6 Steps to

Eliminate Shade-Related Remakes

A Clinical and Lab Guide for Predictable Results

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Stop Shade Remakes Before They Start

Why this matters — and what to do about it

Shade-related remakes are among the most common and most preventable complications in restorative dentistry. Their impact extends well beyond the lab — into your schedule, your revenue, and your patient relationships.

THE IMPACT OF SHADE REMAKES

1. **Every remake is a non-revenue appointment**
   If the mismatch is caught before cementation, one additional visit is needed. If caught after seating, the patient must return a third time — occupying chair time that could have been productive and generating zero revenue.

2. **Erodes margins**
   Non-revenue remake appointments disrupt schedules and cut directly into overhead.

3. **Fuels — or undermines — referrals**
   Smooth patient experiences without remake visits drive satisfaction, trust, and the word-of-mouth referrals for your practice. The inverse is equally true: a patient who returns twice for a crown that still doesn't match hurts valuable referrals.

"What our lab data tells us is encouraging: the vast majority of shade remakes trace back to a handful of preventable chairside steps — before the case ever reaches the lab. We've identified six of them. Master those, and you may never have a shade remake again."

– Rob Brenneise | Chief Growth Officer, Glidewell

THE 6 STEPS IN THIS GUIDE

01

START WITH SHADE

Take shade before you touch the tooth — while it's still hydrated and unaltered.

02

SELECT SHADE PRECISELY

Use Value ▸ Hue ▸ Chroma in that order for a systematic, repeatable result.

03

DON'T SKIP THE STUMP SHADE

The #1 lab request — and one of the easiest problems to prevent.

04

TAKE CLINICAL PHOTOS

A single quality photo of adjacent teeth eliminates the most common reason for a remake.

05

CHOOSE THE RIGHT MATERIAL

Material selection is a shade decision — make it before the case starts, not after.

06

COMPLETE THE PRESCRIPTION

Stump shade, notes, and all Rx fields are the lab's primary window into your patient's mouth.

Start with Shade

The most preventable cause of shade remakes happens before the prep even begins.

Shade selection is the very first clinical step — not an afterthought. Once the tooth is prepped, dried, or anesthetized, the conditions for accurate shade reading are gone. Desiccation alone can make a tooth appear one to two shades lighter than its true value, leading to a crown that is noticeably brighter than adjacent teeth when the patient returns.

"The single most chronic problem I see is shade taken at the very end, after the tooth is prepped and dried — or worse, remembered only after the patient has already walked out the door. When I made it my absolute first step — before I touched anything — my shade-related remakes essentially disappeared."

Jinny Bender, DMD
In-House Clinician, Glidewell

BEFORE YOU BEGIN TREATMENT

1. **Teeth must be clean**
   Remove all debris and stains first. You are reading the tooth, not the calculus.
2. **Teeth must be hydrated**
   Take shade before any injection, isolation, or preparation. A dry tooth reads lighter than it actually is.
3. **Remove visual interference**
   Cover or remove bright lip color, scarves, or other vivid colors in the field of view. These can distort color perception.
4. **Position the patient upright**
   Have the patient sit or stand — not reclined. This better approximates how the finished restoration will be seen in conversation.
5. **Use the right light**
   Natural daylight (mid-morning to early afternoon) is ideal. If using operatory light, use a color-corrected source. Keep overhead lights from shining directly on the teeth during evaluation.

DURING SHADE SELECTION

Evaluate for no more than 5–7 seconds at a time. Prolonged staring causes eye fatigue, which distorts perceived color. Look away, rest your eyes, then re-evaluate. Cross-check your selection with a team member before finalizing.

"When a doctor takes shade on a clean, hydrated tooth at the start of the appointment, we can match that case with confidence. Cases where shade was taken post-prep are the ones that come back. It is that straightforward."

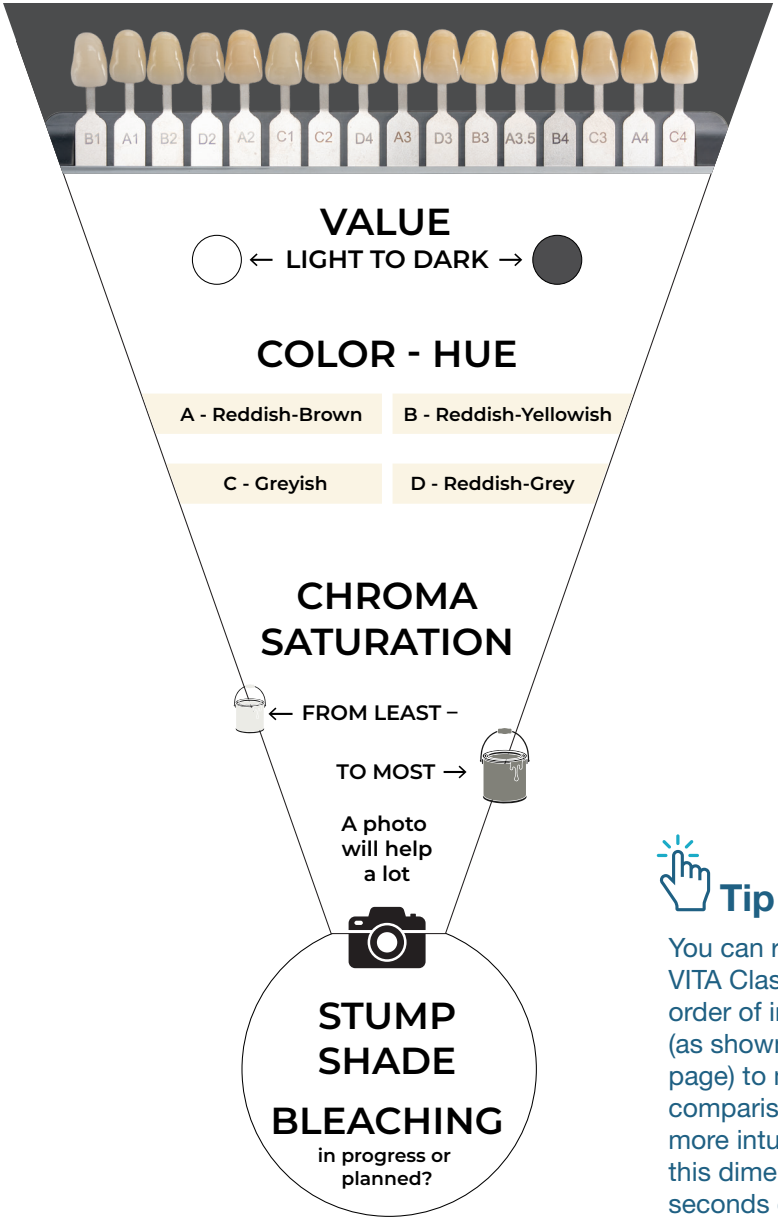
– Wolfgang Friebauer, MDT | Master Dental Technician, Glidewell

Select Shade Precisely

Not all shade guides are equal — and the order in which you evaluate makes all the difference.

"I always recommend the VITA 3D-MASTER® in my veneer course because it is organized exactly how you should be evaluating — value first, then you narrow down from there. If you are using the **Vita Classical Shade Guide**, rearranging it in order of increasing value before you even start puts you in a much better position. Value is the one dimension that will stand out immediately if it is off."

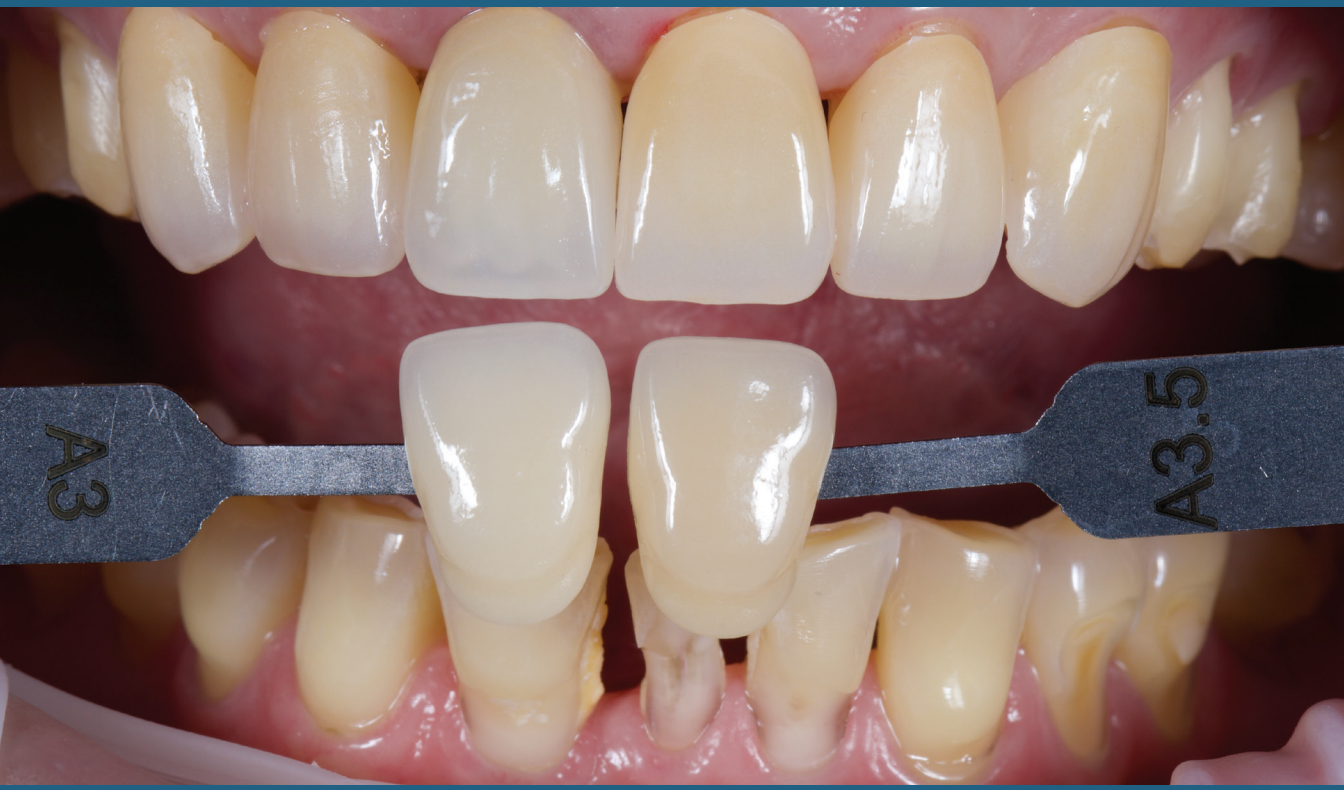
– Danielle Brown, DDS | In-House Clinician, Glidewell



Tip

You can rearrange the VITA Classical tabs in order of increasing value (as shown on the opposite page) to make value comparison faster and more intuitive. Evaluate this dimension for 5–7 seconds only.

The VITA Classical Shade Guide is the most widely used shade system in dentistry — and when used correctly, it produces reliable, consistent results. The key is following the right sequence: Value first, then Hue, then Chroma. Most shade mismatches are not a failure of the guide itself, but a result of skipping steps or evaluating dimensions out of order.



This image highlights that value (lightness vs. darkness) is the most critical factor in shade matching. Even subtle differences—such as A3 versus A3.5—can noticeably affect how bright or dark a restoration appears. In this case, A3.5 was selected, as it delivered a more accurate visual match in brightness than A3.

STEP 1

EVALUATE VALUE FIRST (LIGHT ▸ DARK)

Value is the lightness-to-darkness level of the tooth. It is the dimension most likely to stand out if mismatched, and it should always be confirmed first.

- High value (lighter): B1, A1, B2, D2, A2, C1, C2
- Low value (darker): A3, D3, B3, A3.5, B4, C3, A4, C4

STEP 2

EVALUATE COLOR / HUE

Once value is confirmed, identify which color family the tooth falls into:

- **A — Reddish-Brown**
- **B — Reddish-Yellowish**
- **C — Greyish**
- **D — Reddish-Grey**

Compare your hue selection in different light conditions to avoid metamerism (a color appearing to match in one light but not another).

STEP 3

EVALUATE CHROMA / SATURATION (LESS ▸ MOST)

Chroma is the intensity or depth of the color — think of it as how concentrated the hue is. A3.5 has significantly more chroma than A2. Once value and hue are set, chroma fine-tunes the final selection.

AFTER SELECTION

Provide photo of shade tab incisal-to-incisal.

STEP 4

STUMP SHADE

(Not required for PFM cases)

The color of your prepared tooth directly affects the final shade result. See Step 3 of this guide for a full breakdown — it's the #1 lab pain point and one of the easiest problems to prevent.

STEP 5

BLEACHING

(In progress or planned?)

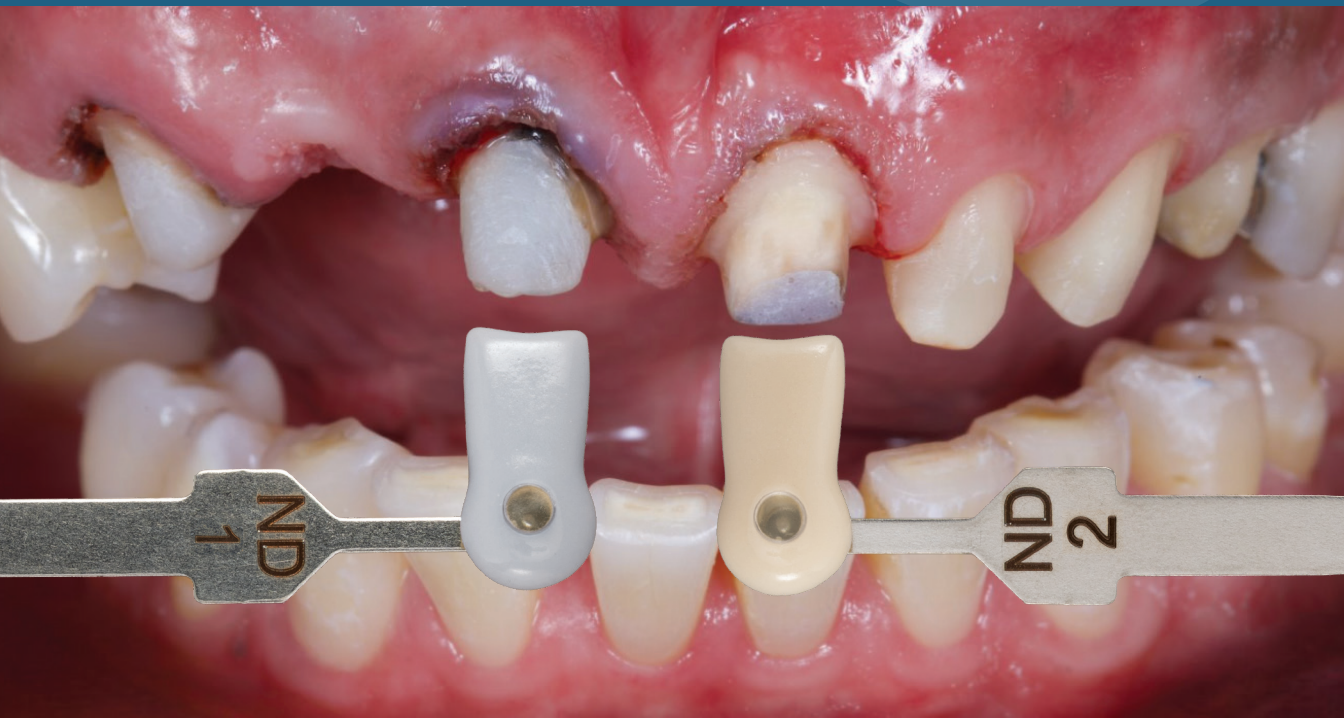
Bleaching changes the shade target. If a patient is whitening — or plans to — wait until treatment is complete, then allow at least 2 weeks for the shade to stabilize before finalizing. Matching too soon (mid-bleach or right after) guarantees a mismatch at delivery.

"When a doctor follows this sequence and sends us a photo that includes the tab, we are all working from the same language. That consistency is what closes the gap between what the doctor sees chairside and what we produce in the lab."

– Wolfgang Friebauer, MDT | Master Dental Technician, Glidewell

Don’t Skip the Stump Shade

The #1 lab request — and one of the easiest problems to prevent.



“Not providing a stump shade has bitten me. The lab would have compensated if I had communicated it. We always kind of think the lab can figure it out — but they can’t figure out what they don’t know. A stump shade takes ten seconds to record. A remake takes weeks to fix.”

– Danielle Brown, DDS | In-House Clinician, Glidewell

The stump shade is the color of the prepared tooth underneath the restoration. For all-ceramic and zirconia materials, it matters more than most doctors expect. A dark or discolored preparation bleeds through translucent materials and shifts the final result — regardless of what shade you selected on the RX. The lab has no way to compensate for a dark stump if they do not know about it.

WHY IT'S THE #1 LAB REQUEST

Stump shade is the single most frequently missing piece of clinical information on RX forms. When it is absent, the lab proceeds with assumptions — and if those assumptions are wrong, the crown comes back too dark, too opaque, or with an unexpected gray cast that no amount of staining can correct. The only fix is a remake.

HOW TO CAPTURE AND COMMUNICATE STUMP SHADE

1. **Evaluate the prep before temporization**
   Take the stump shade immediately after preparation, before placing a temporary. Use your shade guide against the prepared tooth under natural or color-corrected light.

2. **Note it on every all-ceramic case**
   Even if the prep appears normal, record the stump shade. A dedicated stump shade guide is always preferred — it's built to capture opacity and translucency. A standard guide can suffice in a pinch, but a stump you call "A2" on it may still read very differently to a technician calibrating for the real substrate.

3. **Flag dark or discolored stumps explicitly**
   If the tooth is endodontically treated, heavily stained, or has a metal post, note this prominently. Request lab to apply opaquer and think of using a more opaque product, like BruxZir® Full-Strength or BruxZir Fusion.

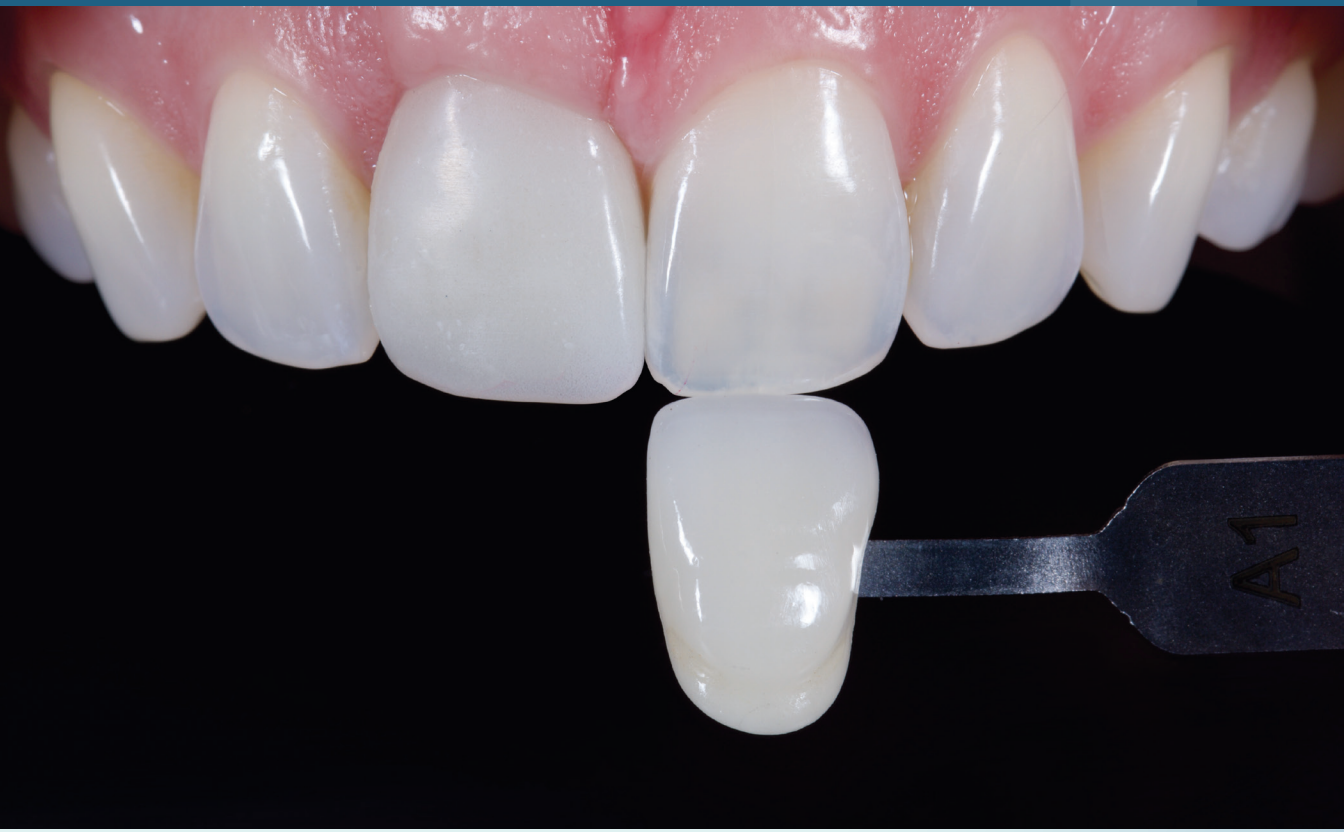
4. **For digital submissions, enter it in the notes field**
   Digital Rx forms may not have a dedicated stump shade field. If yours does not, enter it as the first line of the open notes field. Do not leave it out because there is no dedicated box for it.

"Stump shade is the number one thing missing from the cases that come to us. If the prep is dark and the doctor asked for an A1, we are set up to fail before we even start. When we have the stump shade, we can plan around it — add opacity, adjust the base. Without it, we are guessing at a variable we cannot see."

– Joe Hattouni, CDT | VP of Lab Operations, Glidewell

Take Clinical Photos

A photo gives the lab what shade notation alone never can.



"I started attaching a photo to every single anterior case, even when I thought the shade was straightforward. The shade remakes I used to get on those units stopped. The lab can see what I'm working with. That context changes everything."

– Danielle Brown, DDS | In-House Clinician, Glidewell

The shade tab tells the lab which color family you selected. A photo tells the lab everything else — value in context, chroma relative to adjacent teeth, translucency at the incisal, surface texture, and any characterization worth matching. For single anterior units in particular, a photo is the single most effective step a doctor can take to prevent a shade remake.

WHAT TO CAPTURE

1. **Include adjacent teeth in the frame**
   The restoration will be judged next to them. The lab needs to see what they are matching to, not just the prep site.

2. **Hold the shade tab next to the tooth**
   This gives the lab a visual reference for all three shade dimensions simultaneously and confirms your written notation.

3. **Use the right light**
   Natural light or color-corrected operatory light. Avoid direct flash or overhead glare — both wash out value and flatten chroma, giving the lab an inaccurate read of the tooth.

4. **Provide photo together with your original submission**
   A photo submitted with the original case prevents shade remakes. A photo submitted only after a remake is far less useful — the opportunity to set expectations upfront is gone.

WHEN A PHOTO IS ESPECIALLY CRITICAL

- Single anterior units — the hardest case for any lab to match without visual context.
- Veneer cases
- Teeth with special characterization: white spots, incisal halo, gingival gradation, cracks, or texture.
- BruxZir Fusion or BruxZir Glass cases that allow for expanded customization, including interproximal translucency, internal anatomy with lobes.
- Any shade-based remake — do not resubmit without a photo.

"There is one doctor who has sent me a high-definition photo — with the shade tab held next to the tooth — with every case for years. We have never had a shade issue with that doctor — not one. The photo lets me see the hue, the texture, the gingival tone. When doctors give us that, our technicians can match. Without it, we are working from a tab and a guess."

– Joe Hattouni, CDT | VP of Lab Operations, Glidewell

Choose the Right Restorative Material

Material selection is a shade decision — before the case even starts.

Featured product: **BruxZir Esthetic**

"Once I understood that BruxZir Esthetic was specifically designed for cases where shade match is the priority, I stopped defaulting to BruxZir Full-Strength in the anterior unless there was a strong structural reason. The change was immediate — those anterior cases stopped coming back for shade adjustments."

– Jinny Bender, DMD | In-House Clinician, Glidewell

Selecting the right material before prescribing is the most upstream intervention available to prevent a shade remake.

That's because every individual material does not perform esthetically in the same way — and they may even differ in esthetic performance when compared to the VITA shade guide. For example, BruxZir Full-Strength is inherently more opaque — light reflects from the surface rather than transmitting through, which gives it a flatter appearance. Whereas BruxZir Esthetic is engineered with higher translucency, allowing more light transmission and producing a closer VITA shade correlation.

QUICK SELECTION GUIDE

1 Single anterior unit, esthetic zone

BruxZir Esthetic. Higher translucency, closer VITA shade correlation, fewer remakes. This is the material for cases where shade match and esthetic integration are the clinical priority.

2 Bilayered (BruxZir Fusion, BruxZir Glass) or monolithic glass ceramic (IPS e.max®) cases

Provide the stump shade, veneer shade, and mamelon detail separately. With glass ceramic materials, the underlying coping shade significantly affects the final appearance of the veneer. When in doubt, include a photo.

3 Implant-supported restorations

Implant cases introduce one variable tooth-supported cases don't: the abutment or ti-base serves as the stump shade — and unlike a natural prep, it can't be changed. BruxZir's Full-Strength coping masks most titanium abutments well, but shade matching still depends on what you provide.

Include on the Rx: abutment type, implant system and size, adjacent tooth shade, and a clinical photo with the shade tab. For BruxZir Fusion, also specify incisal translucency (low, medium, or high) and characterization details. Without it, the lab defaults to medium — which may not match.

Not every patient's dentition qualifies for BruxZir Fusion. Submitting photos upfront lets the lab evaluate suitability before fabrication, not after delivery.

4 Matching an existing BruxZir or mixed-material case

Note the material of existing restorations on the Rx. Different materials take on shade differently; the lab needs this context to calibrate expectations.

5 Posterior restoration, function-first

BruxZir Full-Strength. Highly durable and reliable. Because of its opacity, communicate your shade expectations clearly to the lab and note any characterization needs.

"BruxZir Full-Strength excels in the posterior — it's reliable, strong, and consistent. For anterior cases where shade integration is the goal, BruxZir Esthetic gives the lab a translucency profile that works with the adjacent dentition. The best outcomes start with the right material selection for the right clinical situation."

– Wolfgang Friebauer, MDT | Master Dental Technician, Glidewell

Complete the Prescription

Every blank field is a decision the lab makes without you.

Case Information-Restore

Case Information

Creator	Jinny Bender	**Patient**	Justin Case
Expected delivery date	2026-04-13	**Upload time**	2026-04-10 02:46:47
Clinic/hospital	Glidewell Laboratories	**Dental Notation**	UN
Doctor	Jinny Bender	**Clinic Contact**	Mo Ramos, RDA
Clinic contact information	mail@glidewelldental.com		
Clinic address	2201 Dupont Drive, Suite 120, Irvine, CA 92612		

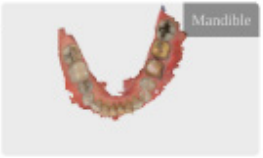
Other requirements: Shade A2, stump ND6 (highlighted in yellow) for anterior

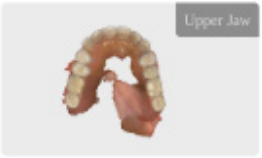
Other Notes

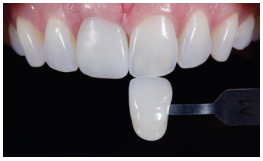
Contact preferences light interprox and lingual contacts.

1/300

Screenshot







Tooth map

Tooth number	Type	Material Name	Tooth color
9	Full Crown	BruxZir Esthetic	**A2, stump ND6**

This applies equally to physical Rx forms and digital case submissions. For digital orders, all of this information must be entered in the notes field — an open text field that is frequently left blank.

Regardless of submission method, the principle is the same: when an Rx arrives incomplete, the lab does not pause and call for missing information. It makes its best clinical guess and proceeds. That guess may produce a result that does not match — and that impacts you and your patient.

FIELDS THAT MUST BE COMPLETED ON EVERY CASE

1. **Final shade**
   The VITA tab you selected. Be specific — A2 and A3 are not interchangeable.

2. **Stump shade**
   Critical for all-ceramic restorations. A dark or discolored preparation bleeds through translucent materials and shifts the final color, regardless of what shade you selected. If the stump is dark, note it. The lab can compensate — but only if they know.

3. **Bleaching history**
   Past, current, or planned whitening changes the reference point. A patient who plans to bleach after delivery will end up with a crown that no longer matches.

4. **Special characterization**
   Note any details that need to be mimicked: incisal translucency, white spot lesions, gingival gradation, mamelons, crack lines, or texture differences between adjacent teeth.

5. **Clinical photo**
   Upload to *My Account* on glidewell.com. The photo supplements every other field and gives the lab visual context that written notation alone cannot provide.

FOR BRUXZIR FUSION CASES — ADDITIONAL FIELDS

- Mamelon design and position
- Incisal translucency level
- Veneer shade (separate from the core shade)

The more information the lab receives upfront, the fewer decisions they make on your behalf.

"The cases that come back to us without shade problems almost always have one thing in common: the doctor sent a photo and filled out everything on the Rx. When we have the stump shade, the final shade, and a clear image of the adjacent teeth, we can plan around it. When we don't, we work from the tab alone — and if the prep is dark, we are already behind."

– Joe Hattouni, CDT | VP of Lab Operations, Glidewell

Ask a Colleague

Peer-to-peer Q&A with Dr. Jinny Bender — real questions from dentists, real answers from the chair.

What's your protocol for shade selection when a tooth has been isolated under a rubber dam for over an hour?

JB I never take a shade with the rubber dam in — I need to see the other teeth to shade match correctly. Always take the shade before the rubber dam goes on and before I prep, while the teeth are still hydrated and the patient's lipstick is off.

Do you rely primarily on digital spectrophotometers, or do you still prefer the classic VITA guide for cosmetic cases?

JB I like to use my own eyes with the VITA shade guide — always have, always will. Spectrophotometers are helpful, but they can give you a lot of variable shades that end up confusing.

How do you resolve a dispute with your lab when they say the restoration matches, but it looks wrong in the patient's mouth?

JB If the shade is off at the delivery appointment, I re-evaluate with the VITA guide and pick the best shade chairside, with the patient's input. It's wonderful to work with a lab that understands dentistry isn't an exact science — Glidewell's no-fault remake policy is very generous in making sure we get the best outcome.

What are your first two steps when selecting a shade?

JB Step one: remember to take the shade before we prep — that's the one people skip. Step two: evaluate the three aspects of shade selection — value, color, and saturation. My assistant keeps the VITA guide and stump shade guide on the tray as a reminder, and I'll get their take too — another pair of eyes doesn't hurt — but the final call on shade is always mine. It's hard to believe, but we forget when the schedule gets busy.

What color-corrected lighting or handheld light source has given you the most consistent results?

JB Natural light is the best background, if it's available. If it's not, I'll turn off the overhead light so I don't get unnatural color distortion.

How do you manage shade selection for tetracycline staining or multi-colored, mottled enamel?

JB Tetracycline cases are tough ones. If the patient wants a true match, photos are absolutely necessary — and a custom shade with the lab is likely the best scenario.

Do you take your own clinical shade photographs with a DSLR, or send the patient directly to the lab for a custom match?

JB I take pre-op photographs of all of my esthetic cases. Using a good camera is an investment for better communication with your lab. Make sure to take pics of potential final shade tabs too!

What causes shade-matching errors, and how long should a shade selection take?

JB Incorrect lighting and prolonged viewing of the tooth. A shade selection should take 2 to 5 seconds, max — rest your eyes on a neutral gray surface in between glances.

If you forgot to take the shade at the start, how long do you let a tooth rehydrate?

JB If we forget — and it happens — I call the patient back for a shade-selection appointment when the teeth are naturally hydrated again. It matters, and patients value that we're taking the time to get the best outcome.

Quick Reference

#	TOPIC	THE ESSENTIAL ACTION
1	Start with Shade	Take the shade before prep, injection, or isolation. Hydrated tooth. 5–7 sec max. Natural or color-corrected light.
2	Select Shade Precisely	Evaluate Value first (light to dark), then Hue (A/B/C/D), then Chroma. Consider the VITA 3D-MASTER for esthetic cases.
3	Don't Skip the Stump Shade	Record stump shade before temporization on every all-ceramic case. Flag dark or endodontically treated teeth explicitly.
4	Take Clinical Photos	Adjacent teeth + shade tab in frame. Natural light. Provide images with your case submission.
5	Choose the Right Restorative Material	BruxZir Esthetic for anterior/esthetic cases. BruxZir Full-Strength for posterior/fuction-first. BruxZir Fusion and BruxZir Glass require additional shade detail.
6	Complete the Prescription	Final shade + stump shade + bleaching history + characterization notes. Use the digital notes field for everything the form doesn't ask.

Questions?

Contact your Glidewell Account Manager or visit glidewell.com

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