How to make dimensionally stable spark erosion models for implants with passive fit.

1) The abutment control check with the impression posts. Control Block made of Pattern Resin fitted tension-free in the mouth.

2) An impression is made over the abutment control check with a customized impression tray and Impregum.

3) The impression with the customized impression tray and Impregum.

4) System Straumann Bone Level – RC impression posts for Multi-Base abutment.

5) Impression at abutment level and the model parts, system Straumann Bone Level from SAE:
   1. SAE model shell (Order No. SAE 82-0081)
   2. SAE implant replica (Order No. SAE 82-0178)
   3. SAE screw (Order No. SAE 82-0079)

6) The system-linked implant replicas are screwed into the Secotec model shells which are in turn screwed into the impression posts situated in the impression. The screws are screwed in using the counter wrench (2) taking into account the given torque tightening values – 20 Ncm (Order No. SAE 82-0531)

7) Each model shell is connected to the copper wire (Order No. SAE 82-0090) so that all model shells are linked to the electric circuit. The free ends of the wires should be linked together and directed away from the model.

8) An effusion of permanently elastic silicone-based model fonnix so that the model replica is completely covered with silicone and only the model shells remain completely visible.

9) An effusion of permanently elastic silicone-based model fonnix so that the model replica is completely covered with silicone and only the model shells remain completely visible.

10) The dimensionally stable master model with the removable SAE implant replicas; these are replaced by copper electrodes that can be eroded for the spark erosion process.

11) This milled-in control window confirms to the dental technician that the Pattern Resin block has been correctly inserted by the dentist.

12) Diagram of the Secotec model structure:
   10a Part of model (elastic and removable)
   10b Part of model – SAE epoxy resin
   10c Part of model made of SAE special die stone
   12 Area to receive implant replica and implant
   12a SAE model shell
   12b Thread for SAE model shell
   16 Contact area for electric wire
   18 Copper wire for electric current (anode)

SAE Epoxy Resin and Special Die Stone – Precision fit with dimensionally stable master models

:: Step by Step for the dimensionally stable master model for combined dental prostheses
:: Step by Step for the dimensionally stable SAE spark erosion model
Do you want a perfect result? Precise fitting is now in your hands.

With SAE spark erosion, we have developed a system which enables you to achieve the pro-precision production of dental prostheses with passive fit.

Even if your work is very exact, the results will never be perfect if the shape and form of your models change as a result of being subjected to varying conditions such as humidity and temperature fluctuations. This results in misfits, complaints and loss of time and money.

Therefore, we recommend that you use the durable SAE materials – SAE special die stone and SAE epoxy resin. They retain their form even if there is a change in environmental conditions.

As such, they enable you to con-

stantly produce dental prostheses with an exact fit under conditions that always remain the same. These instructions of use show you step by step how, by using the SAE materials, you can achieve results of great precision which will enthrall not only you but each one of your customers.

1. Preparation of impression:
   Template mould for epoxy resin.

2. Dispense:
   Epoxy resin: 6 parts (ml)

3. ... add and mix ...

4. ... pour in the thinl ...

5. Position impression in the horizontal centrifuge with counterbalance.

6. Place the retention pins firmly in the epoxy material.

Instructions of use:

Pre-hear the epoxy resin in water bath (baby bottle warmer) to a working temperature of 35°C - 38°C.

- Use at room temperature 20°C – 22°C.
- Setting time 6 hours (ml)
- Normal contractions 0.01 - 0.03 mm
- Setting time up to 3 hours – do not expedite, otherwise increased contraction.

So that the epoxy resin can flow bubble-free into the impression, we recommend the spinning process. For this, both hand or Sirius horizontal centrifuge is ideal.

Setting time = 60 minutes.

Final phase:

- Effusion with SAE special die stone.

7. Remaking effusion with SAE special die stone after removing template mould.

8. Prefabricated model base with magnet.

9. SAE special die stone mixed 1 minute at 15-20 millibar:

- SAE special die stone are much more precise and durable than many other model materials. Thus, you can achieve results of greater precision. Both materials have been used successfully in the Rübeling group dental laboratories for years.

- SAE Special Die Stone light brown is an acrylic-enhanced die stone with increased contraction for sawn models and for inlays, crowns, bridges and processed further.

Despite its high compressive resistance, it does not splinter when trimmed and processed.

These instructions of use show you that always remain the same.

10. Efficacy with SAE special die stone.

11. Efficacy is completed.

12. Efficacy is completed.

13. Final phase: Setting time + 6 minutes.

14. A control window of the impres-

sion is made after the die stone has set. Are the crowns correctly positioned in the impression?

15. The dimensionally stable and durable master model.

Isolation:

Impression material for epoxy model material:

Isolation is not necessary! Should you experience problems, we recommend silver powder used in the galvano technique. Apply a thin layer with the brush and then blow off tightly with the air jet.

Epoxy model for autopolymerizing material:

Apply thin layer of beeswax separator (from the company leader) or Vaseline to the epoxy model area.

78 DAYS (END OF TEST) Distance A 34.63 +-.00

28 DAYS (END OF TEST) Distance B 11.34 +-.00

Distance C 34.20 -0.01

Distance D 31.79 +-.00

Do you still have questions regarding working with SAE epoxy resin? Can we help in any other way? If so, we look forward to hearing from you.

Tel.: +49 (0)471 9 84 87 45 · Fax: +49 (0)471 9 84 87 44

Stand: 10/2015

Model Test 1 Data in mm

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<thead>
<tr>
<th>Distance</th>
<th>Value (mm)</th>
<th>Tolerance (mm)</th>
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Model Test 10 Data in mm

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</tr>
<tr>
<td>D</td>
<td>31.79</td>
<td>+.00</td>
</tr>
</tbody>
</table>

The SAE product catalogues can be downloaded at:

www.sae-dental.de

SAE Special Die Stone
Natural die stones, strengthened with resin Grade IV

SAE Epoxy Resin with sectional division and SAE Special Die Stone

Top marks

SAE DENTAL VERTRIEBS GMBH

Langener Landstraße 173 · D-27580 Bremerhaven

Tel.: +49 (0) 471 9 84 87 60 · Fax: +49 (0) 471 9 84 87 64

E-Mail: info@saedental.de · Internet: www.sae-dental.de

SAE Special Die Stone
Natural die stones, strengthened with resin Grade IV

Top marks

SAE-Epoxy Resin with sectional division and SAE Special Die Stone

Top marks

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www.sae-dental.de

SAE-PRODUKT-KATALOG 2009

SAE CATALOGUE OF PRODUCTS 2009

CATALOGO PRODOTTI SAE 2009

SAE-SECOTEC-PROGRAM 2010

SAE-SECOTEC-PROGRAMM 2010

SAE-Schwenkriegel-Katalog

Catalogo chiavistello orientabile SAE

SAE-PRODUKT-KATALOG 2009

SAE CATALOGUE OF PRODUCTS 2009

CATALOGO PRODOTTI SAE 2009

ИСКРОВОЙ ИМПЛАНТАРНЫЙ напряжения

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SAE-Schwenkriegel-Katalog

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ИСКРОВОЙ ИМПЛАНТАРНЫЙ напряжения

ИСКРОВОЙ ИМПЛАНТАРНЫЙ напряжения

Stand: 10/2015
Do you want a perfect result? Scientifically proven stability

With SAE spark erosion, we have developed a system which enables you to achieve the pre-precise production of dental prostheses with passive fit. Even if your work is very exact, the results will never be perfect if the shape and form of your models change as a result of being subjected to varying conditions such as humidity and temperature fluctuations. This results in misfits, complaints and loss of time and money. Therefore, we recommend that you use the durable SAE materials – SAE special die stone and SAE epoxy resin. They retain their form even if there is a change in environmental conditions. These instructions of use show you step by step how, by using the SAE materials, you can achieve results of great precision which will enthrall your customers.

So that the epoxy resin can flow bubble-free into the impression, it has to be preheated. To allow for this, we recommend the spinning process. For this, both hand or Sirius horizontal centrifuge with counterbalance.

SAE epoxy resin + hardener

Pre-heat the epoxy resin in water bath (baby bottle warmer) to a working temperature of 35°C - 38°C. Pre-heat the hardener to the same temperature. A ready to use mixture of 6 parts (ml) of epoxy resin : 1 part (ml) hardener is used. Afterwards the two components are mixed thoroughly before being applied to the impression (Pattern). The mixture of resin and hardener is used within 6 hours. After 28 days, the contraction of the hardener will be 0.01 - 0.03 mm. Therefore, we recommend that you use a working temperature of 35°C - 38°C.

Epoxy resin: 6 parts (ml)

Normal contraction 0.01 – 0.03 mm

Setting time = 60 minutes

Epoxy model for autopolymerizing material:

Apply thin layer of Ivocron separator (from the company Ivoclar) or silver powder used in the galvano technique. Apply a thin layer with the brush and then blow off lightly with the air jet. Isolation is not necessary! Should you experience problems, we recommend silver powder used in the galvano technique. Apply a thin layer with the brush and then blow off lightly with the air jet. Epoxy model for autopolymerizing material:

Isolation: Impressions material for epoxy model material:

The dimensionally stable and durable master model.

Top marks

Model Test 1 Top marks

Model Test 10 Top marks

Distance A 34.62 -0.01

Distance B 11.34 +-.00

Distance C 34.20 -0.01

Distance D 31.79 +-.00

0.000

The SAE product catalogues can be downloaded at:

SAE-DENTAL VERTRIEBS GMBH

Langenlanderstraße 173 · D-27570 Bremerhaven
Tel.: +49 (0)571 9 84 87-60 · Fax: +49 (0)571 9 84 87-64
E-Mail: info@sae-dental.de · Internet: www.sae-dental.de

Do you still have questions regarding working with SAE epoxy resin? Can we help in any other way? If so, we look forward to hearing from you.

SAE Special Die Stone

Natural die stones, strengthened with resin Grade IV

SAE Epoxy Resin with sectional division and SAE Special Die Stone

Top marks

Model Test 1 Data in mm

Model Test 10 Data in mm

Difference

Difference

Model Test 1 Data in mm

Model Test 10 Data in mm

Difference

Difference

Order No. 70-1117 ivory

Order No. 70-1117 ivory

Difference

Difference

Natural die stone, strengthened with resin Grade IV

SAE Special Die Stone light brown is an acrylic-enhanced die stone with a working temperature of 35°C - 38°C. It is ideal for sawn models and for inlays, crowns, bridges and bridges.

Isolation is not necessary! Should you experience problems, we recommend silver powder used in the galvano technique. Apply a thin layer with the brush and then blow off lightly with the air jet. Epoxy model for autopolymerizing material:

Isolation: Impressions material for epoxy model material:

The dimensionally stable and durable master model.

Top marks

Model Test 1 Top marks

Model Test 10 Top marks

Distance A 34.62 -0.01

Distance B 11.34 +-.00

Distance C 34.20 -0.01

Distance D 31.79 +-.00

0.000

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SAE Special Die Stone

Natural die stones, strengthened with resin Grade IV

SAE Epoxy Resin with sectional division and SAE Special Die Stone

Top marks

Model Test 1 Data in mm

Model Test 10 Data in mm

Difference

Difference

Order No. 70-1117 ivory

Order No. 70-1117 ivory

Difference

Difference

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Isolation is not necessary! Should you experience problems, we recommend silver powder used in the galvano technique. Apply a thin layer with the brush and then blow off lightly with the air jet. Epoxy model for autopolymerizing material:

Isolation: Impressions material for epoxy model material:

The dimensionally stable and durable master model.

Top marks

Model Test 1 Top marks

Model Test 10 Top marks

Distance A 34.62 -0.01

Distance B 11.34 +-.00

Distance C 34.20 -0.01

Distance D 31.79 +-.00

0.000

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E-Mail: info@sae-dental.de · Internet: www.sae-dental.de

Do you still have questions regarding working with SAE epoxy resin? Can we help in any other way? If so, we look forward to hearing from you.
How to make dimensionally stable spark erosion models for implants with passive fit.

1. An impression is made over the abutment control check with a customized impression tray and Impregum.
2. The impression with the customized impression tray and Impregum.
3. The abutment control check with the impression posts. Control block made of Pattern Resin fitted tension-free in the mouth.
5. Impression at abutment level and the model parts, system Straumann Bone Level from SAE:
   1. SAE model shell (Order No. SAE 82-0081)
   2. SAE implant replica (Order No. SAE 82-0178)
   3. SAE screw (Order No. SAE 82-0079)
6. The system-linked implant replicas are screwed into the Secotec model shells which are in turn screwed into the impression posts situated in the impression. The screws are screwed in using the torque wrench (1) and the counter wrench (2) taking into account the given torque tightening values – 20 Ncm (Order No. SAE 82-0521 and 82-0531)
7. Each model shell is connected to the copper wire (Order No. SAE 82-0099) so that all model shells are linked to the electric circuit. The free ends of the wires should be linked together and directed away from the model.
8. An effusion of permanently elastic silicone gingival mask follows so that the implant replicas are completely covered with silicone and only the model shells remain completely visible.
9. An effusion of permanently elastic silicone gingival mask follows so that the implant replicas are completely covered with silicone and only the model shells remain completely visible.
10. This milled-in control window confirms to the dental technician that the Pattern Resin block has been correctly inserted by the dentist.

Diagram of the Secotec model structure:
10a. Part of model (elastic and removable)
10b. Part of model – SAE epoxy resin
10c. Part of model made of SAE special die stone
12. Area to receive implant replica and implant electrode
13. Area to receive implant replica and implant electrode
14. Thread for SAE model shell
16. Contact area for electric wire
18. Copper wire for electric current (anode)

SAE Epoxy Resin and Special Die Stone – Precision fit with dimensionally stable master models

:: Step by Step for the dimensionally stable master model for combined dental prostheses
:: Step by Step for the dimensionally stable SAE spark erosion model
How to make dimensionally stable spark erosion models for implants with passive fit.

1) The abutment control check with the impression posts.
2) An impression is made over the abutment control check with a customized impression tray and Impregum.
3) The impression with the customized impression tray and Impregum.
4) Sistem Straumann Bone Level—RC impression posts for Multi-Base abutment.
5) Impression at abutment level and the model parts.
6) The system-linked implant replicas are screwed into the Secotec model shells which are in turn screwed into the impression posts situated in the impression. The screws are screwed in using the torque wrench (1) and the counter wrench (2) taking into account the given torque tightening values—20 Ncm.
7) Each model shell is connected to the copper wire (Order No. SAE 82-0500) so that all model shells are linked to the electric circuit. The free ends of the wires should be linked together and directed away from the model.
8) An effusion of permanently elastic silicone gingival mask follows so that the implant replicas are completely covered with silicone and only the model shells remain completely visible.
9) A sealing sleeve of wax is applied, followed by a partial effusion of SAE epoxy resin that is not prone to contract—shrinkage 0.003 mm (Order No. SAE 40-1060 and 40-1061). Remaining effusion follows using SAE implant model die stone (Order No. SAE 70-1121).
10) The dimensionally stable master model with the removable SAE implant replicas; these are replaced by copper electrodes that can be eroded for the spark erosion process.
11) The dimensionally stable master model with the removable SAE implant replicas; these are replaced by copper electrodes that can be eroded for the spark erosion process.
12) Diagram of the Secotec model structure:

**SAE Epoxy Resin and Special Die Stone**

Precision fit with dimensionally stable master models

:: Step by Step for the dimensionally stable master model for combined dental prostheses.
:: Step by Step for the dimensionally stable SAE spark erosion model.
Master models for combined prostheses – dimensionally stable and durable thanks to SAE epoxy

Do you want a perfect result? Scientifically proven stability

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Even if your work is very exact, the results will never be perfect if the shape and form of your models change as a result of being subjected to varying conditions such as humidity and temperature fluctuations. This results in misfits, complaints and loss of time and money.

Therefore, we recommend that you use the durable SAE materials – SAE special die stone and SAE epoxy resin. They retain their form even if there is a change in environmental conditions.

As such, they enable you to continuously produce dental prostheses with an exact fit under conditions that always remain the same.

These instructions of use show you step by step how, by using the SAE materials, you can achieve results of great precision which will enthrall not only you but each one of your customers.

Do you still have questions regarding working with SAE epoxy resin? Can we help in any other way? If so, we look forward to hearing from you.

Scientifically proven stability

The comparative study in Quintessenz Zahntechnik 3/2004 illustrated this. Our SAE epoxy resin and the SAE special die stone are much more precise and durable than many other model materials. Thus, you can achieve results of greater precision. Both materials have been used successfully in the Rabl Imaging group dental laboratories for years.

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