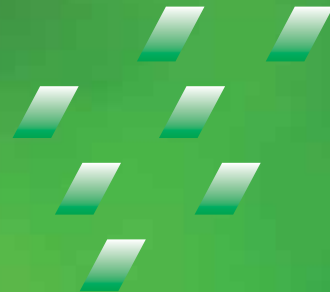


Unmatchable

GRADIA DIRECT ✂



./'GC./

GRADIA DIRECT gives unmatched aesthetic invisibility

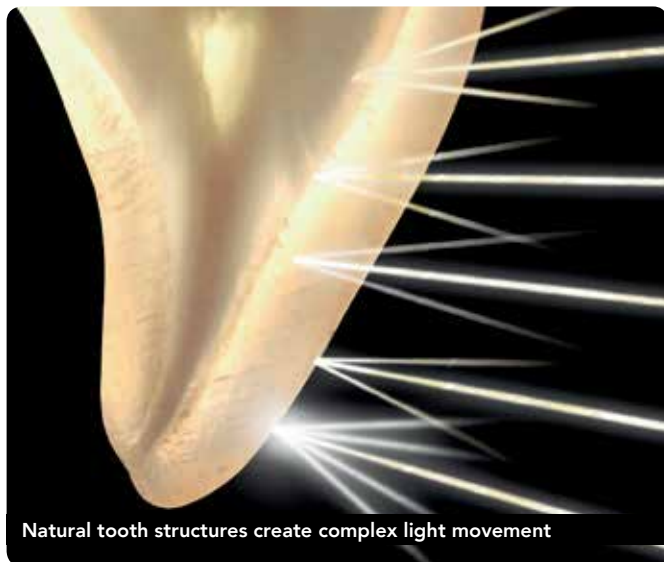


Restorations placed using GRADIA DIRECT X achieve unmatched aesthetic invisibility through a remarkable chameleon effect. 90% of restorations can be completed using a single shade.

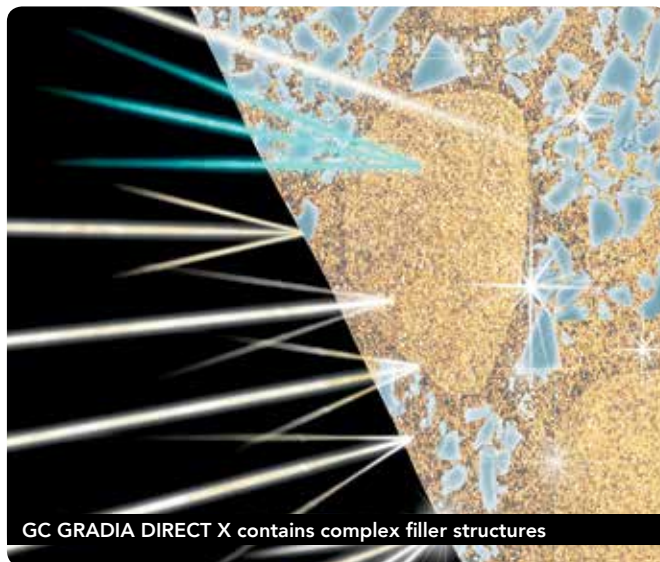




The intelligent use of diverse filler technologies within GRADIA DIRECT X means exceptional aesthetic outcomes can be achieved through a simplified shade system, with minimal need to undertake layering techniques.



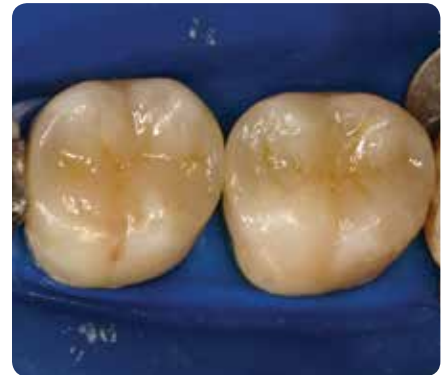
Light movement through natural teeth is highly diverse due to the complex multifaceted structures within teeth.



To replicate the aesthetic properties of natural teeth GRADIA DIRECT X contains nano fillers, glass fillers and pre-polymerised fillers that imitate the complex light transmission, diffusion and reflection characteristics found in natural teeth.

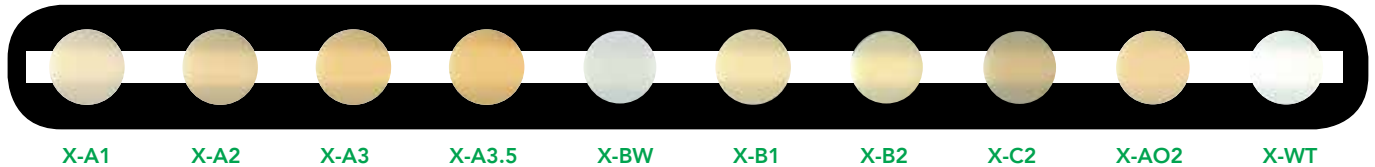
Unmatchable simplicity

GRADIA DIRECT X is designed with the clinician foremost in mind. A strong, radiopaque anterior/posterior composite with exceptional beauty... yet shade selection is remarkably simple. With an optimal combination of handling and finishing characteristics, placement time is minimised and the final high quality restorations are achieved with unmatched ease.



Dr. L. Harris

A simplified shade range allowing the majority of restorations to be completed using a single layer technique.



Unmatchable handling



Optimal adaptation

GRADIA DIRECT X has just the right amount of flow under pressure, ensuring intimate contact with the cavity walls and floor, for the best possible adhesive interface and marginal adaptation.



Total control, even with a brush

GRADIA DIRECT X is easy to manipulate and can even be brush contoured. It won't stick or slump or set up prematurely under the overhead light, giving total control to the clinician.



Self correcting surface

Free-hand contouring is made easier with a remarkable self-correcting feature where small surface voids and imperfections simply vanish leaving a smooth and naturally contoured surface.

Dr R Lowe

A beautiful polish



Polishing with a rubber point under water spray



Final polish with a diamond polisher at low speed



Optional high gloss buff with a diamond polishing paste at low speed

Dr K Kojimura

GRADIA DIRECT X, G-BOND and Fuji IX_{GP} EXTRA. Perfect partners for the sandwich technique.

Fuji IX_{GP} EXTRA provides strong adhesion, effective sealing of dentine and foundation support for the remaining restoration.

G-BOND links the components together by chemically bonding GRADIA DIRECT X to the glass ionomer cement foundation, the etched enamel margins and any remaining dentine that's not covered by gic.



1. Cavity preparation. A thin layer of affected dentine has been left directly over the pulp horn to avoid a potential exposure.



2. Enamel margins are selectively etched with 37% phosphoric acid gel for 15 seconds and rinsed.



6. Technique option. A thin layer of radio-opaque flowable composite can be placed over all internal surfaces to ensure optimal adaptation of composite resin to the bonded surfaces.



7. GRADIA DIRECT X is placed in incremental layers to reduce polymerisation shrinkage stress.



3. The dentine is conditioned with GC CAVITY CONDITIONER (20% polyacrylic acid, 3% Aluminium Chloride) for 10 seconds, rinsed and gently dried.



4. Fuji IXGP EXTRA is carefully injected onto the conditioned dentine to form the foundation for the sandwich technique. Fuji IXGP EXTRA will chemically bond and seal the dentine surfaces and help stimulate remineralisation of the affected dentine.



5. G-BOND is applied to all surfaces for 5-10 seconds, vigorously air thinned and light cured for 10 seconds. G-BOND will chemically bond to glass ionomer cement, etched enamel and any remaining dentine not covered by gic.



8. Completed composite build up using GRADIA DIRECT X shade A2 overlaid with shade A1.



9. Good matrix selection and careful composite placement mean minimal finishing and polishing.



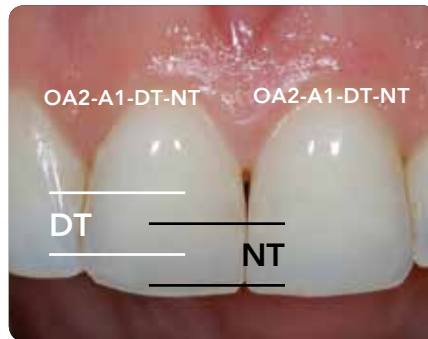
10. The completed restoration using a closed sandwich technique.

GRADIA DIRECT



An anterior composite restorative with remarkable aesthetics. GRADIA DIRECT is designed for clinicians who desire the highest level of aesthetic outcome in anterior restorations.

A chameleon effect that gives you impressive shade matching ability



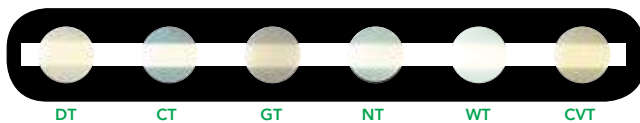
Dr N Faces

A standard shade range with exceptional aesthetics. 90% of procedures can be completed with a single shade



Outside special shades

match variations in enamel translucency and value



Inside special shades

to block shine through



NB. GRADIA DIRECT is not suitable for restorations where radiopacity is required

Physical properties

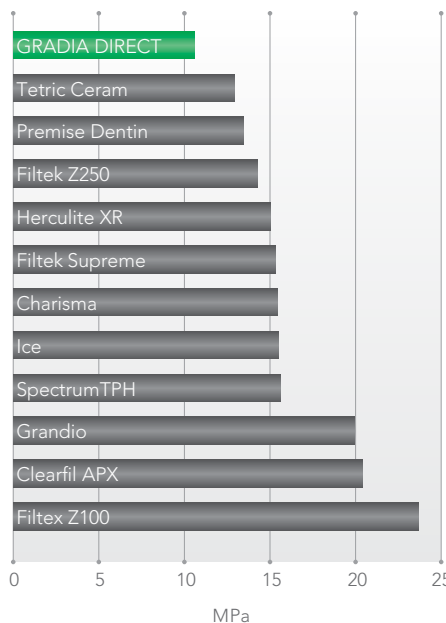
Low polymerisation shrinkage stress

GRADIA DIRECT and GRADIA DIRECT X have minimal shrinkage stress due to their combination of low polymerisation shrinkage and low modulus of elasticity (ie a more flexible and less brittle composite). The low shrinkage is achieved through an optimised resin formulation and the use of new generation pre-polymerised fillers. GRADIA DIRECT composite has been confirmed as the benchmark for low shrinkage stress through a number of independent evaluations.

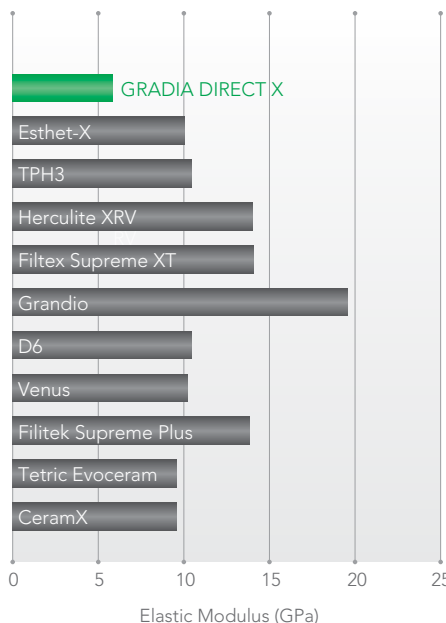
High Fracture toughness

The combination of optimised resin and new filler technologies gives strength to GRADIA DIRECT X and high fracture toughness.

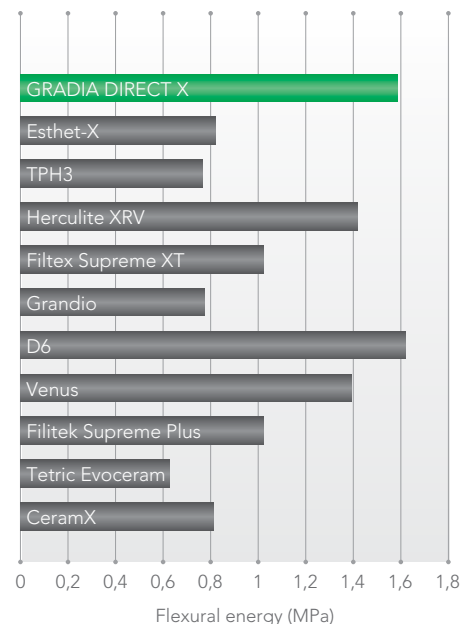
Polymerisation shrinkage stress of nanofilled and hybrid composite resins



Modulus of elasticity



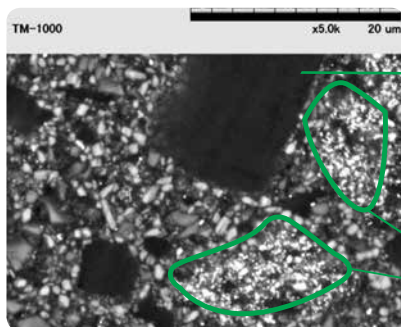
Fracture toughness



Q&A

Q How was the combination of translucency, chameleon effect and radiopacity achieved in GRADIA DIRECT X?

A GRADIA DIRECT X has pre-polymerised fillers containing lanthanoid fluoride nano-particles. The pre-polymerised fillers contribute significantly to the chameleon effect, while the lanthanoid fluoride fillers allow good transmission of light (translucency) while blocking x-rays (radiopacity). GRADIA DIRECT X also contains silica nano-particles, pre-polymerised fillers containing silica nano-particles and fluoroaluminosilicate glass fillers.



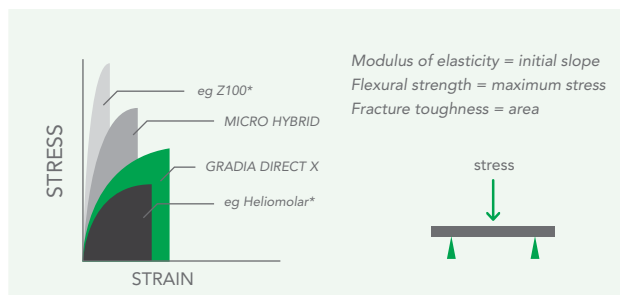
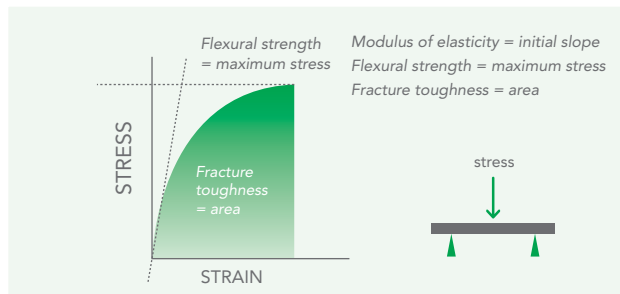
Silica nano-particle containing pre-polymerised fillers

Lanthanoid fluoride containing pre-polymerised fillers

Q What is the benefit of GRADIA DIRECT X having a lower modulus of elasticity and flexural strength with a higher fracture toughness?

A An important strength characteristic in composite is fracture toughness and, compared to traditional hybrid composite materials, GRADIA DIRECT X has high fracture toughness. GRADIA DIRECT X is also designed to be more flexible than other hybrids, ie a lower modulus of elasticity. The relationship of these measurements and flexural strength is seen in the diagrammatic representations following;

Mechanical properties



* Z100 and Heliomolar are not trademarks of GC Corporation

With its good fracture toughness GRADIA DIRECT X is strong and resilient. A low modulus of elasticity combined with low polymerisation shrinkage means significantly less polymerisation shrinkage stress develops during light curing. For optimal marginal adaptation, reduced microleakage and longevity of restorations this is a highly desirable combination of physical properties.

Q What is the difference between volumetric polymerisation shrinkage and polymerisation shrinkage stress?

A Volumetric shrinkage simply indicates how much a composite can shrink. Shrinkage stress is the amount of stress created as a result of polymerisation shrinkage combined with other influencing factors - eg a composite's modulus of elasticity and the nature of its polymerisation reaction. Shrinkage stress is a clinically relevant measurement and with its low volumetric shrinkage, low modulus of elasticity and optimised polymerization reaction, both GRADIA DIRECT X and GRADIA DIRECT produce low shrinkage stress.

Q How wear resistant is GRADIA DIRECT X? How well has it performed in clinical evaluations?

A It is very wear resistant. Due to the large proportion of nano-sized silica particles in GRADIA DIRECT X it has a good balance of wear resistance, minimal wear on opposing dentition and a high gloss surface polish. The Catholic University of Leuven has reported 4-year clinical results on wear of GRADIA DIRECT as part of a trial of hybrid composite materials: "The three hybrid composites showed very acceptable clinical performance and presented enamel-like quantitative wear-patterns after 4 years of clinical service."*

Q What makes GRADIA DIRECT X and GRADIA DIRECT so special?

A Many local and international evaluators, including independent review organisations have commented on GRADIA's exceptional handling and beautiful yet simple-to-achieve aesthetics. The chameleon characteristics of GRADIA DIRECT X are unmatched by any other composite and placement time is reduced thanks to uncanny handling that is both sculptable and brushable, yet never sticky. GRADIA DIRECT X is rated at the very highest level because it gives clinicians total control to achieve beautiful results simply, quickly and with greatly reduced stress.

Q How should I compare composite quantity when deciding if a composite is good value for money?

A The quantity of composite should always be measured by volume (ml) as different composites have different weight of formulation and fillers. For example, GRADIA DIRECT X syringes contain 5 grams of composite, while GRADIA DIRECT Anterior syringes contain 4 grams of composite – however both deliver exactly the same quantity of composite, 2.7ml.

*PEF IADR 2008. Abstract 0708 Clinical, quantitative and qualitative wear evaluation of hybrid posterior composites. S Palaniappan, M Peumans, B Van Meerbeek, P Lambrechts. Leuven BIOMAT Reserch Center, Catholic University of Leuven, Belgium.

GRADIA DIRECT X (Anterior/Posterior)

Standard: X-A1, X-A2, X-A3, X-A3.5,
X-BW, X-B1, X-B2, X-C2

Inside shade: X-AO2

Outside shade: X-WT

Available: In both 5 gram (2.7ml) syringes
and 0.3 gram (0.16ml) unitips



GRADIA DIRECT (Anterior)

Standard: XBW, BW, A1, A2, A3, A3.5, A4,
B1, B2, B3, C3, CV, CVD

Inside shades: AO2, AO3, AO4

Outside shades: DT, CT, GT, NT, WT, CVT

Available: In both 4 gram (2.7ml) syringes
and 0.24 gram (0.16ml) unitips



G-BOND

Intro kit contains:

- 1x 5ml bottle of G-BOND
- 50x micro-tips
- 1x micro-tip applicator
- 1x dispensing dish

Unit Dose contains:

- 50x 0.1ml Unit doses of G-BOND
- 50x micro-brush applicators



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