Impression Material Technique Guide

Your source for implant impressions

3M ESPE
An accurate impression for a precise-fitting implant.

With a rapidly aging population, dental implants are fast becoming a preferred restoration for permanent tooth replacement. If you’re among the growing number of doctors who are incorporating implants into their practice, here’s good news. 3M ESPE, the worldwide leader in impression solutions, has developed products and simplified procedures to help you achieve outstanding functional and esthetic results.

Your initial impression is critical because:

• In order for you to achieve accurate fabrication of an implant-retained prosthesis, the impression must record an exact registration of the relative position and orientation of the implant to other implants, teeth and soft tissue.

• A technician uses it to create a highly precise stone model or digital impression that becomes the basis for your entire implant treatment plan.

3M ESPE impression materials provide excellent detail for accurate implant impressions.

The implant treatment plan can only be as accurate as your impression. The performance and detail reproduction of 3M ESPE impression materials help you:

• Achieve a detailed impression on the first take. Whether using an open or closed tray technique, or making implant- or abutment-level impressions, a detailed impression reduces the chance of costly retakes.

• Capture impressions of transfer copings with confidence. Ensure the precise orientation and position of the implant in the mouth.

The choice is yours. Whether you prefer polyether or VPS impression material, 3M ESPE, the worldwide leader in impression materials, has you covered.

Summary of advantages

• Intrinsic hydrophilicity – best detail reproduction in a moist environment

• Excellent flow properties – enables intimate contact with transfer coping

• Rigidity – secures implant coping position

Impregum™ Penta™ Soft Polyether Impression Materials
Achieve excellent impression results using any implant system you choose.

A number of implant companies offer excellent implant options to choose from. No matter what system you prefer, using a 3M ESPE impression material can help you achieve your desired outcome, using the technique you determine is best for the indication.

Impression Technique and Material Recommendations

There are numerous impression techniques for making implant impressions. 3M ESPE has highlighted three common techniques, along with impression material recommendations for each, to assist clinicians in making this critical decision.

| Technique: Closed Tray Indirect Transfer Impression Technique | Material: Imprint™ 3 VPS Impression Materials |
| Technique: Open Tray Direct Pick-Up Impression Technique | Material: Impregum™ Penta™ Soft Polyether Impression Materials |
| Technique: Closed Tray Direct Snap-On Impression Technique | Material: Imprint 3 VPS Impression Materials, OR Impregum Penta Soft Polyether Impression Materials |

Impression Tray Recommendations

For cases with 1 or 2 implant units:
Use a 3M™ ESPE™ Directed Flow Impression Tray.

- Transparent, and easy to customize – you can cut windows for Open Tray indications
- Distal flow stops – help ensure you capture detail on the 2nd molars
- Self-adhesive – no tray adhesive is required
- The “spoiler” on the upper arch tray – traps excess material to reduce gagging while it deflects material toward lingual tooth surfaces

For multiple implants or for edentulous situations:
Use a rigid custom tray.

- Prepare the tray with the appropriate tray adhesive to ensure reliable adhesion of the impression material

Summary of advantages

- Memory – best in class elastic recovery resists distortion for a more accurate transfer impression
- Toughness – resists tearing upon removal from mouth
- Best balance of clinical properties – no sacrifice of one property for another means better final impressions
**Closed Tray Indirect Transfer Impression Technique**

In this technique, the indirect transfer coping remains on the implant during removal of the set impression from the mouth. Once the impression has been removed, the coping is removed from the implant and connected with the implant analog. The coping/analog assembly is then indexed (transferred) back into its corresponding position in the impression.

### Recommended material:
- **Imprint™ 3 VPS Impression Material**

### Implant Impression Tips

**Common causes for retakes:**

**Distorted impression:** To prevent distortion, stabilize the tray while material is setting.

**Voids and bubbles:** Use enough material and keep tip submerged in extruded material.

**Insufficient capture of detail around coping:** Syringe material without creating air bubbles around copings by keeping mix tip submerged.

1. **Removal of healing abutment**
   - Remove healing abutment
   - Confirm prosthetic platform is free of bone debris or soft tissue
   - Seat the coping and secure it – using the method recommended by the implant manufacturer

2. **Placement of transfer coping**
   - Verify correct seating of the coping with a radiograph
   - Block-out hex-hole with material of choice

3. **Tray selection – closed tray try-in**
   - Try-in the tray
   - Ensure there is appropriate clearance for entire arch
   - Evaluate tray-coping fit, ensuring there is no impedance/interference

4. **Load tray**
   - Load the tray material after using proper bleeding technique
   - Keep the mix tip submerged in the tray material to prevent voids
   - Do not under-fill the tray

5. **Syringe around coping**
   - While loading the tray, syringe the wash material around the coping, and ensure continuous flow around the entire coping
   - Keep the mix tip submerged in the wash material at all times to avoid trapping air bubbles

6. **Tray seating and immobilization**
   - Insert the loaded tray straight and evenly into mouth – avoid rotation
   - Don’t let patient bite down on tray
   - Immobilize the tray using passive pressure
   - Follow the recommended setting time in the mouth – using a timer

7. **Tray and coping removal**
   - Remove tray from mouth carefully after end of setting time
   - Remove coping assembly from implant after tray has been removed, following implant manufacturer’s instructions
   - Replace healing abutment immediately to prevent soft tissue collapse
   - Assemble coping with implant analog

8. **Evaluate final impression with coping inserted (indexed)**
   - Rinse impression before inspection
   - Evaluate the impression for correct transfer and common impression errors (see side bar on this page)
   - Insert coping assembly into impression
   - Ensure the coping is properly aligned (indexed) within the impression
   - Dry and disinfect impression before shipping

9. **Bite registration**
   - Apply a layer of 3M™ ESPE™ Imprint™ Bite Material with a thickness of approximately 5mm occluso-incisally to the entire lower arch
   - Have patient bite into proper occlusion
   - Disinfect prior to shipping
   - Make an impression of the opposing arch and submit it with case
Open Tray Direct Pick-Up Impression Technique

In this technique, the direct transfer coping gets “picked up,” and remains in the set impression upon removal from the mouth. Once the impression has set, the screw holding the coping on the implant is accessed through the hole above/below the implant in the open tray and unscrewed to allow removal of the impression from the mouth. Once outside of the mouth, the implant analog is connected to the transfer coping prior to pouring the stone model.

Recommended material: Impregum™ Penta™ Soft Polyether Impression Material

Implant Impression Tips

Common causes for retakes:
Distorted impression: To prevent, stabilize tray as material is setting
Voids and bubbles: Use enough material and keep tip submerged in extruded material
(Pick-up technique) Tray-abutment contact: Widen implant windows in tray

1. Removal of healing abutment
   - Remove healing abutment
   - Confirm prosthetic platform is free of bone debris or soft tissue
   - Seat the coping and secure it – using the method recommended by the implant manufacturer

2. Placement of transfer coping
   - Verify correct seating of the coping with a radiograph

3. Tray selection – open tray try-in
   - Try-in the tray and create access window
   - Ensure there is appropriate clearance for entire arch with no contact between tray and tissue
   - Evaluate tray-coping fit, ensuring there is enough clearance for coping to fit easily through window in tray

4. Load tray
   - Load the tray material after using proper bleeding technique
   - Keep the mix tip submerged in the tray material to prevent voids
   - Do not under-fill the tray

5. Syringe around coping
   - While loading the tray, syringe the wash material around the coping, and ensure continuous flow around the entire coping
   - Keep the mix tip submerged in the wash material at all times to avoid trapping air bubbles

6. Tray seating and immobilization
   - Insert the loaded tray straight and evenly into mouth – avoid rotation
   - Don’t let patient bite down on tray
   - Immobilize the tray using passive pressure
   - Follow the recommended setting time in the mouth – using a timer

7. Tray and coping removal
   - Once impression material has set, remove screw holding coping in place, following implant manufacturer’s instructions
   - Remove tray from mouth carefully, with coping embedded in the set impression
   - Replace healing abutment immediately to prevent soft tissue collapse

8. Evaluate final impression with coping inserted (indexed)
   - Rinse impression before inspection
   - Evaluate the impression for correct transfer and common impression errors (see side bar on this page)
   - Attach the implant analog to coping embedded in the impression
   - Dry and disinfect impression before shipping

9. Bite registration
   - Apply a layer of 3M ESPE Imprint Bite Material with a thickness of approximately 5mm occlusal-incisally to the entire lower arch
   - Have patient bite into proper occlusion
   - Disinfect prior to shipping
   - Make an impression of the opposing arch and submit it with case
**Recommended material:**
- Imprint™ 3 VPS Impression Material
- Or
- Impregum™ Penta™ Soft Polyether Impression Material

**Implant Impression Tips**

**Common causes for retakes:**

1. **Distorted impression:** To prevent, stabilize the tray while material is setting.
2. **Voids and bubbles:** Use enough material and keep tip submerged in extruded material.
3. **(Snap-on technique) Coping-tray contact:** Try-in the tray prior to making impressions and ensure proper size.

**Closed Tray Direct Snap-On Impression Technique**

The snap-on procedure is best described as a hybrid between the two techniques shown previously. In this closed tray procedure, the direct transfer coping “snaps-on” to the top of the implant abutment in the mouth. Once the impression has set, the coping becomes embedded in the impression and is pulled off of the implant abutment when the set impression is removed from the mouth. Once outside of the mouth, the implant analog is connected to the transfer coping prior to pouring the stone model.

**Steps:**

1. **Removal of healing abutment**
   - Remove healing abutment
   - Confirm prosthetic platform is free of bone debris or soft tissue

2. **Placement of transfer coping**
   - Seat the abutment and secure it—using the method recommended by the implant manufacturer
   - Attach the snap-on transfer coping assembly (see completed assembly in step 5)

3. **Tray selection – closed tray try-in**
   - Try-in the tray
   - Ensure there is appropriate clearance for entire arch
   - Evaluate tray-coping fit, ensuring there is no impingement/interference

4. **Load tray**
   - Load the tray material after using proper bleeding technique
   - Keep the mix tip submerged in the tray material to prevent voids
   - Do not under-fill the tray

5. **Syringe around coping**
   - While loading tray, syringe the wash material around the coping, and ensure continuous flow around the entire coping
   - Keep the mix tip submerged in the wash material at all times to avoid trapping air bubbles

6. **Tray seating and immobilization**
   - Insert the loaded tray straight and evenly into mouth—avoid rotation
   - Don’t let patient bite down on tray
   - Immobilize the tray using passive pressure
   - Follow the recommended setting time in the mouth—using a timer

7. **Tray and coping removal**
   - Once impression material has set, remove tray from mouth carefully, with snap-on coping embedded in the set impression
   - Depending on the implant system used, either
     A) Replace healing abutment immediately to prevent soft tissue collapse, OR
     B) Create the appropriate temporary restoration to protect the abutment
   - Assemble coping with implant analog

8. **Evaluate final impression with coping inserted (indexed)**
   - Rinse impression before inspection
   - Evaluate the impression for correct transfer and common impression errors (see side bar on this page)
   - Dry and disinfect impression before shipping

9. **Bite registration**
   - Apply a layer of 3M™ ESPE™ Imprint™ Bite Material with a thickness of approximately 5mm occlusal-incisally to the entire lower arch
   - Have patient bite into proper occlusion
   - Disinfect prior to shipping
   - Make an impression of the opposing arch and submit it with case
Tray seating and immobilization

- Follow the recommended setting
- Immobilize the tray using passive
- Don’t let patient bite down on tray
- Insert the loaded tray straight and
- Evaluate tray-coping fit, ensuring
- Ensure there is appropriate
- Try-in the tray

Apply a layer of 3M Bite registration

Make an impression of the

Have patient bite into Imprint™ Bite Material with a lower arch thickness of approximately 5mm

Interference there is no impingement/clearance for entire arch with case opposing arch and submit it proper occlusion

Impregum™ Penta™ Soft Polyether Impression Material

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<td>Impregum™ Penta™ Soft Quick Step Heavy Body/Light Body Introductory Kit</td>
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Imprint™ 3 VPS Impression Material

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Directed Flow Impression Tray

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<td>71620</td>
<td>10 Trays, Size Large (L), Lower</td>
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Products designed for the way you like to work …

For every implant indication, you'll find a 3M ESPE polyether or VPS impression material to suit your technique and procedure. Choose from a wide range of viscosities and set/working times – in both cartridge and Penta™ deliveries.

More proven solutions brought to you by 3M ESPE, the worldwide leader in impression materials.

Impregum™
Penta™ Soft Polyether
Impression Material

Be confident you'll get accurate detail …
even in moist conditions.

Summary of advantages
• Initially hydrophilic to provide void-free impressions in moist conditions
• Excellent flow property captures fine details that lead to precise-fitting restorations
• Snap-set behavior of Soft polyether is ultra-forgiving
• Excellent rigidity – secures implant coping position
• Quick Step material cuts working and setting times by at least 33% over Impregum Penta Soft Polyether Impression Material

Imprint™ 3
VPS Impression Material

Make impressions that resist distortion for precise-fitting restorations.

Summary of advantages
• Best balance of clinical properties, compared to other leading brands
• Better memory than leading VPS brands – with nearly 100% recovery from elongation, it's less likely to distort upon removal from the mouth
• More hydrophilic than most leading VPS materials, helping you capture accurate detail in a moist environment
• Tougher than many leading brands, which helps impressions hold true and resist tearing during removal

Make Better Impressions
Even the most experienced practitioner, using the best materials, can encounter difficulties when making an impression. 3M ESPE has taken its long history in developing and testing impression materials, and assembled the Making Better Impressions Troubleshooting Guide. It identifies common impression problems and offers solutions. To get your FREE copy, download it now from our website – or call Customer Care at 1-800-634-2249, ext. 1.