

DRAFT FOR REVIEW — Not Doctor-approved for training. VERIFY items must be cleared before competency use.



IN-HOUSE LABORATORY

Cypress & Katy, TX

Document ID: SOP-LAB-060

Version 0.1 DRAFT | Target effective 09/10/2026

Definitive Crowns / Veneers

SprintRay Ceramic Crown — Lab Manufacturing Procedure

Smile Avenue Family Dentistry — In-House Laboratory

SprintRay Ceramic Crown — Lab Manufacturing Procedure

Document ID	SOP-LAB-060
Version	0.1 DRAFT
Effective (target)	09/10/2026
Owner	Lab Technician (process owner)
Related	Station Job Aid SOP-LAB-060-JA
Status	DRAFT FOR REVIEW

Start: Case received in Medit Lab with scan QC

End: Restoration bagged and logged in SEAZONA for outbound delivery

1. Purpose

This procedure standardizes in-house manufacturing of SprintRay Ceramic Crown definitive restorations (full/partial crowns, veneers, and related IFU indications) so every case meets the same quality, safety, and traceability standard before leaving the lab.

2. Scope

In scope: Medit Lab intake → scan QC → design (VERIFY path) → RayWare / Pro 2 print → wash/dry → NanoCure → finish & polish → lab clean → bag & SEAZONA outbound log.

Out of scope: Chairside scanning; clinical try-in, cementation, and patient delivery; chairside chemical disinfection; temporary Digital Temp (SOP-LAB-050); Crown HT / Midas Restore / Motto paths; non-SprintRay printers.

IFU indications include: individual/fixed definitive full single crowns; definitive partial crowns (anterior/posterior); individual/fixed single veneers; artificial teeth for removable definitive full dentures; individual removable monolithic full and partial dentures (when prescribed as Ceramic Crown path).

3. Roles

Role	Responsibility
Clinical Assistant / Office	Sends case via Medit Lab; receives bagged restoration from lab
Lab Technician	Scan QC; design import/export/approve; manufacture; finish; bag; SEAZONA log
Trainer / Lead Lab Technician	Competency observation and sign-off
Doctor	Clinical indication, shade/Rx, try-in/cementation, remake authorization (outside manufacturing steps)

4. Practice Configuration

#	Item	Smile Avenue setting
1	Printer	Pro 2 only for this path
2	Cure unit	NanoCure — select exact Ceramic Crown resin profile (on-screen name; do not invent minutes)
3	Case intake	Medit Lab
4	Design	VERIFY — outside CAD or SprintRay Cloud Design per IFU (Lab Technician imports, exports STL, approves)
5	Wash	ProWash S available — IPA ≥ 91%. IFU primary methods: IPA bowl scrub or spray/wipe until resin-free; dry completely before cure. VERIFY whether practice standardizes ProWash S cycle vs hand-wash for filled Ceramic Crown.
6	Tank preference	Optical Polish Tank preferred (IFU); Standard Tank acceptable
7	Lab clean before bag	Soap, toothbrush, and warm water (and/or steamer), then dry. Cleaning — not chemical disinfection.
8	Design approval before print	Lab Technician
9	Case log	SEAZONA
10	Design QC thickness	≥ 0.6 mm (IFU)

5. Safety

- Treat uncured Ceramic Crown as a sensitizer. Work in a well-ventilated area.
- Wear nitrile gloves, protective eyewear, lab coat or gown, and face protection when handling uncured resin, IPA, or grinding/polishing.
- Do not place incompletely cured resin in the mouth. Do not bag an under-cured restoration.
- Skin contact: wash with soap and water. Persistent irritation: stop work and follow the SDS.
- Do not substitute non-validated printers, washers, cure units, or resins for this path.
- Cure liquid waste resin fully before disposal. Follow hazardous-waste rules until cured.
- Do not use expired resin.

6. Materials & Equipment

Resins

- SprintRay Ceramic Crown (shade per Rx; >50% inorganic filler by weight per IFU)
- IPA ≥ 91%

Contraindications: known allergy; intraoral contact with uncured resin; use outside IFU indications.

Equipment stack

Step	System
Intake	Medit Lab
Design	VERIFY — outside CAD or SprintRay Cloud Design
Nest / print	RayWare → Pro 2
Wash	ProWash S and/or IFU IPA methods (VERIFY practice standard)
Cure	NanoCure — Ceramic Crown profile
Case log	SEAZONA

Design QC targets

Area	Minimum
Restoration thickness	≥ 0.6 mm

Confirm shade, margins, contacts, and occlusion match Rx.

Finish / polish (IFU)

Step	Tools / media
Support removal	Flush cutter or diamond disc
Polish	SprintRay Restorative Finishing Kit (preferred)
Optional characterization	OptiGlaze (GC) colors/stains + clear glaze
Post-cure wash	IPA bowl scrub or ProWash/Dry after cure (IFU)
Cleanup	Steamer and/or dish soap + brush + warm water; dry

7. Process Controls

Gate	Do not proceed if	Proceed when
Intake	Case missing or files unreadable	Case open with matching ID / Rx
Scan QC	Holes, missing prep/bite, inadequate margins	Scans usable for design
Printer	Not Pro 2	Pro 2 only
Design	Not Lab Technician–approved; thickness < 0.6 mm	QC-A pass
Resin	Expired or wrong material	In-date Ceramic Crown; shaken 1 minute
Pre-cure	Part wet / residual liquid resin	Fully dry and resin-free
Cure	Wrong profile / custom times invented	NanoCure Ceramic Crown profile complete
Outbound	Failed QC-E; not bagged; not logged	Bagged + SEAZONA outbound ready

8. Procedure

A. Intake & scan QC

1. Open the case in **Medit Lab**.
2. Verify patient/case ID, tooth numbers, shade, restoration type (crown / veneer / other IFU indication), due date.
3. Perform scan QC: prep(s) captured; bite usable; margins adequate; no critical holes or wrong-patient files.
4. **QC-SCAN:** Pass → continue. Fail → stop; request rescan or clarified Rx.

B. Design (VERIFY path)

5. Import accepted scans into the practice design path (**VERIFY:** outside CAD or SprintRay Cloud Design).
6. Design (or receive) definitive restoration STL per Rx.
7. Export print-ready **STL**.
8. Lab Technician **approves** for print.
QC-A: Thickness ≥ 0.6 mm; shade/type match Rx; margins/occlusion reasonable; STL labeled.

Fail → return to design; do not nest.

C. Nest (RayWare)

9. Import approved STL into RayWare.
10. Select appliance type and printer **Pro 2**.
11. Select material **Ceramic Crown** (shade per Rx).
12. Orientation (IFU): intaglio facing **away**; ~**10°** from anterior; desired layer thickness (RayWare typically defaults ~170 µm; Desktop IFU notes 50 µm recommended when using Desktop — **VERIFY** Pro 2 / Cloud default used in practice); default supports.
13. Send to Pro 2 queue only.

D. Print

14. Confirm resin not expired; shake **1 minute**; pour to min fill; record lot in SEAZONA.
15. Assign material/shade on touchscreen; confirm clean platform.
16. Start print; wait for lid unlock when complete.
17. **QC-B**: Fully formed; no delamination or major voids. Fail → remake.

E. Wash & dry

18. Wash until surfaces are free of liquid resin using practice-validated method: IPA spray/wipe and/or bowl scrub (IFU Methods A/B), and/or ProWash S if practice standardizes (**VERIFY**).
19. Fully dry before post-cure.
QC-C: Clean, resin-free, fully dry.

F. Post-cure

20. Place dry restoration in **NanoCure**.
21. Select **Ceramic Crown** preprogrammed profile. Do not invent custom times.
22. After cure, optional IPA wash of cured device (IFU). Remove supports if not already removed.
QC-D: Fully cured; supports clean; no critical chips. Fail → remake/salvage.

G. Finish, clean, bag

23. Polish with SprintRay Restorative Finishing Kit (or IFU-equivalent). Optional OptiGlaze characterization if Rx requests.
24. Clean with soap + brush + warm water (and/or steamer); dry.
25. Label and bag; complete SEAZONA bagged / outbound.
QC-E: Finish OK; cleaned; bagged; labeled; SEAZONA complete.

End of SOP-LAB-060. Clinical cementation and delivery are outside this procedure.

9. Case Log (SEAZONA)

Field	Entry
Date	
Patient / case ID	
Medit Lab reference	
Teeth / type	☐ Crown ☐ Veneer ☐ Other IFU: _____
Scan QC	☐ Pass ☐ Fail → returned
Designed by (VERIFY path)	
Design approved by (Lab Technician)	
Ceramic Crown shade + lot	
Printer	Pro 2 ☐
Wash method	☐ ProWash S ☐ IPA hand ☐ Both
NanoCure profile	Ceramic Crown ☐
Lab Technician initials	
QC-SCAN + A–E pass	☐ Yes
Remake?	☐ No ☐ Yes — reason: __
Bagged for outbound	☐ Yes — time __

10. Quality Checkpoints

ID	When	Pass	Fail action
QC-SCAN	After Medit Lab intake	Scans usable	Return to office
QC-A	Pre-print	Approved + ≥ 0.6 mm	Return to design
QC-B	Post-print	Complete geometry	Remake
QC-C	Post-wash	Clean + dry	Re-wash/dry
QC-D	Post-cure	Fully cured	Remake / salvage
QC-E	Before outbound	Finish + bag + SEAZONA	Hold

11. Remake Criteria

Finding	Action
Failed scan QC	Do not manufacture
Incomplete print / delamination	Remake
Printed on non-Pro 2	Remake on Pro 2
Wet / under-cured / wrong profile	Hold; correct or remake
Margin chip / critical fracture	Remake
Light support nubs only	Salvage → re-check QC-E
Unsure	Escalate to Doctor / lab lead

12. Competency

Requirement	Sign-off
Read SOP-LAB-060 and Job Aid SOP-LAB-060-JA	Tech _ Date ____
Demonstrates Medit Lab intake, scan QC, design approve, process controls	Trainer _ Date ____
Completes 3 observed cases to bagged outbound	1. ____ 2. ____ 3. ____
Trainer attests ready	Trainer _ Date ____
Lab lead authorizes unsupervised production	_ Date ____

13. Troubleshooting & Escalation

Problem	Action
Bad scans	QC-SCAN fail → office
Print failure	Remake; filter; verify material assignment
Soft / under-cured	Confirm dry + Ceramic Crown NanoCure profile
Shade variance	Confirm shake/stir/cure; remake if needed
Allergy / wrong indication	Stop — Doctor

SprintRay Support: 1-800-914-8004 — missing NanoCure Ceramic Crown profile; repeated failures.

14. References

- SprintRay Ceramic Crown IFU-016_12 (effective 07/29/2026)

- Local IFU archive: `/workspace/sprintray-ifu/all/CeramicCrown.txt`
 - SprintRay Restorative Finishing Kit instructions (when used)
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Smile Avenue Family Dentistry — In-House Laboratory · Internal use only

SOP-LAB-060 DRAFT FOR REVIEW · Target effective 09/10/2026 · Supersedes prior draft revisions

Review annually or when SprintRay IFU / equipment changes. Confirm all VERIFY items before training use.

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