



Easy Orthotic Solutions for the Fingers, Hand, Thumb, Wrist and Forearm

A booklet of easy-to-follow orthotic instructions
using **Orficast** and **Orficast More**

12

step-by-step
tutorials for
you to try
today



The
personal fit

IN ORTHOTIC FABRICATION
FOR PHYSICAL REHABILITATION



Orficast is a unique thermoplastic material based on threads of thermoplastic. It is supplied on a roll which makes it easy to size, cut and store as opposed to most splinting materials.

Why therapists love Orficast

- The compact product size takes up little space in your workplace.
- A convenient dispenser box lets you cut only the required amount of material that you need. The rest of the product will remain neat and tidy in the box.
- Orficast and Orficast More are easy to cut with regular scissors.
- The airy, knitted structure allows for ventilation of the skin.
- This product might be more comfortable on patients with fragile and/or sensitive skin.
- Orficast molds easily to the shape of the body part allowing for a snug fit to prevent pressure points.
- When heated, Orficast and Orficast More stick firmly to itself, but not to skin or hair.

The Productline

Orficast

Orficast in 3 cm and 6 cm widths can be used for all types of immobilization finger orthoses, and hand-based thumb orthoses.

Length	3 meters (around 10 feet)
Widths	3 cm (1") and 6 cm (2")
Colors	Blue, Black and Orange



Orficast More

Orficast More in 6 cm, 15 cm and 30 cm widths is a thicker product that offers increased rigidity, and more support. Orficast More can be used for all types of thumb, wrist and forearm based orthoses.

Length	3 meters (around 10 feet)
Widths	6 cm (2"), 15 cm (6") and 30 cm (12")
Colors	Blue, Black and Orange



Questions?

Contact us!

We invite you to explore Orficast and Orficast More's versatility, ease of use and working properties by going through the step-by-step instructions in this booklet.

Do you have a question about Orficast?

Do you need help with an orthotic fabrication challenge?

Email your question to welcome@orfit.com.

Our product specialists will be happy to help you.



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Join with thousands of therapists who utilize Orficast and Orficast More for orthotic fabrication.

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**browse this booklet
to start your orthotic
fabrication**

Tips and Tricks

for Working with Orficast and Orficast More

How to attach straps to wet Orficast and Orficast More orthoses.

The Orficast stays damp for a while, nevertheless you will need to apply straps right away. Using a heat gun, directly on the spot where you want to attach the Velcro adhesive backed hook, heat up the Orficast until it turns a bit darker in color and gets sticky. Heat up the glue a bit to activate it and adhere together firmly. Use another small piece of Orficast and heat it up with the heat gun. Apply this as edging around the hook to reinforce the bonding.

How to use Orficast to create finger cuffs with thread.

- Use Orficast 3 cm (1") to create a finger cuff for a mobilization orthosis. Simply activate a small piece of Orficast and while it is warm, fold it over the elastic thread or static line and mold around your patient's finger.
- If you only have the widest version of Orficast More in 30 cm (12") you can easily cut it lengthwise along the thermoplastic threads to make Orficast More in other widths. It will not unravel.

How does the patient wash the Orficast orthosis?

Orficast and Orficast More orthoses can be easily cleaned in the washing machine if placed in a lingerie bag and using a cold- water cycle. If the straps are adhered well to the orthosis, they will not come off.

Orficast can be rolled into a thin tubular shape to fabricate ring style orthoses like the anti- swan neck orthosis.

- Use Orficast rolled into tubular shapes to create finger separators in resting hand orthoses.
- Simply use dry heat from a heat gun on the volar portion of the resting hand orthosis and on the Orficast to adhere together.



See our Orfit Academy courses on Finger orthoses for more fabrication instructions.



Mallet Orthosis Ribbon Design

CLINICAL CONDITION
Mallet injury



Materials

- ✓ Orficast 3 cm (1").
- ✓ 2.5 cm (0.5") adhesive backed hook and loop strapping.

Preparation

1. Cut a strip about 15-20 cm (6-8") long.
2. Activate by immersion in water bath 65°C (160°F).
3. Pat dry on towel briefly and fold material in half so that piece is now 7.5-10 cm (3-4") long.

Position

- Maintain DIP joint extension.
- Pearl: Strap snugly over middle phalanx to keep orthosis in place.
- Wearing schedule is full time for 6-8 weeks.
- Check patient's ability to hold DIP extension against gravity.

Fabricate



1. Place middle portion underneath the fingertip.
2. Bring one side of the material to meet the PIP joint dorsally.



3. Wrap the other side of the material around the finger to the PIP joint overlapping on the first layer.



5. Let the material harden with the fingertip held in extension or slight hyperextension.



1. Remove the orthosis, trim the corners and the sides.
2. Prepare a piece of loop strap and place a small piece of adhesive backed hook on the non-fuzzy side at one end.



3. Heat the dorsal portion of the orthosis with the heat gun and adhere the loop strap and hook by pressing firmly into the Orficast material.
4. Strap snugly around the middle phalanx.

Mallet Orthosis Crossover Design

CLINICAL CONDITION
Mallet injury



Materials

- ✓ Orficast 3 cm (1").
- ✓ 2.5 cm (0.5") adhesive backed hook and loop strapping.

Preparation

1. Cut a strip about 15-20 cm (6-8") long.
2. Activate by immersion in water bath 65°C (160°F).
3. Pat dry on towel briefly and fold material in half so that piece is now 7.5-10 cm (3-4") long.

Position

- Maintain DIP joint extension
- Pearl: Strap snugly over middle phalanx to keep orthosis in place.
- Wearing schedule is full time for 6-8 weeks. Check patient's ability to hold DIP extension against gravity.

Fabricate



1. Fold Orficast in half and cut up the middle leaving about 2 cm / 1 inch uncut.



2. Place on dorsum of finger with uncut edge near PIP joint.



3. Wrap one wing under finger tip on one side and the other wing under finger tip on the other side.



4. Bond these together well by pressing together as you hold the fingertip in extension until the material hardens.



5. Place a strap over the middle phalanx.

Finger Wrap Extension Orthosis

CLINICAL CONDITION
Boutonniere Deformity



Materials

- ✓ Orficast 3 cm (1").

Preparation

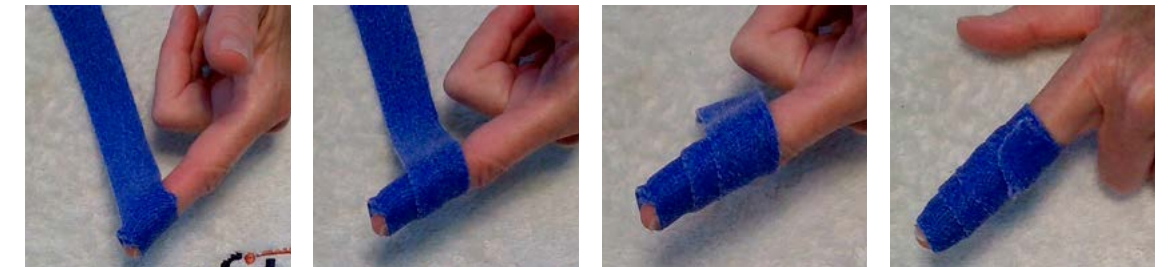
1. Cut one strip about 20 cm (8") long.
2. Activate by immersion in water bath 65°C (160°F) .
3. Pat dry with towel briefly.

Position

- Keep PIP joint in maximum extension.
- Pearl: Complete the orthosis and then address positioning.
- Make sure all layers are smoothed together.
- Make sure that the distal edge of Orficast is adhered to the orthosis and cannot be pulled apart.



Fabricate



1. Wrap one end of the Orficast material around the distal phalanx of the finger and secure together.
2. Continue to wrap around the finger on a diagonal and with a slight stretch.
3. Make sure the end is firmly secured to a layer of Orficast material underneath.
4. Rub all the layers together to smooth them and position the finger in as needed. The orthosis can be removed for trimming or to dry heat and secure a corner that did not stick.

Buddy Tapes

CLINICAL CONDITION
Proximal Interphalangeal Joint Injury

Materials

- ✓ Orficast 3 cm (1").

Preparation

1. Cut two strips about 10 cm (5") long.
2. Activate by immersion in a water bath 65°C (160°F).
3. Pat dry with a towel and either roll into a tube shape or fold in half lengthwise.
4. Maintain the fist in MCP flexion which makes sure that the PIP joints are at the same level while molding.

Position

- Buddy tapes are placed over proximal and middle phalanges
- Pearl: Do not block PIP or DIP joint motion

Fabricate



1. Wrap the material over the palmar surface of the proximal phalanx and connect it to itself as a ring with pressure.



2. Continue wrapping around the proximal phalanx of the second finger and pass it around to connect on the volar surface. Connect by applying sufficient pressure. Trim excess away.



3. Repeat the same for the second part of the orthosis which rests over the middle phalanges.



4. Make sure the buddy tapes can be removed easily. Dip in hot water and stretch if needed to enlarge each ring.



Anti-Swan Neck Orthosis

—
CLINICAL CONDITION
Hyperextension of
the PIP joint



Materials

- ✓ Orficast 3 cm (1").

Preparation

1. Cut one strip about 20 cm (8") long.
2. Activate by immersion in a water bath 65°C (160°F).
3. Pat dry with a towel and either roll into a tube shape or fold in half lengthwise.
4. Maintain the fist in MCP flexion which makes sure that the PIP joints are at the same level while molding.

Position

- Orthosis will block 10-15 degrees of end range PIP joint extension.
- Pearl: Keep PIP joint in maximum flexion during fabrication.

Fabricate



1. Roll the Orficast into a tight tube.



2. Mold an oval shape over the dorsum of the first phalanx and the middle phalanx, keeping the finger in PIP joint flexion.



3. Begin at the PIP joint on one side and complete the oval in the same spot, attaching the material to itself snugly.



4. Slip the remaining material underneath the flexed PIP joint and attach to the opposite side of the oval. Pinch the material together underneath the PIP joint.



5. Trim the remaining material away and hold in PIP joint flexion until hardened.

Trigger Finger Orthosis

CLINICAL CONDITION
Trigger finger

Materials

- ✓ Orficast 3 cm (1").

Preparation

1. Cut one strip about 20 cm (8") long.
2. Activate by immersion in water bath 65°C (160°F).
3. Pat dry with towel briefly.

Position

- Keep MCP joint hyperextended during fabrication
- Pearl: Make sure finger does not trigger with orthosis. If yes, block flexion of the PIP joint as well.

Fabricate



1. Wrap one end of the Orficast material around the proximal phalanx of the finger. Seal it together.



2. Fold the material on a diagonal so that the long end extends into the palm. Take the material from the palm and fold it back on itself towards the finger all the way up to the PIP joint creating a double layer.



3. Now fold over again from the PIP joint back to the palm to create another layer of material on top. There is now one layer around the proximal phalanx, and three layers on top of each other in front of the MCP crease into the palm.



4. Let harden, then remove and trim the corners.

Relative Motion Extension Orthosis

CLINICAL CONDITION
MCP Joint Sprain

Materials

- ✓ Orficast 6 cm (2").

Preparation

1. Cut one strip about 20 cm (8") long or slightly wider than the patient's hand.
2. Activate by immersion in water bath 65°C (160°F).
3. Pat dry on towel briefly and fold

Position

- Make sure the intended MCP joint is held in more extension or more flexion than adjacent MCP joints.
- Pearl: Make sure the orthosis can be easily put on and off the fingers.
- Mark the orthosis so the patient knows exactly how to put it on.

Fabricate



Place the middle of the material underneath the middle finger proximal phalanx. Have the patient supinate their palm.



Wrap one side around the index finger at the level of the proximal phalanx and secure on the palmar surface.



Wrap the other side around the ring finger at the level of the proximal phalanx and secure on the palmar surface. Trim excess away.



With the patient's hand in supination, push into the middle finger with your thumb over the material. Keep the ring and index fingers relatively close to each other. Apply downward pressure over the middle finger so that the finger is more extended than its neighboring fingers.



Let harden and pronate the hand to observe. The middle finger should sit in slightly more extension at the MCP joint than the ring and index fingers. If needed, dip each ring into the splint pan and stretch so that the orthosis can be easily placed on and off the hand. Mark an arrow where the injured finger needs to rest.

Anti-Claw Orthosis

—
CLINICAL CONDITION
Ulnar Nerve Palsy

Materials

- ✓ Orficast More 6 cm (2").

Preparation

1. Cut one strip about 20 cm (8") long.
2. Activate by immersion in water bath 65°C (160°F).
3. Fold in half lengthwise and stretch slightly.

Position

- Make sure the intended MCP joint is held in more extension or more flexion than adjacent MCP joints.
- Pearl: Make sure the orthosis can be easily put on and off the fingers.
- Mark the orthosis so the patient knows exactly how to put it on.

Fabricate



1. Place the middle portion over the proximal phalanges of the ring and little fingers.



2. Bring the two ends of material to cross over the volar palm. Then pinch them together on the dorsum of the hand near the wrist.



3. Keep the MCP joints in flexion. Make a small indent between the fingers on the dorsal surface and pinch the crossed material tightly together on the volar surface.



4. Trim the excess material. Cut open and apply loop and hook strapping or leave closed for a slip-on orthosis.



Short Thumb Opponens Orthosis

CLINICAL CONDITION
Thumb pain, sprain, arthritis



Materials

- ✓ Orficast More 15 cm (6").
- ✓ Adhesive backed hook and loop strapping.

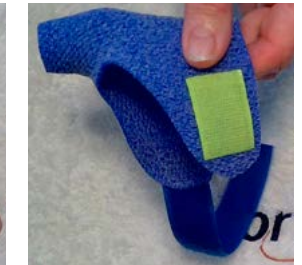
Preparation

1. Cut a 15 by 15 cm (6" by 6") square of material.
2. Cut off the corner at one end and into the center from the opposite corner, leaving enough width of the center portion to cover the web space between the IP crease and the distal palmar crease.
3. Activate by immersion in water bath 65°C (160°F).

Position

- The thumb is in a position of function.
- Pearl: Make sure the IP joint is free; trim all rough edges away and reinforce the straps with additional scraps of Orficast.

Fabricate



1. Place the center portion of the material into the web space and stretch around the radial side of the thumb.
 2. Pinch the corners together at the thumb IP crease and all the way proximal to the corners below the wrist. Pinch the ulnar wings together with stretch.
 3. While warm, pull the material away from the thumb and cut, forming a flattened seam. Open the ulnar pinch, and re-pinch until hardened.
1. Remove the orthosis and trim the corners and sides.
 2. Attach a single strap over the ulnar side.

Wrist Orthosis Thumb Hole Design

CLINICAL CONDITION

Wrist pain, sprain, tendinitis, fractures
and/or arthritis

Materials

- ✓ Orficast More 15 cm (6").
- ✓ Orficast More 6 cm (2").

Preparation

1. Cut a rectangle from Orficast More 15 cm (6") about 30 cm (10") long and a similar length of the Orficast More 6 cm (2").
2. Activate by immersion in water bath 65°C (160°F).
3. Press both materials together on a towel while patting excess water out. Compress by rolling in the towel.

Position

- The wrist is typically held in 20-30 degrees of extension.
- Pearl: Clear the thumb hole for comfort and allow for full flexion of all fingers at the distal palmar crease.

Fabricate



1. Cut a small hole for the thumb, slightly off center at one end of the material.



2. Place the thumb through the hole and stretch the material around the palm, pinching together over the metacarpals.



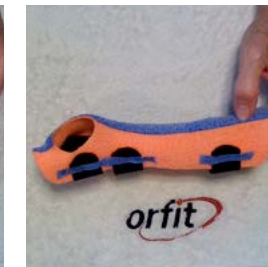
4. Stretch the material along the volar forearm and pinch on the dorsal surface proximally.



5. Pinch once more dorsally at wrist level. Place in desired wrist position, and let the material harden.



1. Remove the orthosis and trim the corners, thumb hole and sides.



2. Prepare 3 pieces of loop strap and attach to the orthosis using a small piece of Orficast dry heated with the heat gun to reinforce.



3. Heat the orthosis and the adhesive side of hook with the heat gun briefly and attach the hook to the orthosis. Reinforce here as well with dry heated Orficast around the borders.

Long Opponens Orthosis

CLINICAL CONDITION

Thumb and wrist pain, sprains, arthritis and/or similar

Materials

- ✓ Orficast More 15 cm (6").

Preparation

1. Activate by immersion in water bath 65°C (160°F).
2. Pat dry with towel briefly.

Position

- The thumb is held in a functional position and the wrist is in 20-30 degrees of extension.
- Pearl: If the thumb IP joint is enlarged, make sure the overlapped portion around the thumb portion allows for easy on and off. If not consider a loop strapping closure instead of overlapping the material.

Fabricate



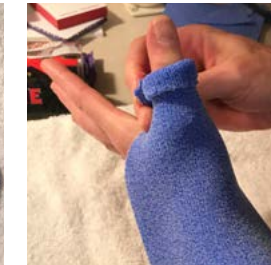
1. Measure a rectangle of Orficast More 15 cm (6") long enough to cover the thumb and 2/3rd of the forearm.



2. Cut off the two corners, activate the material in hot water and pat dry.



3. Fold over the distal edge and place over the radial border of the thumb and wrist.



4. Overlap the material in the first web space and pinch on the ulnar side at the level of the distal palmar crease, the wrist and the proximal forearm, stretching the material to fit. Let harden but open the ulnar sided pinches before they permanently seal.



1. Attach straps using the heat gun and additional scraps of Orficast to secure the borders of the hook and of the loop.



2. Apply 2 or 3 straps as needed.

Muenster Orthosis

—
CLINICAL CONDITION
Prevention or Limitation of
Forearm Motion

Materials

- ✓ Orficast More 6 cm (2").
- ✓ Orficast More 15 cm (6").
- ✓ Adhesive backed hook and loop strapping.

Preparation

1. Cut a rectangle of the wider material about $\frac{3}{4}$ the length of the forearm and a strip of the narrow Orficast More the same length.
2. Activate both pieces of material by immersion in water bath 65°C (160°F).
3. Place the narrow Orficast More directly in the middle of the larger rectangle.
4. Briefly pat dry and bond the two layers together well.

Position

- The forearm is typically placed in neutral with the thumb pointing up - but the forearm can also be in full pronation or supination
- Pearl: Stretch the material for maximum conformity. Pinch together lightly to allow for un pinching as soon as the shape has been captured.

Fabricate



1. Briefly pat dry and bond the two layers together well.
2. Cut a small hole for the thumb in the center of one end, about 3-4 cm (1-1.5") from the border.
3. Opposite to this opening, cut an opening for the elbow's cubital fossa.



4. With the patient standing in elbow flexion with a forearm in neutral, place the material over the patient's thumb and pinch lightly near the fifth metacarpal.



5. Pull the material proximally and pinch together at the posterior elbow. Pinch lightly along the entire ulnar border of the forearm so that the material conforms to the shape. Mold carefully along the forearm structures.

Finish



1. Cut two small pieces of material, activate in the splint pan and use these to reinforce the material directly over the lateral and medial epicondyles.



2. Let the material harden and mark the trim lines. Undo all of the pinches and remove from the patient. Complete the trimming and apply straps.



3. Heat the orthosis and the adhesive side of hook with the heat gun briefly and attach the hook to the orthosis. Reinforce here as well with dry heated Orficast around the borders.

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The community of Orfit users spans across the world and they love to share their most interesting patient cases and creative orthotic fabrication ideas.



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