

Processing notes

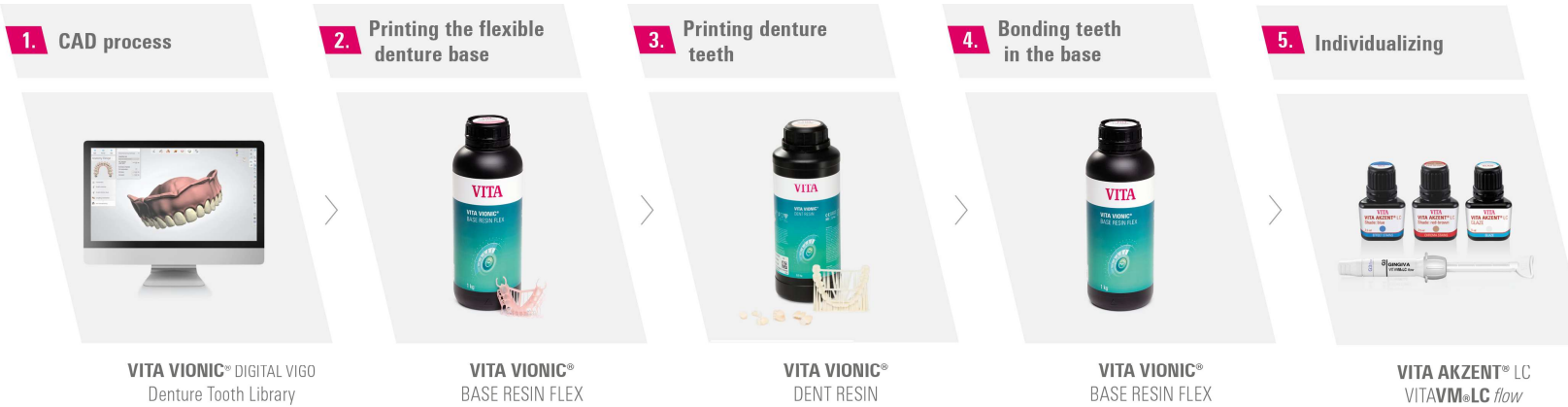


VITA VIONIC® BASE RESIN FLEX

Your Workflow Options for flexible partial dentures



Economy Workflow: Print it



Smart Workflow: Mix it



VITA VIONIC® BASE RESIN FLEX



VITA VIONIC®

BASE RESIN FLEX

- 3D printing material for producing removable, flexible denture bases
- Class IIa medical device
→ permanent indication
- Recommended duration of wear:
up to **1.5 years**
- Two shades:
 - Clear
 - Pink translucent
- 1 kg bottle



Validated devices



- There is a **separate printing template for each shade** of the flexible denture base!
- You can find the current post-curing parameters on the following website under "Parameters:":



Validierte Drucker				
	ASIGA Max/Mini	☒	☒	☒
	ASIGA Max 2	☒	☒	☒
	ASIGA Ultra	☒	☒	☒
	ASIGA Pico2	☒	☒	☒
	ASIGA PRO2	☒	☒	☒
	ASIGA PRO 4K	☒	☒	☒
	Rapid Shape Pro20/D20+ Series	☒	☒	☒
	Rapid Shape D30+ Series	☒	☒	☒
	Rapid Shape D50+ Series	☒	☒	☒
	Rapid Shape ONE	☒	☒	☒
	Carbon 3D M2	☒	☒	☒
	Carbon 3D M3	☒	☒	☒
	Formlabs Form4B	☒	☒	☒
	MICROLAY Versus	☒	☒	☒
	GlideWell Fastprint IQ	☒	☒	☒
	W3P SoliFlex	☒	☒	☒
	RAYSHAPE Edge E2	☒	☒	☒
	RAYSHAPE Edge mini	☒	☒	☒
	Phrozen Sonic 4K 2022	☒	☒	☒
	Aidite CPD-100	☒	☒	☒
	Shining 3D Accufab CEL	☒	☒	☒
	Shining 3D Accufab L40	☒	☒	☒
	Shining 3D Accufab D1s	☒	☒	☒
	SprintRay Pro2	☒	☒	☒



Validierte Drucker				
	Straumann P Series	☒	☒	☒
Validierte Nachhärteeinheiten				
	NK Optik DtoFlash G171 N2	☒	☒	☒
	NK Optik NK Flash 250	☒	☒	☒
	NK Optik NK Flash 150	☐	☐	☐
	Rapid Shape RS cure	☒	☒	☒
	Rapid Shape RS cure XL	☒	☒	☒
	Formlabs FormCure V2	☒	☒	☒
	Dentaply Digital Cure	☒	☒	☒
	SprintRay NanoCure	☐	☐	☐
	Straumann P Cure	☒	☒	☒
	GlideWell iLuxCure Dental	☒	☒	☒
	Drevo PCU LED2	☒	☒	☒
	DetailForm Photopol Vacuum+Gas	☒	☒	☒
	Aiga Cure	☒	☒	☒
Validierte Wascheinheiten				
	Ultrasonic Beth Bandelin Sonorex	☒	☒	☒
	Rapid Shape RS wash	☒	☒	☒
	Formlabs Form Wash V2	☒	☒	☒
	SprintRay ProWash	☐	☐	☐

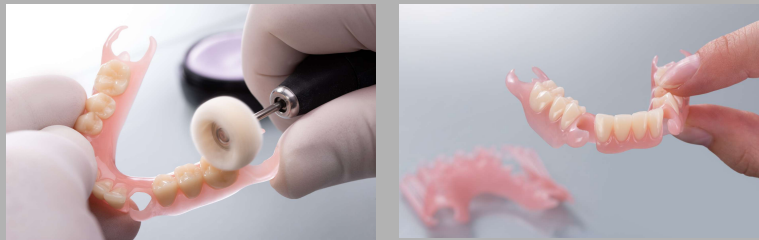
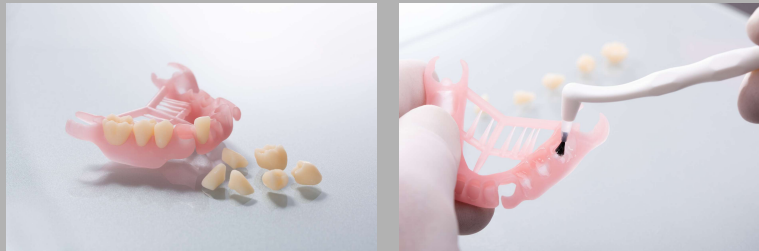
☒ successfully validated ☐ in progress



View the current validation list

[VITA VIONIC RESIN | Validated devices](#)

Print it - Workflow for printed partial dentures



Your Economy Level



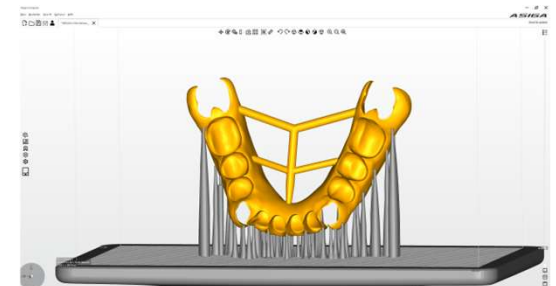
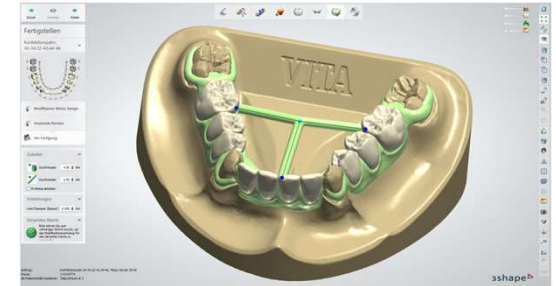
- 1) CAD design in exocad/3Shape
 - generate STL file
 - Select the material parameters for the corresponding product in the printer
 - Transfer the data to the printer
 - Prepare for printing & start
- 2) Post-processing
- 3) Cleaning
- 4) **Bonding**
- 5) **Post-exposure**
- 6) Polishing
- 7) Final cleaning

1) CAD design

In exocad / 3Shape

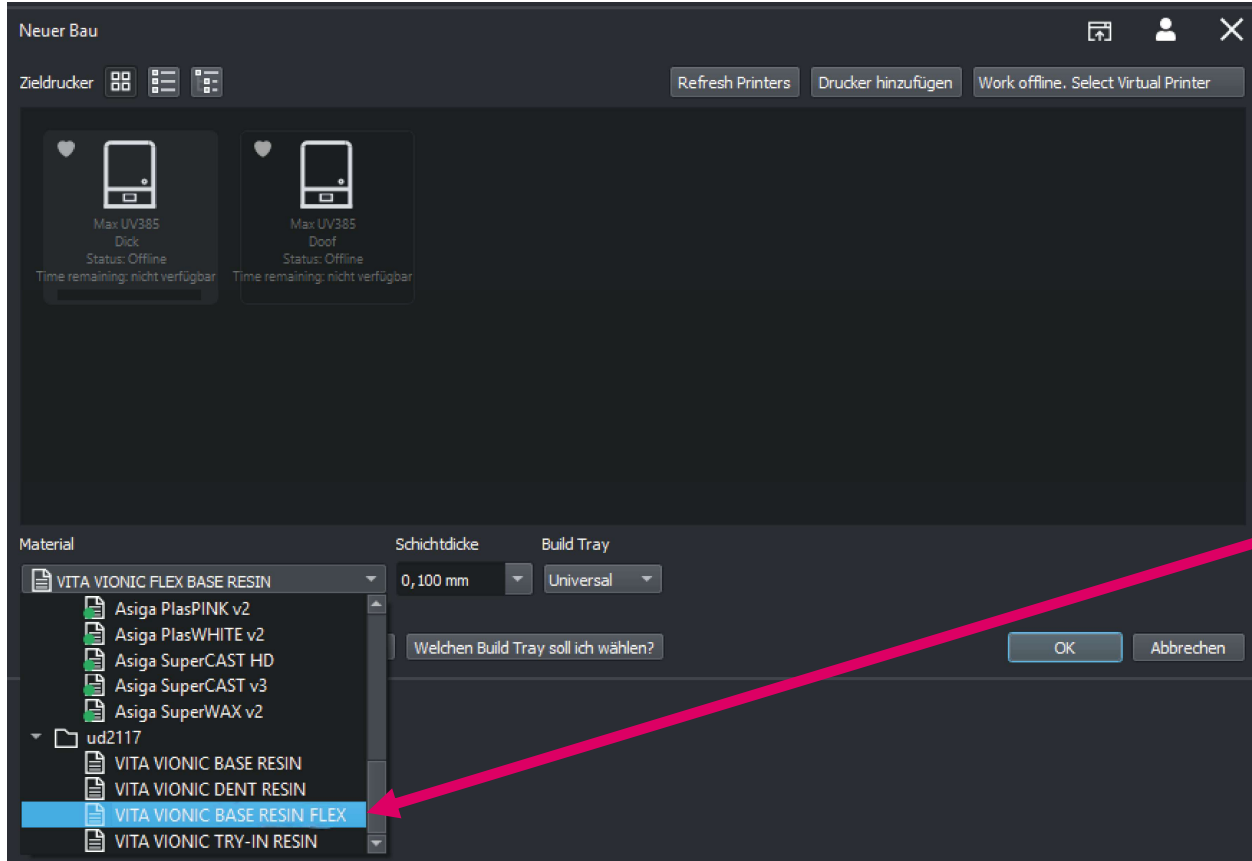


1. Design recommendations
 - **Clasps:** Ideally 1-1.5mm
 - **Minimum wall thickness of periodontal pocket:** 0.8-1mm
 - **Bonding gap:** 150µm
 - **Palatal plate:** 2-3mm
 - **Lingual bar:** 3-5mm
2. Generate an STL file
3. Convert the data to the CAM software and create supporting structures – Slicersoftware
Select validated parameters:
 - VITA VIONIC DENT RESIN - layer thickness 50 µm
 - VITA VIONIC BASE RESIN FLEX - layer thickness 100 µm
4. Transfer the data to the printer



Printing parameters

For example: Asiga Composer – Slicing Software



Select the validated material parameters in the printer software.

If the parameters are not available:

- Update the software
- or*
- Import the parameters manually
 - as a **download** on the [VITA product page](#) (Downloads – Software and Software Updates)
 - or*
 - available in the Asiga Material Library

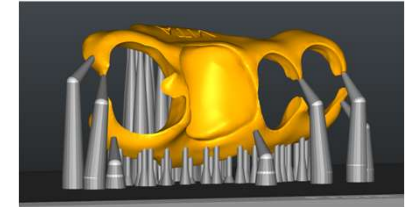
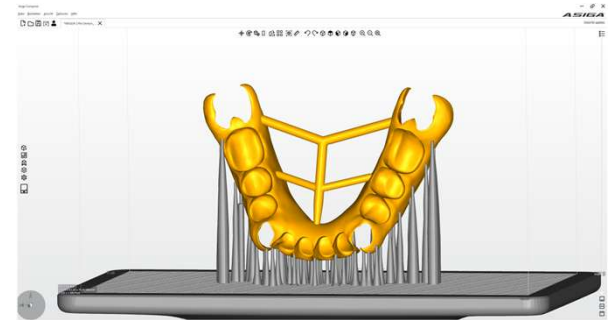
1) CAD design

Recommendations for placing the support structures



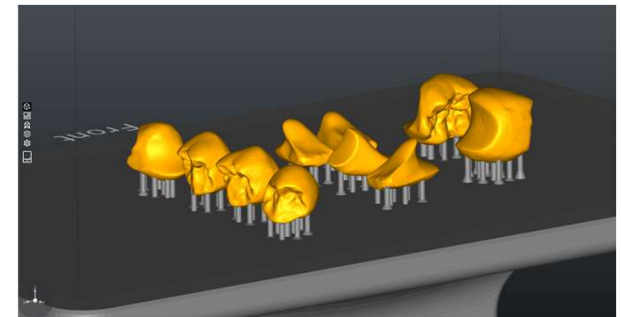
VITA VIONIC® BASE RESIN FLEX:

- Alignment of approx. **45°-70°**
 - The **optimal angle depends on the design** and should be adjusted as needed to avoid overhanging areas that are not adequately supported.
- Reinforce critical areas, for example **alveolar crests**, by installing additional support structures.
- Keep **cavities free** of support structures.



VITA VIONIC® DENT RESIN

- Attach supports to areas not relevant to the fit (labial/buccal).



1) CAD design

Recommendations for placing the support structures



Advantages of vertical alignment:

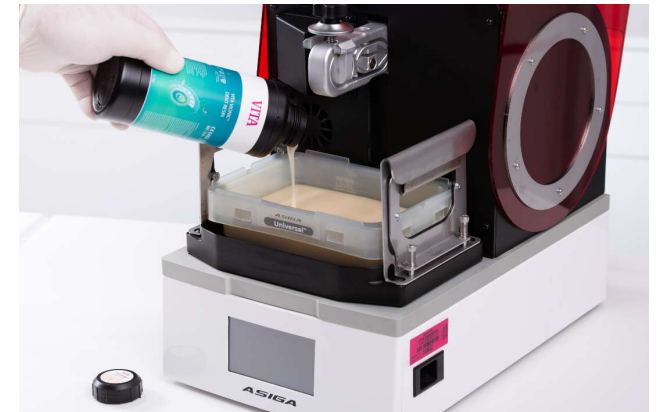
- Greater precision, better fit
- Support structures do not affect bite/occlusion

Disadvantage:

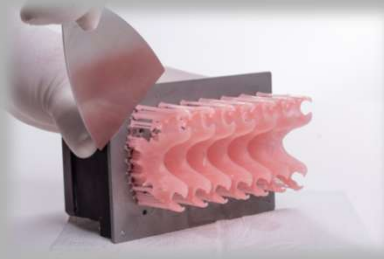
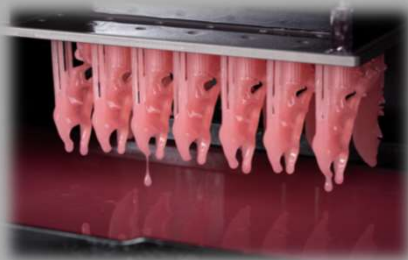
- Longer printing time

Preparations for 3D printing

- Before use, **the material in the bottle must be shaken well** or preferably homogenized with a bottle roller to avoid any shade deviations or misprints.
- If the resin has already been stored in the tray, mix it with a silicone spatula to make it homogeneous.
- Fill the resin tank of the 3D printer in accordance with the instructions of the printer manufacturer.
- Start the printing process.



Workflow with VITA VIONIC® RESINS



2) Post-processing

- Allow the printed objects to **drain** for approx. **10 min. in the printer**. Reworking should take place as soon as possible after the printing process.
- Remove the platform from the printer and remove the printed objects from the platform. In the case of multiple objects, separate from each other.
- Before cleaning, **remove excess resin** with **compressed air**.
- **Remove the outer supporting structure.**

3) Cleaning

- VITA VIONIC BASE RESIN FLEX **2x 3min**
- VITA VIONIC DENT RESIN **2x 1min**

clean each in an ultrasonic bath using **fresh isopropanol** $\geq 98\%$ as specified by the equipment manufacturer

- 1) Preliminary cleaning
- 2) Intensive cleaning

→ Alternatively, select validated wash units (e.g., Formlabs Form Wash V2, RapidShape RS wash) and their corresponding templates for the respective product.

- **Dry the cleaned printed objects** until there are no longer any traces of isopropyl alcohol. Check openings, hollow spaces and gaps for residue. The surface may no longer be sticky and shiny after cleaning.
→ If liquid resin is still visible in the cavities after the cleaning time, a follow-up cleaning with isopropyl alcohol and a brush is recommended.
- **Store objects in a dark place** (protected from light at room temperature) **for 30 minutes before post-exposure!**



4) Bonding the printed base to the printed teeth with VITA VIONIC® BASE RESIN FLEX



- IMPORTANT: Leave the printed denture base and denture teeth in their **green state** (not after post exposure)!
 - External support structures have been removed
 - Cleaning has taken place
- Place the printed denture teeth into the cavities of the denture base, check to ensure that the teeth fit properly, and then remove them again.



4) Bonding the printed base to the printed teeth with VITA VIONIC® BASE RESIN FLEX



- Apply liquid VITA VIONIC BASE RESIN FLEX to the cavities using a small brush or a syringe
- Place the teeth in the cavities
- Use a brush to smooth out excess resin



5) Post-exposure



- Perform post-curing with a suitable light-curing device according to the manufacturer's instructions.
 - The properties and the shade effects of the end product depend on a number of factors such as the reworking process.
 - Correct post exposure is important for **biocompatibility**. For this reason, it must be ensured that the exposure device is in proper condition and that the moulds are completely hardened.



5) Post-exposure

Otoflash G171 N2



Use receptacle trays with **UV filter type 360N2**.

Bond the denture base to the teeth using exposure.

Step 1:

Cure the denture teeth with **400 flashes** under **nitrogen**.

→ If necessary, apply additional liquid VITA VIONIC BASE RESIN FLEX.

Step 2:

2 x 1,800 flashes under **nitrogen** for final post-exposure.

→ Turn the dentures over after the first 1,800 flashes

Alternatively, perform post-curing in a validated device.



Post-exposure

Asiga Cure – These parameters apply only for the 'pink translucent' shade



Step 1: **Pre-exposure of the flexible denture base under vacuum**

- Intensity: 50%
- Duration: 15 min. under vacuum

Step 2: **Bonding the printed teeth**

- Apply liquid VITA VIONIC BASE RESIN FLEX to the cavities using a small brush or a syringe
- Use a brush to smooth out excess resin

Step 3: **Curing without vacuum**

- Intensity: 50%
- Duration: 30 seconds without vacuum

Step 4: **Final curing of the flexible base and teeth under vacuum**

- Intensity: 50%
- Duration: 90 seconds under vacuum



Post-exposure

Formlabs Form Cure V2



Step 1: Pre-exposure of the flexible denture base

1 min. – no heat

Step 2: Bonding the printed teeth

- Apply liquid VITA VIONIC BASE RESIN FLEX to the cavities using a small brush or a syringe
- Use a brush to smooth out excess resin

Step 3: Final curing of the flexible base and teeth under vacuum

2 min. – no heat



Post-exposure

Additional validated post-curing units



If the flexible base requires a longer or more intense exposure than the dental material, **separate curing** of the objects must be performed first, followed by **bonding with VITA VIONIC BOND**.

For example, this is necessary for RS Cure & Dreve PCU LED N2.

Unit	VITA VIONIC® DENT RESIN	VITA VIONIC® BASE RESIN FLEX
RapidShape Cure 	Select the template with the name "VITA VIONIC DENT RESIN." The parameters stored in the template are as follows: • Vacuum at 50mbar • Initial curing phase • Activate lower & upper wavelengths • Duration: 240 seconds • Power: 75% • Second curing phase: • Only activate lower wavelength • Duration: 240 seconds • Power: 100%	Select the template with the name "VITA VIONIC BASE RESIN FLEX." The parameters stored in the template are as follows: • Vacuum at 50mbar • Initial curing phase • Activate lower & upper wavelengths • Duration: 300 seconds • Power: 85% • Second curing phase: • Only activate lower wavelength • Duration: 360 seconds • Power: 85%
Dreve PCU LED N2 	• Intensity 40% • 6:40 min • Vacuum, nitrogen	• Intensity 80% • 6:40 Min • Vacuum, nitrogen

Post-exposure

Validated post-curing units



Since the printed teeth require more intense exposure than the flexible base, **separate curing** of the objects must be performed first, followed by **bonding with VITA VIONIC BOND**.



Unit	VITA VIONIC® DENT RESIN	VITA VIONIC® BASE RESIN FLEX
Dentsply Digital Cure	• Intensity 100% • 5:00 min • Temperature off	• Intensity 50% • 5:00 min • Temperature off

6) Polishing



Workflow for printed partial dentures

6) Polishing



Mechanical preparations

- Smooth contact points of the support structures using **cross-cut milling cutters for acrylics**
- Processing with polishing pads, for example from DIMO®



Prepolishing

- Polishing brushes and pumice
- Standard polishing brushes with linen inserts are suitable to achieve an even surface.



High-gloss polishing

- 1500 RPM with buffing pad
- Polishing compounds, for example HATHO Polistar Emulsion
- Finally, polish using a wool pad and handpiece
- Low pressure, low speed



Note:

Due to the flexibility of the material, work should be carried out using **light contact pressure and at low speed** to prevent excessive heating.

7) Cleaning



The **cleaning process is carried out by dental laboratories/dental practices**

- in an ultrasonic bath (room temperature water bath).
- Do not use heat-based disinfection or sterilization methods. This could cause the denture to lose its shape.

For **daily cleaning** of the dentures **by the patient**

- lukewarm water, a soft toothbrush, liquid soap or dishwashing liquid should be used. Rinse well afterwards.

Please note:

- Do not use toothpaste, as the abrasive particles are coarse and will scratch the dentures.
- Do not use acids or solvents, as these will deteriorate the material properties when applied.
- Before insertion: Soak the clasp denture in **warm water (max. 40 °C)** for up to five minutes
 - Heat will make the prosthesis slightly more flexible.
 - The clasps are easier to slide over natural teeth.

Done

Printed partial dentures made with

VITA VIONIC® BASE RESIN FLEX

VITA VIONIC® DENT RESIN



Smart Level Workflow



Workflow: printed base + milled teeth

VITA

Your Smart Level

1) CAD design in exocad/3Shape

→ Generate STL file

- Create support structures in the slicing software
- Select material parameters for the corresponding product in the printer
- Transfer the data to the printer
- Prepare for printing & start

2) Post-processing

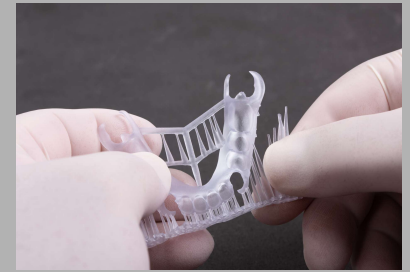
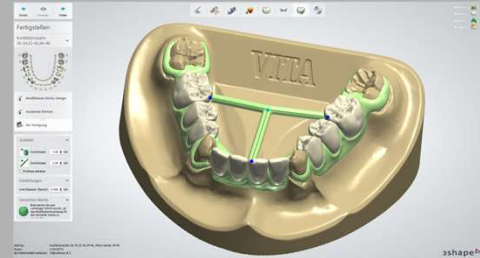
3) Cleaning

4) **Post-exposure**

5) **Bonding**

6) Surface treatment + polishing

7) Final cleaning



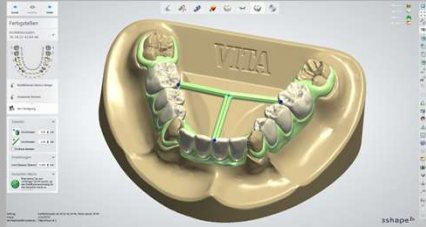
Workflow Smart Level – printed base



1) Prepare printed data

1. CAD design

- Design recommendations:
 - **Clasps:** Ideally 1-1.5 mm
 - **Minimum wall thickness of periodontal pocket:** 0.8-1 mm
 - **Bonding gap:** 150 μm
 - **Palatal plate:** 2-3 mm
 - **Lingual bar:** 3-5 mm
- Generate an STL file
- Convert the data to the CAM software and create supporting structures – Slicersoftware.



2. Select validated process and material parameters in the printer software.

- VITA VIONIC BASE RESIN FLEX– layer thickness 100 μm

Preparations for 3D-print



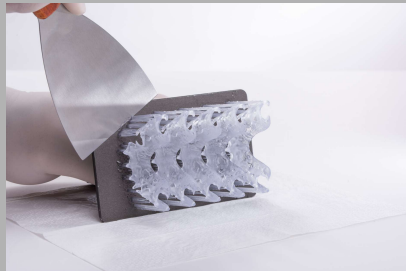
- **Before use, the material in the bottle must be shaken well** or preferably homogenized with a bottle roller to avoid any shade deviations or misprints.
- If the resin has already been stored in the tray, mix it with a silicone spatula to make it homogeneous.
- Fill the resin tank of the 3D printer in accordance with the instructions of the printer manufacturer.
- Start the printing process.



Workflow Smart Level – printed base



2) Post-processing



- Allow the printed objects to **drain** for approx. **10 min.** in the printer. Reworking should take place as soon as possible after the design process.
- Remove the platform from the printer and remove the printed objects from the platform. In the case of multiple objects, separate from each other.
- Before cleaning, **remove excess resin** with **compressed air**.
- **Remove the outer supporting structure.**

3) Cleaning

- VITA VIONIC BASE RESIN FLEX **2x 3 Min**

clean each in an **ultrasonic bath** using **fresh isopropanol** $\geq 98\%$ as specified by the equipment manufacturer

1) Preliminary cleaning

2) Intensive cleaning

→ Alternatively, select validated wash units (e.g., Formlabs Form Wash V2, RapidShape RS wash) and their corresponding templates for the respective product.

- **Dry the cleaned printed objects** until there are no longer any traces of isopropyl alcohol. Check openings, hollow spaces and gaps for residue. The surface may no longer be sticky and shiny after cleaning.

→ If liquid resin is still visible in the cavities after the cleaning time, a follow-up cleaning with isopropyl alcohol and a brush is recommended.

- **Store objects in a dark place for 30 minutes before post-exposure!**



Form Wash V2

formlabs



4) Post-exposure

- Perform post-curing with a suitable light-curing device according to the manufacturer's instructions.
 - The properties and the shade effects of the end product depend on a number of factors such as the reworking process.
 - Correct post exposure is important for **biocompatibility**. For this reason, it must be ensured that the exposure device is in proper condition and that the moulds are completely hardened.
- **Otoflash G171 N2: 2 x 2000 flashes** under nitrogen
 - Use receptacle tray with UV filter type 360N.
 - Turn the dentures over after the first 2,000 flashes.
- **Rapidshape RS cure:** Select the “VITA VIONIC BASE RESIN FLEX” template.



View the current validation list

[VITA VIONIC RESIN | Validated devices](#)



4) Post-exposure

Validated post-curing units



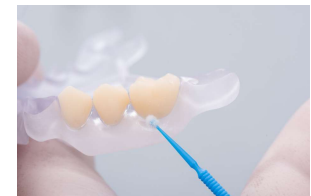
Unit	Parameter: VITA VIONIC® BASE RESIN FLEX
Asiga Cure 	Select the "VITA VIONIC BASE RESIN FLEX" template. Important: Different curing templates must be used for the <i>Pink Translucent</i> and <i>Clear</i> shades.
Dentsply Digital Cure 	• Intensity 50% • 5:00 min • Temperature off
Dreve PCU LED N2 	• Intensity 80% • 6:40 min • Vacuum, nitrogen
Formlabs Form Cure V2 	3 min - no heat

VITA VIONIC® BASE RESINS FLEX

5) Bonding with VITA VIONIC® DENT DISC multiColor



1. Check the fit: Ensure that the dental components fit loosely in the denture base.
2. Make sure that the bonding surfaces of the denture base and the denture teeth are clean.
3. Carefully sandblast the cavities of the printed denture bases and the milled teeth with Al_2O_3 (50 μm , 2 bar).
4. Residue is removed using compressed air that is free of oil and water.
5. Preconditioning of the milled tooth arch and the **cured**, printed base: **VITA VM LC Primer II**
Using a disposable brush, apply an **even, thin layer** of the primer. Next, perform curing using a validated light-curing unit in accordance with the curing instructions for VITA VMLC Primer.
6. Apply liquid denture base resin using a small brush.
7. Join the elements and use a brush to remove excess resin.
8. Post-exposure in a validated device.



6) Polishing



Workflow for printed partial dentures

6) Polishing



Mechanical preparations

- Smooth contact points of the support structures using **cross-cut milling cutters for acrylics**
- Processing with polishing pads, for example from DIMO®



Prepolishing

- Polishing brushes and pumice
- Standard polishing brushes with linen inserts are suitable to achieve an even surface.



High-gloss polishing

- 1500 RPM with buffing pad
- Polishing compounds, for example HATHO Polistar Emulsion
- Finally, polish using a wool pad and handpiece
- Low pressure, low speed



Note:

Due to the flexibility of the material, work should be carried out using **light contact pressure and at low speed** to prevent excessive heating.

7) Cleaning



The **cleaning process is carried out by dental laboratories/dental practices an ultrasonic bath**

- In an ultrasonic bath (room temperature water bath).
- Do not use heat-based disinfection or sterilization methods. This could cause the denture to lose its shape.

For **daily cleaning** of the dentures **by the patient**

- lukewarm water, a soft toothbrush, liquid soap or dishwashing liquid should be used. Rinse well afterwards.

Please note:

- Do not use toothpaste, as the abrasive particles are coarse and will scratch the dentures.
- Do not use acids or solvents, as these will deteriorate the material properties when applied.
- Before insertion: Soak the clasp denture in **warm water (max. 40 °C)** for up to five minutes
 - Heat will make the prosthesis slightly more flexible.
 - The clasps are easier to slide over natural teeth.

Done



Repair friendly. Relineable. Expandable.

VITA VIONIC® BASE RESIN FLEX



Printed clasp dentures made from VITA VIONIC BASE RESIN FLEX can be repaired and extended.

VITA recommends the following materials for this purpose:

- For the shade pink translucent: Astron Labtec Pro
- For the shade clear: Astron Clearsplint



Procedure:

- 1) Sandblasting with Al_2O_3 (50 μm , 2 bar).
- 2) Application of **VITA VM LC Primer II** to condition the denture base.

Apply a thin, even layer using a disposable brush. Then cure with an approved light-curing device in accordance with the polymerization instructions for VITA VM LC Primer II.

- 3) Application & processing of Astron Clearsplint or Astron Labtec Pro according to the manufacturer's instructions.

Clever combination

Printed flexible denture base



With **printed teeth:**

VITA VIONIC® DENT RESIN



With **milled teeth:**

VITA VIONIC® DENT DISC multiColor



Comparison of workflow options

Economy Level

- 1) Printing denture base + teeth
- 2) Washing
- 3) Checking the fit
- 4) Luting with resin
- 5) Curing
- 6) Polishing



Your advantage:

Solid, quality printed restorations produced efficiently and cost effectively.

Smart Level

- 1) Printing, washing and curing denture bases
- 2) Milling + cutting out teeth
- 3) Checking the fit
- 4) Preconditioning using primer
- 5) Luting with resin
- 6) Curing
- 7) Polishing



Your advantage:

Integrated shade gradient and easy polishing of teeth for improved esthetics.

Testimonials from our customers



"The flexible denture base material from VITA has proven itself to me because it's so easy to polish. I can achieve that high gloss twice as fast as with Valplast."

Marcus Beuchelt
L. Schanz Dentallabor
Germany



"The printed clasp denture stands out for its ease of fabrication: no embedding and no retention mechanisms like with Valplast, for example. But it has better millability, a high-gloss polish can be achieved much more quickly, and a strong chemical bond is possible between the base and the teeth."

Anna-Lena Lüber
L. Schanz Dentallabor
Germany



"With VITA VIONIC BASE RESIN FLEX, I can design and manufacture partial dentures more quickly, precisely and cost-effectively. Patients will love the comfort and natural look – no metal clasps, no compromises. An innovation that benefits everyone."

Darius Northey
Jade Dental Laboratory Pty Ltd
All Smiles Denture Clinic
Australia





VITA VIONIC® SOLUTIONS

DIGITAL DENTURES - Your Next Level!