Invibio
BIOMATERIAL SOLUTIONS

JUVORA™ Dental Disc

Processing & Technique Guide

IDCM-JUV-PG-0001-REV13 - JUVORA PROCESSING GUIDE US MARKET

THE PROCESSING GUIDE

Caution: US Federal Law restricts this device to sale by or on the order of a dentist.

Instructions for Use and Safety Precautions:

The JUVORA™ Dental Disc shall only be processed in accordance with this manual and the instructions for use.

Qualifications and Safety at Work:

The user has to be trained and skilled in dental technology and know the safety regulations for the application.

JUVORA recommend the use of eye protection, extraction units and a dust mask as is applicable for all standard dental milling procedures.

IMPORTANT:

This manual covers the use of products from the following companies:

- 3M ESPE
- GC
- Kulzer
- Ivoclar Viva dent

Other possible combinations can be found in the chart at the end of this manual.

Any systems not referenced in this manual MUST be fully tested according to ISO 11405 Dental Materials - Testing of Adhesion to Tooth Structure, and with a resultant adhesive strength of> 10 MPa.

Indications

For the manufacture of:

i) Full and partial removable dentures and implant overdentures.

ii) Copings, substructures, removable dentures, or frameworks for permanent and transitional anterior or posterior crowns, bridgework, and substructures that can be either cemented or uncemented restorations (e.g. telescopic restorations).

For a full list of warnings and contraindications, see instructions for use.

CONTENTS

This manual describes:

Not all sections of this manual are applicable to all indications.

PREPARATION OF THE MODEL

Suggestions for Model Preparation

Scanning Model

The model for scanning can be made from gypsum and should have no reflective surface.

Veneering Model

The model for veneering can be made from transparent acrylic.

Wax Model Construction

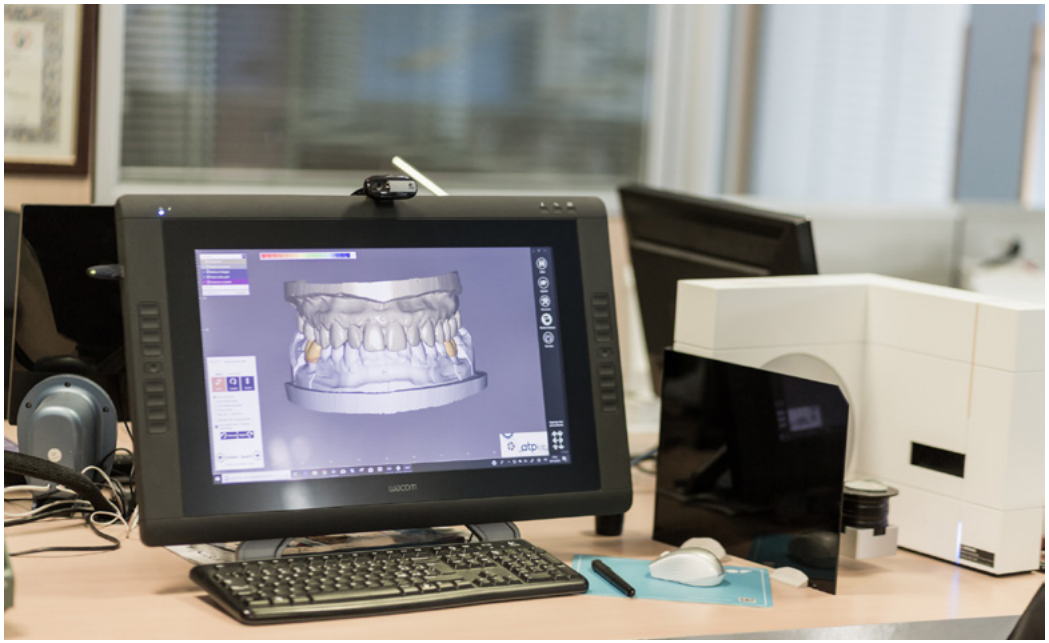
Block out with wax, **AVOID** sharp edges. This makes it easier to fit the denture to the model after construction.

PREPARATION OF THE MODEL

Scanning Considerations

To achieve detailed scanning results:

- Use high resolution
- A good polygon mesh (at least 1 million) is required as less than this will lead to inaccuracies



CONTRUCTION & DESIGN GUIDANCE PER APPLICATION

Implant Dentures

A **Buccal Side of Impant:**

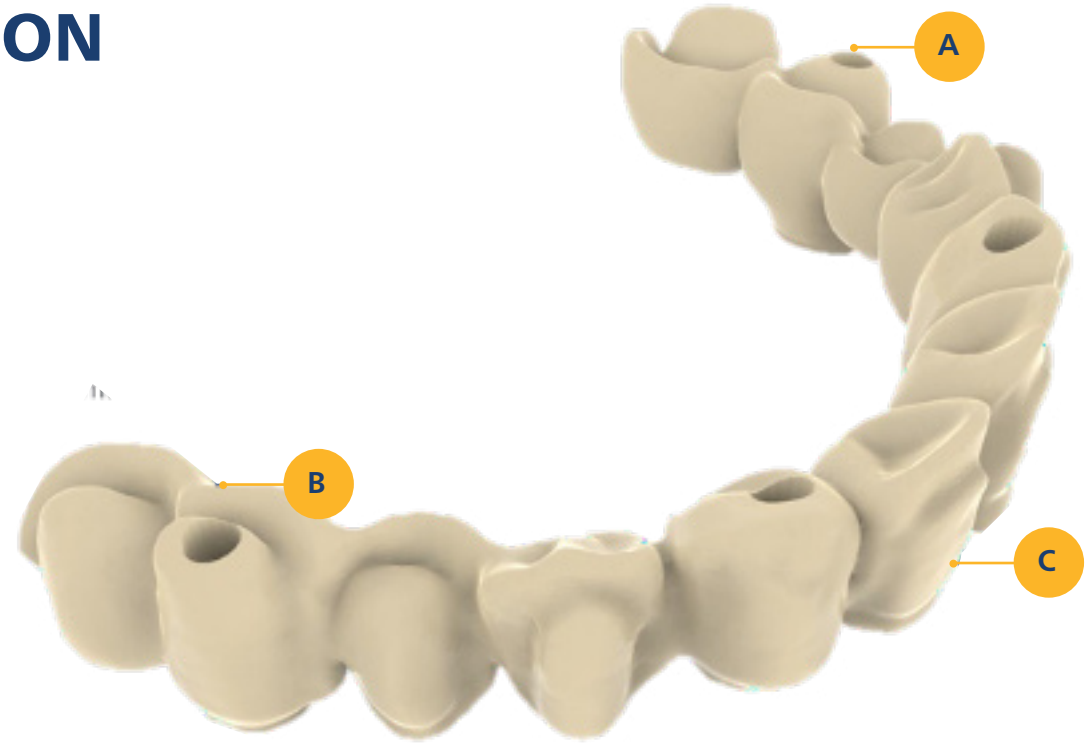
Minimum framework thickness of 1.5 mm
Preferred framework thickness of 2 mm

B **Lingual Side of Implant:**

Minimum framework thickness of 2 mm
Preferred framework thickness of 3 mm

C **Height of Framework:**

Minimum framework height of 5 mm
Preferred framework height of 7 mm to 10 mm to improve bonding



Palatinal Plate Protection: Required to avoid damage/de-bonding between the framework and the veneering. Where possible avoid contact between the veneer and the antagonist and ensure contact in the anterior region of the Juvora framework.

Implant Dentures

A **Abutment Wall Thickness:**

Minimum width of 1 mm

B **Posterior Base Framework:**

Minimum width of 9 mm

C **Anterior Base Framework:**

Minimum width of 8 mm

D **Cantilever:**

Maximum of 1 pontic.

Implant Bars

A **Posterior Wall Thickness:**

Minimum of 6 mm

B **Height:**

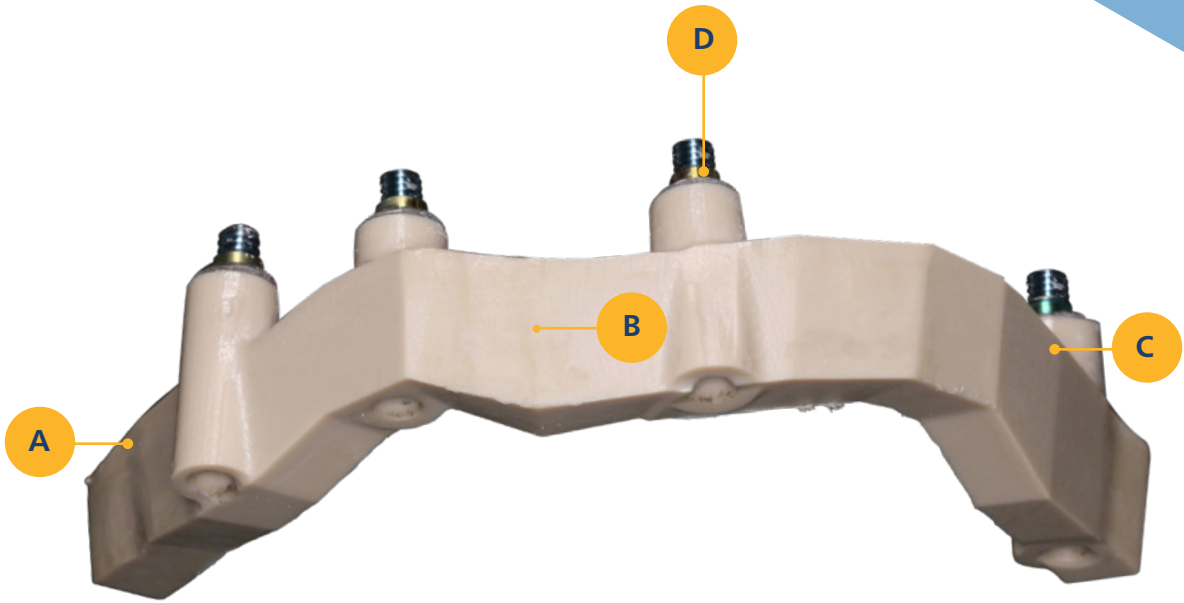
Minimum of 4 mm

C **Anterior Wall Thickness:**

Minimum of 5 mm

D **Abutment Wall Thickness:**

Minimum width of 1 mm



Overdentures

A **Implant Bar:**

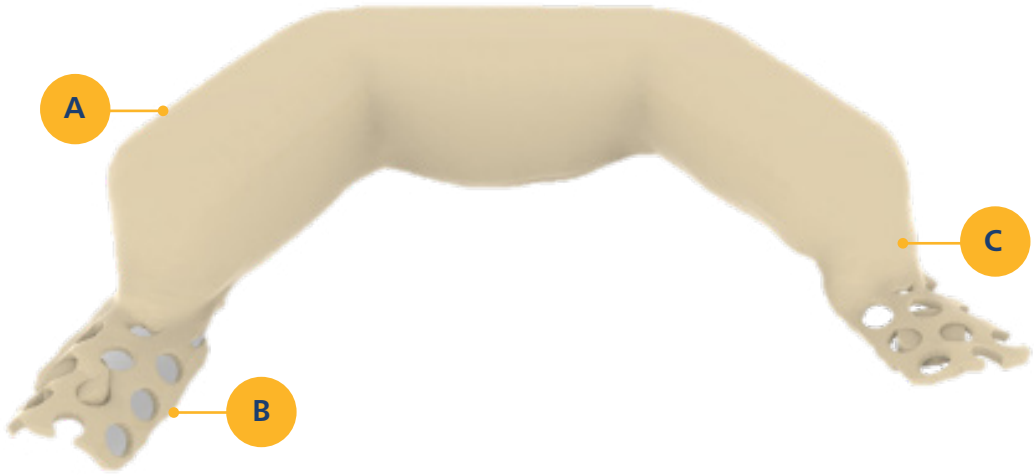
Overdentures must ALWAYS be supported by implant bars

B **Protection Plate:**

A Palatinal or Lingual protection plate is required for overdentures when a transpalatal bar (horizontal retainer) is not present

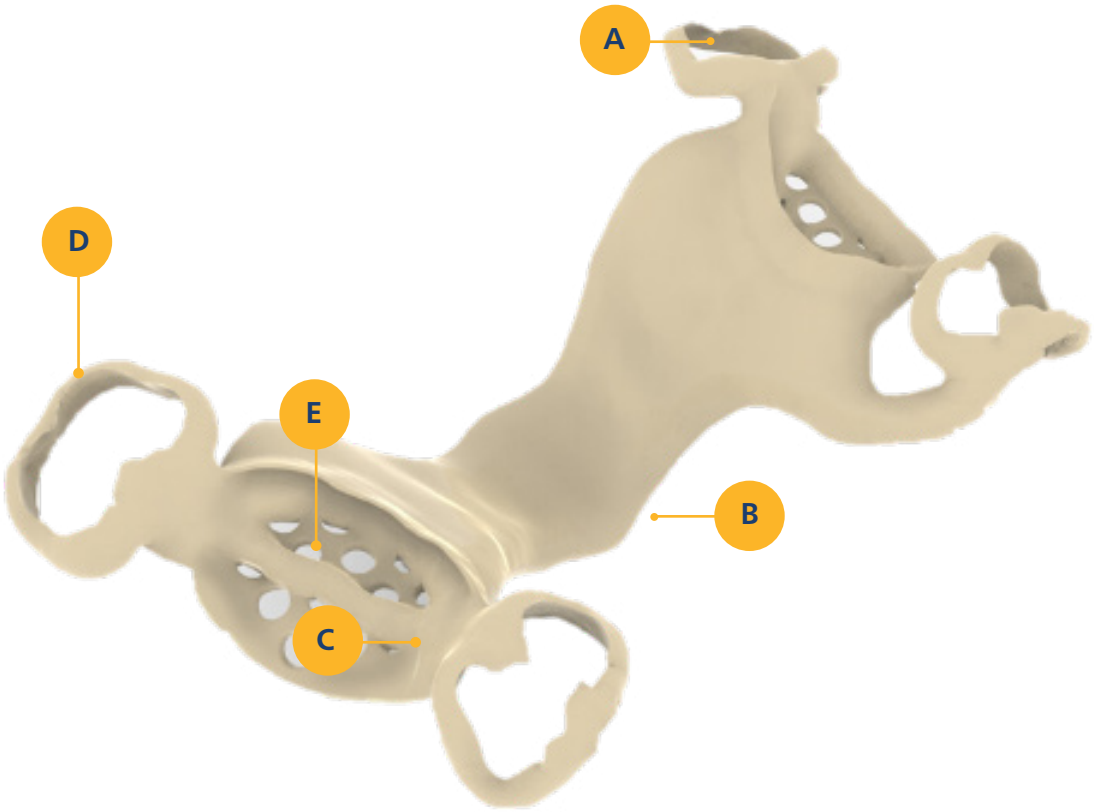
C **Framework Wall Thickness:**

Minimum wall thickness of 2 mm on occlusal, lingual and buccal regions



Palatinal Plate Protection: Required to avoid damage/de-bonding between the framework and the veneering. Where possible avoid contact between the veneer and the antagonist and ensure contact in the anterior region of the Juvora framework.

Removable Clasp Dentures



Machining Tip: For higher stability whilst milling the clasps have to be connected with each other or with the framework. Double closed clasps can be used.

A **Framework Wall Thickness:**

Minimum wall thickness of 2 mm

B **Transpalatal bar:**

Minimum framework thickness of 2 mm
Minimum framework width of 8 mm

C **T-Shape Reinforcement:**

Required to provide strength and stability.
Minimum diameter: 1.5 mm2

D **Clasps:**

Minimum thickness for clasps in the shape of the drop of 2 mm (thickness) x 3 mm (height).

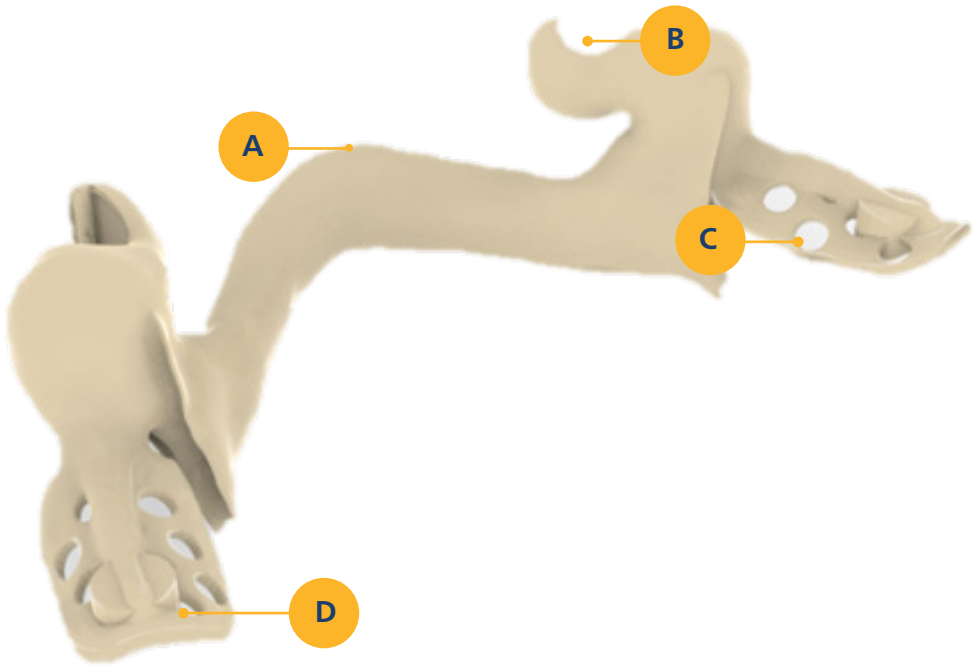
E **Retention Plate Holes:**

Maximum hole diameter of 2 mm Minimum distance between hole and external plate wall of 1 mm
Minimum distance between adjacent holes of 2 mm

Clasp undercut:

0.5 mm in the anterior region and 0.5-0.75 mm in the posterior region

Removable Attachment Dentures



Attachment Piece: To secure the attachment piece onto the framework attachment housing please use the primer bonding system recommended in the veneering table at the end of the document : Page 39

A **Transpalatal bar:**

Minimum framework thickness of 2 mm
Minimum framework width of 8 mm

B **Retention Grooves:**

Must have a smooth finish, round curvature and no indentations and sharp edges.
Minimum width of 2 mm, minimum height 1.5 mm.

B **Retention Plate Holes:**

Maximum hole diameter of 2 mm
Minimum distance between hole and external plate wall of 1 mm
Minimum distance between adjacent holes of 2 mm

D **T-Shape Reinforcement:**

Required to provide strength and stability.
Minimum diameter: 1.5 mm2

Framework Wall Thickness:

Minimum wall thickness of 2 mm

Removable Attachment Dentures

A **Lingual Bar (lower):**

Minimum thickness of 2 mm
Minimum width of 5 mm

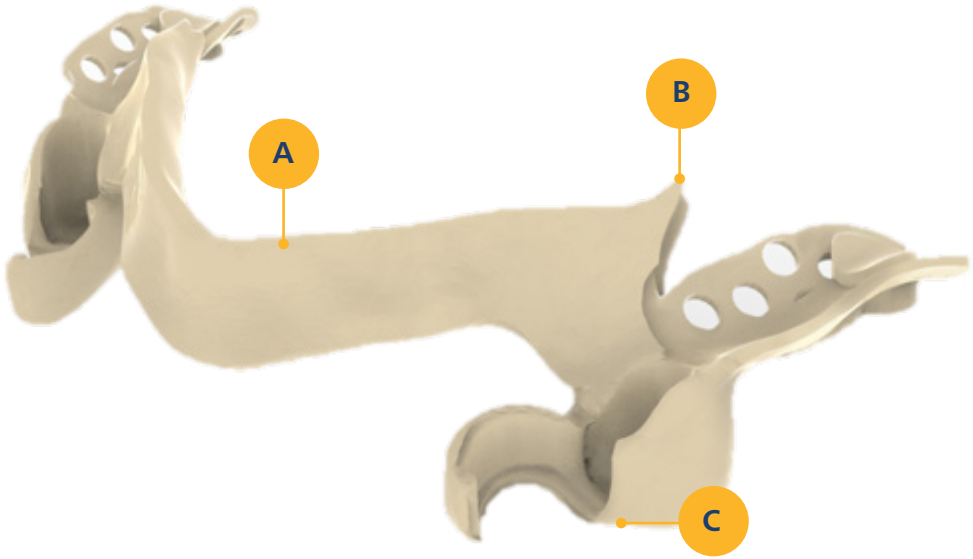
B **Transpalatal Bar (upper):**

Minimum thickness of 2 mm
Minimum width of 10 mm

C **Connector Housing:**

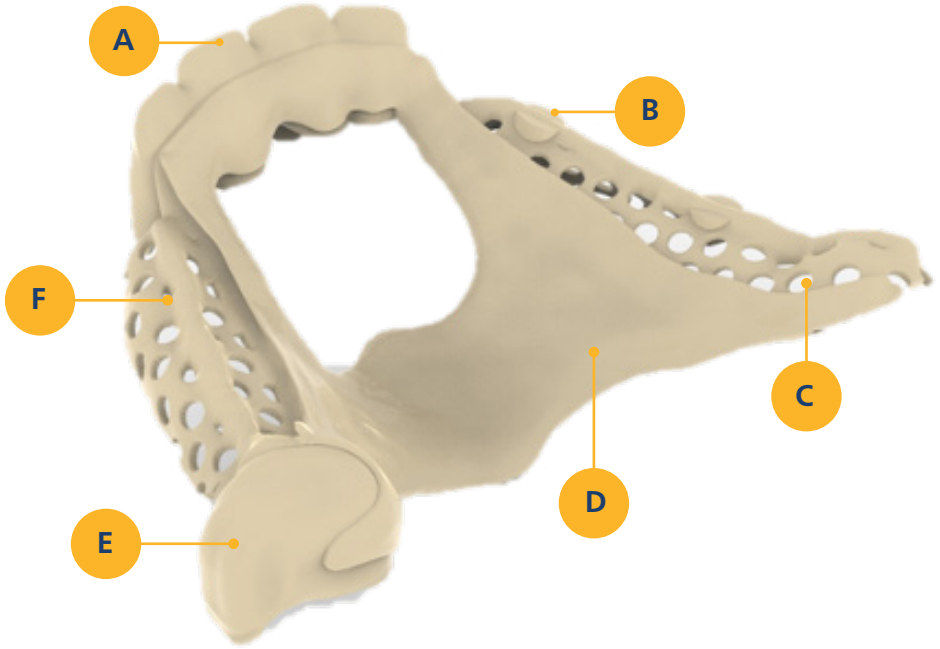
Wall thickness minimum for each area:

- **Occlusal:** 1 mm EXCEPT in fully anatomic where thickness should be greater than 1.5 mm
- **Buccal:** 2 mm
- **Lingual:** 2 mm
- **Palatinal:** 2 mm



Attachment Piece: To secure the attachment piece onto the framework attachment housing please use the primer bonding system recommended in the veneering table at the end of the document : Page 39

Removable Telescope Dentures



Framework Wall Thickness:

Minimum wall thickness of 2 mm

A Retention Plate Framework:

Minimum thickness of 2 mm.
Minimum width of 8 mm

B Retention Grooves:

Must have smooth finish, round curvature with no indentations or sharp edges
Minimum groove width of 2 mm and height of 1.5 mm.

C Retention Plate Holes:

Additional holes provide maximum veneering stability
Maximum hole diameter of 2 mm
Minimum distance from hole to plate wall of 1 mm
Minimum distance between holes of 2 mm

D Transpalatal Bar:

Minimum thickness of 2 mm.
Minimum width of 10 mm

E Occlusal Region:

Minimum wall thickness of 1.5 mm.

F T-Shape Reinforcement:

Necessary to assure stability and strength of framework
Minimum diameter: 1.5 mm2

Removable Telescope Dentures

A **Lateral Region of Secondary Telescope Crown:**

Minimum wall thickness of 2 mm

B **Wall Thickness Between Adjacent Secondary Telescope Crown:**

Preferably greater than 1 mm thickness
Minimum thickness of 0.7 mm.

C **Lingual Region:**

Minimum thickness of 2 mm

D **Buccal Area of Secondary Telescope Crown:**

Preferably 1 mm thickness
Minimum thickness of 0.7 mm

Removable Telescope Dentures

- Removable telescope dentures without transpalatal bar (horizontal retainer) – requires the designing of a palatinal protection plate (for upper jaw denture) or lingual protection plate for (for lower jaw denture).
- Palatinal protection plate is required to avoid damage or de-bonding between the framework and the veneering. The antagonist should only make contact in the anterior region with the JUVORA material, and not at the juncture between JUVORA and the veneering material.

Palatinal/Lingual Protection Plate:

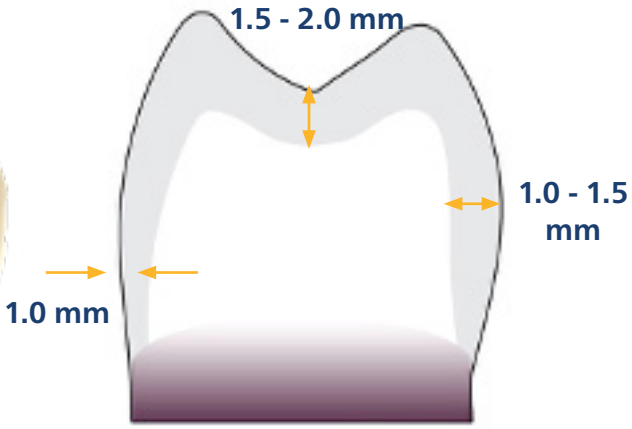
Contact with JUVORA framework recommended
AVOID contact with veneer

Crown & Bridge Master Table

JUVORA™ Framework	Anatomical Crown	Crown for Veneering	Anatomical Posterior 3- Unit Bridge - Maximum 1 Pontic	Posterior 3- Unit Bridge for Veneering Maximum 1 Pontic
Minimum Wall Thickness - Circumferential	1 mm	0.7 mm	1 mm	0.7 mm
Minimum Wall Thickness- Occlusal	1.5 mm	0.8 mm	1.5 mm	0.8 mm
Minimum Crown Margin	1 mm	-	-	-
Minimum Connector Margin	-	-	16 mm^2	16 mm^2

Fully Anatomical Crowns

JUVORA™ Peek Framework	Anatomical Crown
Minimum wall thickness circumferential	1 mm
Minimum wall thickness occlusal	1.5 mm
Minimum Crown margin	1 mm
Connector dimension	-

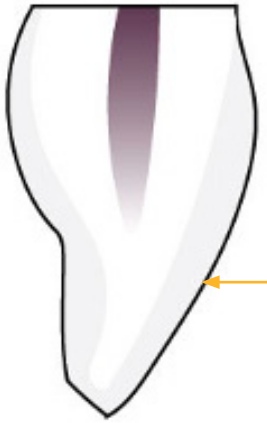


Follow accentuated chamfer preparation – provides a larger material surface spreading the pressure to the preparation.

AVOID – Chamfer and Shoulder preparation as these will weaken the framework

Crowns for Veneering

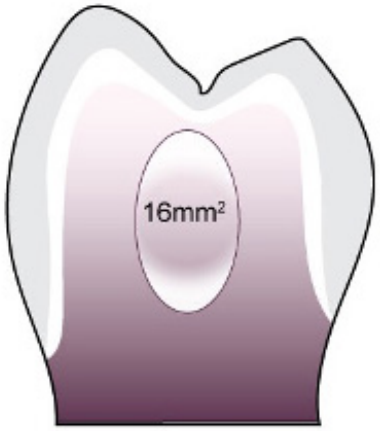
JUVORA™ Peek Framework	Crown for veneering
Minimum wall thickness circumferential	0.7 mm
Minimum wall thickness occlusal	0.8 mm
Crown margin	-



Veneer Thickness:
1.2 mm – 1.5 mm

Fully anatomical 3-unit bridge

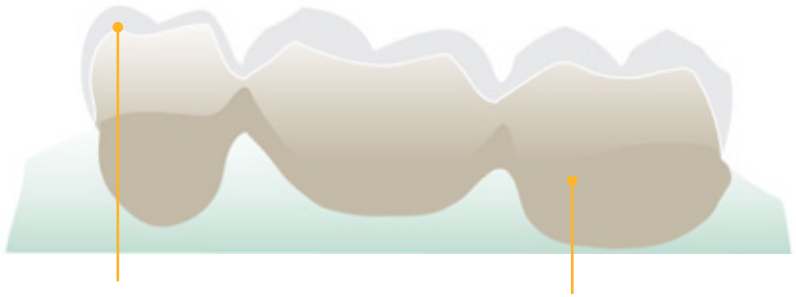
JUVORA™ Peek Framework	Anatomical posterior 3-unit bridge - Maximum 1 pontic
Minimum wall thickness circumferential	1 mm
Minimum wall thickness occlusal	1.5 mm
Minimum connector dimension	16 mm^2



Posterior Connection Area:
Minimum of 16 mm

3-Unit Bridge for Veneering (Maximum 1 Pontic)

JUVORA™ Peek Framework	Maximum 1 Pontic
Minimum wall thickness circumferential	0.7 mm
Minimum wall thickness occlusal	0.8 mm
Minimum connector dimension	16 mm²

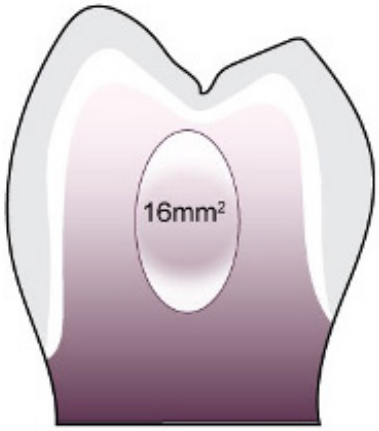


Veneer Area:

Does not exist in the framework

Cusp Reinforcement and Pontic Basal Area:

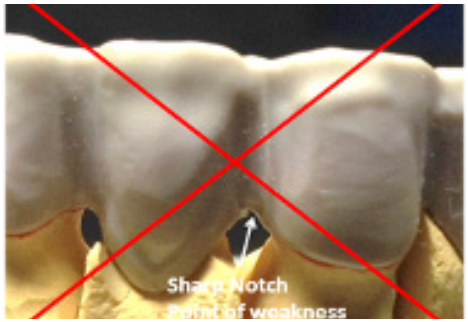
MUST NOT be veneered. High polish only

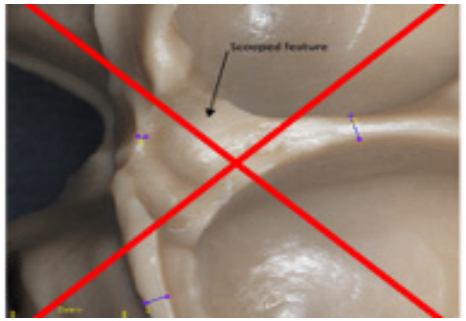


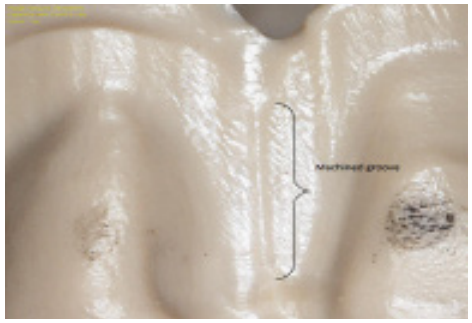
Design Guidance: 3-unit bridge frameworks MUST be constructed in anatomically reduced design with reinforcing the composite cups.

When veneering the frameworks the pontic basal area MUST NOT be covered with the veneering material.

Important Design Considerations for JUVORA Frameworks







Notches in Framework:

Where possible AVOID introducing notches into the JUVORA framework. Creating a notch creates a point of weakness within the framework.

If unavoidable notches must not be present on areas with a thickness less than 2 mm and **must have an angle greater than 45 degrees.**

Scooped Features:

Scooped features can weaken the JUVORA framework.

ENSURE that such a feature is not adjacent to a thin wall thickness.

Grooves:

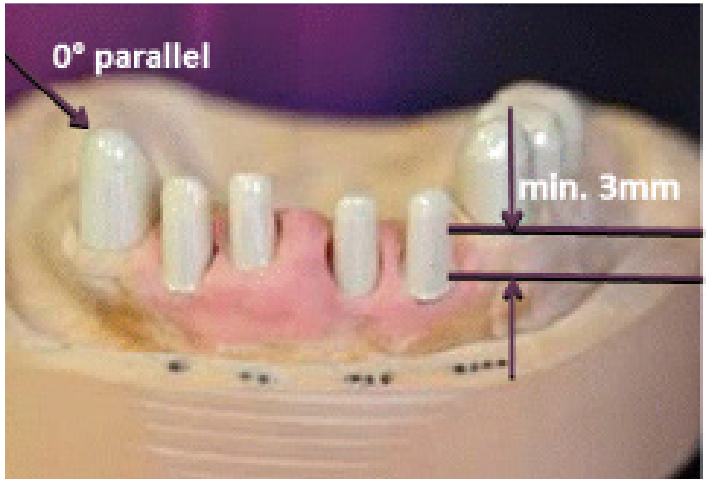
Groove features can act as stress concentrators and can weaken the JUVORA framework.

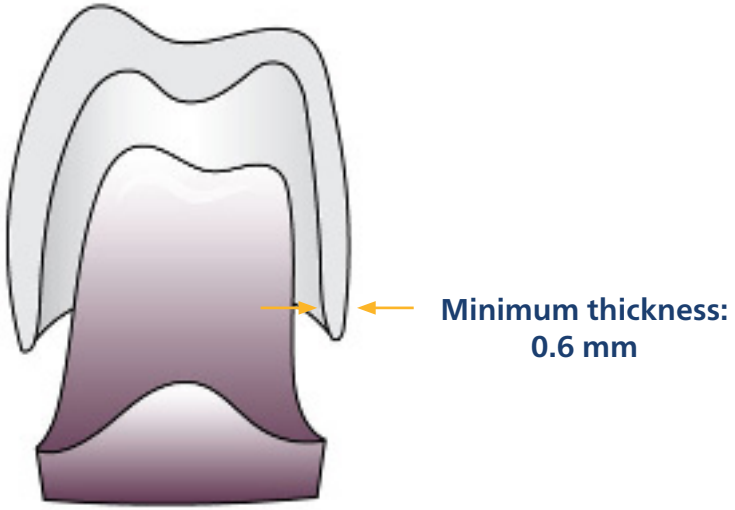
ENSURE that such a feature is not adjacent to a thin wall thickness.

Key Design Focus:

If the guidance on framework design with regard to avoiding introduction of notches and/or minimum wall thickness is not followed, then failure can occur.

Recommendations Regarding the Construction of Collateral Parts





Construction:

Primary Parts: Primary telescopes and attachments
Parallelism: 0° parallel
No cone
Height of the friction: minimum 3 mm

Zirconium is recommended as the material for primary telescope crowns.

For the secondary telescope crowns produced from a material which is not JUVORA (for example gold) a **minimum wall thickness of 0.6 mm** is recommended.

Milling of the JUVORA Dental Disc

Machine Selection:

JUVORA Dental Discs can only be processed on suitable milling machines with suitable milling programs. JUVORA recommends adaptation of the CAM software by your software manufacturer.

For an exact fit, JUVORA recommends a 5-axis milling machine of stable construction.

The following systems are suitable for the milling of the JUVORA Dental Disc: KaVo Dental, KaVo Everest® CAD/CAM system; WIELAND Dental, ZENOTEC select; Deckel-Maho-Gildemeister (DMG), Ultrasonic Gildemeister 20-5 axis simultaneously.

Cooling:

JUVORA recommends cooling the milling head either with compressed air or cooling fluids.

Time Taken:

Milling time should be approximately 2 hours depending upon size and design

Tool Speed:

For Dry Milling (CAM operating with a dry coolant) it is advisable to keep tool speed below 15000 rpm to avoid heat generation on the surface of the disc.

For Wet Milling (CAM operating with a liquid coolant) can operate at speeds up to 30000rpm.

Use adequate amount of compressed air on dry mills to cool the milling head during milling of Juvora to avoid stresses which in turn can cause dimensional inaccuracies, problems with patient fit and potential framework failure under loading.

Tool Selection:

JUVORA recommend the use of silicon carbide or diamond tipped tooling.

Milling of the JUVORA Dental Disc

Instructions: Use a 5-axis milling machine to enable a milling angle of 15°	Use silicon carbine or diamond tipped tooling	Use diamond tipped tooling
Clearance Angle (°)	5 - 15	15 - 30
Rake Angle (°)	6 - 10	6 - 10
Cutting Speed (RPM)	Dry milling: Up to 15000 Wet milling: Up to 30000	Dry milling: Up to 15000 Wet milling: Up to 30000
Coolants	Compressed air	Compressed air

Feed may be up to 0.5 mm/tooth

Bonding instructions

The following instructions are required when bonding implant components and materials to JUVORA during the fabrication of prostheses for the cleared indications, to include:

1. Titanium or titanium alloy bases (“Tibase”)
2. Multi-unit abutment cylinders (“MUA”) manufactured from Titanium or Titanium Alloy
3. Composite material to build esthetics (i.e. pink tissue matching composites)
4. Crowns manufactured from zirconia, lithium disilicate, composite, PMMA
5. Heat and chemical cure acrylic bonding

Overview: Many composite cements are effective when bonding either Tibases or multi-unit abutment copings to frameworks fabricated from JUVORA Dental Discs. The same process and cement would be used to bond either zirconia, lithium disilicate, composite, or PMMA crowns to the milled JUVORA framework.

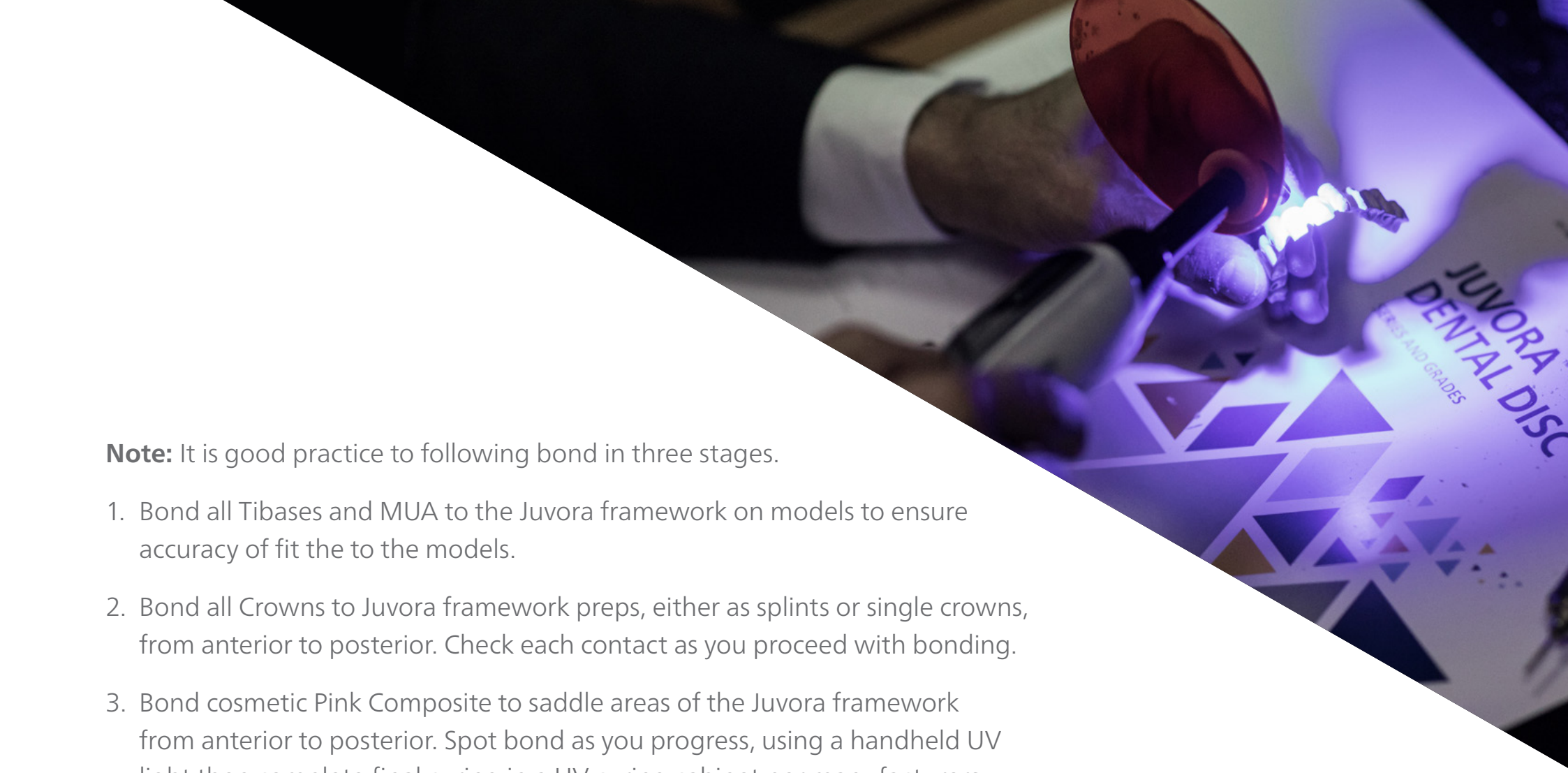
This applies also to the final composite materials, such pink tissue composites to establish the esthetics of the final restorative prosthesis. For example, Multilink® composite cement from Ivoclar Vivadent is one cement that has demonstrated reliable performance when bonding crowns and Tibases to JUVORA frameworks. Multilink will be used as the reference example in the following instructions.

Composite cement manufacturers will include detailed Instructions for Use (IFU), and it is recommended that the user follow these instructions for the correct application of the product being used.

- Preform all crown try-ins to JUVORA frame prior to bonding to determine if a color correcting bond material is needed (this may be more prevalent with Lithium Disilicate) to achieve desired shade.
- Once crowns are bonded, shade correction is very difficult to achieve. Again, specific to Lithium Disilicate, these materials can be more translucent than Zirconia, and therefore require more attention to the possible darker shades resulting from the Juvora material.
- Inspect all Contacts and Occlusion prior to starting the bonding process to ensure no further adjustments need be addressed.

Step-by-step bonding guide

1. Finish the Juvora frame with Crosscut carbides and clean any residual dust or dirt with soap and water. After this cleanup, water should never be introduced to any of the surfaces to be bonded.
2. Dry very thoroughly with air and drying towels. Dehydrators would also be effective for drying the cementable surfaces.
3. Sandblast both bondable surfaces of crowns and JUVORA well with 50 micron Aluminous Oxide with at least 100 psi (6.9 bar) of pressure. Be careful to not burn JUVORA with friction from the sandblaster.
4. DO NOT RINSE with water or steam clean. Air blast only, then proceed immediately to your bonding station.
5. Apply primer within 10 minutes of sandblast. Using the Multilink kit, mix equal parts of A&B primer then apply using appropriate application brushes, completely over the surfaces (JUVORA and inside rown) to be bonded. LIGHTLY air excess primer to avoid pooling of primer. Allow the primer to cure for a minimum of 10 minutes. THIS STEP IS VERY IMPORTANT! A light curing cabinet may be used, but according to the manufacturer's IFU.
6. Apply Multilink Automix cement to crowns. If Implant crown with access hole in crown, apply the Multi link to the circumference of prep only and slide the crown portion down onto the JUVORA framework prep, being very careful not to get cement into access hole. Use handheld UV light to cure the cement. Use 3 cycles on each section being bonded.
7. Use instrument to clean up any excess bond from around base of crowns and Tibases. Do not create gaps at margins. Ensure all access holes are free from composites.
8. As a final step, place the completed and bonded framework into a bench top UV curing unit and cure for up to 5 minutes to ensure completion of curing of all bonding elements.



Note: It is good practice to following bond in three stages.

1. Bond all Tibases and MUA to the Juvora framework on models to ensure accuracy of fit the to the models.

2. Bond all Crowns to Juvora framework preps, either as splints or single crowns, from anterior to posterior. Check each contact as you proceed with bonding.

3. Bond cosmetic Pink Composite to saddle areas of the Juvora framework from anterior to posterior. Spot bond as you progress, using a handheld UV light then complete final curing in a UV curing cabinet per manufacturers recommendations.

In all three stages follow steps #1-8 of bonding guide to make ensure consistent and reliable bonding is achieved throughout the finished prosthesis.

FINISHING OF THE JUVORA™ MILLED FRAMEWORK

Cutting Out the Prosthesis

1. Upon removal from the milling machine - carefully remove the connection bars with a fine bur
2. We recommend the use of grinding instruments which are suitable for soft materials
3. Closed retention holes can be opened with a fine bur

Positioning of the Teeth

1. Use modelling wax to hold the teeth in situ. Teeth will be veneered later (Veneering of the teeth is explained in the veneering section).
2. Application of the transparent silicon aids fixation of the teeth during light curing.

Recommended Surface Preparation

1. Sandblasting of the framework (Rocatec plus, pressure: 3 bar, distance: 1 cm), please see manufacturer's guidance.
2. Sandblasting of the teeth with Aluminium Oxide – pressure: 3 bar, distance: 1 cm.

Application of Silane and Preparation of Pre-Manufactured Teeth

1. In this manual the silane 3M ESPE Sil is used.
2. A thin application of silane is recommended. Drying time should be between 5 to 30 minutes maximum.
3. The teeth are then glued to the silicone ready for veneering.

Application of Foundation Opaque

1. Apply the Foundation Opaque thinly and evenly to avoid “puddles”.
2. Polymerisation of the opaque
   Time of polymerization of the opaque: **3 Minutes**
   Wavelength for polymerization: **380 to 450 Nm**
3. After polymerisation a smooth, shiny surface should be achieved. In case of insufficient coverage add another layer.

Application of Colored Opaque

1. Apply the **pink** colored opaque thinly and evenly in 2 layers to avoid “puddles”.
2. Apply the **tooth** colored opaque thinly and evenly in 2 layers to avoid “puddles”.
3. Polymerization of the opaque
   Time of polymerization of the opaque: **3 Minutes**
   Wavelength for polymerization: **380 to 450 Nm**
4. After polymerisation a smooth, shiny surface should be achieved.

Dentine and Gingiva Flow – Application of Pre-Manufactured Teeth

1. The dentine flow should be applied to the model (framework and teeth in silicone) initially from the occlusal side followed by a short polymerization.
2. The gingiva flow is then applied from the buccal side (following removal of silicone) followed by a short polymerization.
3. Apply the Air Barrier and complete a final polymerization according to the thickness of the layer (5 to 10 minutes).

Corrections

1. Sandblast using Aluminium oxide. Pressure: 3 bar, Distance: 1 cm.
2. Steam clean
3. Apply the composite primer.
4. Light cure for 5 Minutes
5. Apply the required material depending upon the correction.
6. Short Polymerization.
7. Repeat steps 5 and 6 as required.
8. Final polymerization: 5 to 10 Minutes.

VENEERING OF JUVORA™ WITH MILLED ZIRCONIA CROWNS

Surface treatment of the single zirconia crowns	Sandblasting (Al2O3, 2bar, 120µm)
Surface treatment of the JUVORA framework	Sandblasting (Al2O3, 2bar, 50µm)
Application of the bonding primer	Scotchbond Universal Adhesive, 3M ESPE
Application of the dental cement	RelyXUltimate, 3M ESPE
Insertion of the Zirconia crowns onto the JUVORA framework	
Application of the gum coloured opaque	GC Gum Opaque, GC
Application of the gum veneer	GC Reline Soft, GC
Final polymerization and polishing	Ceramic rubber polishing instruments & diamond polishing paste

VENEERING OF JUVORA™ WITH ACRYLIC SYSTEMS

Surface treatment of the JUVORA framework	Sandblasting (Al2O3, 2bar, 50µm)
Application of the bonding primer	Signum connector, Kulzer
Application of the opaque	Opaque F, Kulzer
Placement of acrylic prosthetic teeth	Premium and Mondial crowns, Kulzer
Pink Acrylic veneer	PalaXpress, Kulzer
Application of the acrylic veneer utilizing a pressure polymerisation unit	Palamat Elite, Kulzer
Finish and polishing	Tungsten burs, silicone rubber, sandpaper and polish with pumice paste & Universal Polishing paste, Ivoclar Vivadent

VENEERING OF JUVORA™ WITH COMPOSITE SYSTEMS

Surface treatment of the JUVORA framework	Sandblasting (Al2O3, 2bar, 50µm)
Application of the bonding primer	GC Metal Primer II, GC
Application of the opaque paste	GC opaquer, GC
Application of the dentin veneer	GC Gradia, GC
Application of the gum coloured opaque	GC Gum Opaque, GC
Application of the gum veneer	GC Reline Soft, GC
Final polymerization and polishing	Ceramic rubber polishing instruments & diamond polishing paste

LIST OF COMPOSITE VENEERING SYSTEMS

System	Surface Treatment	Bonding Primer	Opaque Paste	Dentin Veneer	Shear Bond Strength (MPa) - After 90 Days aging
GC Gradia	Al2O3/2 bar/50µm	Bredent, Visiolink	GC opaquer	GC Gradia	27.3
3M ESPE, Sinfony	3M ESPE, Rocatec Pre, Plus	3M ESPE, ESPE Sil	3M ESPE, Sinfony	3M ESPE, Sinfony	27.1
Bredent/Visioline	Al2O3/2 bar/50µm	Bredent, Visiolink	Combo lign	Crea.lign	24.2
Shofu, Ceramage	Al2O3/2 bar/50µm	ML Primer	Pre/Opake	Shofu, Ceramage	21.1
GC Gradia™	3M ESPE, Rocatec Pre, Plus	3M ESPE, ESPE Sil	GC opaquer	GC Gradia	21.0
GC Gradia™	Al2O3/2 bar/50µm	GC Metal primer II	GC opaquer	GC Gradia	19.6
3M ESPE, Sinfony	3M ESPE, ocatec Plus	3M ESPE, ESPE Sil	3M ESPE, Sinfony	3M ESPE, Sinfony	19.6
Ivoclar, SR Adoro	Al2O3/2 bar/50µm	Ivoclar, SR Link	Ivoclar, SR Opaquer	Ivoclar, SR Adoro	17.9
Heraeus Kulzer/ Signum	AL2O3/ 2 bar/50µm	Metallbond I and II	Opaquer F	Heraeus, Signum	14.6
Shofu, Solidex	Al2O3/2 bar/50µm	Shofu, Photo Primer	Shofu, Flow Opaquer	Shofu, Solidex	14.3
3M ESPE, Clearfill/ Sinfony	Al2O3/2 bar/50µm	Clearfill, Alloy Primer	Clearfill, Opaquer	3M ESPE, Sinfony	13.0
Schuetz, A+B Composite	Al2O3/2 bar/50µm	Shuetz, Bonding Fluid	Schuetz, Paste	Schuetz, A+B Composite	12.7
Heraeus, Signum	Al2O3/2 bar/50µm	Heraeus, Signum Connector	Heraeus, Opaquer	Heraeus, Signum	11.7

System	Surface Treatment	Bonding Primer	Cement	Shear Bond Strength (Mpa) - After 90 days ageing
RelyXUltimate, 3M ESPE	Al2O3/2 bar/50µm	Scotchbond Universal Adhesive, 3M ESPE	RelyXUltimate, 3M ESPE	21.2
RelyXUltimate, 3M ESPE	Al2O3/2 bar/50µm	Scotchbond Universal Adhesive, 3M ESPE	RelyXUnicem, 3M ESPE	20.6

The shear bond strength between JUVORA and the cement system was determined in accordance to ISO TR 11405

System	Surface Treatment	Bonding Primer	Cement	Performance under chewing simulation testing l 50N 1.2x106 cycles, TC 300x5oC/55oC
Variolink II, Ivoclar Vivadent	Rocatec Pre, 3M ESPE	Heliobond, Ivoclar Vivadent	Variolink II, Ivoclar Vivaden	No decementations were observed with a diverse range of frameworks

Note about plasma surface treatment: Plasma treatment is a technology that potentially could be used to enhance the bonding of dental systems to the PEEK polymer surface, as showed by M. Weppler in Plasmatechnologie - das Multitalent für neue zahntechnische Anwendungen, Quintessenz Zahntechnik 2015; 41(6): 700-716. Plasma technology could be used in combination with other surface treatment techniques such as grit blasting.

Safety Information

While machining the JUVORA™ Dental Disc, the following safety precautions are recommended:

- Dust mask or dust extraction
- Personal protective equipment (eye protection, gloves)

Storage Information

The JUVORA Dental Disc should be stored in dry conditions and exposure to direct sunlight should be avoided. The PEEK-OPTIMA® polymer from which the JUVORA Dental Disc is made is stable and can be stored for an extended period (10 year shelf life). It has a working temperature range from cryogenic up to 250 °c and hence the storage temperature range for the JUVORA Dental Disc is any ambient temperature and humidity.

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Additional Information

For additional information contact:

info@invibio.com

Juvora Ltd. 300 Conshohocken State Road,

West Conshohocken, PA 19428 USA

Tel: (484) 342-6004 Fax: (484) 342-6005

www.invibio.com/dental