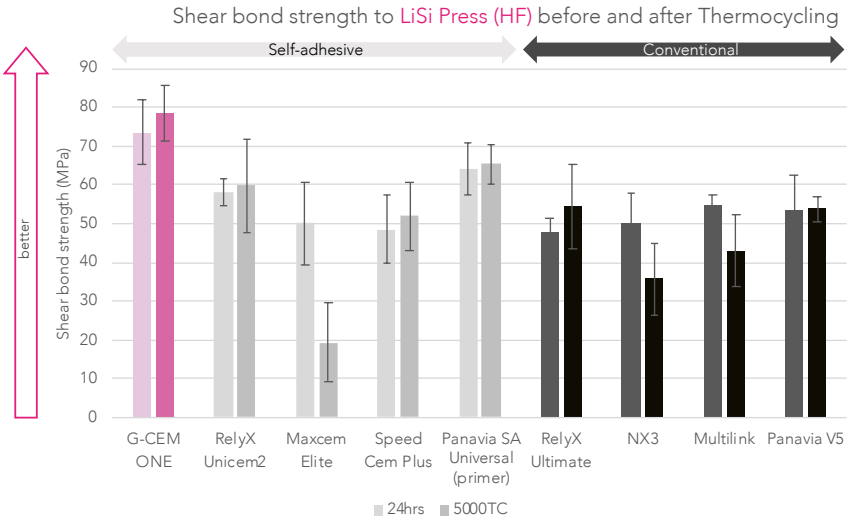


Figure 12. Shear bond strength to Initial LiSi Press before and after thermocycling for G-CEM ONE syringe and competition

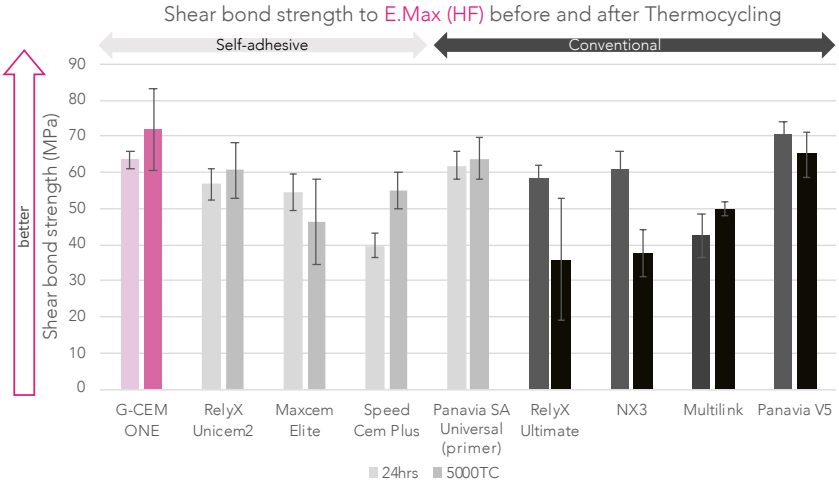


Figure 13. Shear bond strength to IPS e.max CAD before and after thermocycling for G-CEM ONE syringe and competition

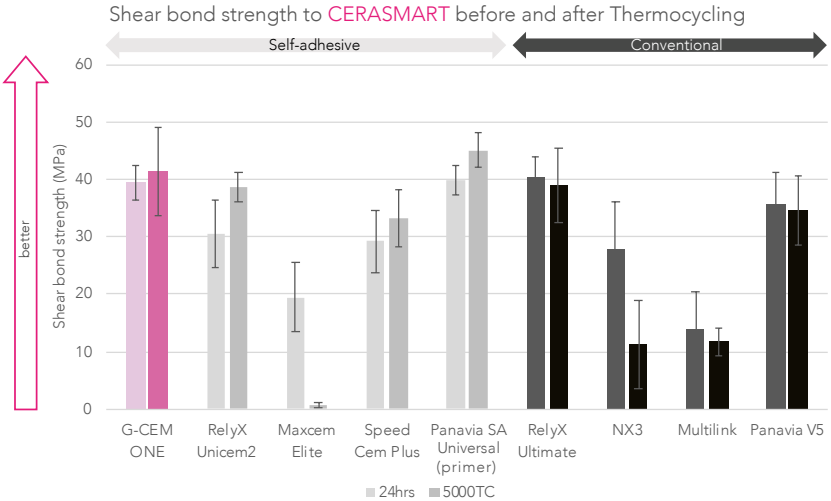


Figure 14. Shear bond strength to CERASMART before and after thermocycling for G-CEM ONE syringe and competition

The above data suggests that G-CEM ONE has a reliable performance independent of the substrate used.

6.1.4 Flexural strength

Test method: Flexural strength of each material was measured according to ISO 4049(N=5) for 3-point flexural strength. The cement was put in their designated mould.
Specimens were cured with light, taken out of the mould, and stored in water at 37°C for 24hrs. For the test without light irradiation, the mould was stored for 1 hour at 37°C and 100% relative humidity and cured. Then, it was stored in water at 37°C for 24 hrs.
Before tests, specimens were grounded by 320-grid SiC paper. The test was performed by using autograph at a crosshead speed of 1mm/min.

Figure 15. 3-point flexural strength with and without light curing for G-CEM ONE syringe and competition

Resulting in the confirmation that the flexural strength of G-CEM ONE is reaching comparable levels as conventional resin cement, with or without light irradiation.

6.2 Touch-cure technology of the Adhesive Enhancing Primer

6.2.1 Explanation of the technology

G-CEM ONE Adhesive Enhancing Primer, a tooth primer

In everyday luting dentistry, practitioners face retentive dentistry, like crowns and bridges, or non-retentive preparations, like veneers and onlays. In some cases, practitioners can have doubts about the retentiveness and effectiveness of the preparation.

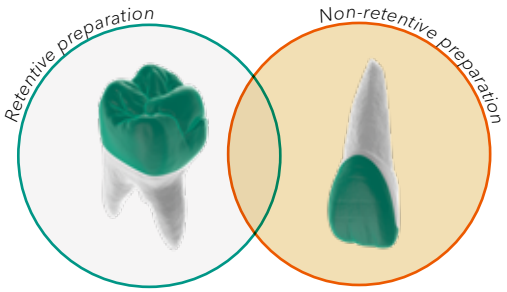


Figure 16. Scheme of 2 main types of preparation according to retention

In most cases, the preparation would determine the selected cement for the future luting procedure. G-CEM ONE syringe is accompanied with G-CEM ONE Adhesive Enhancing Primer (AEP), which can be applied on the tooth preparation.
G-CEM ONE features a Touch-cure technology, thus the G-CEM ONE Adhesive Enhancing Primer (AEP) works as an accelerator for the chemical initiators, to strengthen the adhesion to the tooth. It can be used when higher bond strength is required, such as in low retentive preparation (veneers or onlays). This unique combination provides ONE solution to all challenging adhesive situations.

+

G-CEM ONE
Self-adhesive resin cement

Highly efficient initiator system for reliable self-curing

G-CEM ONE
Adhesive Enhancing Primer (AEP)

Optional tooth Primer
Touch-cure, catalyst boost technology found in AEP

Figure 17. G-CEM ONE in combination with G-CEM ONE Adhesive Enhancing Primer

Composition of G-CEM ONE AEP

The composition of G-CEM ONE AEP makes it an ideal partner due to its three functional monomers to bond to all preparations.

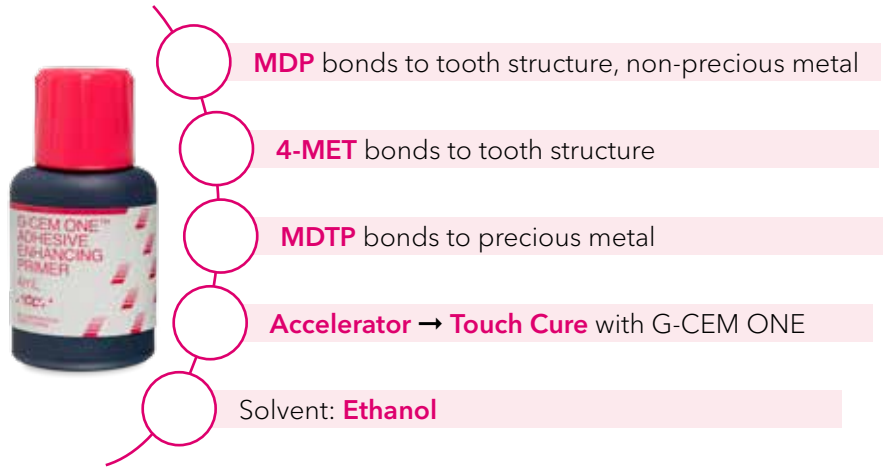


Figure 18. Functional components of G-CEM ONE Adhesive Enhancing Primer

4-MET (4-methacryloyloxyethyl trimellitic acid) and MDP (methacryloyloxydecyl dihydrogen phosphate) assure adhesion to enamel and dentin tissues, since the phosphoric acid and carboxylic acid functional groups of those monomers can chemically bond to calcium. Apart from bonding to tooth structure, MDP provides further adhesion to resin core build-up and non-precious metal core through bonding of the phosphoric acid group with silicic acid groups, zirconia and non-precious metal oxides, respectively. Comparatively, MDTP (methacryloyloxydecyl dihydrogen thiophosphate) provides adhesion to precious metal cores through chemical bonding of sulphur to precious metals such as gold, platinum and palladium.
Hence, G-CEM ONE AEP is designed to fit all tooth substrates and additionally features better bond strength thanks to catalyst boost technology.

Touch-cure: catalyst boost technology

The Touch-cure feature acts like a catalyst booster, by promoting the initiators creation effect. It will generate more radicals, and strengthen the polymerisation of G-CEM ONE monomers.

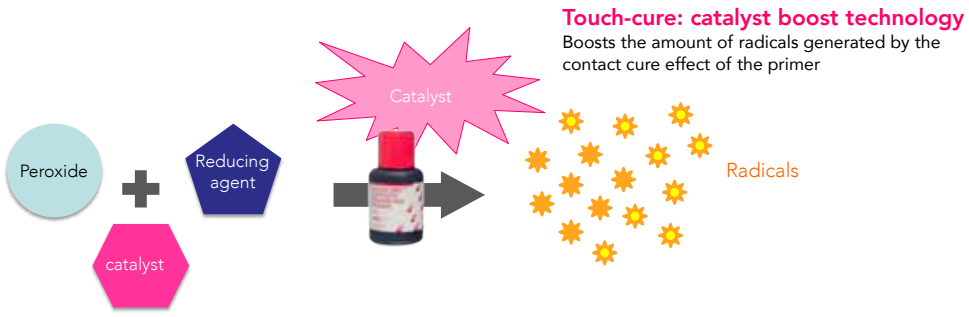


Figure 19. Radical formation explanation in G-CEM ONE syringe with impact of G-CEM ONE Adhesive Enhancing Primer

Simple Protocol

G-CEM ONE AEP is simple to use thus it excels as an everyday solution for practitioners. G-CEM is compatible with the practitioner's choice of an etching mode: self-etching, selective etching of enamel or total etch can be used (21). This allows to adapt to the type of preparation to be restored. In general, etching of enamel has been shown to be of interest (1,2), in particular, preparations involving mainly enamel. Specifically, in preparations for veneer or table tops, the etching of dentin does not seem to have a significant influence on the bond strength, whilst it could also induce post-operative sensitivity in vital teeth (3). Therefore, selective etching would be recommended when possible.

Figure 20. Visualization of different etching techniques when using G-CEM ONE AEP

G-CEM ONE AEP does not need to be light-cured, simply applied for 10 seconds and air-dried for 5 seconds.

Apply G-CEM ONE AEP. Wait 10 seconds.

Dry with a MAXIMUM AIR PRESSURE for 5 seconds to prevent liquid pooling in the gingival sulcus.

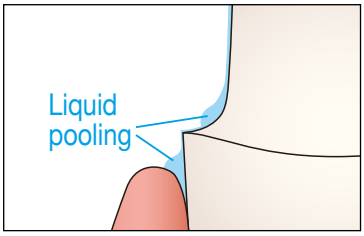


Figure 21. Step-by-step of G-CEM ONE Adhesive Enhancing Primer on tooth

The G-CEM ONE Adhesive Enhancing Primer features Touch-cure technology enabling early bond strength. The main advantages are the excellent bond strength on tooth at early stage thanks to high polymerisation degree, as well as good results independently of the cement thickness and of moist degree environment.

6.2.2 Impact of Touch-cure technology on Polymerisation degree and radical formation

As mentioned previously, the accelerator (catalyst) in G-CEM ONE AEP reacts with the initiator existing in the cement paste, enhancing the cement-curing capacity. The polymerisation starts from the surface and results in high bond strength and trustable bonding durability.

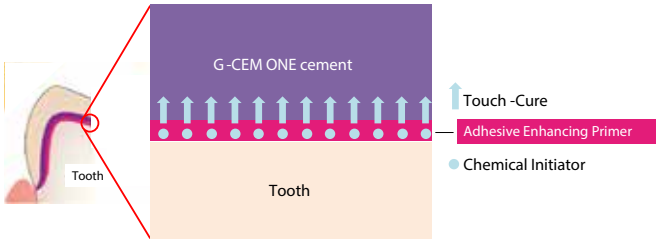


Figure 22. Explanation of Touch-cure effect on cement polymerisation

Radical generation

Test method: 5 min after the kneading was started, the radical amount in the cement paste at 37°C was measured using ESR (JES-X310, manufactured by JEOL Ltd.). The measurement result was calculated by dividing the peak intensity of the methacrylic group by the Mn peak.

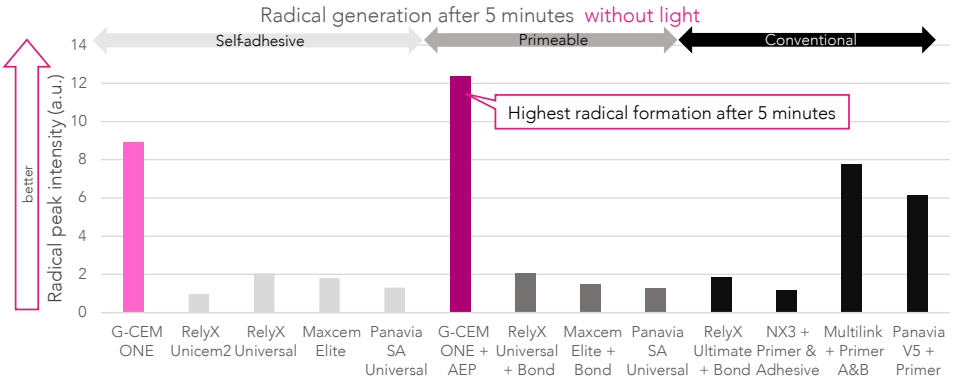


Figure 23. Radical generation after 5 min with light irradiation for G-CEM ONE and G-CEM ONE with Adhesive Enhancing Primer in comparison with competitors, including primeable cement

The above data demonstrates that many radicals are generated by Touch-cure effect with G-CEM AEP, which confirms the ability to accelerate adhesion

Shear Bond Strength after 5 min

Test method: Bovine dentin specimens were polished with P600 SiC paper.
No chemical pre-treatment was applied. The bonded area was 3 mm in diameter and 100µm thickness, attached with Teflon tape. Stainless steel rods were cemented with the respective cement. Pressure was applied with 10N for 10 sec. Excess cement was removed without light irradiation and specimens were stored at 37°C for 5 min (self-cure mode). Shear adhesion test was realised by autograph.

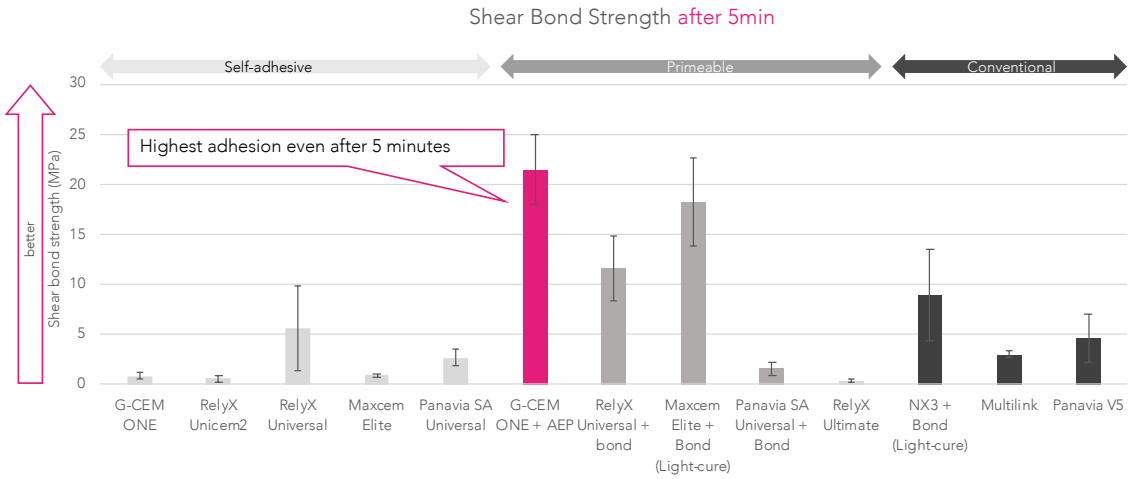


Figure 24. Shear bond strength to bovine dentin after 5 min for G-CEM ONE and G-CEM ONE with Adhesive Enhancing Primer in comparison with competitors, including primeable cement

Due to priming effect and Touch-Curing ability of G-CEM ONE Adhesive Enhancing Primer, G-CEM ONE and G-CEM ONE AEP demonstrate high adhesive strength after 5 minutes.

Initial high bond strength is desired not only by dentists but also by the patients. In reality, patients want to eat and drink as soon as the prosthesis is attached, they may even touch it with their tongue. These behaviours can lead to debonding. By improving the immediate bond strength, dentists can start the occlusal adjustment immediately with reduced debonding risk.

6.2.3 Impact of Touch-cure technology on bond strength to enamel & dentin

Shear bond strength to Enamel & Dentin

Test method: Bovine enamel and dentin specimens were polished with P600 SiC paper. The gold specimens were polished with P120 SiC paper and sandblasted with 0,4MPa Alumina. No chemical pre-treatment was applied. The bonded area was 3 mm in diameter and 100µm thickness, attached with Teflon tape. Stainless steel rods were cemented with the respective cement. Pressure was applied with 10N for 10seconds. Excess cement were removed without light irradiation and specimens were stored at 37°C for 1h (self-cure mode). Shear bond strength was measured at 24 hours from start of mix. Thermocycling was measured after 24 hours immerse in 5°C and 55°C water for 30 sec each for 5.000 times.

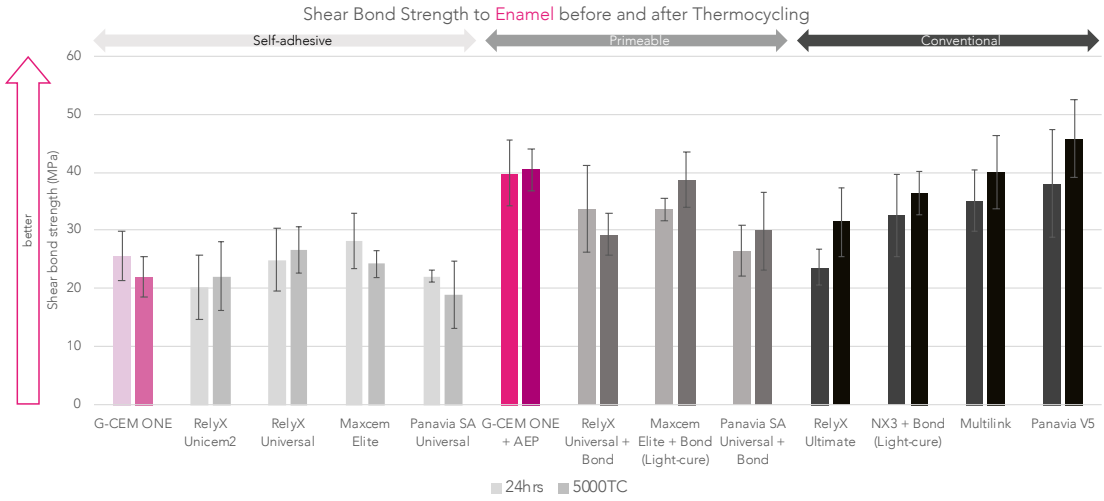


Figure 25. Shear bond strength to bovine enamel before and after thermocycling for G-CEM ONE syringe + AEP and competition

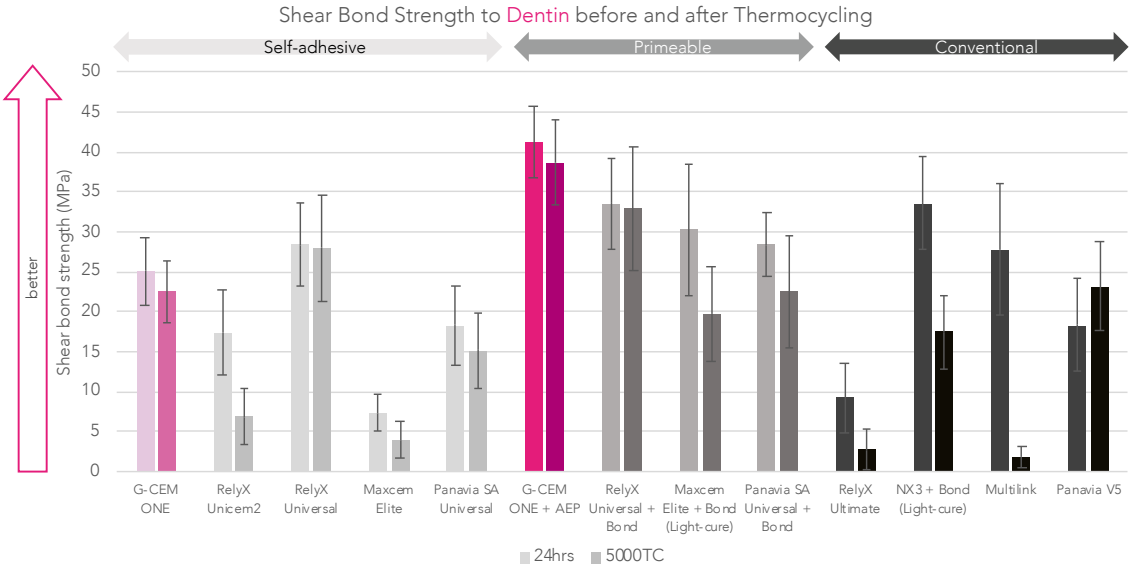


Figure 26. Shear bond strength to bovine dentin before and after thermocycling for G-CEM ONE syringe + AEP and competition

The above data demonstrates the high performance of G-CEM ONE in combination of G-CEM ONE AEP in challenging situations, thanks to the increased bond strength generated by the Tooth primer. As an example, G-CEM ONE AEP is ideal on dentin for renewal of old crowns or limited height abutment; whereas on enamel, it is perfect for veneer or onlay.

6.2.4 Bond strength according to cement thickness

In addition to the early debonding risk, practitioners can face some difficulties with CAD/CAM restoration. They don't always perfectly fit due to limitations of milling machines in terms of thickness of burs.
In some cases, the sharp inner shape is difficult to be milled, making the adaptation critical in the inner part of the indirect restoration (28).

The risks linked to misfitting restorations are: Formation of a thick cement layer (1), Stress concentration in the cement layer (2) and risk of debonding increased (3).

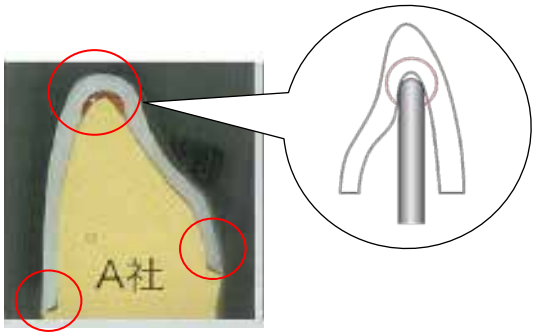


Figure 27. Limitation of milling machines in term of fitting and bur impact.

During the curing process, the resin cement undergoes polymerization shrinkage on the crown side. A force is generated to pull the cement away from the abutment tooth, and the thicker the cement is, the greater the force is. In conclusion, a thick cement layer can negatively affect the bond strength and generate a debonding.

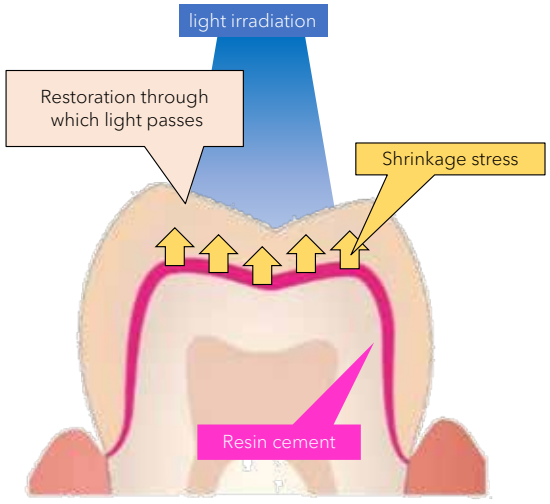


Figure 28. Explanatory scheme of shrinkage stress under CAD CAM restoration.

Shear bond strength and SEM pictures of cement layer

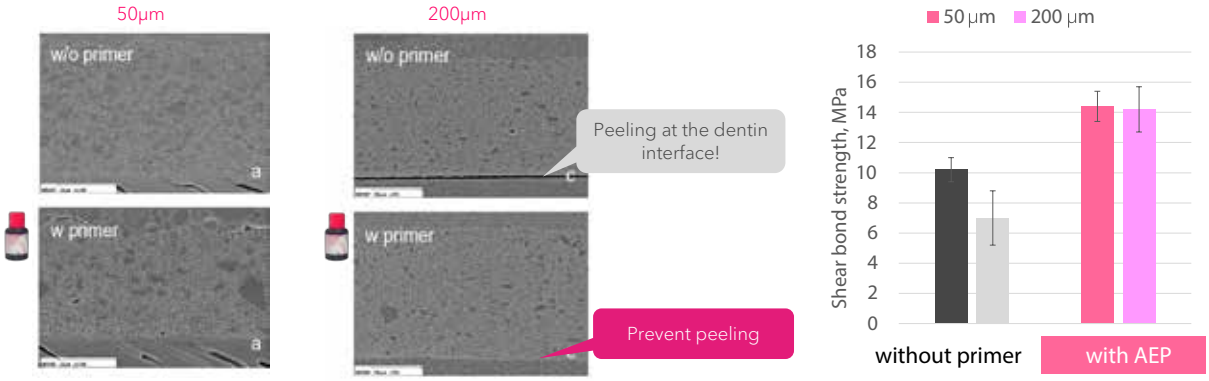


Figure 29. SEM pictures of G-CEM ONE with or without G-CEM ONE Adhesive Enhancing Primer depending on cement thickness, and impact on the shear bond strength
Source: Bonding characteristics of self-adhesive resin cement utilizing tooth primer for reinforced of adhesion. Dec.2016, JSAD (Japan Society for Adhesive Dentistry), Hokkaido, Japan, H. Kurokawa, M. Miyazaki, Nippon Univ.

Without primer, the bond strength is impacted by the cement thickness by decreasing from 200µm to 50µm. A peeling effect is visible on the dentin interface, leading to potential debonding. When AEP is used, the bond strength is not influenced by the thickness of the cement layer and no delamination happens with thicker cement layer.

6.2.5 Effect of Touch-cure on bond strength in moist environment

Thanks to the initiators used, G-CEM ONE by itself features a strong self-curing technology, generating much more radicals for high self-polymerisation. As a drawback, the initiators prevent radical generation in moist environments.

Figure 30. Radical formation explanation in presence of water in conventional resin cement

With G-CEM ONE Adhesive Enhancing Primer, not only the initiators accelerate the self-curing ability, they also enable the generation of a large number of radicals in a moist environment such as the oral environment.

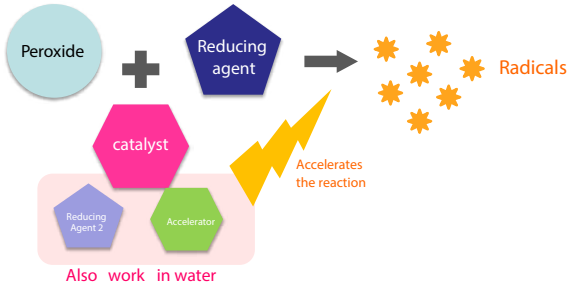


Figure 31. Radical formation explanation in presence of water in G-CEM ONE

Thanks to the use of the Adhesive Enhancing Primer, G-CEM ONE can be used without moist isolation, without compromising on the bond strength and on the restoration durability.

Saliva contamination

Test method: Bovine dentin specimens were embedded in GC UNIFAST™ II and were polished with P600 SiC paper. Then, human saliva was applied to the surface and specimens were air dried 5 sec.
No chemical pre-treatment was applied. The bonded area was 3 mm in diameter and 100µm thickness, attached with Teflon tape. Stainless steel rods were cemented with the respective cement. Pressure was applied with 10N for 10seconds. Excess cement was removed without light irradiation and specimens were stored at 37°C for 5 min 100%R.H. or for 1h at 37°C 100%R.H. followed by 23hrs at 37°C water. Shear bond strength was measured by autograph (crosshead speed 1mm/min).

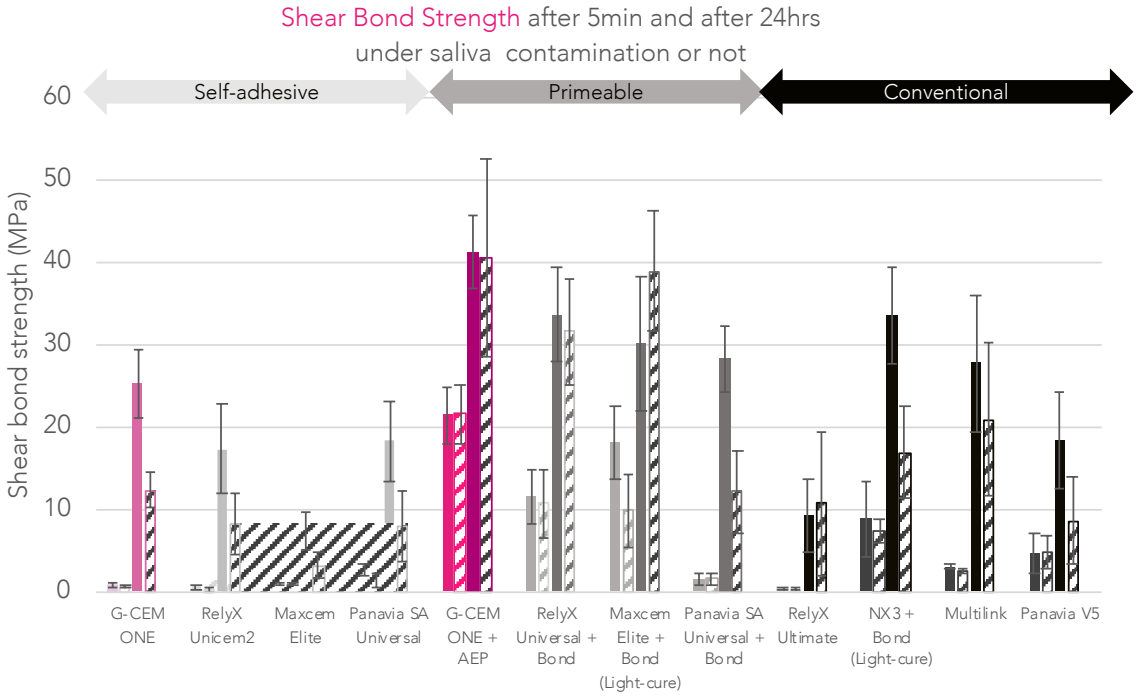


Figure 32. Shear bond strength to bovine dentin before and after thermocycling under saliva contamination or not

G-CEM ONE is not sensitive to saliva contamination and reaches excellent bond strength while using G-CEM ONE Adhesive Enhancing Primer.

6.3 Combining G-CEM ONE with G-Premio BOND

G-Premio BOND: Universal adhesive

In the aim of enhancing the adhesion, GC opened the G-CEM ONE system with the optional use of G-Premio BOND. G-Premio BOND is a universal adhesive that can be used for direct cases, intraoral repairs, hypersensitivity treatment and indirect cases.

In case of non-retentive restorations, a dentist can opt for a fully adhesive protocol when using G-CEM ONE. The two options are G-CEM ONE Adhesive Enhancing Primer or G-Premio BOND. The benefits of using G-Premio BOND are:

- Open system: 1 bonding for all your workflows, ideal if you are already using G-Premio BOND
- Reduced inventory
- Universal bonding solution
- Control of working time with light-curing (excellent for luting veneers)
- Long-term evidence of bonding system

G-CEM ONE
Self-adhesive resin cement

Highly efficient initiator system for reliable self-curing

+

G-Premio BOND
Universal bonding agent

Figure 33. G-CEM ONE in combination with G-Premio BOND

Composition of G-Premio BOND

The composition of G-Premio BOND provides worry-free luting due to its 3 functional monomers for optimal bond strengths to any substrate.

MDP bonds to tooth structure, non-precious metal

4-MET bonds to tooth structure

MDTP bonds to precious metal

Solvent: **Acetone**

Silicon dioxide

Figure 34. Functional components of G-Premio BOND

4-MET (4-methacryloyloxyethyl trimellitic acid) and MDP (methacryloyloxydecyl dihydrogen phosphate) assure adhesion to enamel and dentin tissues, since the phosphoric acid and carboxylic acid functional groups of those monomers can chemically bond to calcium. Apart from bonding to tooth structure, MDP provides further adhesion to resin core build-up and non-precious metal core through bonding of the phosphoric acid group with silicic acid groups, zirconia and non-precious metal oxides, respectively. Comparatively, MDTP (methacryloyloxydecyl dihydrogen thiophosphate) provides adhesion to precious metal cores through chemical bonding of sulphur to precious metals such as gold, platinum and palladium.
Hence, G-Premio BOND is designed to fit all tooth substrates.

Simple Protocol

G-Premio BOND is compatible with the practitioner's choice of an etching mode: self-etching, selective etching of enamel or total etch can be used (36). This allows to adapt to the type of preparation to be restored. In general, etching of enamel has been shown to be of interest in particular, preparations involving mainly enamel. Specifically, in preparations for veneer or table tops, the etching of dentin does not seem to have a significant influence on the bond strength, whilst it could also induce post-operative sensitivity in vital teeth. Therefore, selective etching would be recommended when possible.

Figure 35. Visualization of different etching techniques when using G-Premio BOND

G-Premio BOND application steps go as follows: apply, wait for 10 seconds, dry with maximum air pressure and light-cure (see below table for light-curing time).

Apply G-Premio BOND. Wait 10 seconds.

Dry with MAXIMUM AIR PRESSURE for 5 seconds.

Light cure for 10 seconds (Halogen/LED 700 mW/cm²)

Irradiation time	G-Premio Bond	G-CEM ONE
Halogen / LED (more than 1200 mW/cm²)	5 seconds	10 seconds
Halogen / LED (700-1200 mW/cm²)	10 seconds	20 seconds

Figure 36. Step-by-step of G-Premio BOND on tooth

6.3.1 Impact of using G-Premio BOND with G-CEM ONE on the shear bond strength to enamel

Shear bond strength to Enamel

Test method: Bovine enamel specimens were polished with P600 SiC paper. The gold specimens were polished with P120 SiC paper and sandblasted with 0,4MPa Alumina. No chemical pre-treatment was applied. The bonded area was 3 mm in diameter and 100µm thickness, attached with Teflon tape. Stainless steel rods were cemented with the respective cement. Pressure was applied with 10N for 10seconds. Excess cement was removed without light irradiation and specimens were stored at 37°C for 1h (self-cure mode). Shear bond strength was measured at 24 hours from start of mix. Thermocycling was measured after 24 hours immerse in 5°C and 55°C water for 30 sec each for 5.000 times.

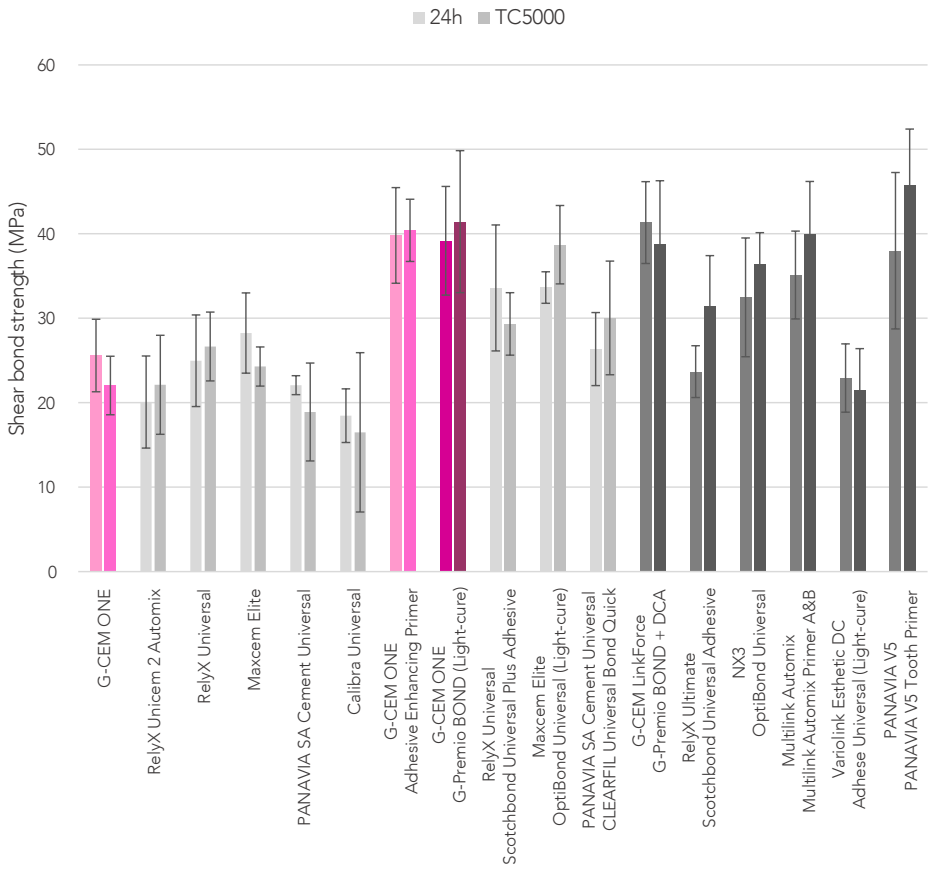


Figure 37. Shear bond strength to bovine enamel before and after thermocycling for G-CEM ONE syringe + G-Premio BOND and competition

6.3.2 Impact of using G-Premio BOND with G-CEM ONE on the shear bond strength to dentin

Shear bond strength to Dentin

Test method: Bovine dentin specimens were polished with P600 SiC paper. The gold specimens were polished with P120 SiC paper and sandblasted with 0,4MPa Alumina. No chemical pre-treatment was applied. The bonded area was 3 mm in diameter and 100µm thickness, attached with Teflon tape. Stainless steel rods were cemented with the respective cement. Pressure was applied with 10N for 10seconds. Excess cement was removed without light irradiation and specimens were stored at 37°C for 1h (self-cure mode). Shear bond strength was measured at 24 hours from start of mix. Thermocycling was measured after 24 hours immerse in 5°C and 55°C water for 30 sec each for 5.000 times.

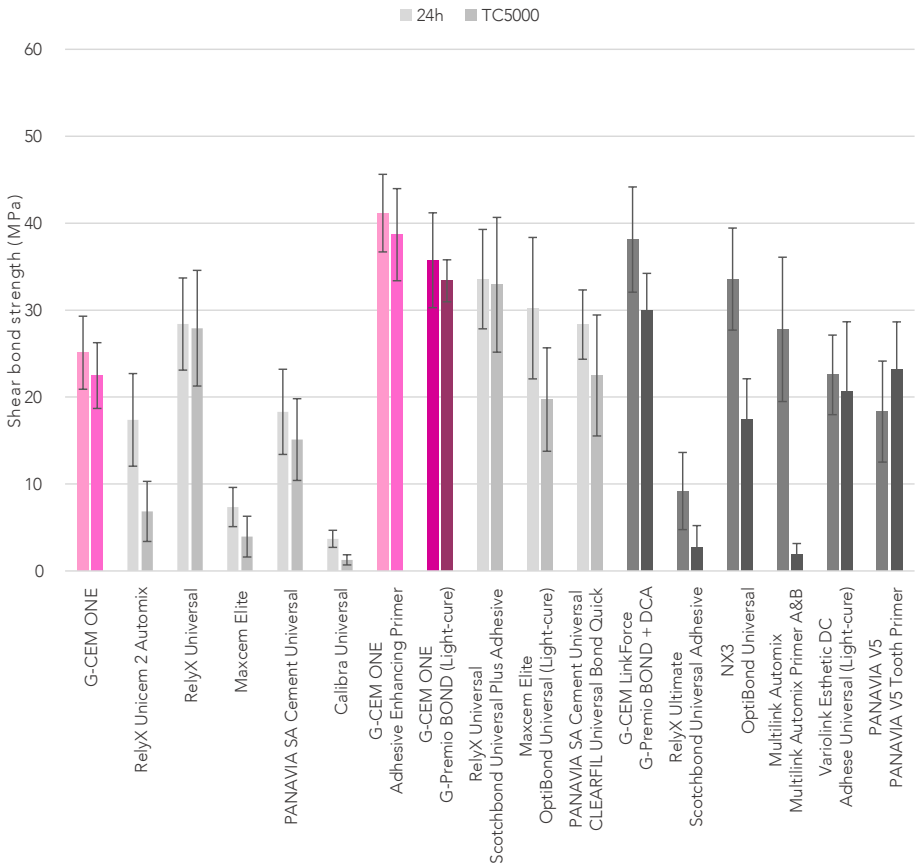


Figure 38. Shear bond strength to bovine dentin before and after thermocycling for G-CEM ONE syringe + G-Premio BOND and competition

The above data demonstrates the high performance of G-CEM ONE in combination of G-Premio BOND in challenging situations, thanks to the increased bond strength generated by the adhesive. As an example, G-Premio BOND is ideal on dentin for renewal of old crowns or limited height abutment; whereas on enamel, it is perfect for veneer or onlay.

6.3.3 Impact of G-Premio BOND to immediate shear bond strength

Immediate bond strength to Dentin

Test method: Bovine dentin specimens were polished with P600 SiC paper. The gold specimens were polished with P120 SiC paper and sandblasted with 0,4MPa Alumina. No chemical pre-treatment was applied. The bonded area was 3 mm in diameter and 100µm thickness, attached with Teflon tape. Stainless steel rods were cemented with the respective cement. Pressure was applied with 10N for 10seconds. Excess cement was removed without light irradiation and specimens were stored at 37°C for 5 minutes (self-cure mode). Shear bond strength was measured.

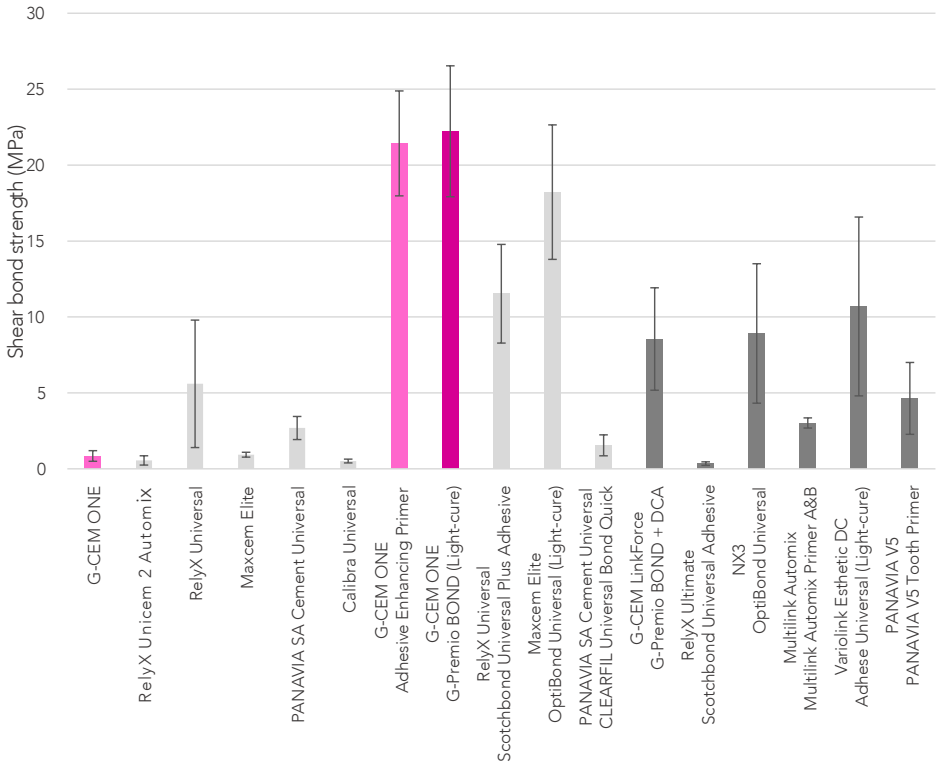


Figure 39. Immediate shear bond strength to bovine dentin for G-CEM ONE syringe + G-Premio BOND and competition

The above data demonstrates the high performance of G-CEM ONE in combination of G-Premio BOND immediately after the cementation procedure. The data shows high reliability of the system which ensures high immediate bond strengths and therefore minimizes the risk of early debonding of the restorations.

6.3.4 Use of G-Premio BOND with G-CEM ONE in moist environment

Shear bond strength to Dentin in moist environment

Test method: Bovine dentin specimens were polished with P600 SiC paper. The gold specimens were polished with P120 SiC paper and sandblasted with 0,4MPa Alumina. No chemical pre-treatment was applied. Human saliva was applied to the surface to be adhered and dried with light air for 5 seconds. The bonded area was 3 mm in diameter and 100µm thickness, attached with Teflon tape. Stainless steel rods were cemented with the respective cement. Pressure was applied with 10N for 10seconds. Excess cement was removed without light irradiation and specimens were stored at 37°C for 1h (self-cure mode). Shear bond strength was measured at 5 minutes and 24 hours from start of mix.

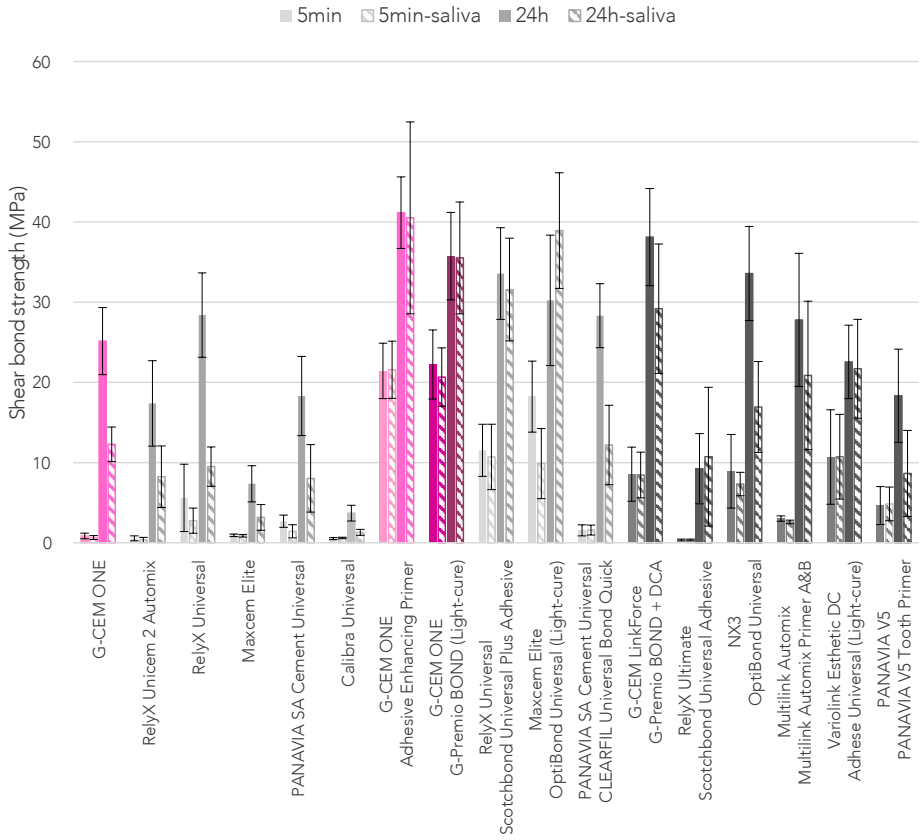


Figure 40. Shear bond strength to bovine dentin in moist environment for G-CEM ONE syringe + G-Premio BOND and competition

The above data demonstrates the high performance of G-CEM ONE in combination of G-Premio BOND even in moist environment. While absolute isolation is always recommended, the data suggests that the combination of G-CEM ONE and G-Premio BOND provides good adhesion under contamination of the bonding surface with saliva.

6.4 Long-lasting aesthetic properties Long-lasting aesthetic properties

6.4.1 Wear resistance

The durability of a luting restoration is mainly based on the resistance of wearing of the cement.
Poor wear resistance of some dual-cure materials can lead to gap formation, plaque accumulation, marginal degradation and chipping of enamel and ceramic over time.

Source: Peumans M, Voet M, De Munck J, Van Landuyt K, Van Ende A, Van Meerbeek B. Four-year clinical evaluation of a self-adhesive luting agent for ceramic inlays. Clin Oral Investig. 2013;17(3):739-750. doi:10.1007/s00784-012-0762-9

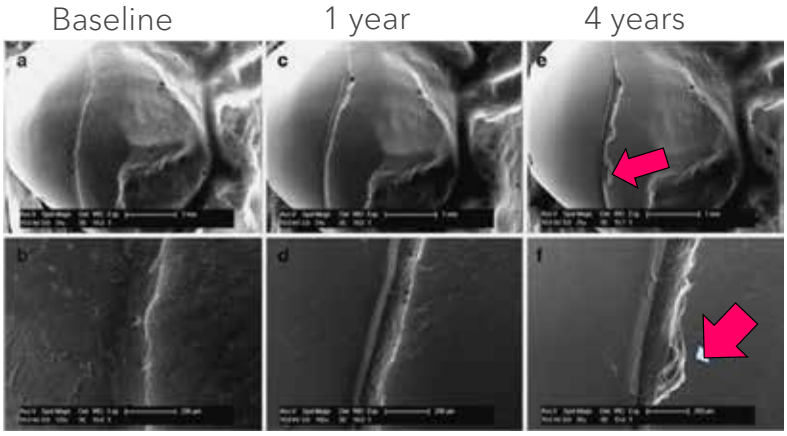
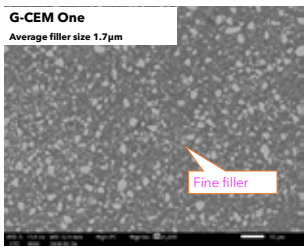


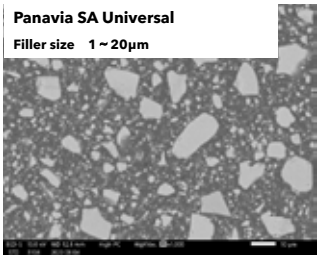
Figure 41. Crack increase over the years due to wear of self-adhesive resin cement

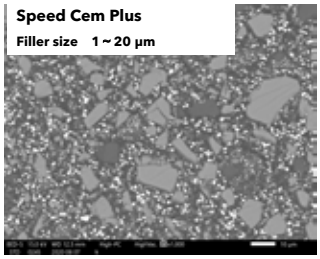
Figure 42. Marginal gap formation over the years due to wear of self-adhesive resin cement

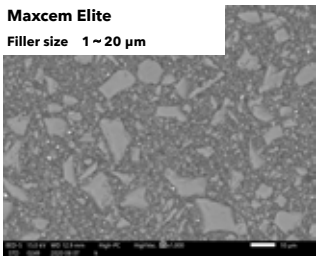
In order to obtain a good wear resistance, it is important to reach a low filler size and high filler rate. G-CEM ONE features both parameters.

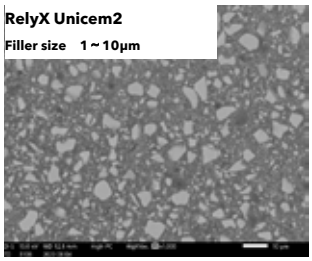


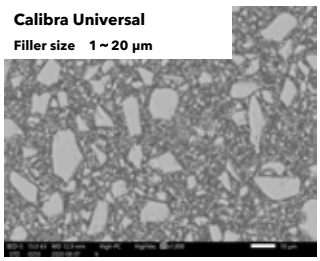
Self-Adhesive resin cement



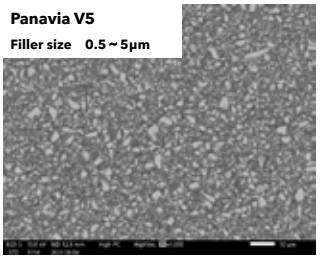


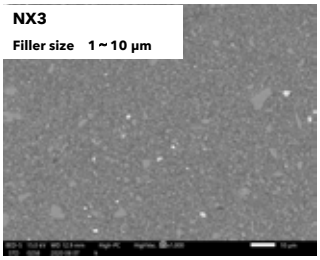


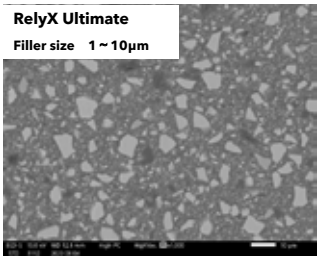




Conventional non self-adhesive resin cement







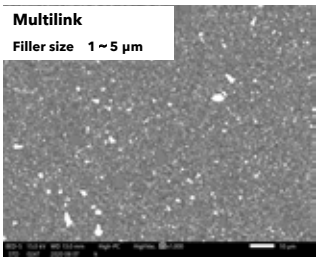


Figure 43. Filler pictures of different luting cement in comparison with G-CEM ONE

G-CEM ONE offers unsurpassed wear resistance due to its small and homogeneously distributed filler particles of 1,7µm.

Wear depth

Test method: Specimens consist of PMMA beads and glycerine slurry
Load of 300g was applied, up and down, left and right 100,000 times

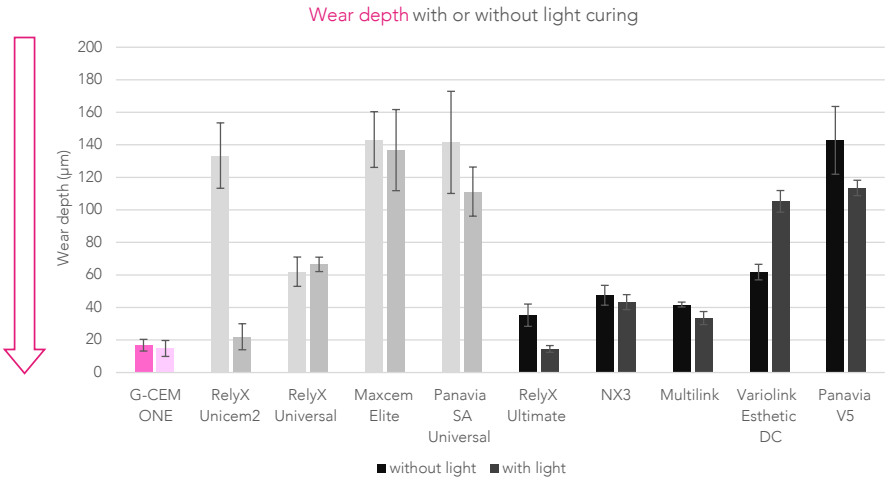


Figure 44. Wear depth of different cements with or without light curing

G-CEM ONE demonstrated a low wear, both with or without curing of the cement, enabling a long lasting aesthetic restorations.

6.5 Features summary

G-CEM ONE is positioned as a universal and flexible solution for dentist, for day-to-day luting restoration, as well as for high aesthetic demand.

- Thanks to the possibility of using it in combination with G-CEM ONE Adhesive Enhancing Primer or G-Premio BOND, it becomes **versatile** – and enables to cover 100% of luting cases a dentist can face
- It is a **simple & easy to use**, thanks to a standardized workflow to be applied in all cases
- **Very good self-cure properties** for long lasting restoration and practitioner peace-of-mind
- The optional G-CEM ONE Adhesive Enhancing Primer procures **strong bond** and safety feeling when needed
- Thanks to its early bond strength (CAD/CAM, early debonding) and moisture tolerance, G-CEM ONE is not **technique sensitive**
- It fits to **aesthetic needs** with 4 shades and high wear resistance to cover all cases
- It is Indicated for hybrid ceramics such as CERASMART270

G-CEM ONE is the universal luting solution to all adhesive situations with high reliability.

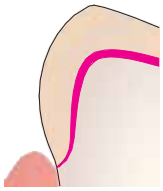
7 Step by step

Before using G-CEM ONE, always refer to the instruction for use for a correct usage of the product.

7.1 Use of G-CEM ONE Adhesive Enhancing Primer or G-Premio BOND and G-Multi PRIMER

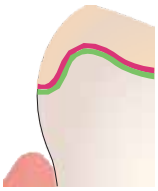
When to use G-CEM ONE ADHESIVE ENHANCING PRIMER?

Retentive preparation



Adherend	Primer Needed
Metal, Zirconia, ceramics, fiber posts	X
Hybrid ceramics, Composite	√

Non - Retentive preparation



Adherend	Primer Needed
Metal, Zirconia, ceramics, fiber posts	√
Hybrid ceramics, Composite	√

The use of G-CEM ONE Adhesive Enhancing Primer or G-Premio BOND is needed in case of low or non-retentive preparations. The fully adhesive protocol will help the early bond strength and be beneficial in case of doubt or in case of low retention.

As the use of G-CEM ONE Adhesive Enhancing Primer will act on the polymerisation phase, it is important to remember that it will logically also act on the working time.

Working time	Without AEP	With AEP
23 Degree C	2'40"	2'10"
37 Degree C	0'60"	0'50"

When to use G-Multi PRIMER?

Adherend	G-Multi PRIMER
Metal, Zirconia,	X
Ceramics, Fiber posts, Hybrid ceramics, Composite	√

G-Multi PRIMER contains functional monomers to bond to every restoration: silane is added to bond to glass ceramics, hybrid ceramics and composites fillers, while MDP will ensure adhesion to zirconia, alumina and non-precious metals and MDTP will ensure a strong adhesion to precious metal.
In the case of G-CEM ONE, the syringe already contains MDP and so, G-Multi PRIMER is not needed onto the restoration. It is required to use Silane-containing primer such as G-Multi PRIMER for glass ceramics, fiber posts, hybrid ceramics and composites.

7.2 Cementation technique for inlays, onlays, crowns, bridges and veneers

Before placing the mixing tip, check the two openings of the syringe to ensure that the pastes are at same level or bleed a small amount of pastes to ensure even flow from the syringe.

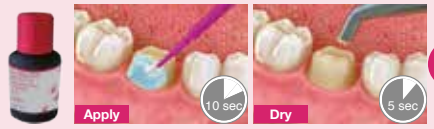
G-CEM ONE™ TECHNIQUE GUIDE

CEMENTATION TECHNIQUE for inlays, onlays, crowns, bridges and veneers

Tooth Preparation

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

When more adhesion is needed



2A. Apply **G-CEM ONE ADHESIVE ENHANCING PRIMER**, wait 10 seconds, and dry with MAXIMUM air pressure for 5 seconds to prevent liquid pooling in the gingival sulcus**. **Light-cure is NOT needed.**

or

2B. After **shaking the bottle**, apply **G-Premio BOND**, wait 10 seconds, and dry with MAXIMUM air pressure for 5 seconds to prevent liquid pooling in the gingival sulcus**and **light-cure**. See the below table for the irradiation time.

* In case of veneer or onlay cementation, etch enamel with 35-40% phosphoric acid for 10-15 seconds and carefully rinse off.

Restoration Preparation

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

4. Place the mixing tip and extrude the material directly into the restoration.

Cement Application

5. Seat immediately and maintain moderate pressure. Working time is 2 minutes 45 seconds at 23°C (which is reduced when **G-CEM ONE ADHESIVE ENHANCING PRIMER** is used).

6A. Tack cure by waving the light guide of a curing light over the excess cement **for 1 second** until it reaches a rubbery consistency.

or

6B. Keep moderate pressure until it reaches a solid rubbery consistency.

7. Remove excess cement while maintaining moderate pressure.

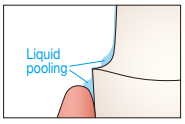
8A. While maintaining moderate pressure, light cure all surfaces /margins.

or

8B. Let the material set for 4 minutes in case restoration does not let the light to pass through.

Irradiation time	G-Premio BOND	G-CEM ONE
High power LED (more than 1200 mW/cm²)	5 seconds	10 seconds
Halogen / LED (700-1200 mW/cm²)	10 seconds	20 seconds

** Liquid pooling in the gingival sulcus



▶ Find the step-by-steps for all your cementations on GC Luting Guide

Download on the App Store
GET IT ON Google Play

Consult Instructions for Use

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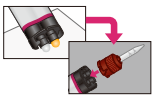
041122SK

7.3 Cementation technique for metal, ceramic, fiber posts and cast post and cores

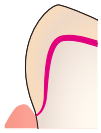
G-CEM ONE™ TECHNIQUE GUIDE



Before placing the mixing tip, check the two openings of the syringe to ensure that the pastes are at same level or bleed a small amount of pastes to ensure even flow from the syringe.

When to use G-CEM ONE ADHESIVE ENHANCING PRIMER (AEP) or G-Premio BOND? (ONLY for tooth/abutment: See opposite side for procedures.)

Retentive preparation



Substrate of restoration	AEP or G-Premio BOND
Metal, Zirconia, Ceramics	Optional
Hybrid Ceramics, Composite	Mandatory ✓

Non-retentive preparation

Substrate of restoration	AEP or G-Premio BOND
Metal, Zirconia, Ceramics	Mandatory ✓
Hybrid Ceramics, Composite	Mandatory ✓

When to use G-Multi PRIMER? (ONLY for restoration)

Substrate of restoration	G-Multi PRIMER
Metal, Zirconia	Optional*
Ceramics, Fiber Post, Hybrid Ceramics, Composite	Mandatory ✓

*G-CEM ONE cement contains MDP, so G-Multi PRIMER is optional for metal and zirconia.

CEMENTATION TECHNIQUE for metal, ceramic, fiber post and cast post & cores

1. Clean and rinse the post space, then thoroughly dry using paper points. Do NOT use H_2O_2 and/or EDTA to chemically clean the post space.

When more adhesion is needed

2. When more adhesion is needed, apply **G-CEM ONE ADHESIVE ENHANCING PRIMER**, wait 10 seconds, and dry with MAXIMUM air pressure until the primer solution does not come out of the root canal entrance anymore. Remove excess primer solution with paper points. Do NOT use G-Premio BOND in this case.

3. Prepare the post/core according to the manufacturer's instructions.

4. Extrude the material directly into the post space. Insert the post immediately into the post space within 1 minute after cement application.

5. Continue to maintain moderate pressure making sure the post remains in place and remove excess cement.

6. While maintaining moderate pressure, light cure all surfaces / margins.

7. Let the material set for 4 minutes.

Irradiation time	G-CEM ONE
High power LED (more than 1200 mW/cm^2)	10 seconds
Halogen / LED (700-1200 mW/cm^2)	20 seconds

8 Clinical cases

8.1 Individual zirconia crowns in anterior area

by Dr. Lampson Christian, Germany

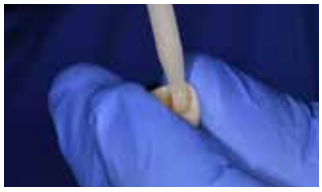
The patient needed dental treatment after a hoof strike with trauma of the upper anterior teeth as a result. Tooth 21 could not be preserved; tooth 22 required endodontic treatment and a core build-up with a glass fibre post. It was planned to restore teeth 11, 12, 22 and 23 with zirconia crowns, an implant at the site of tooth 21 and a direct restoration on tooth 13.

1. *Situation before cementation with the temporary crowns in situ.*

2. *After removal of the temporary restorations.*

3. *The preparations were cleaned with a pumice slurry.*

4. *After cleaning, the preparations were abundantly rinsed and dried.*



5. *Application of G-CEM ONE (GC) self-adhesive resin cement (Shade A2) into the zirconia crowns.*

6. *Cementation of the crowns on teeth 22 and 23.*

7. *Tack-curing of the cement with the curing light.*

8. *Excess was easily removed with a scaler.*

9. *Interproximal clean-up with dental floss.*

10. *Final result directly after cementation*

11. *Intraoral view at follow-up, showing lifelike aesthetics and healthy gingival aspect.*

8.2 Posterior restoration made of Initial LiSi Block crown, luted with G-CEM ONE

by Dr. Claudia Mazzitelli, Italy

The patient presented to the practise experiencing discomfort during chewing and hypersensitivity to cold in the first quadrant.

1 *Pre-operative view*

2. *Teeth 15,16 and 17 after removal of old restorations and caries.*

3. *The teeth were built up again with composite and prepped for minimally invasive lithium disilicate restorations.*

4. *With Initial LiSi Block, beautiful and strong restorations can be milled quickly.*

5. *The optional G-CEM ONE Adhesive Enhancing Primer accelerates the polymerization and enhances the self-curing ability.*

6. *G-CEM ONE is applied to the inner surface of the crown that was pretreated in accordance with the IFU.*

7. *Excess cement is cleaned up fast.*

8. *Post-operative view. Naturally beautiful.*

8.3 Anterior lithium disilicate veneers

by Dr. Roberto Sorrentino, Italy

Anterior veneers were luted with G-CEM ONE according to a fully adhesive protocol with G-Premio BOND. 18-month follow-up was done where good functional and aesthetic outcome was observed.

1. *Pre-operative view*

2. *After preparation*

3. *Luting with G-CEM ONE and G-Premio BOND*

4. *Post-operative view*

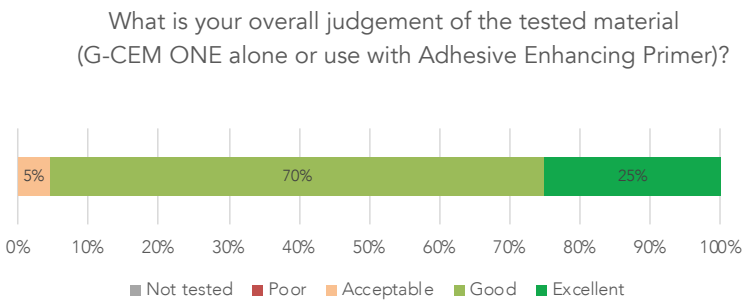
5. *18 months follow-up*

9 Clinicians' evaluation

Based on the survey prior to launch, 45 dentists have been invited to test G-CEM ONE and G-CEM ONE Adhesive Enhancing Primer and to give anonymous feedback from September to November 2020.
Answers were collected and treated in a confidential manner to guarantee honest replies.

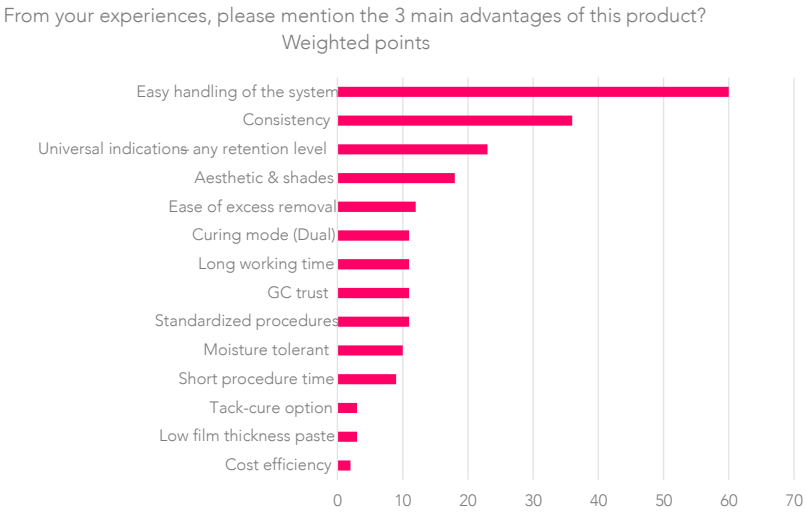
Source: Survey Monkey, G-CEM ONE Field test 27/11/2020, N=45 respondents

G-CEM ONE & G-CEM ONE Adhesive Enhancing Primer overall judgment



95% of the respondents are satisfied with G-CEM ONE system (with or without G-CEM ONE AEP).

Main product features for clinicians



Based on opened responses, TOP 3 products advantages are:

- Ease of handling
- Consistency
- Versatility of the indications

10 Packaging

10.1 Packaging description

G-CEM ONE is available in several different packaging and refills, to answers all the practitioners needs.

10.1.1 Kit description

G-CEM ONE System kit

Content: 1x G-CEM ONE Syr. A2 (4,6g), 1x G-CEM ONE Syr. TR (4,6g), 15x GC Automix Tips Regular, 5x GC Automix Tip for endo with extension tips, 1x G-CEM ONE Adhesive Enhancing Primer 4mL, 1x G-Multi PRIMER 4mL

G-CEM ONE Starter kit

Content: 1x G-CEM ONE Syr. A2 or Translucent (4,6g), 8x GC Automix Tips Regular, 2x GC Automix Tip for endo with extension tips, 1x G-CEM ONE Adhesive Enhancing Primer 2mL

G-CEM ONE Universal System kit

Content: 1x G-CEM ONE Syr. A2 (4,6g), 1x G-CEM ONE Syr. TR (4,6g), 15x GC Automix Tips Regular, 5x GC Automix Tip for endo with extension tips, 1x G-Premio BOND 5mL, 1x G-Multi PRIMER 4mL

G-CEM ONE Universal Starter kit

Content: 1x G-CEM ONE Syr. A2 or Translucent (4,6g), 8x GC Automix Tips Regular, 2x GC Automix Tip for endo with extension tips, 1x G-Premio BOND 5mL

10.1.2 Refills description

G-CEM ONE Adhesive Enhancing Primer

Content: 1x G-CEM ONE Adhesive Enhancing, Primer 4mL

G-CEM ONE Twin refill

Content: 2x G-CEM ONE Syr. A2 or Translucent (4,6g), 15x GC Automix Tips Regular, 5x GC Automix Tip for endo with extension tips

G-CEM ONE Single refill

Content: 1x G-CEM ONE Syr. AO3 or White Opaque (4,6g), 8x GC Automix Tips Regular, 2x GC Automix Tip for endo with extension tips

10.2 Product codes

Please refer to your GC sales representatives or to your dealer to find more information related to pricing.

WEP		EEP		Product Name
SAP Art. Num. Code	S4 HANA Art. Num. code	SAP Art. Num. Code	S4 HANA Art. Num. code	
013661	10006918	013683	10006927	G-CEM ONE Starter Kit A2
013662	10006919	013684	10006928	G-CEM ONE Starter Kit Translucent
013663	10006920	013685	10006929	G-CEM ONE System Kit
014543	10037114	014547	10037118	G-CEM ONE Universal Starter Kit A2
014544	10037115	014548	10037119	G-CEM ONE Universal Starter Kit Translucent
014545	10037116	014549	10037120	G-CEM ONE Universal System Kit
013664	10006921	013686	10006930	G-CEM ONE Twin Refill A2
013665	10006922	013687	10006931	G-CEM ONE Twin Refill Translucent
013666	10006923	013688	10006932	G-CEM ONE Single Refill AO3
013667	10006924	013689	10006933	G-CEM ONE Single Refill White Opaque
013668	10006925	013690	10006934	G-CEM ONE Value Refill A2
013669	10006926	013691	10006935	G-CEM ONE Value Refill Translucent
013640	10006833	013641	10006834	G-CEM ONE ADHESIVE ENHANCING PRIMER
900668	10003335	900668	10003335	GC Automix Tip Regular, 10pcs
900495	10003289	900495	10003289	GC Automix Tip for Endo, 10pcs
012694	10001461	012695	10001462	GC G-Premio BOND, Bottle Refill, 5ml

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