



# STRENGTH & ESTHETICS FOR A STRONG FOUNDATION

**GRADIA<sup>®</sup> CORE &  
GC FIBER POST**  
Core & Post Restorative System





# GRADIA® CORE

## Clinical Benefits

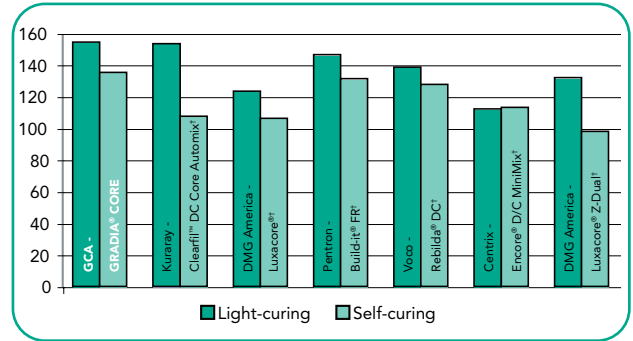
- Modulus of elasticity similar to GC FIBER POST and dentin
- High flexural and compressive strength
- Self-etching bonding system, easy mixing and handling
- Excellent flow - prevents voids in bonded post and core
- High bond strength to enamel, dentin and GC FIBER POSTS
- High microtensile strength<sup>4</sup>
- More than 3 minutes working time
- Rapid, deep dual-cure
- Cutting characteristics similar to dentin
- Radiopaque

## The Combination of GC FIBER POST and GRADIA® CORE Offers Unsurpassed Esthetics

- White translucent post optimizes esthetics, removes risk of shadowing
- Optimal light transmission through post and core for light-curing<sup>5</sup>

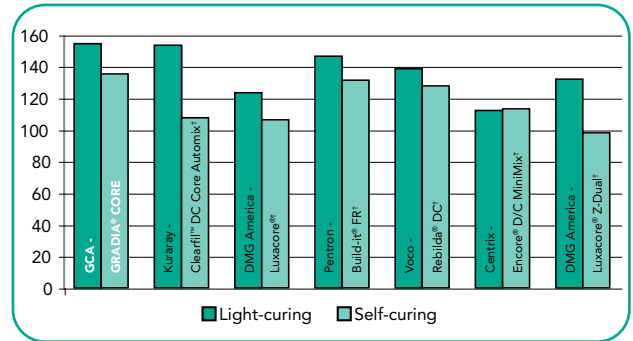
GC FIBER POST and GRADIA® CORE are both radiopaque, allowing differentiation between tooth structure, the fiber post and the composite core radiographically.

## Compressive Strength (MPa)



Data on file, measured by GC R&D

## Flexural Strength (MPa)



Data on file, measured by GC R&D



Physical Properties - GRADIA® CORE	
Flexural Strength (MPa)	154.1 (16.8)
Modulus of Elasticity (MPa)	10.8 (0.6)
Compressive Strength (MPa)	273.0 (16.7)
Depth of Cure (mm)	2.9 (0.1)
Curing Time/LED	10 sec
Radiopacity	268%
Bond Strength to Enamel (MPa)	21.6 (3.3)
Bond Strength to Dentin (MPa)	21.7 (2.2)
Bonding Agent	Self-Etching Bond



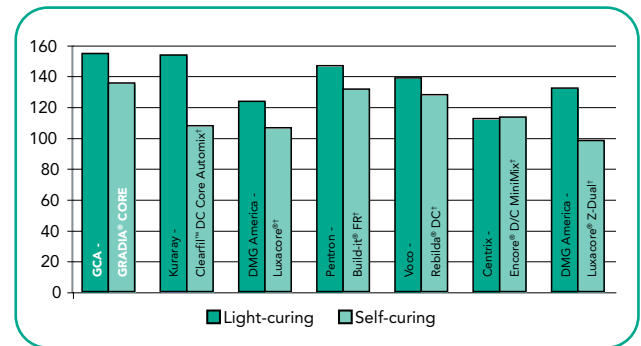
# GC FIBER POST

## Clinical Benefits

- High strength
- Low modulus of elasticity - similar to dentin
- Minimal dentin removal due to tapered post design
- Strong and intimate bond with GRADIA® CORE
- Radiopaque
- Esthetic, with excellent light transmission
- Biocompatible and non-corrosive

GC FIBER POSTS are designed to offer a low modulus of elasticity similar to dentin combined with high flexural strength superior to metal posts, which reduces the risk of stress transfer and root fractures and results in superior fatigue resistance.<sup>1,2,3</sup>

## Young's Modulus of Elasticity (GPa)



**Similar modulus of elasticity to dentin reduces stress.**

Data on file, measured by GC R&D



**Glass Fiber & Resin Core:**  
Even stress distribution.



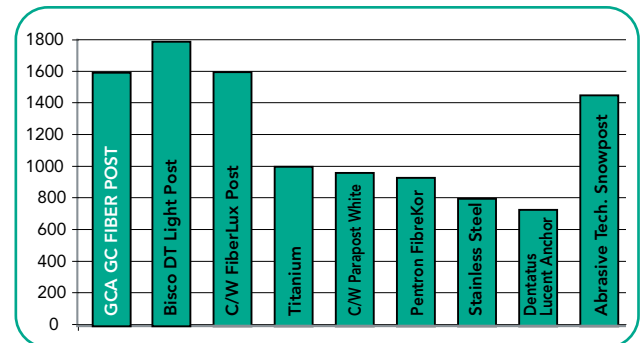
**Cast Metal Post Core:**  
Higher stress between core and tooth structure for core and post.



**Prefabricated Metal Post & Resin Core:**  
Uneven stress and structural damage may occur.

Reference: Dr. Kaito (Nihonbashi Dental Clinic, Tokyo University of Science Graduate School Faculty of Engineering), Dr. Shinya (The Nippon Dental University).

## Flexural Strength (MPa)



Data on file

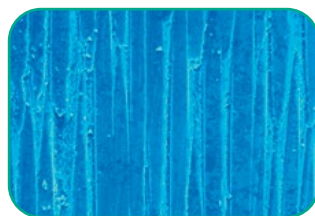
The excellent fatigue resistance is attributable to the unique chemistry and high filler content of GC FIBER POSTS, reducing risk of restoration failure.

The taper design of GC FIBER POSTS maximizes adaptation and minimizes dentin removal, preserving root structure and strength. Its radiopacity enables easy checking of the post length at try-in.

**Even and thorough distribution of fibers ensures higher strength.**



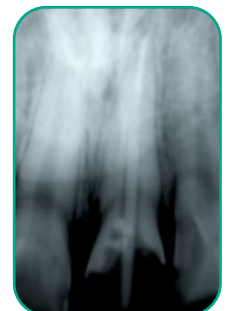
**Cross-Section**



**Longitudinal**

**Radiopaque for easy checking at try-in. Taper preserves root dentin.**

Reference: Dr. Matsumura (Tokyo Medical and Dental University).



1) Spazzin AO, et al. Influence of post and resin cement on stress distribution of maxillary central incisors restored with direct resin composite. Oper Dent. 2009;34(2):223-9. 2) Grandini S, et al. Fatigue resistance and structural integrity of different types of fiber posts. Dent Mater J. 2008;27(5):687-94. 3) Hattori M, et al. Fatigue Properties of Fiber-reinforced Post and Resin Core Build-up Materials. IADR 2009, Miami, FL. Abstract 1913. 4) Ferrari M, et al. Microtensile strength and micromorphological aspects of post-core interfaces. IADR 2005, Baltimore, MD. Abstract 1655. 5) Goracci C, et al. Light-transmitting ability of marketed fiber posts. J Dent Res. 2008;87(12):1122-6.



## GC FIBER POST Placement: Clinical Steps

### Step 1: Preparing the Canal and GC FIBER POST



Root canal preparation.



Trial fit of the post.  
Determine the length.



Apply self etching bond to the prep,  
leave for 30 seconds. Blow dry with air  
syringe using moderate pressure for  
10 seconds. Light cure for 10 seconds.



Apply GC CERAMIC PRIMER to  
the GC FIBER POST and dry.

### Step 2: Placing the Post and Building the Core



Dispense GRADIA® CORE into  
the root canal.



Seat the post and light cure  
several seconds to tack cure.

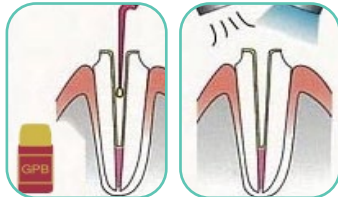


Continue dispensing GRADIA®  
CORE around the post to form  
the core.



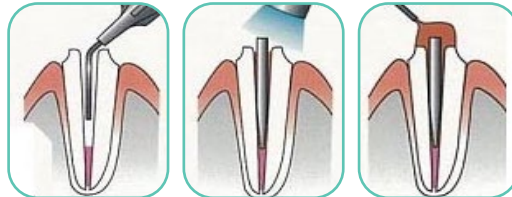
Light cure the surfaces for  
10 seconds each. Once set,  
prepare the core using the  
standard technique.

## Easy Mixing, Cementation and Core Build-Up



### Bonding Treatment

Easy to use: 2 liquid mixing,  
1 step treatment bonding system.



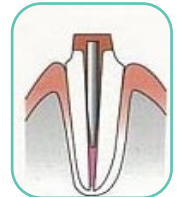
### Post Cementation and Core Build-Up

EM (Easy Mixing) system: Fewer bubbles and easy extrusion  
of the cement. The excellent flow characteristics and paste  
consistency enable placement without use of a pre-formed  
matrix. The paste also offers a long working time for accurate  
placement.



### Curing

Snap curing,  
deep curing depth,  
quick setting time.



### Prepare the Teeth

Material cuts  
similarly to dentin.

#### 400011 POST & CORE System Kit

Contains: One GRADIA® CORE KIT (10 mL cartridge, one 5mL G-Premio BOND™ bottle, one 3mL G-Premio BOND™ DCA bottle, 20 mixing tips, 20 intra-oral nozzle, one micro tip applicator, one micro tip holder, one dispensing dish, one GC FIBER POST Assortment Kit (five posts each - diameter 1.2, 1.4, 1.6, one drill each - diameter 1.2, 1.4, 1.6, Technique Card, IFU, one GRADIA® CORE DISPENSER GUN).

#### 400001 GC FIBER POST Assortment Kit

Contains: Five posts – Diameter 1.2, five posts – Diameter 1.4, five posts – Diameter 1.6, one drill – Diameter 1.2, one drill – Diameter 1.4, one drill – Diameter 1.6, IFU, Technique Card.

#### 013045 GRADIA® CORE Kit

Contains: One 10 mL cartridge, one 5mL G-Premio BOND™ bottle, one 3mL G-Premio BOND™ DCA bottle, 20 mixing tips, 20 intra-oral nozzle, one micro tip applicator, one micro tip holder, one dispensing dish.

#### 003652 GRADIA® CORE Cartridge Refill

Contains: One 10 mL (20 g) cartridge.

#### 400010 GRADIA® CORE Dispenser Gun

Contains: One Dispenser Gun to be used exclusively with GRADIA® CORE.

#### GC FIBER POST Refills

Contains: 10 posts of one size.

400002 Diameter 0.8    400003 Diameter 1.0  
400004 Diameter 1.2    400005 Diameter 1.4  
400006 Diameter 1.6

#### GC FIBER POST Refills

Contains: One drill of one size.

400007 Diameter 1.2    400008 Diameter 1.4  
400009 Diameter 1.6