



Application booklet for the pressure moulding technique

Indication examples and technical information

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On our website www.scheu-academy.com you will find videos on various applications described in this manual.

▶ COURSES

General information about our pressure moulding devices.

We have written this manual to give you a general view of the various application techniques for our pressure moulding machines. Each chapter is divided into working steps with pictures to quickly understand and realise by yourself the shown application examples with your pressure moulding machines. With little variation, you will be able to apply these techniques to make a wide range of applications. This manual is applicable for all BIOSTAR®, MINISTAR® and MINISTAR S® machines.

Since 1988, temperature, heating and cooling time in BIOSTAR® pressure moulding machines are programmed via keypad, barcode scanner or manually and precisely controlled and monitored. Optimal moulding results can be achieved with a working pressure of 5-6 bar with the BIOSTAR® and with 3 bar for the MINISTAR® and 4 bar with the MINISTAR S®. The pressure is adjusted in our factory and should not be increased, because higher pressure does not create more precision.

Loss of pressure, which may occur by perforation of thinner foils in the areas of pellets, will not affect the quality of the appliance, if the loss of pressure does not exceed 1-2 bar and enough compressed air is supplied.

For best heating and pressure moulding results we recommend using our barcode or material codes. You may also program individual codes or heating times.

When working with the MINISTAR S®, the recommended heating times are programmed manually or by scanning and are monitored both visually and acoustically. The corresponding cooling times are matched and programmed automatically.

When working with the MINISTAR®, you can monitor the recommended values for heating and cooling by means of the built-in timer, once the machine has been heated up for 90 seconds. Tolerances of +/-5 seconds have to be taken into account.

When working with the BIOSTAR® of series I and II, the current values for heating and cooling have to be monitored by an external timer, once the heater has been heated up for 15 minutes. Tolerances of +/-15 seconds have to be taken into account.

Heating times of less than 20 seconds cannot be coded in BIOSTAR® devices. In these cases, the heating time must be entered manually using the key with the „clock symbol“.

Machine type	Construction year	Dimensions of material mm / inch ○	mm / inch □	Thickness of material mm / inch	Working pressure bar / psi
BIOSTAR®	1967–1978	125 / 5"	125 X 125 / 5" X 5"	0.1–3.0 / .0040-.12"	5.0 / 72
BIOSTAR®	1978–1988	125 / 5"	125 X 125 / 5" X 5"	0.1–3.0 / .0040-.12"	5.0 / 72
BIOSTAR®	07/88–03/99	125 / 5"	125 X 125 / 5" X 5"	0.1–4.0 / .0040-.16"	5.0 / 72
BIOSTAR®	from 04/1999	125 / 5"	—	0.1–5.0 / .0040-.20"	5.0 / 72
BIOSTAR®	from 10/2005	125 / 5"	—	0.1–5.0 / .0040-.20"	6.0 / 87
BIOSTAR®	from 07/2009	125 / 5"	—	0.1–5.0 / .0040-.20"	6.0 / 87
BIOSTAR®	from 2015	125 / 5"	—	0.1–5.0 / .0040-.20"	6.0 / 87
MINISTAR®	from 04/1992	125 / 5"	—	0.1–5.0 / .0040-.20"	2.5-3.0 / 35-42
MINISTAR S®	from 08/2003	125 / 5"	—	0.1–5.0 / .0040-.20"	3.0-4.0 / 42
MINISTAR S®	from 2011	125 / 5"	—	0.1–5.0 / .0040-.20"	3.0-4.0 / 42
MINISTAR S®	from mid 2017	125 / 5"	—	0.1–5.0 / .0040-.20"	3.0-4.0 / 42

General information about materials and models.

If you are using **hard-elastic material**, it is generally recommended to use a **duplicate model**, as undercuts on the model may cause deformations of the material and breakage of teeth. If you are using **hard elastic material** and you want to mould only parts of the model (eg. for splints), the model should be embedded in **pellets** in order to avoid overstretching the material. In case of using **soft-elastic material**, the trimmed and insulated models should be placed on the **model platform**.

The material can be divided in 3 main categories:

1. Hard-elastic material

BIOCRYL® C belongs to this group – acrylic monomer-free sheets – clear-transparent or coloured for dentures and orthodontic plates with a good compound to acrylic. DURAN® is a high transparent and abrasion-resistant material for all indications in splint therapy. IMPRELON® clear or opaque is suitable for temporary use in the mouth, e.g. custom trays, dressing carriers or bite plates.

2. Hard/soft compound material

DURASOFT®pd is a transparent two-layer sandwich material destined for splints with a soft inner side for extremely convenient wearing, especially comfortable for snoring devices.

3. Soft-elastic material

BIOPLAST® belongs to this material group – clear transparent, coloured or multi-coloured for soft splints, sports mouth guards and positioners or duplicate models as well as BIOPLAST® bleach for bleaching. A similar application is covered by COPYPLAST®, which is slightly tougher, and can be used for bleaching splints as well. The transparent and visco-elastic COPYPLAST® C is used in orthodontics for aesthetic adjustment and retention splints.

HARDCAST® and COPYPLAST®, in combination with the transparent spacer foil, are used for the fabrication of copings as well as space holders when fabricating bleaching and fluorisation splints. Our line of material is completed by the insulation foil ISOFOLAN® used for insulation, DURASOFT® seal to avoid discolourations of DURASOFT® splints, spacer foil destined for use with COPYPLAST® and COPYPLAST® C and coating foil serving as protection when shipping models.

General information about 3D printed working models.

3D printed models are increasingly common in pressure moulding technique. Therefore we have put together a few tips that should be considered when working with 3D printed models.

Once cured, the resins used for 3D printing are impermeable to air. Compared to a conventional plaster model with porous material structure, the air cushion formed during thermoforming between working model and material cannot escape in a printed model.

This is why 3D printed working models (full and hollow models) shall be embedded in the pellets to the dental arcade including the palate, so that the air can escape through the pellets which are air permeable. The risk of air inclusions can thus be avoided. It is recommended to place dental arcade models on the model platform, which is also permeable to air.

Hollow models with thin wall thickness are sensitive to heat and not dimensionally stable therefore, it is not recommended to use hollow models.

The ISOFOLAN® foil is best suited for the insulation of 3D printed models in the pressure moulding technique. In the thermoforming technique, the use of ISOFOLAN® or a non-perforated protective film is required. In the “salt and pepper” technique, the IMPRIMO® Model Separator insulating gel and, when using BIOPLAST® material, the BIOPLAST® insulating agent are best suited.

Note on cleaning 3D printed models:

Ensure the models are free of monomer/ detergent/ alcohol before the thermoforming process.

In addition, the use of ISOFOLAN® is recommended to prevent transferring any residual monomer/detergent.

When using printing resins from other manufacturers, the thermostability of the polymerised material must be guaranteed.

Duplication mould for situation models



Material List:

BIOPLAST® 2.0/3.0 mm for situation model (plaster)

COPYPLAST® 1.5/2.0 mm for situation model (resin)

Important: Not for use as working model

Insulating and embedding



Trim the base of the model flat and soak model shortly in water. Place the plaster model on the platform.

Pressure moulding



Heat material by setting the code or recommended heating time according to the instructions. Close the pressure chamber and open once the heating phase has elapsed. The moulded duplicating form should not be trimmed to keep it stable.

Finishing



We recommend placing the BIOPLAST® mould filled with plaster in a mixing bowl filled to the rim with water to reduce deformations caused by the weight of the plaster to a minimum. Nevertheless, as deformations may still occur, these duplicates should only be used as situation models.

Tips and tricks:

COPYPLAST® should only be used for models with small undercuts.

BIOPLAST® moulds are not suitable for pouring modelling resins.

Individual tray Functional tray

Material List:

IMPRELON® clear 2.0 /3.0 mm
 IMPRELON® white 3.0 mm
 Blocking-out putty
 Foam discs
 STEADY-RESIN
 Finishing Set
 Impression tray handle



1 Insulating and embedding



Block out undercuts and single teeth with blocking-out putty. Embed the model to the fold in pellets, so that the model parts which shall be moulded are above the model cup rim. Fill model cup with pellets to the upper rim and make sure the edges of the cup are clean.

2 Pressure moulding



Heat the material by setting the code or recommended heating time according to the instructions. Place the moist foam (thickness approx. 1 cm) over the plaster model, serving as space maintainer for the impression material and to roughen the tray surface. Depending on the required space and jaw form, up to 3 layers of foam can be used. Close the pressure chamber and open once the cooling phase has elapsed.

ATTENTION:

Make sure the edges of the cup are free from foam material.

3 Finishing



Remove the foam space maintainer from the tray. Excess material is removed with a cutting bur (REF 3214) or with carbide cutter (REF 3369). The impression tray handle (REF 3216) is heated over flame and adapted to the ridge. Final fixing of the handle to the tray is done with STEADY-RESIN or similar cold cure resin.

Bite registration tray



Material List:

IMPRELON® clear 3.0 mm

Blocking-out putty

Cutting bur

Finishing Set

LC Burs A,B and C

1 Insulating and embedding



Block out undercuts and single teeth with blocking-out putty. Embed the model to the fold in pellets, so that the parts of the model which shall be moulded are above the model cup rim.

Fill the model cup with pellets to the upper rim and make sure the edges of the cup are clean.

2 Pressure moulding



Heat the material by setting the code or recommended heating time according to the instructions. Close the pressure chamber and open once the cooling phase has elapsed. Remove moulded bite plate from the model. Cut out excess with cutting bur (REF 3214) or HM carbide cutter (REF 3369).

3 Finishing



Finish with LC burs A,B and C. Drill retentions in the tray, put the wax wall on it and fill the space between wall and tray with liquid wax.

Mould

for temporary crowns and bridges

Material List:

COPYPLAST® 0.5 / 0.75 mm (single crown)

COPYPLAST® 1.0 - 2.0 mm (bridges)

Finishing Set

Orthodontic insulating agent



1 Insulating and embedding



Trim the model flat and break sharp edges.

Soak model shortly in water and place it on the model platform. If models are embedded in pellets, take care that the parts of the model to be moulded are above the model cup rim; when using COPYPLAST® 0.5 / 1.0 mm air can escape through the material caused by the pellets. Gaps and extractions can be filled with artificial teeth and BLUE-BLOKKER®.

2 Pressure moulding



Heat the foil by setting the code or recommended heating time according to the instructions.

Close the pressure chamber and open once the cooling phase has elapsed. Cut the foil distally directly on the model with scalpel or scissors, remove it carefully and cut it to desired size. Fill mask with veneer resin; in case of direct temporaries polymerize directly on the patient, in case of indirect temporaries polymerize on the plaster model.

3 Finishing



For single crowns press a COPYPLAST® foil over the model and cut out a coping.

Tips and tricks:

Fix pouring mask on the model before polymerization (with wax or rubber ring).

COPYPLAST® does not need any special insulation, showing a nearly completely polished acrylic resin surface.

Temporary splint



Material List:

DURAN® 0.75-1.5 mm (depending on extent)
ISOFOLAN® foil
Medical adhesive (CA® Cyano Veneer Fast)
Finishing Set
SD Pipettes

1 Insulating and embedding



Trim the model flat and place it on the model platform. Press ISOFOLAN® foil over the model and cut foil at model base. For space closure set up plastic teeth and fix them on ISOFOLAN® from the basal side using CA® Cyano Veneer Fast.

2 Pressure moulding



Embed model in pellets, so that the parts of the model to be moulded are above the model cup rim, with the teeth vertically to the foil to be pressed on. Fill model cup rim and make sure the edges of the cup are clean. Heat the material by setting the code or recommended heating time according to the instructions. Make sure the cooling phase is long enough to ensure complete curing of adhesive and primer.

3 Finishing



Cut the plate radially and only roughly below the moulded part, remove it carefully from model and finish to exact length.

Tips and tricks:

In addition to mechanical retention, the plastic teeth can be moistened with medical adhesive (SD Cyano Veneer Fast, REF 3701.1) before pressure moulding DURAN® for additional chemical compound.

Temporary plate Partial denture

Material List:

BIOCRYL® C clear 2.0 or 3.0 mm (for lower jaw 3.0 mm)

ISOFOLAN® foil

BIOCRYL®-RESIN

Finishing Set



1 Insulating and embedding



Press an ISOFOLAN® foil over the model and cut the foil at the model base. Perforate ISOFOLAN® foil interdentally in order to avoid air bubbles. Fix clasps with wax on the ISOFOLAN® foil from the buccal side and fix teeth with prepared matrix on the model. Embed the model up to the incisal resp. occlusal areas in pellets. Fill model cup with pellets to the upper rim and make sure the edges of the rim are clean. Melt down the ISOFOLAN® foil onto the plaster modell using wax.

2 Pressure moulding



Heat the foil by setting the code or recommended heating time according to the instructions. During the last 20-30 sec. of the heating time apply BIOCRYL® Resin underneath the teeth and to the clasp retentions. Close pressure chamber and open once the cooling phase has elapsed.

3 Finishing



Remove BIOCRYL® C from the model. Cut off excess with cutting bur (REF 3214) or HM carbide bur (REF 3369). Finish with HM carbide bur fine (REF 3370) or finishing bur (REF 3377). Polish as usual.

Tips and tricks:

Roughen teeth mechanically or chemically for better bonding.

Bleaching splint



Material List:

BIOPLAST® bleach 1.0 mm or
COPYPLAST® 1.0/1.5/2.0 mm or
BLUE-BLOKKER® (space maintainer)

1 Insulating and embedding



Mark the areas you want to bleach with a pencil. Apply BLUE-BLOKKER® serving as space maintainer in the desired layer thickness.

2 Pressure moulding



Place dental arcade model on the platform resp. embed complete model in pellets and fill cup up to the upper rim. Pressurize BIOPLAST® bleach or COPYPLAST® depending on the desired stability and model size.

3 Finishing



Cut material radially, remove it carefully from model and cut it to exact length.

Tips and tricks:

The light curing blocking-out material BLUE BLOKKER® can be applied easily and precisely in the desired layer thickness. Following the same procedure, you may as well fabricate medical trays.

Fluorisation splint

Material List:

BIOPLAST® 1.0-3.0 mm (space maintainer)

BIOPLAST® Insulating agent

DURAN® 1.0–1.5 mm / DURAN®+ 1.0–1.5 mm

CETRON® Spray



1 Insulating and embedding



Mark the areas you want to fluorize with a pencil and moisten with BIOPLAST® Insulating agent. Place flat trimmed model on the platform. Fix BIOPLAST® in the required thickness and heat by setting the code or programme the recommended heating time. Open once the cooling phase has elapsed. Cut out space maintainer according to the marked areas and insert occlusal perforations in the area of cusp tips and incisal edges by means of punch pliers, in order to create space for a support.

2 Pressure moulding



Put prepared space maintainer on the model. Place reduced models on the platform resp. embed complete models in the pellets and fill model cup up to the upper rim. Use CETRON® spray for insulation. Fix DURAN® in the desired thickness and heat by setting code or according to the recommended heating time. Close pressure chamber and open once the cooling phase has elapsed.

3 Finishing



Cut out material roughly and remove it carefully from the model. The thermoformed space maintainer made of BIOPLAST® will not bond to DURAN® and can be removed easily. Finish as usual.

Tips and tricks:

BIOPLAST® Insulating agent should be applied only to the required splint extension. Perforation by means of punch pliers should be done in the areas of the most protruding cusps.



Material List:

BRUX CHECKER® foil 0.1 mm

1 Insulating and embedding



Place upper or lower arch on the model platform resp. embed complete upper or lower model in the pellets and fill model cup up to the upper rim.

2 Pressure moulding



One side of the BRUX CHECKER® foil is colour coated. By scratching the foil margin you can verify the correct fixing of the foil. Heat the foil according to the recommended heating time. Close pressure chamber and open once the cooling phase has elapsed.

3 Finishing



Cut foil radially and remove it carefully from the model.

Tips and tricks:

When heating the BRUX CHECKER® foil take care that the material is not overheated. 10-15 sec. heating time will be sufficient when working with machines of older series (MINISTAR® and BIOSTAR® I-IV), whereas you may heat for 15-20 sec. when working with current series (MINISTAR S® and BIOSTAR® V/VI). Please refer to instructions on packaging.

Cosmetic splint

Material List:

DURAN®+ white pd 0.75 mm, 1.0 mm or

DURAN®+ A2 pd 0.75 mm

ISOFOLAN® foil

Finishing Set

DIMO® / DIMO®PRO



1 Insulating and embedding



Place the reduced model with flat trimmed model base on the model platform. For insulation, press ISOFOLAN® foil over the model and cut off at the model base using a scalpel.

2 Pressure moulding



Place model on the model platform or embed it into the pellets in case of high models. Heat material according to the manufacturer's instruction using the programmed code or the recommended heating time. Lock pressure chamber, evacuate and open it once the cooling phase is completed.

3 Finishing



Lift material carefully and cut it to exact length.

Occlusal splint

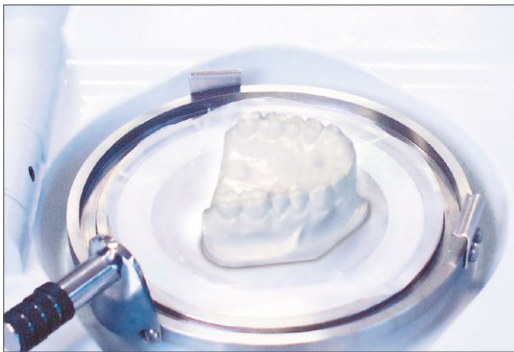
TMJ splint, bruxism splint,
functional splint
MINIPLAST splint



Material List:

DURAN® 0.5/0.75/1.0/1.5/2.0 mm (hard) or
DURAN® + 0.5/0.75/1.0/1.5/2.0 mm or
DURASOFT® pd 1.2/1.8/2.5/3.0/4.0 mm (hard/soft) or
BIOPLAST® 1.5/2.0/3.0 mm (soft)
ISOFOPLAN® foil
DURASPLINT® Kit (transparent adjusting material)
Finishing Set
Pellet cover
SD-Foil scissors A

1 Insulating and embedding



Trim the model flat and place it on the model platform. Press ISOFOPLAN® foil over the model (serving as insulation and as space maintainer for comfortable fit of the splint). BIOPLAST® splints should be insulated with BIOPLAST® Insulating agent applied by a brush. Cut off the foil in the required splint extension with a scalpel and perforate it interdentally to avoid air bubbles. Embed the model in pellets up to approx. 4 mm below the cervical margin and fill the model cup up to the upper rim; when using BIOPLAST® it is recommended to use the pellet cover. Fill missing teeth with plaster or blocking-out putty (REF 3220) to avoid folds. We recommend using the pellet cover (REF 3006/3007).

2 Pressure moulding



Make sure the edges of the cup are absolutely clean. Heat material by setting the code or recommended heating time according to the instructions. Lock pressure chamber and open once the cooling phase has elapsed.

3 Finishing



Depending on the kind of material and thickness, trim the splint with SD-Foil scissors A (REF 3460), cutting bur (REF 3214) or HM carbide cutter (REF 3369). Further finishing is done with the finishing set. The edges of hard material can be polished as usual. BIOPLAST® can be polished with the OSAMU polisher (REF 3247) or thermally with a flame.

Tips and tricks:

When fabricating an adjusted functional splint, the splint should be removed from the model for finishing only once DURASPLINT® has completely polymerized. The adhesion to the splint is guaranteed by applying DURASPLINT® monomer to the occlusal surfaces (please also see refer to our additional information on DURASPLINT® and the special brochure).



Occlusal splint with DURASPLINT® adjustment

Material List:

DURAN® 1.5 mm, 2.0 mm
 ISOFOLAN®
 DURASPLINT® LC Kit
 BLUE-BLOKKER® or SIL-KITT
 LC Insulation
 LC Primer
 HM-Carbide cutter
 Diamond separating disc
 DIMO® (brown, coarse)
 Articulator
 Parallelometer
 Pellet cover

1 Preparing and pressure moulding



Trim the model base flat and mount the casts in an articulator according to the doctor's prescription and using the recommended bite registration. Magnet systems can be used as well. Measure the model taking into account the insertion direction using the parallelometer and mark the prosthetic equator. Block out strong undercuts as well as interdental spaces and bridge elements with BLUE BLOKKER® or SIL-KITT. This will facilitate lifting the finished splint from the model. The same applies to gaps and bridge elements. In the next step, an ISOFOLAN® foil is pressed over the model, followed by DURAN® 1.5 mm or 2.0 mm. The use of a pellet cover is recommended.

2 Sand-blasting



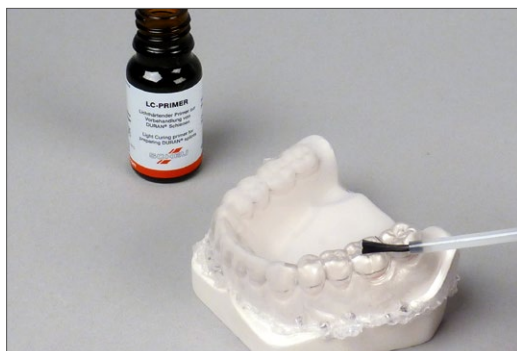
Important: You should always use DURAN® as base material for the light-curing material.

Coarsely reduce the thermoformed DURAN® material using the HM-Carbide cutter or the diamond separating disc.

Note: The splint should only be lifted from the model once light curing of DURASPLINT® LC is completed and the splint has been reduced. This will ensure optimal fit.

Now sandblast the material surface in the area of the complete splint extension using aluminium oxide (AL_2O_3) or roughen it with a DIMO® wheel (brown, coarse).

3 Preparing



Degrease the roughened area with medical ethanol to ensure an excellent bond. Apply a thin layer of LC-PRIMER to the area of the splint extension and cure for 5 minutes in the LC-6 Light Oven. Then apply the LC Insulation to the antagonist model using a brush in order to prevent it from sticking to the DURASPLINT® LC material.

4 Modelling



Adapt one bar of DURASPLINT® LC to the pressure moulded splint and form a thin material layer slightly exceeding the splint extension. Visible material transitions of DURASPLINT® LC and DURAN® can thus be avoided. If necessary, CLEAR BLOKKER® can be applied as well in the area of material transitions to facilitate modelling.

Attention: Avoid skin contact with uncured material. Make sure wearing gloves while using the material.

5 Articulating



Insert movement patterns and impressions by means of the articulator. Make sure to effect the movements only once in the corresponding direction and return with the articulator being open.

Note: Repeated movements or return movements with the articulator being closed might cause distortion due to the easily sticking material.

6 Light curing



Remove the model with the splint from the articulator and place it centrally in the light curing device. Then cure the material 2 times for 10 minutes each.

Note: If you intent to cure several splints one after the other, short cool-down phases are recommended. During these cooling phases the drawer of the LC-6 Light Oven should be left wide open.

7 Finishing



Following the light-curing process you can start finishing the splint while it is still on the working model. The slightly sticky inhibition layer can be removed with medical ethanol or Isopropanol. LC burs A, B and C are ideally suited for finishing.

Now the sliding surfaces and the cusps should be grinded according to the therapeutic demands before completely finishing the splint. Reduce the material carefully with the HM-Carbide cutter and the diamond separating disc. Avoid any contact between HM-Carbide cutter and model.

The splint should always be lifted off simultaneously on both sides of the model.

Tips and tricks:

Lifting the splint from the model on one side only may lead to cracks in the splint material. Occlusal polishing of the splint is not recommended in order to make sure the function of the adjusted surfaces is fully maintained. Detailed information on DURASPLINT® LC can be found at www.scheu-dental.com/download.

A video showing this application can be found in our youtube channel or directly here:



Splint retainer Retention splint

Material List:

COPYPLAST® C 1.0 mm (e.g. ESSIX C®)

DURAN® 0.75/1.0 mm (e.g. ESSIX A®)

DURAN® + 0.75/1.0 mm

IMPRELON® S pd 0.75/1.0 mm

ISOFOLAN® foil

HM-carbide cutter

Finishing Set

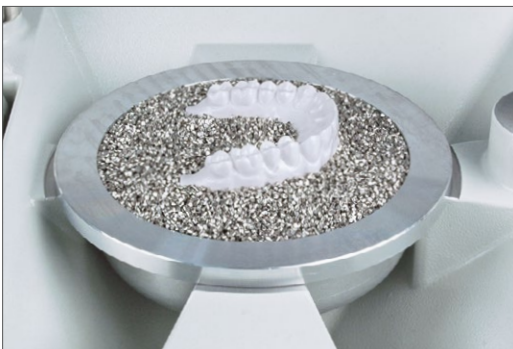
DIMO® / DIMO®PRO

1 Insulating and embedding



Place the flat trimmed, reduced model on the model platform. When using DURAN® press an ISOFOILAN® foil over the model serving as insulation and cut the material at the model base with a scalpel. In case of using COPYPLAST® C soak the model in water.

2 Pressure moulding



Place model on the platform, in case of high models embed in pellets. Heat the foil by setting the code and recommended heating times according to the instructions. Lock pressure chamber and open once the cooling phase has elapsed.

3 Finishing



Remove material carefully and cut it to exact length. Finally, the edges of the splint are smoothed using DIMO®/DIMO® PRO wheels.

Tips and tricks:

Ensure not to use ISOFOILAN® for insulating COPYPLAST® C, as it may bond to the material.

ESSIX A® and ESSIX C® are registered trademarks of Dentsply Raintree Essix.

Retention plate



Material List:

BIOCRYL® C 3.0 mm clear
ISOFOPLAN® foil
BIOCRYL® Resin
Finishing Set
Blocking-out putty

1 Insulating and embedding



Bend and adjust clasps without fixing them. Place flat trimmed model on the platform and press an ISOFOPLAN® foil over it. Cut out surplus material at model base and perforate material interdentally with scalpel. Fix clasps from the buccal side with sticky wax. Embed vestibular model parts in the pellets up to occlusal areas. Block out large lingual undercuts using blocking-out putty (REF 3220).

2 Pressure moulding



Heat the material by setting the code or recommended heating time according to the instructions. During the last 20-30 sec. of the heating time, apply some drops of BIOCRYL® resin to the clasp retentions, close pressure chamber and press heated material over the still liquid resin. BIOCRYL® Resin polymerizes during approx. 20 min. in the pressure chamber and bonds to BIOCRYL® C during this procedure.

3 Finishing



For initial trimming use a cutting bur (REF 3214). The clasps and labial bow are exposed with the finishing bur (REF 3377). The finishing bur is made of a special soft alloy that does not damage the clasps.



Material List:

DURAN® (at least 0.75 mm)
 ISOFOLAN®
 VECTOR® 45 acc. to Prof. Hinz
 BIOCRYL®-Resin monomer, BIOCRYL®-Resin polymer
 SIL-KITT red
 Set-up manual saw
 LC Bur C
 SD Foil scissors A + B
 BIOPERM® Trimmer
 DIMO® brown, coarse
 Sticky wax (e.g. Supradent)

Expansion Aligner

1 Preparing



Block out the model in the area of crowdings and undercuts with SIL-KITT. Mark the midline and drill a positioning hole for the lower part of the VECTOR® 45 space holder. The screw should be positioned as close as possible to the model, making sure to consider sufficient space for the impression of the counter bite.

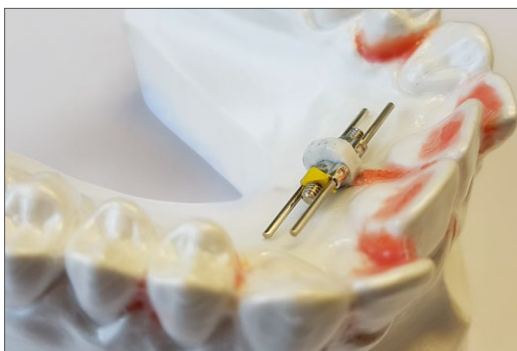
Important: Cut out palatal model area.

2 Pressure moulding



Place the model on the model platform. Thermoform ISOFOLAN® according to the manufacturer's instructions, reduce the model at the model edge and make interdental incisions.

3 Positioning the VECTOR® 45



Reduce the upper part of the space holder close to the VECTOR® 45 with a separating disc and round it off with a DIMO® wheel (brown). Ensure not to squeeze the space holder when cutting with scissors or reamer. If necessary, adapt guiding pins to the jaw width (by reducing).

Apply a few drops of hot sticky wax through the ISOFOLAN® foil into the positioning hole, align the screw in the hole close to the plate and fix it.

4 Embedding



Position the model with the front teeth showing in the direction of the locking shaft. Make sure to embed the model so that the VECTOR® 45 screw has as few undercuts as possible. The model front should be placed more deeply into the model pot and the pellets should be filled in only to the model rim.

Important: Make sure to fill in sufficient pellets in the palatal area as well to exclude the risk of air inclusions. The palatal area should be cut out to approx. 1 cm in front of the positioned screw.

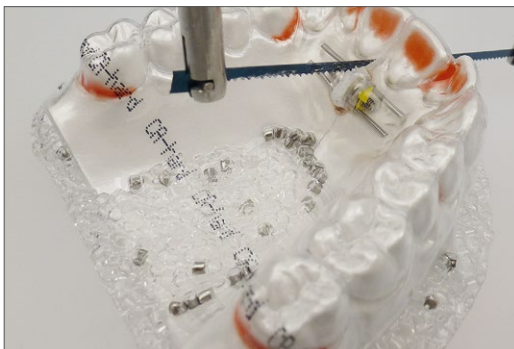
5 Pressure moulding



Clamp DURAN® and mix BIOCRYL® Resin until it has a creamy consistency. Apply a few drops of BIOCRYL® Resin to the metal parts during the heating time of DURAN®. During the last 5 seconds of the heating time the resin should be added generously. Once the heating time has ended, close the pressure chamber and thermoform.

The model should stay under pressure in the unit for at least 10 minutes. Ignore any acoustic signals during this period. Do not evacuate or switch off the machine during this time.

6 Exposing the space maintainer



Cut out material coarsely and separate it along the midline using a manual saw or a separating disc with the splint still being on the model for stability reasons.

Separate the material in the area of the screw space holder with a bur and remove it using needle-nosed pliers.

7 Finishing



Remove the splint from the model and cut off the lower part of the space holder using a pair of pliers. Then reduce the rims to the required length and complete the separating cut.

The expansion screw can be pre-activated by a few turns so that the separation cut can be cleaned. Finish and polish the splint as usual.

Hint for activation:

1/4 turn 0.175 mm

4/4 turn 0.7 mm

Activation: approx. 3.0 mm



Bracket transfer matrix

Lingual technique

Material List:

BIOPLAST® 1.0-2.0 mm
BIOPLAST® Insulating agent
DURAN® 0.75-1.0 mm
CETRON® Spray
3M Unitek Laboratory adhesive
Set-up separating disc, diamond separating disc
BLUE-BLOKKER®
Set-up wax



1 Target set-up



The target set-up has been made using red set-up wax.

Hints for positioning brackets on the prepared set-up model:

Apply a few drops of water soluble adhesive to the tooth. Position lingual bracket. Changes in positions can be done with a hot wax knife, inserted in the bracket slot. Avoid too much adhesive between bracket and tooth. Allow adhesive to dry for 10 min.

2 Pressure moulding BIOPLAST®



Fix set-up model with BLUE-BLOKKER®. Apply BIOPLAST® Insulating agent to the flat trimmed model and place it on the platform. Heat BIOPLAST® by setting the code or the recommended heating time according to the instructions. Lock pressure chamber and open once the cooling phase has elapsed.

3 Soaking in water



Soak model in water to dissolve the adhesive. Remove material with brackets from the model and reduce BIOPLAST® with scissors (at 2-3 mm exceeding the gingival margin).

Tips and tricks:

smile dental offers a wide range of bracket adhesives, if the use of a water soluble adhesives is not intended (www.smile-dental.de).

4 Segmenting BIOPLAST®



The material is segmented tooth by tooth, thus allowing the transfer to the situation model.

5 Positioning the segments on the original model



Position BIOPLAST® single tooth segments on the situation model, then insulate them with CETRON® spray or vaseline, so they can be removed easily from DURAN® later. In case of crowdings leave out the corresponding tooth.

6 Pressure moulding DURAN®



Embed the situation model with brackets in BIOPLAST® segments (refer to picture) and press an ISOFOLAN® foil over it. Heat foil by setting the code or recommended heating time according to the instructions. Lock pressure chamber and open once the cooling phase has elapsed.

7 Segments of 3 teeth for transfer



Cut material radially and remove it from model. Proceed with finishing. The extension of DURAN® should be about 2-3 mm shorter than BIOPLAST®. Separate DURAN® in 3 tooth segments, serving as bracket transfer from model to patient.

Bracket transfer mask

Semi-covered

Material List:

COPYPLAST® 0.5/0.75 mm

3M Unitek Laboratory adhesive



1 Insulating and embedding



Apply a drop of water soluble adhesive to the teeth with a probe. Position the bracket. Changes in position can be done with a hot wax knife, inserted in the bracket slot. Avoid too much adhesive between bracket and tooth. Place flat trimmed model on the platform.

2 Pressure moulding



Heat material by setting the code or recommended heating time according to the instructions. Lock pressure chamber and open after cooling phase has finished. Soak model in water in order to dissolve the adhesive. Remove material and clean residues of adhesives with luke warm water.

3 Finishing



Cut mask with scissors.

Preparing fixing the brackets:

Insert incisal perforations with a scalpel, so that surplus adhesive can escape.

Information for dentist/orthodontist:

Apply adhesive to the base (if possible pasty) and insert mask directly on the patient. Press each bracket with an instrument or finger to the tooth and remove the material beginning from the distal side once the adhesive has set.

Tips and tricks:

smile dental offers a wide range of bracket adhesives, if using water soluble adhesives is not intended (www.smile-dental.de).

Positioner (2 or 3 layers)



Material List:

BIOPLAST® 2.0/3.0/4.0 mm

BIOPLAST® Insulating agent

Finishing Set

DIMO® / DIMO®PRO

Heating support

Space holder for air slits, trapezoidal

Space holder for air slits, semicircular

1 Insulating, embedding and pressure moulding



Apply BIOPLAST® Insulating agent to working models (upper and lower) – only to those parts which will be covered by the positioner. Trim models flat and place them on model platform, then press BIOPLAST® of the required thickness over the model. Cut surplus material at the model base using the finishing set, scissors or scalpel. Cover the palatal and lingual area with a damp cloth or similar material.

Heating

2



Heat both models for about 3-4 min. under the infrared heater using the heating support (REF 3452, at a distance between occlusal surface and heater of approx. 10 mm). Place both models into the articulator or fixator, position space maintainer and close device slowly. Smooth the lingual area between upper and lower jaw while it is still plastic with moistened fingers.

3

Finishing



After about 2 min. of cooling, cut the positioner to the required exterior shape with scissors or scalpel. Unevenness can be levelled by melting BIOPLAST® before taking out the models. Use scissors resp. BIOPERM Trimmer for required corrections of the edges.

Tips and tricks:

Split cast cuts at the model base may cause perforations or air leaks through the BIOPLAST® material and therefore should be blocked out.

4



Pierce the bimaxillary BIOPLAST® mould with drill tip in the interdental space at the papilla from the labial and buccal side – the lingual and palatal areas of the mould are finished later. Reduce space holder for the insertion of air slits before the next thermoforming process.

5



Reset the models in the bimaxillary unit made of BIOPLAST®. For an optimum compound, clean the areas which are to be melt with lukewarm water and let them dry, avoiding any further contact. Place upper and lower model unit upright in the pellets with the occlusal surface parallel to the swivel axis and embed them carefully, covering the model base and exposing the distal areas. Swivel the pressure chamber in working position to check whether there is enough space for the two models from all sides, especially to the top. Then press BIOPLAST® 2 mm over the models. Air release and perforations of the material in the area of the 2nd molars are normal. If this is the case, wait 1 minute before opening the pressure chamber.

6



Cut excess BIOPLAST® material with scissors, scalpel or hot knife. Keep distance from the final edges, lay open distal model sides. Take models out of the BIOPLAST® mould and cut surplus material precisely following the definite rim with scissors. Cut the interior shape to its final extension. Expose space holder to insert the air slits and remove it.

7



Smooth the edges with BIOPERM Trimmer at high speed. Finish and polish preferably with DIMO®/DIMO® PRO. Polish the edges with OSAMU polisher. When using BIOPLAST® 4.0/5.0 mm the positioner can be fabricated in two layers as well. In this case, the two models are heated under the heating support after pressure moulding and then carefully melt and modelled in the articulator.

Tips and tricks:

For an optimum thermal compound of the BIOPLAST® material, avoid naked flame and any kind of soiling (e.g. finger prints, compressed air containing oil) in the melting areas. When fabricating the two-layer positioner, a spacer made of COPYPLAST® can be used for the insertion of air slits which is positioned frontally in the articulator before melting and removed afterwards (Part number WW0033.800 for the trapezoidal space maintainer and WW0034.800 for the semicircular one).

BIOPLAST® XTREME

Sports mouth guard



Material List:

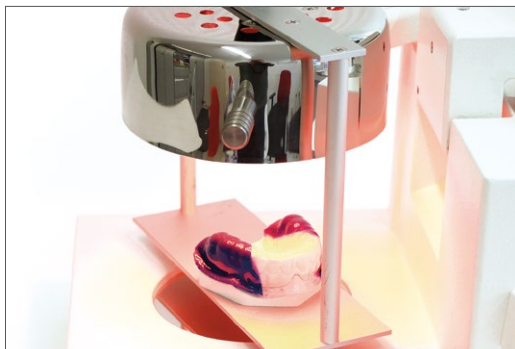
BIOPLAST® XTREME 5.0 mm
BIOPLAST® Insulating agent
Heating support
BIOPERM Trimmer
OSAMU-Polisher
DIMO®PRO
Pellet cover

1 Insulating, embedding and pressure moulding



Apply one thin layer of BIOPLAST® Insulating agent only to those parts of the working model which will be covered by the mouth guard. Embed model in pellets with the clear V-shaped part of the BIOPLAST® Insulating agent covering the desired extension of the front section (e.g. from 3-3). Place pellet cover on pellets. Make sure the material is fixed with the soft side down and the labels being placed in the direction of the heater. The imprint on the label has to be readable. Heat the foil by setting the code or recommended heating times according to the instructions. Lock pressure chamber and open once the cooling phase has elapsed.

2 Heating



Heat the occlusal surfaces under the infrared heater using the heating support. Apply BIOPLAST® Insulating agent to the antagonist model and put the models into the articulator for the impression of the counter bite. Cool down with compressed air or water and remove from the mould. Polish the edges using the finishing set.

3 Finishing



Cut mouth guard to the desired shape. Polish the edges with OSAMU-Polisher or DIMO®PRO wheel.

Tips and tricks:

Detailed information on BIOPLAST® XTREME and BIOPLAST® XTREME PRO sports mouth guard can be found at www.scheu-dental.com/download.

You can find a video showing this application on our youtube channel or directly here:



OSAMU-Retainer®

acc. to Dr. Osamu Yoshii

Material List:

IMPRELON® S pd 0.75 mm

BIOPLAST® 1.5 mm

OSAMU-Bond 10 ml

BIOPLAST® Insulating agent

SD Foil scissors A,B

Finishing set

DIMO®/DIMO® PRO



1 Insulating and Embedding



Apply BIOPLAST® insulating agent only to the required splint areas. Trim the model base flat and place it on the model platform. Heat material by setting the code or recommended heating time according to the instructions. Lock pressure chamber and open once the cooling phase has elapsed. Trim out occlusal areas and incisal edges. For stability reasons, cut BIOPLAST® only at the model base.

2 Pressure moulding



Trim and clean BIOPLAST® with luke warm water and replace it on the model. Embed in pellets up to approx. 10 mm below the cervical edge. Fill model cup with pellets up to the upper rim and make sure the edges of the cup are clean. Heat the foil by setting the code or recommended heating time according to the instructions. Apply OSAMU-Bond to the BIOPLAST® material during the last 15 sec. of heating of IMPRELON® S pd. Lock pressure chamber. For an optimum compound, leave the model for at least 5 min. or longer under pressure.

3 Finishing



In order to avoid tensions or cracks, trim the plate radially. Then remove the plate carefully. Trim the OSAMU-Retainer® to the exact length and polish the edges of the hard material carefully.

Tips and tricks:

Please also refer to detailed fabrication instructions at www.scheu-dental.com/download.

For an optimum compound, avoid any kind of dirt, fingerprints etc. on BIOPLAST® material.

You can find a video showing this application on our youtube channel or directly here:



Coating foil Skin packaging



Material List:

Coating foil 0.15 mm

Skin packaging

1 Insulating and embedding



Place cardboard on the model platform.
Position model on blister packaging.

2 Pressure moulding



Set the code and heat foil according to the instructions.

3 Finishing



Lock pressure chamber and open after cooling phase has finished. Further finishing is not necessary.

Tips and tricks:

If desired, you may include a label with name or address on the blister packaging.
Use only in well-ventilated rooms (formation of fumes).

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