straumann®

STEP-BY-STEP INSTRUCTIONS ON THE **PROSTHETIC PROCEDURES**

Straumann® Anatomic IPS e.max® Abutment

COMMITTED TO
SIMPLY DOING MORE
FOR DENTAL PROFESSIONALS℠

The ITI (International Team for Implantology) is the academic partner of Institut Straumann in the areas of research and education.

CONTENT

STRAUMANN® ANATOMIC IPS E.MAX®[1] ABUTMENT

Intended use

- Cement-retained crowns and bridges via mesostructure
  - Conventional procedure
  - Temporary restoration chairside

- Screw-retained crowns
  - Direct veneering (with IPS e.max® Ceram)
  - Press-on technique (with IPS e.max® ZirPress)

Material

- Zirconium dioxide

Characteristics

Ease of Use

- Processing of a highly esthetic ceramic abutment in different shades with conventional lab methods
- Less grinding necessary due to prepared mucosa margins
- Adaptation to natural soft tissue contour due to prepared mucosa margins in different heights
- Oval shape resembles emergence profile of a natural tooth

Reliable

- Biocompatible and low thermal conductivity
- High-performance all-ceramics thanks to a high strength and high fracture toughness
- Reduced risk of margins shining through the soft tissue even with thin mucosa biotype
- CrossFit® Connection
- Precise fit

Note

Use a new basal screw for the final insertion of the abutment.

IPS e.max®, IPS e.max® Ceram, and IPS e.max® ZirPress are registered trademarks of Ivoclar Vivadent AG, Liechtenstein

1. CEMENT-RETAINED CROWNS AND BRIDGES

Cement-retained restorations need to meet the following criteria (see 1.2c):

- Individualized abutments must have cusp and marginal ridge support.
- The maximum thickness of the veneering material on top of the coping must not exceed 2.0 mm in all directions.
- Avoid any sharp edges.

1.1 Straumann® Anatomic IPS e.max® Abutment – Lab procedure

The following case describes the fabrication of a cement-retained crown by using the Straumann Anatomic IPS e.max Abutment.

1a

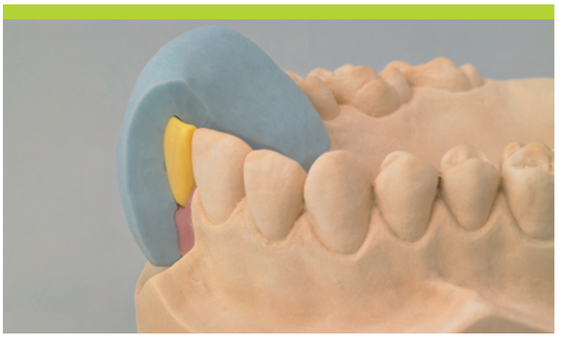
Step 1 – Fabricating the master cast and wax-up

- Fabricate the master cast including a gingival mask with the corresponding implant analog (see instructions in chapter 5 in brochure USLIT 232).

1b

- For optimal esthetic planning, design a full anatomical wax-up.

1c



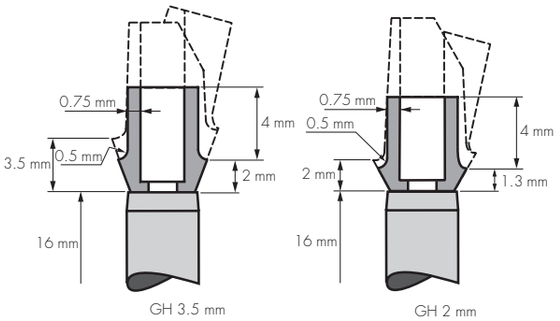
- Make a silicone key over the full wax-up to define the optimal shape of the modified abutment.

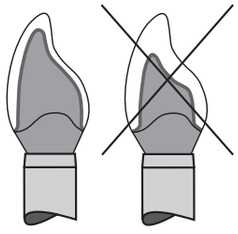
IPS e.max® is a registered trademark of Ivoclar Vivadent AG, Liechtenstein

2a

2b

2c





Cemented

Step 2 – Preparing the Straumann® Anatomic IPS e.max® Abutment

- Place the abutment on the polishing aid / analog and hand tighten the screw using the SCS screwdriver.

- For the customization of the Straumann Anatomic IPS e.max Abutment, Straumann recommends working with a water-cooled turbine and abrasive instruments that are appropriate for grinding sintered ZrO_2 material. Work with a low grinding pressure and avoid any spark formation. The Ivoclar Vivadent® grinding instrument recommendations for IPS e.max must be followed.

Note

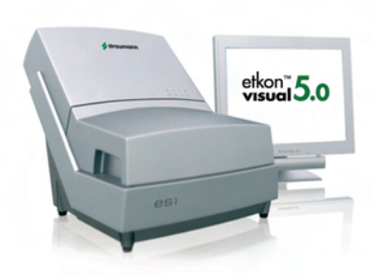
In order to keep sufficient stability of the abutment, **do not deviate** from the dimensions shown in graphic 2c (1.2c). The height of the abutment must achieve at least 65 % of the complete restoration.

- The final geometry of the abutment has to meet the requirements of the material of the final restoration.

2d

- After grinding and/or polishing the abutment a regeneration firing is recommended in a firing furnace: 65 °C (117 °F) per minute heating up to 1050 °C (1922 °F) / 15 minutes holding time and long term cooling down with 25 °C (45 °F) per minute to 750 °C (1382 °F).

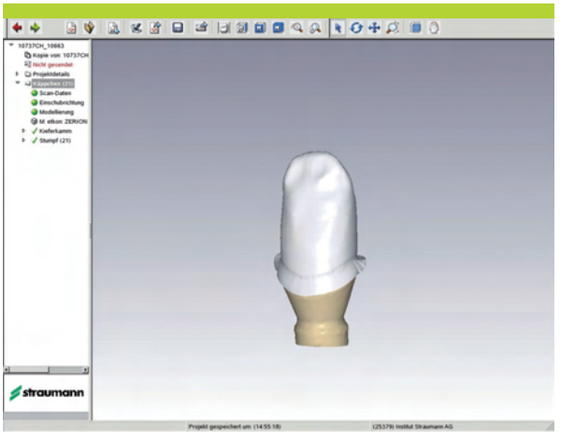
3a



Step 3 – Fabricating the superstructure

- Use a standard procedure to fabricate the ceramic coping with the es1™ scanner and the visual™ software.

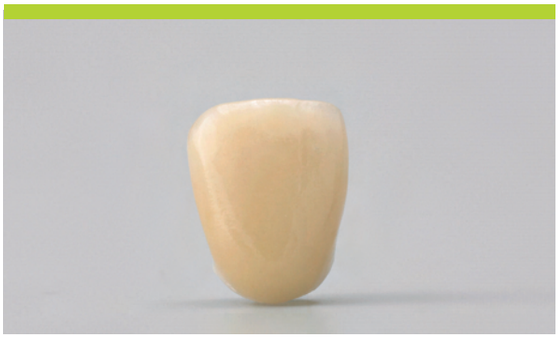
3b



3c

- Veneer the coping with conventional veneering material synchronized to the thermal expansion coefficient of the ceramic coping.
- Coefficient of thermal expansion[2] (CTE) (100–500 °C) $10.80 \pm 0.25\ 10^{-6}\ K^{-1}$
- For veneering follow the recommendations of the ceramic material manufacturer.

3d



3e

Note

In case of adhesive bonding, sandblast the portions of the abutment surface which will be covered with cement with Al_2O_3 (type 100 microns) at 0.5–1.0 bar (15–30 psi). While sandblasting, the implant configuration must be protected with the polishing aid.

1.2 Straumann® Anatomic IPS e.max® Abutment – Prosthetic procedure

The final restoration is delivered to the doctor's office on the master cast.

Step 1 – Preparation

- Remove the healing cap or temporary restoration.
- Remove the superstructure from the master cast and unscrew the abutment from the analog.
- Clean and dry the interior of the implant and the abutment thoroughly.
- Prepare the surface of the abutment corresponding to the cementation material which will be used (e.g., in case of adhesive bonding apply primer).
- Condition the inner surface of the superstructure according to the instructions for use given by the applicable manufacturer (e.g. in case of adhesive bonding apply primer).

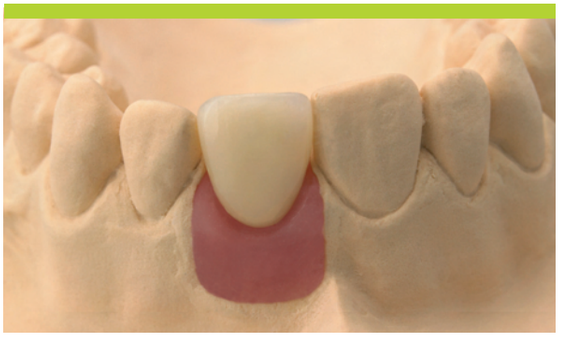
Sterilization

Straumann abutments and components are not sterile when delivered. Straumann recommends the following procedure for sterilization prior to use.

Component	Material	Method	Conditions
Abutment	ZrO_2	Dry heat	160 °C (320 °F), 4h
Screw	Ti alloy	Autoclave, moist heat	134 °C (273 °F), 18 min

2a

2b



Step 2 – Final insertion

- Position the cleaned abutment in the implant. Tighten the screw to 35 Ncm using the SCS screwdriver along with the ratchet and the torque control device (see instructions in chapter 7.5 in brochure USLIT 232).
- Close the SCS screw channel with cotton and sealing compound (i.e., gutta-percha). This allows for later removal of the modified abutment in the event a restoration replacement is required.
- Cement the superstructure onto the abutment.
- Remove any excess cement.

Note

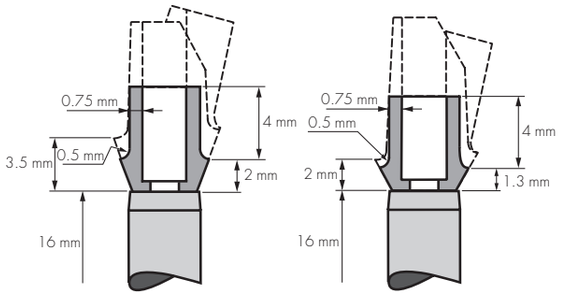
Use a new basal screw for the final insertion of the abutment.

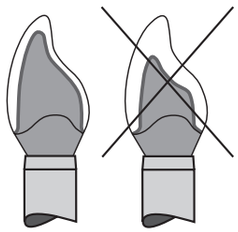
1.3 Straumann® Anatomic IPS e.max® Abutment – Chairside procedure for temporary restorations

The following case describes the usage of the Straumann Anatomic IPS e.max Abutment chairside.

1a

1b





Cemented

Step 1 – Preparing the Straumann Anatomic IPS e.max® Abutment

- For the customization of the Straumann Anatomic IPS e.max Abutment, Straumann recommends working with a water-cooled turbine and abrasive instruments that are appropriate for grinding sintered ZrO_2 material. Work with a low grinding pressure and avoid any spark formation. The Ivoclar Vivadent® grinding instrument recommendations for IPS e.max must be followed.

Note

In order to keep sufficient stability of the abutment, **do not deviate** from the dimensions shown (1b). The height of the abutment must achieve at least 65 % of the complete restoration.

- The final geometry of the abutment has to meet the requirements of the framework and veneering material.

IPS e.max® is a registered trademark of Ivoclar Vivadent AG, Liechtenstein

1c

- After grinding and / or polishing the abutment a regeneration firing is recommended in a firing furnace: 65 °C (117 °F) per minute heating up to 1050 °C (1922 °F) / 15 minutes holding time and long term cooling down with 25 °C (45 °F) per minute to 750 °C (1382 °F).

2a

Step 2 – Fabricating the cement-retained temporary single crown

- Use a standard procedure to fabricate the cement-retained single crown (e.g., grind out a prefabricated plastic tooth).

2b

3a

3b

3c

Step 3 – Placing the modified Straumann® Anatomic IPS e.max® Abutment

- Place the abutment on the implant and tighten the screw with a torque between 15 Ncm and 35 Ncm using the SCS screwdriver along with the ratchet and the torque control device (see instructions in chapter 7.5 in brochure USLIT 232).

Note

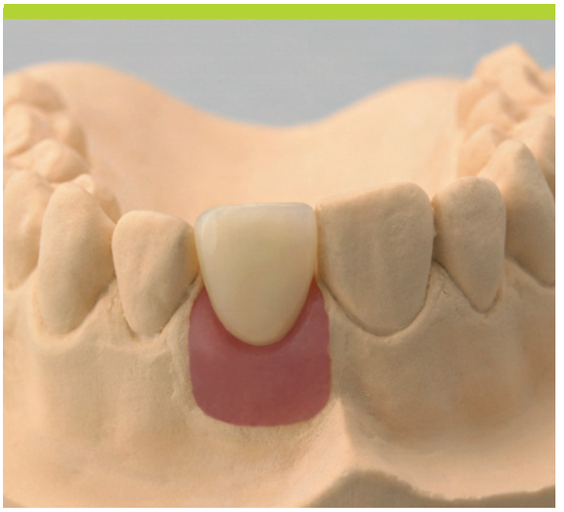
Before taking the abutment level impression the abutment needs to be torqued with 35 Ncm.

- Cover the screw head with absorbent cotton or gutta-percha and seal the screw channel temporarily (e.g., with absorbent cotton).

- Take an impression with an individualized impression tray and order the final restoration.

IPS e.max® is a registered trademark of Ivoclar Vivadent AG, Liechtenstein

4



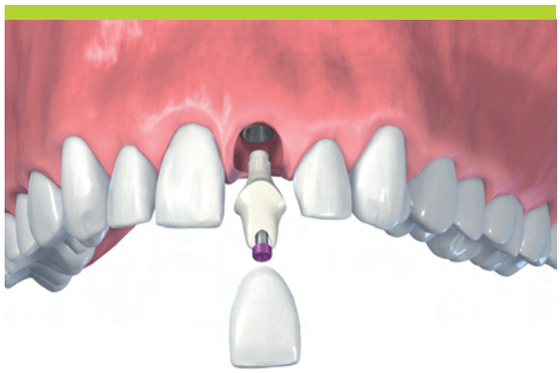
Step 4 – Cementing the temporary single crown

- Coat the internal configuration of the crown with temporary cement and cement it onto the Straumann® Anatomic IPS e.max® Abutment.

- Remove any excess cement.

IPS e.max® is a registered trademark of Ivoclar Vivadent AG, Liechtenstein

5a



Step 5 – Final insertion

- Remove the temporary restoration.
- Remove the superstructure from the master cast and unscrew the abutment from the analog.
- Clean and dry the interior of the abutment thoroughly.

Sterilization

Straumann abutments and components are not sterile when delivered. Straumann recommends the following procedure for sterilization prior to use.

Component	Material	Method	Conditions
Abutment	ZrO_2	Dry heat	160 °C (320 °F), 4h
Screw	Ti alloy	Autoclave, moist heat	134 °C (273 °F), 18 min

5b

- Close the SCS screw channel with cotton and sealing compound (i.e., gutta-percha). This allows for later removal of the modified abutment in the event a restoration replacement is required.

2. SCREW-RETAINED CROWNS, DIRECTLY VENEERED

Screw-retained restorations need to meet the following criteria (see 2c):

- In the anterior region, screw hole access must be located in the palatal/lingual area of the restoration.
- The screw hole position in the incisal or labial area is contraindicated.
- In the posterior area, screw hole position must be located in the center of the occlusal area of the restoration.
- Before veneering or press-on procedure the individualized abutment must have an anatomic tooth supported design, means cusp and marginal ridge support.
- Individualized abutments must have cusp and marginal ridge support.
- The maximum thickness of the veneering material on top of the individualized abutments (layering ceramic and/or press-on ceramic) must not exceed a maximum of 2.0 mm in all directions of the screw retained restoration.

2.1 Straumann® Anatomic IPS e.max®[1] Abutment – Lab procedure

The following case describes the fabrication of screw-retained crowns directly veneered, when using the Straumann Anatomic IPS e.max Abutment and IPS e.max® Ceram.

1a

Step 1 – Fabricating the master cast and wax-up

- Fabricate the master cast including a gingival mask with the corresponding implant analog (see instructions in chapter 5 in brochure USLIT 232).

1b

- For optimal esthetic planning, design a full anatomical wax-up.

1c

- Make a silicone key over the full wax-up in order to define the optimal shape of the modified abutment.

IPS e.max® and IPS e.max® Ceram are registered trademarks of Ivoclar Vivadent AG, Liechtenstein

2a

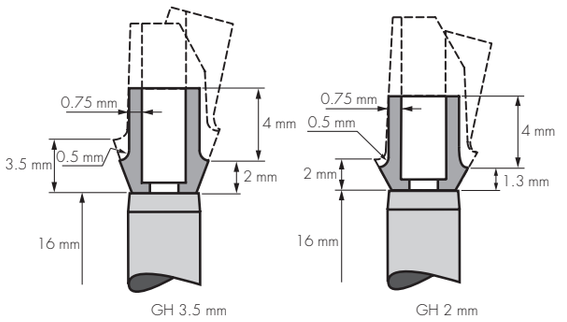
Step 2 – Preparing the Straumann® Anatomic IPS e.max® Abutment

- Place the abutment on the polishing aid / analog and hand tighten the screw using the SCS screwdriver.

2b

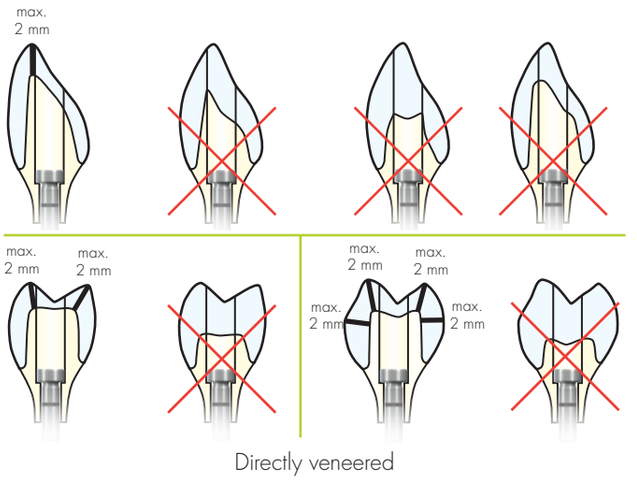
- For the customization of the Straumann Anatomic IPS e.max Abutment, Straumann recommends working with a water-cooled turbine and abrasive instruments that are appropriate for grinding sintered ZrO_2 material. Work with a low grinding pressure and avoid any spark formation. The Ivoclar Vivadent grinding instrument recommendations for IPS e.max must be followed.

2c



Note

In order to keep sufficient stability of the abutment, **do not deviate** from the dimensions shown (2c). The height of the abutment must achieve at least 65 % of the complete restoration.



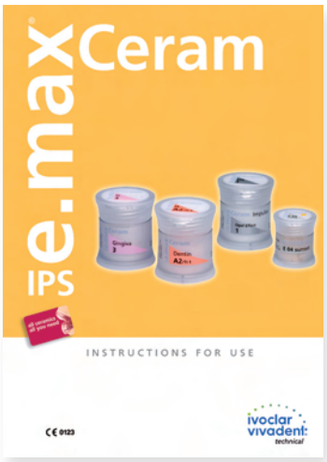
Directly veneered

- The final geometry of the abutment has to meet the requirements of the veneering material.

2d

- After grinding and/or polishing the abutment a regeneration firing has to be conducted in a firing furnace: 65 °C (117 °F) per minute heating up to 1050 °C (1922 °F) / 15 minutes holding time and long term cooling down with 25 °C (45 °F) per minute to 750 °C (1382 °F).

3a



3b

Step 3 – Veneering

- For the veneering of the Straumann® Anatomic IPS e.max®[1] Abutment, use conventional veneering material synchronized to the thermal expansion coefficient of the abutment.
- Coefficient of thermal expansion[2] (CTE) (100–500 °C) $10.80 \pm 0.25\ 10^{-6} K^{-1}$
- In this case IPS e.max® Ceram has been used. For further details please consult the brochure "Instructions for use IPS e.max Ceram" (www.ivoclarvivadent.com).
- Steam clean the abutment and apply the IPS e.max Ceram ZirLiner only where IPS e.max Ceram will be applied later on.
- The implant configuration must be protected with the polishing aid while applying the IPS e.max Ceram ZirLiner.

Note

Do not sandblast the abutment before applying the IPS e.max Ceram Liner. Avoid any application of IPS e.max Ceram ZirLiner into the screw channel.

3c

3d

3e

- Particular attention must be given to an even layer of thickness of the porcelain veneered on the abutment.

Note

Observe the maximum thickness of the layering ceramic material (max. 2 mm).

2.2 Straumann® Anatomic IPS e.max® Abutment – Prosthetic procedure

The final restoration is delivered to the doctor's office on the master cast.

Step 1 – Preparation

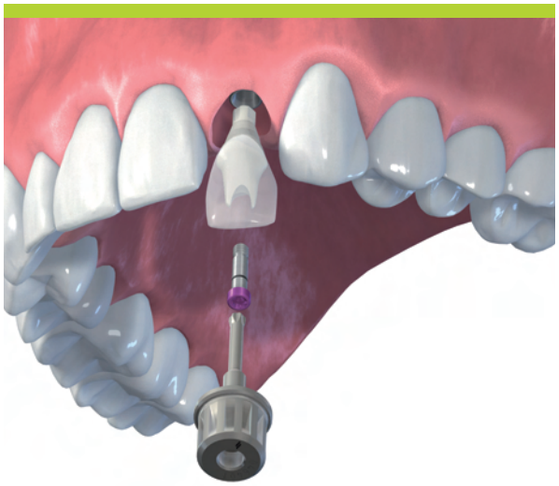
- Remove the healing cap or temporary restoration.
- Remove the veneered abutment from the master cast.
- Clean and dry the interior of the implant and the abutment thoroughly.

Sterilization

Straumann abutments and components are not sterile when delivered. Straumann recommends the following procedure for sterilization prior to use.

Component	Material	Method	Conditions
Abutment	ZrO_2	Dry heat	160 °C (320 °F), 4h
Screw	Ti alloy	Autoclave, moist heat	134 °C (273 °F), 18 min

2a



Step 2 – Final insertion

- Position the cleaned and veneered abutment in the implant. Tighten the screw to 35 Ncm using the SCS screwdriver along with the ratchet and the torque control device (see instruction in chapter 7.5, in brochure USLIT 232).

2b

- Close the SCS screw channel with cotton and sealing compound (i.e., gutta-percha). This allows for later removal of the modified abutment in the event a restoration replacement is required.

Note

Use a new basal screw for the final insertion of the abutment.

3. SCREW-RETAINED CROWNS USING THE PRESS-ON TECHNIQUE

Screw-retained restorations need to meet the following criteria (see 2c):

- In the anterior region, screw hole access must be located in the palatal/lingual area of the restoration.
- The screw hole position in the incisal or labial area is contraindicated.
- In the posterior area, screw hole position must be located in the center of the occlusal area of the restoration.
- Before veneering or press-on procedure the individualized abutment must have an anatomic tooth supported design
- Individualized abutments must have cusp and marginal ridge support.
- The maximum thickness of the veneering material on top of the individualized abutments (layering ceramic and/or press-on ceramic) must not exceed a maximum of 2.0 mm in all directions of the screw retained restoration.

3.1 Straumann® Anatomic IPS e.max® Abutment – Lab procedure

The following case describes the fabrication of a screw-retained crown when using the Straumann Anatomic IPS e.max Abutment in combination with the press-on technique. In this case IPS e.max® ZirPress has been used.

1a

Step 1 – Fabricating the master cast and wax-up

- Fabricate the master cast including a gingival mask with the corresponding implant analog (see instructions in chapter 5 in brochure USLIT 232).

1b

- For optimal esthetic planning, design a full anatomical wax-up.

1c

- Make a silicone key over the full wax-up in order to define the optimal shape of the modified abutment.

IPS e.max® is a registered trademark of Ivoclar Vivadent AG, Liechtenstein

2a

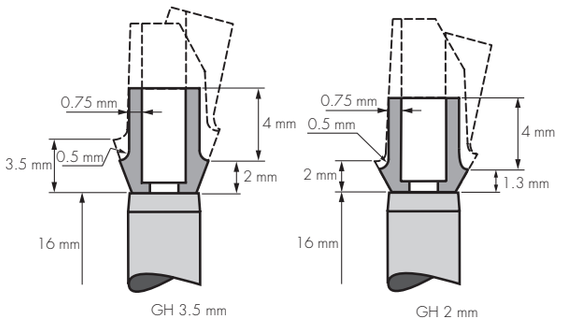
Step 2 – Preparing the Straumann® Anatomic IPS e.max® Abutment

- Place the abutment on the polishing aid / analog and hand tighten the screw using the SCS screwdriver.

2b

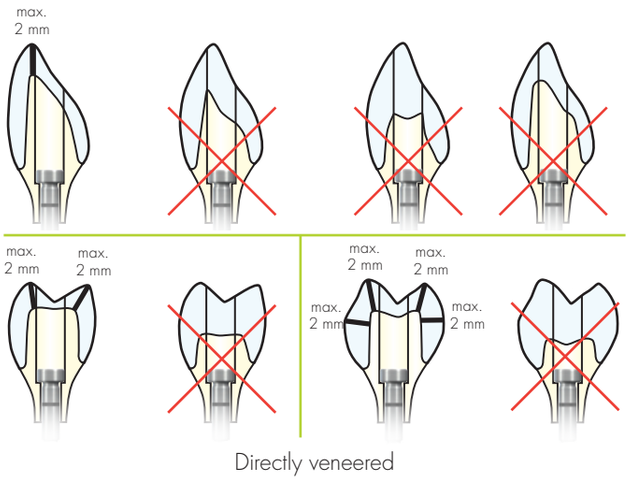
- For the customization of the Straumann Anatomic IPS e.max Abutment, Straumann recommends working with a water-cooled turbine and abrasive instruments that are appropriate for grinding sintered ZrO_2 material. Work with a low grinding pressure and avoid any spark formation. The Ivoclar Vivadent grinding instrument recommendations for IPS e.max must be followed.

2c



Note

In order to keep sufficient stability of the abutment, **do not deviate** from the dimensions shown (2c). The height of the abutment must achieve at least 65 % of the complete restoration.

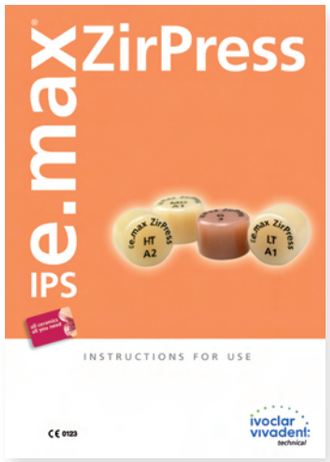


- The final geometry of the abutment has to meet the requirements of the framework and veneering material.

2d

- After grinding and/or polishing the abutment a regeneration firing has to be conducted in a firing furnace: 65 °C (117 °F) per minute heating up to 1050 °C (1922 °F) / 15 minutes holding time and long term cooling down with 25 °C (45 °F) per minute to 750 °C (1382 °F).

3a



3b

Step 3 – Process of press-on technique

- For pressing onto the Straumann® Anatomic IPS e.max® Abutment, use conventional press-on material synchronized to the thermal expansion coefficient of the abutment.
- Coefficient of thermal expansion[2] (CTE) (100–500 °C) $10.80 \pm 0.25\ 10^{-6} K^{-1}$
- In this case IPS e.max® ZirPress has been used. For further details please consult the brochure "Instructions for use IPS e.max ZirPress" (www.ivoclarvivadent.com).
- Steam clean the abutment and apply the IPS e.max® Ceram ZirLiner only where IPS e.max ZirPress will be applied later on.
- The implant configuration must be protected with the polishing aid while applying the IPS e.max Ceram ZirLiner.

Note

Do not sandblast the abutment before applying the IPS e.max® Ceram ZirLiner. Avoid any application of IPS e.max® Ceram ZirLiner into the screw channel.

3c

■ The respective material thickness (minimum 0.7 mm up to 2 mm) is recommended in order to ensure a proper press-on restoration.

3d

Note

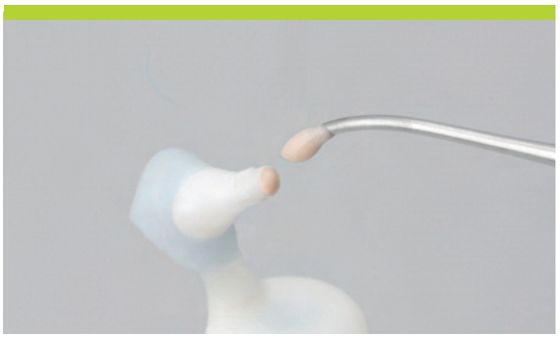
In order to prevent IPS e.max® ZirPress to intrude from clogging into the screw channel of the abutment do not cover the screw channel with wax.

3e

■ Sprueing

IPS e.max® ZirPress is a registered trademark of Ivoclar Vivadent AG, Liechtenstein

3f



- Cover the whole abutment with investment material and ensure that the screw channel is also completely filled.

3g

- Before pressing, ensure that the pressing furnace is sufficiently preheated.

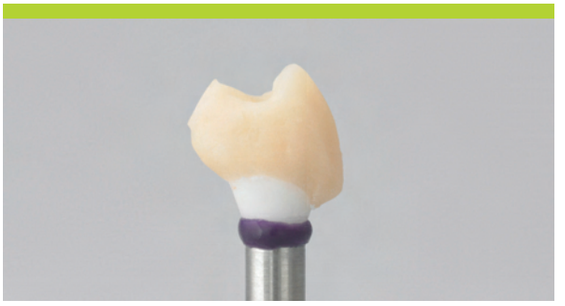
3h

- The implant configuration must be protected with the polishing aid (e.g., sandblasting).

3i

3j

3k



3l

Note

The long term success of the prosthetic work depends on the accurate fit of the restoration. Therefore the following recommendations must be observed:

– Allow for enough cooling time of the press-on abutment before divestment
– Rough divestment is carried out with glass polishing beads at 4 bar (60 psi) pressure
– Fine divestment is carried out with glass polishing beads at 2 bar (30 psi) pressure
– Do not use Al_2O_3 for rough or fine divestment
– Do not sandblast the conical portion of the abutment and always protect the implant/abutment interface with the polishing aid

■ Immerse the pressed objects into the IPS e.max® Press Invex Liquid (min. 5 minutes, max. 10 minutes) and ensure that they are completely covered.

■ Carefully remove the white reaction layer on the pressed objects with Al_2O_3 (type 100 microns) at 1 – 2 bar (15 – 30 psi) pressure.

3m

■ Veneer, shade and glaze the restoration according to the individual situation.

Note

The implant configuration must be protected with the polishing aid while applying the IPS e.max® Ceram.

3n

■ Final restoration

IPS e.max® Ceram is a registered trademark of Ivoclar Vivadent AG, Liechtenstein

3.2 Straumann® Anatomic IPS e.max® Abutment – Prosthetic procedure

The final restoration is delivered to the doctor's office on the master cast.

Step 1 – Preparation

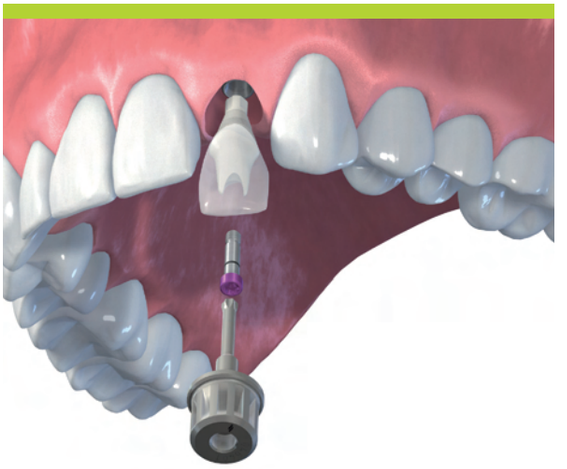
- Remove the healing cap or temporary restoration.
- Remove the overpressed abutment from the master cast.
- Clean and dry the interior of the implant and the abutment thoroughly.

Sterilization

Straumann abutments and components are not sterile when delivered. Straumann recommends the following procedure for sterilization prior to use.

Component	Material	Method	Conditions
Abutment	ZrO_2	Dry heat	160 °C (320 °F), 4h
Screw	Ti alloy	Autoclave, moist heat	134 °C (273 °F), 18 min

2a



Step 2 – Final insertion

- Position the cleaned abutment in the implant. Tighten the screw to 35 Ncm using the SCS screwdriver along with the ratchet and the torque control device (see instructions in chapter 7.5 in brochure USLIT 232).

2b

- Close the SCS screw channel with cotton and sealing compound (i.e., gutta-percha). This allows for a later removal of the modified abutment in the event a restoration replacement is required.

IMPORTANT GUIDELINES

Disclaimer of liability
The Straumann® dental implants and other Straumann products are part of an overall concept and may be used only in conjunction with the corresponding original components and instruments according to Institut Straumann AG's instructions and recommendations.

The use of third-party components not distributed directly or indirectly by Institut Straumann AG in conjunction with the Straumann® Dental Implant System voids any guarantee and/or warranty from Institut Straumann AG and from the contractual partners of the Straumann® Dental Implant System.

Instructions as to the application of our products take place verbally, in writing, by electronic media or in hands-on trainings corresponding to the state of the art at the time of introduction of the product.

The user of Straumann products is responsible for determining whether or not any product is suitable for a particular patient and circumstances. Straumann disclaims any liability, expressed or implied, and bears no responsibility for any direct, indirect, punitive or other damages, arising out of or in connection with any errors in professional judgment or practice in the use or installation of Straumann products.

The user is also obliged to study the latest developments of the Straumann® Dental Implant System and their applications regularly.

Please note
The descriptions contained in this document are not sufficient for immediate use of the Straumann® Dental Implant System. Knowledge of dental implantology and instruction in the handling of the Straumann® Dental Implant System provided by an operator with the relevant experience are always necessary.

Availability
Some of the products listed in this brochure are not available in all countries.

Validity
Upon publication of this brochure, all previous versions are superseded.

Caution
In addition to the caution notes in this basic information, our products must be secured against aspiration when used intraorally. Do not use damaged or blunt instruments.

Units per package
Unless stated otherwise, there is one unit in each package.

Documentation
For detailed instructions on the Straumann® Dental Implant System contact your Straumann representative.

Copyright and trademarks
Straumann documents may not be reprinted or published, in whole or part, without the written authorization of Institut Straumann AG. Straumann® and/or other products and logos from Straumann® that are mentioned here are trademarks or registered trademarks of Straumann Holding AG and/or its affiliates.

Definition SLActive®
Sand-blasted, Large grit, Acid-etched, chemically active and hydrophilic

Definition SLA®
Sand-blasted, Large grit, Acid-etched

Explanation of the symbols on labels and instruction leaflets

LOT	Batch code
REF	Catalog number
STERILE R	Sterilized using irradiation
	Lower limit of temperature
	Upper limit of temperature
	Temperature limitation
Rx only	Caution: U.S. Federal law restricts this device to sale by or on the order of a licensed dentist.
	Do not re-use
	Non-sterile
	Caution, consult accompanying documents
	Use by
	Keep away from sunlight
CE	Straumann Products with the CE mark fulfill the requirements of the Medical Devices Directive 93/42 EEC
CE 0123	
	Consult operating instructions

Colored warning labels

YELLOW = CAUTION	Indicates hazards or unsafe handling which might cause minor injury or damage to property
ORANGE = WARNING	Indicates hazards which might cause serious or fatal injury
RED = DANGER	Indicates hazards which might cause immediate serious or fatal injury

Straumann® Anatomic IPS e.max®[1] Abutment is avaible in the following range of opacity:
MO 0 and MO 1 (MO = Medium Opacity)

[1] IPS e.max®, IPS e.max® Ceram, IPS e.max® ZirPress, IPS e.max® Ceram ZirLiner, IPS e.max® Ceram Liner, and IPS e.max® Press Invex are registered trademarks of Ivoclar Vivadent AG, Liechtenstein

[2] Ivoclar Vivadent AG, Liechtenstein

www.straumann.com

International Headquarters
Institut Straumann AG
Peter Merian-Weg 12
CH-4002 Basel, Switzerland
Phone +41 (0)61 965 11 11
Fax +41 (0)61 965 11 01

Straumann USA
Straumann USA, LLC
60 Minuteman Road
Andover, MA 01810
Phone 800/448 8168
978/747 2500
Fax 978/747 2490
www.straumannusa.com

Straumann Canada
Straumann Canada Limited
3115 Harvester Road, 1st Floor
Burlington, ON L7N 3N8
Phone 800/363 4024
905/319 2900
Fax 905/319 2911
www.straumann.ca

Straumann products are CE marked. 1/10 USLIT 293