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Instructions for Use



PressCeramic

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Product information

PressCeramic are lithium disilicate glass-ceramic blanks for press technology. The industrial manufacturing process produces absolutely homogeneous blanks in different levels of translucency. These have a strength of 470 MPa (typical mean value). They are pressed into extremely accurate restorations in press furnaces. The pressed, tooth-colored, highly esthetic restorations are stained and/or veneered with layering ceramic and glazed.

Property	Specification	Typical mean value
CTE (25 - 100 °C) [10 ⁻⁶ /K]	10.5 ± 0.5	-
Flexural strength (biaxial) [MPa]	≥ 300	470
Chemical solubility [µg/cm ²]	< 100	-
Type/Class	Type II/Class 3	-

According to ISO 6872:2015

Indication

- › Veneers
- › Inlays & Onlays
- › Partial crowns
- › Crowns in the anterior and posterior region
- › 3-unit bridges in the anterior region
- › 3-unit bridges in the premolar region up to the second premolar as the terminal abutment
- › Hybrid abutments for single-tooth restorations in the anterior and posterior region
- › Hybrid abutment crowns in the anterior and posterior region

Contraindication

- › Inlay bridges
- › Free-end bridges
- › Adhesive bridges
- › Anterior teeth bridge pontic width > 11 mm
- › Premolar region bridge pontic width > 9 mm
- › Temporary placement of PressCeramic restorations
- › Very deep subgingival preparations
- › Patients with severely reduced residual dentition
- › Bruxism
- › Failure to observe the requirements stipulated by the implant manufacturer regarding the use of the selected implant type (diameter and length of the implant must be approved for the

respective position in the jaw by the implant manufacturer)

- › Failure to observe the permissible maximum and minimum ceramic wall thicknesses
- › Use of a luting composite other than Multilink® Hybrid Abutment (Ivoclar Vivadent) to bond PressCeramic to the titanium bonding base
- › Intraoral cementation of the ceramic structures to the titanium bonding base
- › Temporary cementation of the crown on the hybrid abutment
- › All other applications not listed as indications

Important processing restrictions

In case of non-compliance with the following Instructions of Use, successful work with Press-Ceramic cannot be guaranteed:

- › If hybrid abutment crowns are fabricated, the opening of the screw channel must not be located in the area of contact points and areas with masticatory function. If this is not possible, a hybrid abutment with a separate crown is to be preferred
- › Failure to observe the manufacturer's instructions regarding the processing of the titanium bonding base
- › Failure to comply with the required minimum layer thicknesses
- › No extension parts



Warnings!

- › If a patient is known to be allergic to any of the ingredients, PressCeramic must not be used
- › Do not inhale ceramic dust during finishing
- › Use extraction equipment and wear a face mask
- › Observe the Safety Data Sheet (SDS)

Material composition

Components

SiO₂

Further contents

Li₂O, K₂O, MgO, ZnO, Al₂O₃, P₂O₅ and other oxides

Ingot concept

	Ingot translucency				
	Opal	HT (High Translucency)	MT (Medium Translucency)	LT (Low Translucency)	MO (Medium Opacity)
Processing technique					
Staining technique	✓	✓	✓	✓	
Cut-back technique	✓	✓	✓	✓	
Layering technique					✓
Indications					
Occlusal veneer ¹	✓	✓	✓		
Thin veneer ¹	✓	✓	✓		
Veneer	✓	✓	✓	✓	
Inlay		✓			
Onlay		✓	✓	✓	
Partial crown		✓	✓	✓	
Anterior and posterior crown			✓	✓	✓
3-unit bridge ²			✓	✓	✓
Hybrid abutment			✓	✓	✓
Hybrid abutment crown			✓	✓	

¹ The cut-back technique must not be used for the fabrication of thin veneers and occlusal veneers

² Only up to the second premolar as the distal abutment

Preparation instructions and minimum layer thicknesses

The preparation of the tooth structure is done according to the basic rules for all-ceramic restorations:

- › No angles or edges
- › Shoulder preparation with rounded inner edges and/or chamfer preparation

When designing the restoration, the following minimum layer thicknesses (in mm) of the individual indications and processing techniques must be observed:

Staining technique

Indication	Occlusal veneer	Thin veneer	Veneer	Inlay & Onlay	Partial crown	Crown		Bridge		
						Anterior region	Posterior region	Anterior region	Posterior region	
Incisal/occlusal	1.0	0.4	0.7	1.0 fissure depth	1.0	1.5	1.5	1.5	1.5	
Circular	1.0	0.3	0.8	1.0 isthmus width	1.0	1.2	1.5	1.2	1.5	
Connector dimensions	-	-	-	-	-	-	-	16 mm ² In general, the following applies: Height ≥ Width		
Pontic width	-	-	-	-	-	-	-	≤ 11	≤ 9	
Cementation	Adhesive cementation is mandatory					Adhesive, self-adhesive or conventional cementation are optional				

Dimensions in mm

Cut-back technique

Indication	Occlusal veneer	Thin veneer	Veneer	Inlay & Onlay	Partial crown	Crown		Bridge		
						Anterior region	Posterior region	Anterior region	Posterior region	
Incisal/occlusal	-	-	0.4	-	0.8	0.4	0.8	0.8	0.8	
Circular	-	-	0.6	-	1.5	1.2	1.5	1.2	1.5	
Veneer (layer thickness)	-	-	0.4	-	0.7	0.4	0.7	0.7	0.7	
Connector dimensions	-	-	-	-	-	-	-	16 mm ² In general, the following applies: Height ≥ Width		
Pontic width	-	-	-	-	-	-	-	≤ 11	≤ 9	
Cementation	Adhesive cementation is mandatory					Adhesive, self-adhesive or conventional cementation are optional				

Dimensions in mm

Layering technique

Indication	Occlusal veneer	Thin veneer	Veneer	Inlay & Onlay	Partial crown	Crown		Bridge	
						Anterior region	Posterior region	Anterior region	Posterior region
Incisal/occlusal	-	-	-	-	-	0.6	0.8	-	-
Circular	-	-	-	-	-	0.6	0.8	-	-
Veneer (layer thickness)	-	-	-	-	-	0.6	0.7	-	-
Connector dimensions	-	-	-	-	-	-	-	-	
Pontic width	-	-	-	-	-	-	-	-	-
Cementation	Adhesive cementation is mandatory					Adhesive, self-adhesive or conventional cementation are optional			

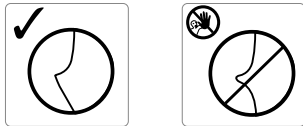
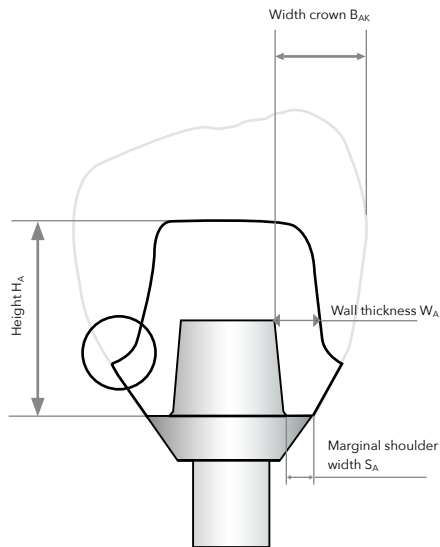
Dimensions in mm



Important!

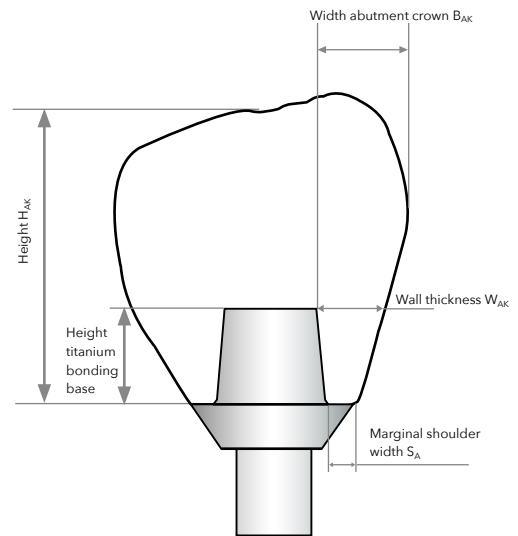
- › The high-strength component (PressCeramic) of the restoration must always make up at least 50% of the total layer thickness of the restoration.
- › In large preparations and for veneered or partially veneered restorations, the excess available space must be compensated by the corresponding dimensions of the high-strength component (PressCeramic) and not by the layering material.

Minimum layer thicknesses hybrid abutment



- › The marginal shoulder width S_A must be at least 0.6 mm.
- › Create an emergence profile with a right angle at the transition to the crown (see picture).
- › The wall thickness W_A must be at least 0.5 mm.
- › The height H_A must not exceed twice the height of the titanium bonding base H_T .
- › The hybrid abutment should be designed in a similar way as a prepared natural tooth:
 - Circular epi-/supragingival shoulder with rounded inner edges or a chamfer
 - In order for the crown to be cemented to the hybrid abutment using a conventional/self-adhesive cementation protocol, retentive surfaces and a sufficient "preparation height" must be observed.
- › The width B_{AK} of the crown is limited to 6.0 mm from the axial height of contour to the screw channel of the hybrid abutment.

Minimum layer thicknesses hybrid abutment crown



- › The marginal shoulder width S_A must be at least 0.6 mm.
- › The wall thickness W_{AK} must be larger than 1.5 mm for the entire circumference.
- › The opening of the screw channel must not be located in the contact point areas or areas with a masticatory function. If this is not possible, a hybrid abutment with a separate crown is to be preferred.
- › The width of the hybrid abutment crown B_{AK} is limited to 6.0 mm from the axial height of contour to the screw channel.
- › The height H_{AK} must not exceed twice the height of the titanium bonding base by more than 2 mm.

Instructions for use

Model and die preparation

Fabricate a working model with removable segments as usual. Depending on the preparation, the spacer is applied to the die in several layers:

- › For occlusal veneers, thin veneers, veneers, partial crowns, as well as single crowns, the spacer is applied in two layers up to max. 1 mm from the preparation margin (spacer application 9-11 µm).
- › For inlays and onlays, the spacer is applied in up to 3 layers and up to the preparation margin.
- › Also apply two layers for bridge constructions. Apply an additional layer at the intercoronal surfaces of the abutments (towards the pontic). This measure helps prevent undesired friction.
- › For restorations on abutments, the procedure is the same as that on natural preparations.

Contouring

Use only organic waxes for contouring, since they fire without leaving residue. Contour the restoration in accordance with the desired processing technique (staining, cut-back, or layering technique).

Please observe the following general notes for contouring:

- › Observe the stipulated minimum layer thicknesses and connector dimensions of the respective indication and processing technique.
- › Exactly contour the restoration, particularly in the area of the preparation margins. Do not over-contour the preparation margins, since this would require time-consuming and risky fitting procedures after pressing.
- › For fully anatomical restorations, the possible occlusal relief must be taken into consideration as early as during the wax-up, since the application of the Stains and Glaze results in slight increase in vertical dimensions.
- › Do not model tips and edges with the cut-back and layering technique.
- › For the layering technique, the frameworks should be anatomically reduced and modelled to support the cusps.

Sprueing

Please observe the following notes when attaching the sprues to the wax-up:

- › Before sprueing, weigh the ring base and record the weight.
- › Always attach the sprues in the direction of flow of the ceramic and at the thickest part of the wax-up so that smooth flowing of the viscous ceramic during pressing is enabled.
- › The attachment points of the wax wire on the pressed object and on the investment ring base must be rounded. Avoid corners and edges.
- › Use a wax wire diameter between Ø 2.5-3 mm.
- › Observe a wax wire length of min. 3 mm and max. 8 mm.
- › Observe a distance of at least 3 mm between the objects.
- › Observe a distance of at least 10 mm between the wax objects and silicone ring.
- › The maximum length (wax objects + sprue) of 16 mm must not be exceeded.
- › Attach the sprued restoration at the "edge" of the investment ring base.
- › Align the cervical margins of the wax objects to the silicone ring.
- › To calculate the wax weight, weigh the loaded investment ring base again and then calculate the difference between the unloaded and loaded investment ring base.
- › Use 1x3g ingot up to a maximum wax weight of 0.75g.

Investing

Please follow the operating instructions of the investment material manufacturer.

Preheating

Please follow the operating instructions of the investment material manufacturer.

- › Do not preheat the PressCeramic ingots and press plunger.

Pressing

Please follow the operating instructions of the press furnace manufacturer.

Basic procedure after completion of the preheating cycle:

- › Remove the investment ring from the preheating furnace and place the cold Press-Ceramic ingot into it.
- › Insert the ingots in the investment ring with the rounded, non-imprinted side facing down.
- › Place the press plunger into the hot investment ring.
- › Use the investment ring tongs to place the loaded investment ring upright and straight in the centre of the press furnace.
- › Start pressing process with corresponding pressing parameters.

Divesting

Divest the investment ring as follows:

- › Mark the length of the press plunger on the cooled investment ring.
- › Separate the investment ring using a separating disc. This predetermined breaking point enables reliable separation of the press plunger and the ceramic material.
- › Break the investment ring at the predetermined breaking point using a plaster knife.
- › Always use polishing beads to divest the pressed objects (rough and fine divestment). Do not use Al_2O_3 .
- › Rough divestment is carried out with polishing beads at 4 bar (58 psi) pressure.
- › Fine divestment is carried out with polishing beads at 2 bar (29 psi) pressure.
- › Observe the blasting direction and distance to prevent damage to the object margins during divestment.

Finishing

Suitable grinding instruments are imperative for adjusting and finishing high-strength glass-ceramic materials. If unsuitable grinding instruments are used, chipping of the edges and local overheating may occur.

The following procedure is recommended for finishing:

- › Adjustment by grinding should be kept to a minimum.
- › Overheating of the ceramic must be avoided. Low speed and light pressure must be observed.
- › Separate the sprue using a suitable separating disc. Avoid overheating.
- › Make sure that the minimum layer thickness of the restoration is maintained during finishing.
- › Smooth out the attachment point of the sprue.
- › Remove the spacer from the die. The restorations are tried in on the dies and carefully finished.
- › Do not "post-separate" the bridge connectors with separating discs. This may result in undesired predetermined breaking points, which will subsequently compromise the stability of the all-ceramic restoration.
- › Check the occlusion and articulation and grind in the appropriate adjustments, if necessary.
- › Design surface textures.
- › To clean the outer side of the restoration, briefly blast with Al_2O_3 100 μm at 1 bar (15 psi) pressure and clean with the steam cleaner.

Completion

The press objects are finished using the staining, cut-back or layering technique with suitable ceramic materials. Please follow the Instructions for Use of the layering ceramic manufacturer.

Cementing

	Preparation PressCeramic restoration
Blasting	-
Etching	Bonding surface 20 s with 5-9% hydrofluoric acid etching gel. Please follow the Instructions for Use of the etching gel manufacturer.
Silanizing	Bonding surface 60 s silanization. Please follow the Instructions for Use of the silane manufacturer.
Cementing	Adhesive cementation is mandatory : occlusal veneer, thin veneer, veneer, inlay, onlay, partial crown Adhesive, self-adhesive or conventional cementation are optional: crown, bridge Please follow the Instructions for Use of the cementation manufacturer.

Bonding

	Preparation PressCeramic ceramic structure	Preparation titanium bonding base
Blasting	-	Observe the instructions of the manufacturer
Etching	Bonding surface 20 s with 5-9% hydrofluoric acid etching gel. Please follow the Instructions for Use of the etching gel manufacturer.	-
Silanizing	Bonding surface 60 s silanization. Please follow the Instructions for Use of the silane manufacturer.	Bonding surface 60 s silanization. Please follow the Instructions for Use of the silane manufacturer.
Bonding	Multilink® Hybrid Abutment (Ivoclar Vivadent) Please follow the Instructions for Use of the manufacturer.	



Important!

- › The hybrid abutments or hybrid abutment crowns must be sterilized prior to insertion. Furthermore, the locally applicable legal regulations and the hygiene standards applicable for a dental practice must be observed.
- › Steam sterilization can be performed with 3 x fractionated pre-vacuum using the following parameters: Sterilization time 3 min; steam temperature 132 °C/270 °F. The hybrid abutment and/or the hybrid abutment crown must be used immediately. No storage after sterilization!

Press parameter

General press recommendations for PressCeramic

Ingot	Investment ring size	Start temperature	Heating rate	Pressing temperature	Holding time	Pressing time	Pressing pressure
Translucency	g	°C/°F	°C/°F/min	°C/°F	min	min	N
Opal, HT, MT	100	700/1292	60/108	920/1688	15	3	200-300 (approx. 3-4.5 bar/43-65 psi)
	200				25		
LT, MO	100	700/1292	60/108	925/1697	15	3	200-300 (approx. 3-4.5 bar/43-65 psi)
	200				25		

Standard values of the pressing temperature for selected pressing furnaces

Press furnace	Pressing temperature
	°C/°F
Zubler Vario Press 300	925/1697
Dekema press-i-dent	935/1715
Dentsply Multimat NTxpress	940/1724
Ugin	925/1697
Ivoclar Programat	920/1688

Set the value "E" for press furnaces from Ivoclar to 300

Procedure for determining the optimum pressing temperature

- › Pin an inlay, a veneer and a crown and perform a test pressing.
- › When all objects have been pressed out, gradually reduce the pressing temperature by 5°C until the pressing is incomplete.
- › If not all objects have been pressed out, gradually increase the pressing temperature by 5°C until all objects have been pressed out.
- › The lowest pressing temperature at which all objects are pressed out generally gives the best pressing results.



Important!

- › Depending on the press furnace used, the press temperature to be entered can sometimes deviate significantly from the recommended temperature. The recommended press temperatures should therefore only be seen as guidelines.
- › Preheating furnace and pressing furnace must be calibrated regularly.
- › The optimum pressing temperature depends on several factors. The use of reusable press plunger may require a 5°C higher pressing temperature. Depending on the investment material used, the press temperature can vary by +/- 5°C. The higher the total liquid content of the investment material, the higher the press temperature is usually.



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RX only
For dental use only

This material has been developed solely for use in dentistry and must be processed according to the Instructions. Liability cannot be accepted for damages resulting from misuse or failure to observe the Instructions. The user is solely responsible for testing the material for its suitability for any purpose not explicitly stated in the Instructions. This also applies when the materials are mixed with or used together with products from other companies.

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