

*Otto Bock*<sup>®</sup>

QUALITY FOR LIFE



# ThermoLyn<sup>®</sup> PETG clear

Processing Instructions for ThermoLyn<sup>®</sup> PETG clear  
in Prosthetic Applications

Technical Information 4.1.0





# ThermoLyn® PETG clear in Prosthetic Applications

## Excellent Socket Adhesion for Increased Safety

### Functions and effects

616T183 ThermoLyn® PETG clear is used as a first layer in definitive sockets (e.g., for Harmony® fittings).

The Harmony® System is an active volume management system for transtibial prostheses. It effectively reduces the air between socket and liner, a process in which a pump and a one-way valve create a vacuum. With every step, the system is activated and maintains the required vacuum within a defined range. For this reason, a it is necessary to maintain an airtight connection between the socket and the residual limb of the prosthesis wearer, or the liner.

ThermoLyn® PETG clear contributes to this seal, resulting in increased adhesion in the socket. Since the material is flush with the upper socket brim, the friction between the socket and the residual limb of the prosthesis wearer is reduced, the placing less stress on the liner.

### Processing

The material provides the same superior processing properties as the 616T83 ThermoLyn clear.

The processing temperature is 160°C (320°F) for processing in an infrared oven or 170°C (338°F) for processing in a convection oven. We recommend using material 3 mm thick for residual limbs up to 20 cm in length and 5 mm thick for residual limbs longer than 20 cm. During thermoplastic processing, the PETG wall thins out to less than 1 in the case of material which is 3 mm thick. This wall thickness is sufficient for lining the rough surface of a laminated socket.

Please read the processing instructions carefully before using the ThermoLyn PETG clear for the first time. The manufacturer recommends using the material only for its intended purpose and in accordance with the manufacturer's instructions. The manufacturer is not responsible for damage caused by disregarding the Processing Instructions.

### Materials

ThermoLyn® PETG clear is a fracture-proof and highly transparent copolyester. Thanks to its extremely shock-resistant design and excellent thermoforming properties, the material is ideal for a variety of orthopedic technology applications.



ThermoLyn® is a registered trademark of Otto Bock.

Article no.:	Sheet size	Color	Thickness
616T183=3	400x400 mm	clear	3 mm ( 0.12 in )
616T183=5	400x400 mm	clear	5 mm ( 0.20 in )

## Processing Instructions ThermoLyn® PETG clear in Prosthetic Applications



Clamp the test socket into the 743A16 Transfer Apparatus and extend the proximal end conically with plaster bandage.



Lubricate the square tube and cast the test socket with plaster (up to the level of about 3 cm above the fixation pins but not higher than 2 cm above the socket brim).



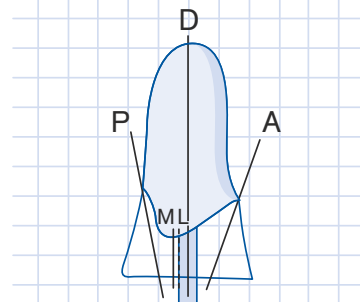
Remove the test socket.



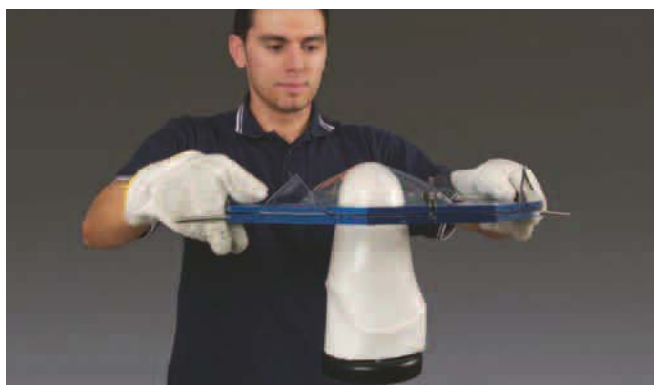
Lay open the fixation pins and remove the square tube.



Bore Ø 3 mm suction holes on the socket brim anteriorly (A), proximally (P), medially (M), laterally (L) and distally (D).



Close the suction holes with 623T3 Perlon and grease the entire surface of the plaster model with 633F11 Silicone Grease.



### Infrared Oven

Preheat the oven (e.g. 701E20) to 160 °C (320 °F):

a) for residual limbs up to 20 cm in length:

Clamp the 3-mm PETG into the 755X84= 60x8 Frame, small (Ø 260) in combination with 755T4=360 and heat for 2:45 min

b) for residual limbs longer than 20 cm:

Clamp the 5-mm PETG into the 755T4 =360 Vacuum Forming Insert (Ø 360) and heat for 4:10 min

### Convection Oven

Preheat the oven (e.g. 701E7) to 170 °C (338 °F):

a) for residual limbs up to 20 cm in length:

Clamp the 3-mm PETG into the 755X84= 60x8 Frame, small (Ø 260) in combination with 755T4=360 and heat for 12 min.

b) for residual limbs longer than 20 cm:

Clamp the 5-mm PETG into the 755T4 =360 Vacuum Forming Insert (Ø 360) and heat for 13 min.

Select the smallest possible vacuum sealing disk.

We recommend using the following implements:

755X93=180 Vacuum Sealing Disk (Ø 180)

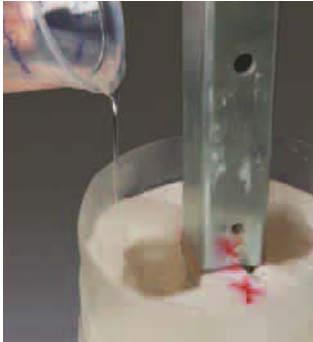
755X =180 Vacuum Pipe (Ø 180)

Quickly remove the PETG sheet from the oven and immediately thermoform it under high vacuum pressure (if necessary, shape the undercuts with a hot air gun such as the 756E9).

Implements:

755E9 Vacuum Pump

641H13 Heat Protective Gloves



Trim the socket brim after cooling down.  
Close the suction holes (in the plaster) with 636K8 = 20 x 2 x 10 Plastaband. Insert the square tube and insulate the plaster with 617H21 Orthocryl® Sealing Resin.

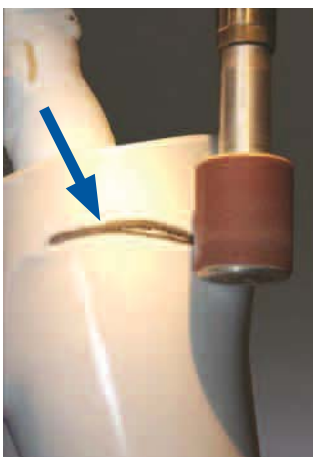
Implements:  
616F8 Coroplast, Clear



Following the vacuum forming process, carefully roughen the socket by sanding it with 649G1 = 150 Emory Cloth (avoid sanding through thin parts of the material).




Apply the appropriate reinforcement material and laminate the socket. For lamination, we recommend using our 617H19 Orthocryl® Lamination Resin or 617H55 C-Orthocryl® Resin.



Prior to applying the finishing coat (e.g., decor fabric), sand off the socket brim area up to PETG sheet in order to ensure a good connection between the PEG material and the finishing coat.

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