

STRATA-G™

Sectional Matrix System

White Paper



Garrison
Dental Solutions

Table of Contents

Executive Summary	i
Glossary	ii
1. Introduction.....	1
2. People’s Feelings About Fillings	1
2.1 Dental Anxiety	1
2.2 Less Trauma with Modern Materials and Techniques	2
3. The Strata-G™ Sectional Matrix System.....	2
3.1 Evolution of Matrix Systems: Tofflemire, Composi-Tight®, and Strata-G™	2
3.2 Unboxing the Strata-G™ Kit.....	3
3.3 Application Technique.....	4
4. Why Strata-G™ is a State-of-the-Art Matrix System	4
4.1 Feature Comparison	5
4.2 Pricing Comparison	6
5. Next Steps	6
References.....	7

Executive Summary

The purpose of this white paper is to recommend Canadian dentists to adopt the Strata-G™ sectional matrix system to make Class II restorations easier and more precise, mitigate patient anxiety, and cut costs.

An estimated 14 million Canadians feel uneasy—or worse—about going to the dentist because they are afraid of feeling pain during dental procedures [1]. If they have cavities, these people may choose to delay treatment and wait until their condition worsens and offers them no other choice but to see a dentist. Then, when they finally seek treatment, their agitation and the difficulty of the restoration can make the situation unpleasant for both patient and dentist.

Yet, restorations do not need to be traumatic. Dentists who rely on the right tools and techniques to perform Class II restorations can:

- Ensure fillings are quick and comfortable and break the patient's cycle of anxiety
- Eliminate gaps between teeth and minimize prospects of pain after the procedure
- Help patients be more cooperative and seek dental care more often
- Employ durable instruments to lower the impact on their clinic's budget

This is what the Strata-G™ sectional matrix system can deliver. Those interested should visit the [Strata-G™ website](#) for more information. The Strata-G™ standard kit costs Can\$724—an initial investment that pays for itself down the line—and can be [ordered online](#) or by phone by calling 1-888-437-0032.

Glossary

Class II restoration: Dental procedure that repairs a back tooth with cavities on two surfaces with five basic steps: 1) removing unhealthy parts; 2) etching with acid; 3) filling with composite (a tooth-coloured resin); 4) curing the composite; and 5) polishing the filling.

Conservative preparation: Step in a dental restoration in which the unhealthy cavity of a decayed tooth is removed while attempting to leave its healthy structures intact.

Filling: Critical step in a dental restoration where the hollowed-out cavity is filled with a restorative substance. In common parlance, “filling” denotes the whole restorative procedure.

Matrix system: Set of dental materials that create a temporary barrier around a decayed tooth so it can be properly filled and restored. Matrix systems are comprised of bands and wedges placed between teeth and a vise- or ring-shaped retainer (also called separator) that holds the bands in place.

MOD restoration: Dental procedure that repairs a decayed tooth with extensive damage along its mesial, occlusal, and distal (MOD) surfaces, i.e., its top and sides.

Rubber dam: Thin latex sheet placed over a patient’s mouth to isolate a tooth undergoing restoration by exposing it while covering the rest of the mouth.

Trauma: Injury to a patient’s mouth—typically their gum or teeth—that can occur as a by-product of a dental procedure. When physical trauma generates pain, whether during the procedure itself or afterwards, it can contribute to psychological trauma and dental anxiety.

1. Introduction

The purpose of this white paper is to recommend Canadian dentists to adopt Garrison Dental Solutions' Strata-G™ sectional matrix system to make Class II restorations easier and more precise, mitigate patient anxiety, and cut costs.

Many people in the world are scared about going to the dentist [2]. Despite being relatively simple and common procedures, restorations can be daunting to patients because they involve the use of invasive instruments. But they do not have to be traumatic; by using an advanced matrix system with ring-shaped separators, dentists can perform quick, comfortable, and precise restorations that alleviate dental anxiety and fear.

Then, after the restoration, the matrix rings can be sterilized and reused, allowing dentists to accomplish similar results with more patients. Since restorations are routine procedures, performing them at a high level produces a ripple effect that makes the dentist's job easier, helps patients become more cooperative, and builds the clinic's reputation.

This white paper will:

- Address the impact of dental anxiety in restorations
- Present a technical overview of the Strata-G™ sectional matrix system
- Outline the benefits of Strata-G™ in comparison with other sectional matrix systems

2. People's Feelings About Fillings

Dental restorations, commonly known as fillings, have come a long way since the days of manual drills and metal amalgams, yet many patients are still worried about feeling pain. Dentists, too, continue to seek ways to improve restorations and be more efficient.

2.1 Dental Anxiety

A recent study has revealed that 1 in 6 people in the world have a deep and persistent fear of going to the dentist [3], making dental anxiety "the most common psychological condition" seen in dental clinics [4]. Figure 1 below shows that the situation is similar in Canada.

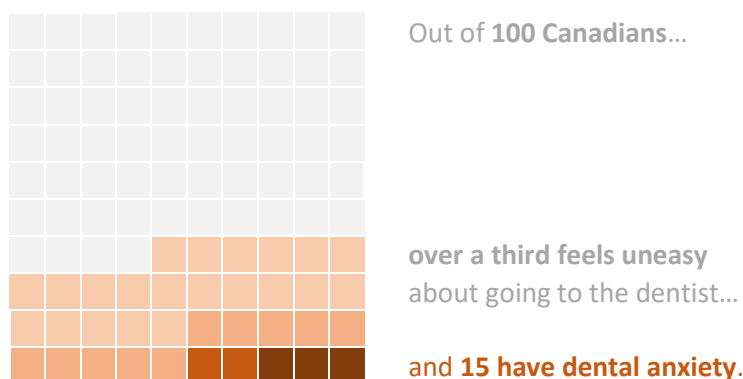


Figure 1: How anxious Canadians feel about receiving dental treatment [1].

Restorations intimidate patients because of how unpleasant it sounds to have one's tooth drilled and punctured with needles. This fear of discomfort drives many to live with pain and avoid receiving treatment, and as the condition of their affected tooth worsens, so does the difficulty and cost associated with the procedure needed to deal with it. This creates a negative cycle that feeds into their anxiety [5].

2.2 Less Trauma with Modern Materials and Techniques

Dentists equipped with a modern matrix system and the right techniques can perform precise restorations in half an hour or less and create as little discomfort and mess as possible. When a patient gets up from the dentist's chair feeling that their filling was quicker and more comfortable than they expected, they will have gained confidence in their dentist and seek treatment more often and at an earlier stage of tooth decay. If they experience no pain in the days following the filling either, their satisfaction grows even more. Minimally traumatic restorations revert a patient's cycle of anxiety and help them live with less pain.

3. The Strata-G™ Sectional Matrix System

The Strata-G™ sectional matrix system is a set of dental materials that includes bands, wedges, ring-shaped retainers (also called “separators”), and a ring-placing forceps—things a dentist needs to prepare a molar or premolar with cavities on two surfaces to be hollowed out and filled in.

3.1 Evolution of Matrix Systems: Tofflemire, Composi-Tight®, and Strata-G™

The recently released Strata-G™ system is an evolution of Composi-Tight®, the sectional matrix system that launched Garrison Dental Solutions to the world in 1997. The Composi-Tight system modernized Class II restorations—fillings of back teeth with cavities on two sides—as it allowed dentists to replicate natural tooth anatomy, achieve optimal contact between teeth, and eliminate food-trapping gaps that other matrix systems would sometimes create between teeth [6].

At the time, Class II restorations were commonly done with a matrix system known as Tofflemire, named after the dentist who invented it in the 1950s. It consisted of long manually shaped bands, manually prepared wedges, and a matrix retainer that held the bands in place by clamping them like a vise, as shown in Figures 2-4 below.



Figure 2: Unprepared band [7].

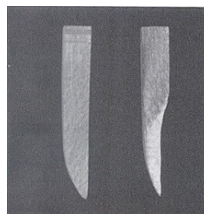


Figure 3: Uncarved and carved wedges [7].



Figure 4: Tofflemire retainer [7].

In traditional Tofflemire systems, it can be difficult to correctly shape bands and wedges and find the right pressure for the clamp mechanism, especially for new dentists. It can also be

quite uncomfortable for the patient. The retainer vises also have to be replaced frequently as they tend to lose tension—even after a single use—and their tightening screws can strip easily.

Composi-Tight® addressed these issues by providing dentists with smaller and pre-contoured bands, curved plastic wedges with flexible fins, and a reusable ring-shaped retainer that made it easier to get a high and stable clamping force. Restorations with Composi-Tight® required less steps to complete and had a greater chance of turning out well than with Tofflemire. This meant less discomfort for patients and less stress for dentists.

Composi-Tight® became an industry standard and inspired companies like Dentsply, Pac-Dent, and Premier Dental to release similar sectional matrix systems. As explained later in Section 4, these competitors represent a step up from Tofflemire but have yet to match Composi-Tight®'s effectiveness. In 2023, Strata-G™ replaced Composi-Tight® as Garrison's flagship product, building on more than a quarter-century of design experience and placing Garrison even further ahead from the competition.

3.2 Unboxing the Strata-G™ Kit

Figures 5-8 below show the materials included in the standard Strata-G™ sectional matrix system kit:

- 50 bands in five different sizes, including pedodontic, i.e., for “baby teeth”
- 40 wedges in four different sizes
- A short separator ring (blue), used when there is limited space between teeth
- A tall separator ring (yellow), used when there is sufficient space between teeth
- A wide prep separator ring (green), used with teeth that have extensive decay
- A ring-placing forceps



Figure 5: Bands, including pedodontic [8].



Figure 6: Wedges [8].



Figure 7: Short, tall, and wide prep rings [8].



Figure 8: Ring forceps [8].

Garrison also offers Strata-G™ kits in three other versions—introductory, deluxe, and professional—with additional materials from their other lines of products, such as:

- Anterior bands for restorations of front teeth
- Firm bands for challenging cases that require more conservative preparation
- Composite polishers for finishing fillings
- Band forceps for handling bands without distorting them
- A 5-in-1 composite instrument for precise control, contouring, and shaping

Table I below summarizes the differences between Strata-G™'s four kit types:

Table 1: Differences between the four types of Strata-G™ kits.

	Standard	Introductory	Deluxe	Professional
Posterior Bands	50	50	50	50
Anterior Bands	---	10	10	10
Firm Bands	---	50	50	50
Wedges	40	80	80	80
Polishers	---	12	12	12
Rings	3	3	3	3
Ring Forceps	1	1	1	1
Band Forceps	---	---	1	1
Composite Instrument	---	---	---	1

3.3 Application Technique

Figures 9-12 below show the steps for using the Strata-G™ matrix system in Class II restorations. After placing a rubber dam around the affected tooth and preparing it with conservative preparation, the dentist:

1. Places a band between the teeth

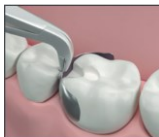


Figure 9: Band placement [10].

2. Inserts a wedge between the teeth



Figure 10: Wedge insertion [10].

3. Places the ring to hold the band



Figure 11: Ring placement [10].

4. Etches and fills the tooth

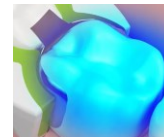


Figure 12: Tooth restoration [11].

If the affected tooth presents pervasive decay, Strata-G™ allows dentists to stack rings to hold two bands and two wedges in place simultaneously, as shown in Figure 13 below:

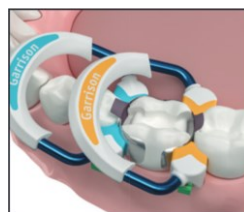


Figure 13: Rings may be stacked in MOD restorations [9].

4. Why Strata-G™ is a State-of-the-Art Matrix System

Strata-G™ represents the cutting edge in sectional matrix systems today. The pre-contoured, non-stick bands isolate and contain the affected tooth so well that a little polishing is all it takes to shape the restoration in the end. The smooth wedges do not back out and keep trauma to a minimum. The rings are strong, easy to handle, and reusable for hundreds of

procedures because they combine metal, silicone, and a special plastic called polyether ether ketone (PEEK) and do not lose tension over time.

Crucially, Strata-G™'s tight contour also stops food-trapping spaces from forming between teeth as an unintended result of the restoration procedure. This means not only that cavities are filled easily and quickly but are also less likely to return and inconvenience the patient before their next dental appointment.

4.1 Feature Comparison

Because of these features, Strata-G™ outperforms other sectional matrix systems in terms of effectiveness, efficiency, reusability, and consistency of results. Tables 2-4 below outline how Strata-G™'s components set it apart from three other matrix systems: Composi-Tight®, its predecessor; Palodent®, one of its competitors; and Tofflemire, still used by many dentists:

Table 2: Comparison between bands of four sectional matrix systems [5, 7, 8, 11].

Bands	Feature	Benefit
Strata-G™	Enhanced marginal ridge	Excellent tooth shaping
Composi-Tight®	Regular marginal ridge	Better tooth shaping
Palodent®	Regular ridges	Good tooth shaping
Tofflemire	No marginal ridge	Hit-or-miss tooth shaping

Table 3: Comparison between wedges of four sectional matrix systems [5, 7, 8, 11].

Wedges	Feature	Benefit
Strata-G™	Smooth tunnel design Ready to go	Minimally traumatic Quick to apply, no back-outs
Composi-Tight®	Curved design Ready to go	Less traumatic Quick to apply, no back-outs
Palodent®	Hourglass design Ready to go	Abrasive, possibly traumatic Quick to apply, no back-outs
Tofflemire	Triangular design Need to be carved	Likely traumatic Longer to apply, possible back-outs

Table 4: Comparison between retainers of four sectional matrix systems [5, 7, 8, 11].

Retainers	Feature	Benefit
Strata-G™	Ring-shaped Nickel titanium + PEEK frame	Strong clamping force Easy to open Maximum lifespan
Composi-Tight®	Ring-shaped Stainless steel + PEEK frame	Strong clamping force Less easy to open Extended lifespan
Palodent®	Ring-shaped Nickel titanium frame	Strong clamping force Stiff to open and brittle Moderate lifespan
Tofflemire	Vise-shaped Stainless steel frame	Hit-or-miss clamping force Tricky to tighten Reduced lifespan

4.2 Pricing Comparison

Strata-G™'s efficiency translates to cut costs. This includes indirect savings, like attracting more patients and fitting more procedures in the schedule, but it also refers to expenses directly associated with the purchase of matrix systems. Figure 14 below compares the estimated cost¹ of Class II restorations using Strata-G™, Palodent®, and Tofflemire systems:

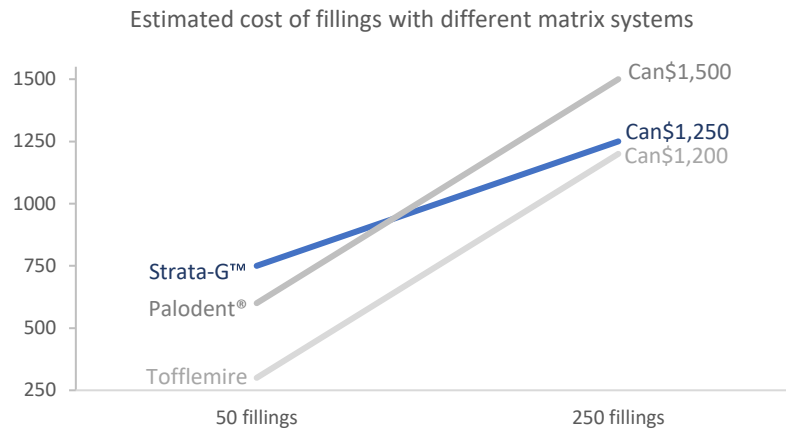


Figure 14: Pricing comparison of 50-250 Class II restorations using three matrix systems.

As observed, Strata-G™'s heftier initial investment pays off in the long run and justifies the ease, efficiency, and precision it offers.

5. Next Steps

The Strata-G™ sectional matrix system enables dentists to:

- Perform quick and simple fillings that relieve patient anxiety
- Radically decrease the possibility of pain during and after restorative procedures
- Aid patients in becoming more responsible with their dental health
- Save up to 20% in sectional matrix systems in under a year

Interested dentists and clinic managers can obtain more information about Strata-G™, including video demos, by visiting the [Strata-G™ website](#). Orders can be placed online via [Garrison's website](#) or by calling Stephanie Hicks at 1-888-437-0032, ext. 214.

¹ Only the cost of matrix systems (bands, wedges, retainers) is considered; all other required materials and instruments, like rubber dams, composite, etc. are not factored in.

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