

Workflow guide for: 3D Printing Retainers with Sweeth ClearShape

From intraoral scan to a direct-printed retainer
in a streamlined, AI-assisted workflow.



PRODUCT CODE
PSCS12



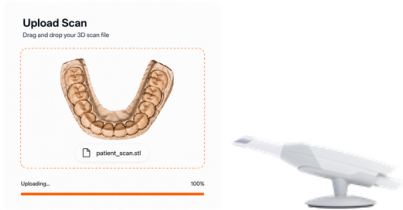
EFFECTIVE DATE
03/08/2026



VERSION
1.0

1 CAPTURE DATA

Capture accurate digital data of the patient.

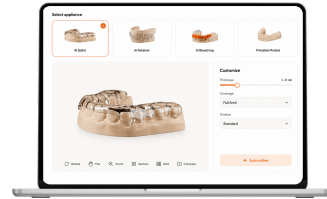


TOOLS

- Intraoral scanner
- Scan software
- Data storage / cloud

2 GET AI DESIGN

AI-assisted design for precision and consistency.

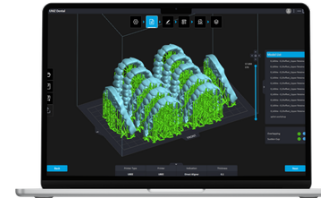


TOOLS

- AI-design platform
- Design review
- Cloud storage

3 CREATE A PRINT JOB

Prepare and validate the print job for optimal results.

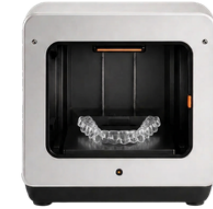


TOOLS

- Slicing software
- Print settings
- Job validation

4 3D PRINT

Print the appliance with validated materials and settings.



TOOLS

- 3D printer
- Dental resin
- Validated print profile

5 SPINNER

Spin to remove uncured resin from the surface.



TOOLS

- Spinner or centrifuge
- Cure settings
- Spinning time

6 POST CURE

Post cure to achieve optimal mechanical properties.



TOOLS

- UV post cure unit
- Cure settings
- Cure time

7 POST-PROCESS

Finish and inspect the printed appliance.



TOOLS

- Finishing tools
- Quality inspection
- Try-in & adjustments



Follow validated parameters and best practices to ensure safety, precision, and patient satisfaction.



Als 1 retainer ongeveer:

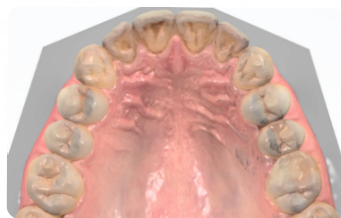
- 8 ml → ± 125 retainers
- 10 ml → ± 100 retainers
- 12 ml → ± 83 retainers

BENEFITS

- Faster turnaround
- Consistent quality
- Predictable results

1 Capture data

Use an intraoral scanner to capture accurate digital impressions for the case.



Upper arch scan



Lower arch scan



Bite scan (occlusion)

1

CAPTURE UPPER ARCH

Capture the entire upper arch, including as much surrounding soft tissue as possible.

2

CAPTURE LOWER ARCH

Capture the entire lower arch, including as much surrounding soft tissue as possible.

3

CAPTURE BITE SCAN

Capture the bite with the upper and lower arches in maximum intercuspation.

4

CHECK SCAN QUALITY

Ensure there are no holes in the scan and that the scan is not missing any relevant data for the appliance (i.e. palate).

5

EXPORT FILE

Export the scans as STL with the upper and lower arch in occlusion. This is the default export style for most scanners and removes the need for a separate bite file.



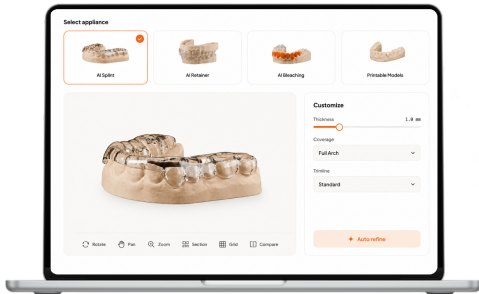
IMPORTANT FOR ITERO SCANNERS

If you're using an iTero scanner, select the option 'File Per Arch (ArchesOriented in Occlusion)' when exporting, or your scans may not import correctly into Unison AI.



2 Get AI design

Submit your case to Unison AI and receive a high-quality retainer design in minutes.



unison^(AI)
by sweeth



Fast turnaround

Designs delivered in minutes.



AI-powered precision

Optimized for fit and function.



Cloud-based

Access and manage cases anytime, anywhere.

1



Visit unison.sweeth.pro

Open your browser and go to unison.sweeth.pro.

2



Sign in or create a Unison AI account

Sign in with your existing account or create a new one.

3



Start a new treatment

Click "New Treatment" to begin a new case.

4



Select or add the patient

Search for an existing patient or add a new patient profile.

5



Choose "AI Retainer" as the appliance type

Select "AI Retainer" from the appliance list.

6



Upload the scan file and submit

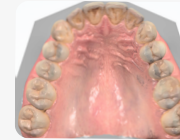
Upload upper and/or lower scan files and click "Submit" to send your case.



SCAN GUIDELINES



Either select upper and/or lower scans.



Scans must be exported in occlusion.



Sufficient tissue must be captured beyond the margin in the anterior/buccal area.



Unison AI generates the design within minutes.

You can review and approve the design from the Cloud Design dashboard. If the design is not acceptable, please rescan and submit a new case.

Once the retainer design has been accepted, use the 'Export' action on the file page to download a print-ready file, or send it directly to your printer's native slicing software.



Export for printing

Export the retainer file (STL format) and import it into your printer's slicing software.



Send directly

Send the retainer file directly to the printer's native slicing software (if connected).



NOTE

Ensure the file has been checked and approved before creating the print job.



PRINT JOB SETUP

1		Job type	Retainer
2		Material	Sweeth ClearShape
3		Layer thickness / resin profile	Use the validated ClearShape resin profile for the specific printer as provided in the Instructions for Use .
4		Orientation	Intaglio surface facing away from the build platform and angled to minimise supports on occlusal/incisal surfaces.
5		Supports	Standard supports as recommended by the printer build software.



QUEUE TO PRINTER

You can also print immediately without queuing, but thoroughly inspect your printer and resin tank/vat before starting a print.

3D print

Follow safety guidance and these steps to ensure reliable prints and operator safety.



IMPORTANT SAFETY INFORMATION

Uncured Sweeth ClearShape resin may:

- Cause skin irritation (H315) and allergic skin reactions (H317)
- Be toxic to aquatic life (H411)



Wear appropriate PPE (nitrile gloves, safety glasses with side shields, lab coat).



Avoid skin and eye contact. In case of contact, flush with plenty of water and seek medical advice if irritation persists.



Ensure good ventilation in the work area.



Follow the latest Safety Data Sheet (SDS) and instructions for Use (IFU) for full information.



Avoid release into the environment. Do not pour resin or cleaning solutions down the drain.



Store resin cool, well vaccinated, and protected from sunlight.



Remove and store the resin tank when not printing.

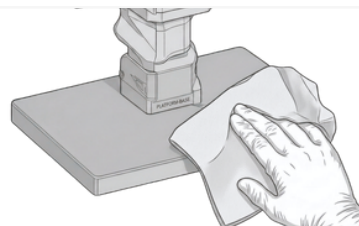


ALWAYS CONSULT THE LATEST SDS AND IU
www.sweeth/resources



PRINT START STEPS

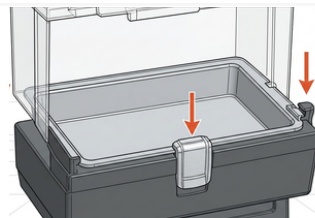
1



Check the build platform

Ensure the build platform is clean, free of resin, and correctly seated.

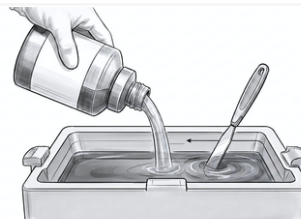
2



Install the resin tank/vat

Install the resin tank and confirm it is fully seated and locked in place.

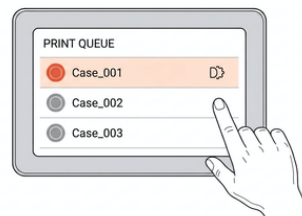
3



Fill the tank with Sweeth ClearShape resin

Fill the resin tank up to the indicated line.

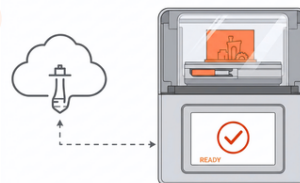
4



Start the print job from the queue

Select the validated job from the print queue on the printer touchscreen or cloud dashboard.

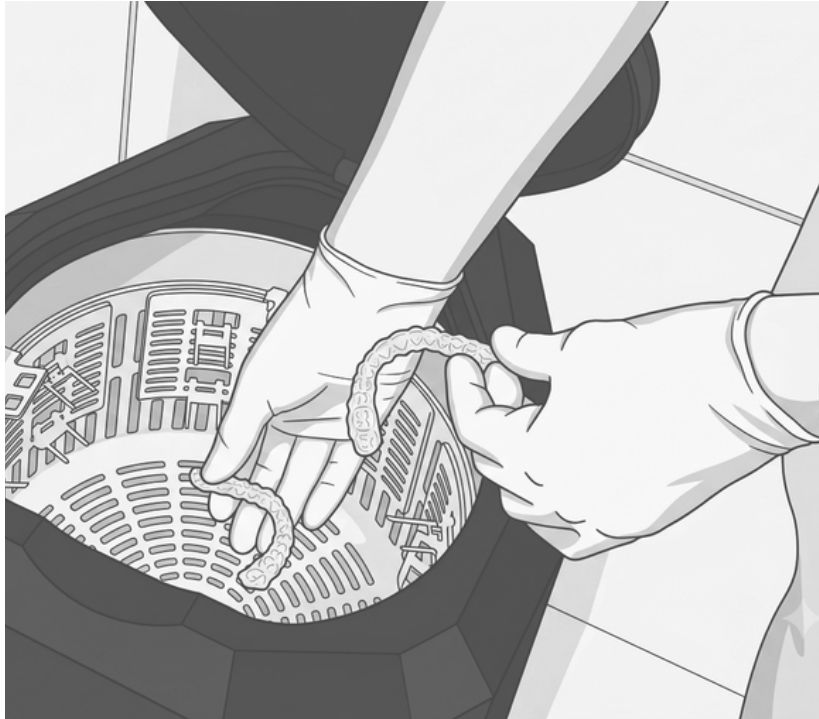
5



Monitor the print progress

Monitor the job on the printer touchscreen or cloud dashboard. Do not open the printer during printing.

Spin the retainer using your spinner to remove uncured resin from the surface, then dry thoroughly



FOLLOW THESE STEPS

1



A) Remove the printed retainers from the build platform.

2



B) Remove the printed support structure from the actual retainer.



NOTE

Follow the correct time specified in the ClearShape IFU for your equipment (i.e. 6 min).



Inspect the appliance for residual uncured resin, and redo this step if needed before post-curing.

Sweeth ClearShape is only validated for use with the curing units listed below.

VALIDATED CURING UNITS

Asiga CURE	 with vacuum
Graphy TeraHarz Cure 2	 with nitrogen

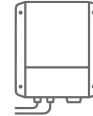


Using a non-validate curing device may result in an defective or non-compliant appliance.



POST-CURE PROCEDURE

1



Place in validated curing unit

Place the retainer in one of the validated curing units listed on the left.

2



Select material or follow IFU parameters

Select "ClearShape" from the material list if available. If not, follow the curing time, temperature, and post-cure protocol specified in the IFU.

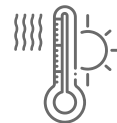
3



Follow device instructions

Follow the operating instructions provided by the curing unit manufacturer.

4



Remove and cool before handling

Once the curing cycle is complete, carefully remove the retainer from the curing unit. Allow it to cool on a clean, non-reactive surface for approximately 5 minutes before handling further.



NOTE

After post-curing make sure the retainer has fully cooled before handling.

For full curing times, temperatures, and post-cure protocol, refer to the Sweeth ClearShape IFU.

7

Post process & deliver

Finish, clean, heat-activate, and seat the retainer for a comfortable chairside delivery.

TOOLS

Lab handpiece

Low-RPM finishing and polishing.

Silicone or carbide burr & cotton buff wheel

Remove support stumps and smooth the surface.



SHAPE-MEMORY ACTIVATION

ClearShape responds to heat. Warm water above the material's T_g helps the retainer recover its intended form before seating.

KEY PARAMETERS

BOIL

60 sec

ACTIVATE

≈ 50 °C

SOAK

≈ 15 sec



FINISHING AND DELIVERY

1



Remove supports and polish

At low RPM, use a silicone or carbide burr to remove remaining support stumps. Finish with a cotton buff wheel as needed.

2



Boil for 60 seconds

Boil the retainer in water for 60 seconds to remove residue, then handle it with clean instruments.

3



Activate the shape memory

Before chairside placement, immerse the retainer in warm water at approximately 50 °C for about 15 seconds.

4



Seat and allow to set

Place the retainer in the patient's mouth and confirm proper fit. Leave it seated for a few minutes to allow it to set.

5



Give the patient clear instructions

Ask the patient to rinse the retainer in hot water immediately before wearing it to reactivate the shape-memory response.



NOTE

Confirm a proper fit before delivery and follow the latest ClearShape IFU for validated handling instructions.

Reference: ClearShape material & compliance

Material properties

Property	Value
Viscosity	500 +/- 100 cP
Tg for heat activation	45 °C
Flexural strength	40 MPa
Flexural modulus	980 MPa
Tensile strength	30 MPa
Elongation at break	60%



Biocompatibility evaluation

Standard	Result	Meaning
ISO 10993-1:2025	Conform	Biological evaluation
ISO 10993-5	Not cytotoxic	Cell viability evaluation
ISO 10993-10	Not sensitizing	Skin sensitization evaluation
ISO 10993-23	Not irritating	Irritation evaluation

Compatible equipment overview

Equipment	Manufacturer / model	Status	Notes
Printer	Uniz UBEE Shining AccuFab-CEL	Validated	Layer settings, support settings and resin profile.
Curing unit	Asiga CURE (with vacuum) Graphy TeraHarz Cure 2 (with nitrogen)	Validated	Curing time, temperature and post-cure protocol.

Handling and safety: Use PPE, avoid skin and eye contact with uncured resin, ensure good ventilation and follow the latest SDS and IFU. Avoid release into the environment.

This information is provided for reference purposes only. Always follow the latest TDS, IFU, and validated workflow.

For more information, contact your Sweeth representative or visit www.sweeth.pro

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