

## Protocol for the preparation of a substructure in Ruthinium Fibra UHM

1. Master mould with bar to be duplicated. Minimum thickness of turrets: 1.5mm. Minimum thickness of bar: 5mm x 7mm. For the substructures: maximum 1 tooth per cantilever. [\[images 1-2-3\]](#)
2. Make two bar masks from Duplistar 90 silicone. Remove the bar to be produced. [\[images 4-5\]](#)
3. Stamp the master mould on a 2mm thermoplastic disk. Use material that acrylic does not adhere to. Remove the disk and bore holes at the analogues.
4. Sandblast the turrets, re-screw them and fit the disk. [\[image 6\]](#)
5. Insulate the bridge screw holes and the turret bases with silicone insulator. [\[image 7\]](#)
6. Make a paper template not much larger than the substructure to be produced. [\[image 8\]](#)
7. Mix 9 ml of Base Resin with 3 ml of Catalyst. The mixing ratio is always 3:1.
8. Impregnate the whole UHM fabric sheet with the resin. Distribute the resin using the silicone spatula, ensuring that the fabric is completely impregnated. Remove any excess material.
9. With a pair of scissors, trim the outer edges bordered by the paper adhesive tape. The fabric will not fray as it is impregnated.
10. From the impregnated fabric, cut rectangles large enough to contain the template.
11. Overlap the rectangles cut (minimum 13 sheets), changing by 10-15 degrees the direction of the fibres between each sheet. [\[image 9\]](#)
12. Compress the overlapped rectangles using the roller provided to expel the air between the various layers (lamination). [\[image 10\]](#)
13. Place the paper template on the lamination sheets and trim them around the edge of the template. [\[images 11\]](#)
14. Mix the finishing powder\* with the previously activated Ruthinium Fibra Base and Catalyst, and apply the mix to the turrets with a brush. [\[images 12-13\]](#)
15. Place the obtained result on the master mould and extend with a pointed instrument near the turrets so as to fit the laminated sheets. [\[image 14-15\]](#)
16. Increase the volume of the substructure with the excess fibre from the laminated cut-off. [\[image 16\]](#)
17. Insert the master mould with the fibre placed inside a (food grade) vacuum bag and seal after vacuuming. [\[image 17\]](#)
18. Put in water at room temperature and bring to 80°C. Keep the product at a temperature of 80°C for 2 hours.
19. After the post-curing cycle, remove the product, allow it to cool and finish it. [\[images 18\]](#)
20. Use the two previously made masks in Duplistar 90 silicone to simplify finishing. [\[images 19-20\]](#)
21. Sandblast with 110/130 micron aluminium oxide. Brush the product with 96% ethanol. Important: do not vaporise.
22. Apply a layer of primer and wait for it to be absorbed by the substructure. Apply a second layer of primer and blow to remove any excess. At this point it is possible to light-cure following the manufacturer's indications. Opacify with a light-curing matt, observing the manufacturer's instructions. [\[image 21\]](#)



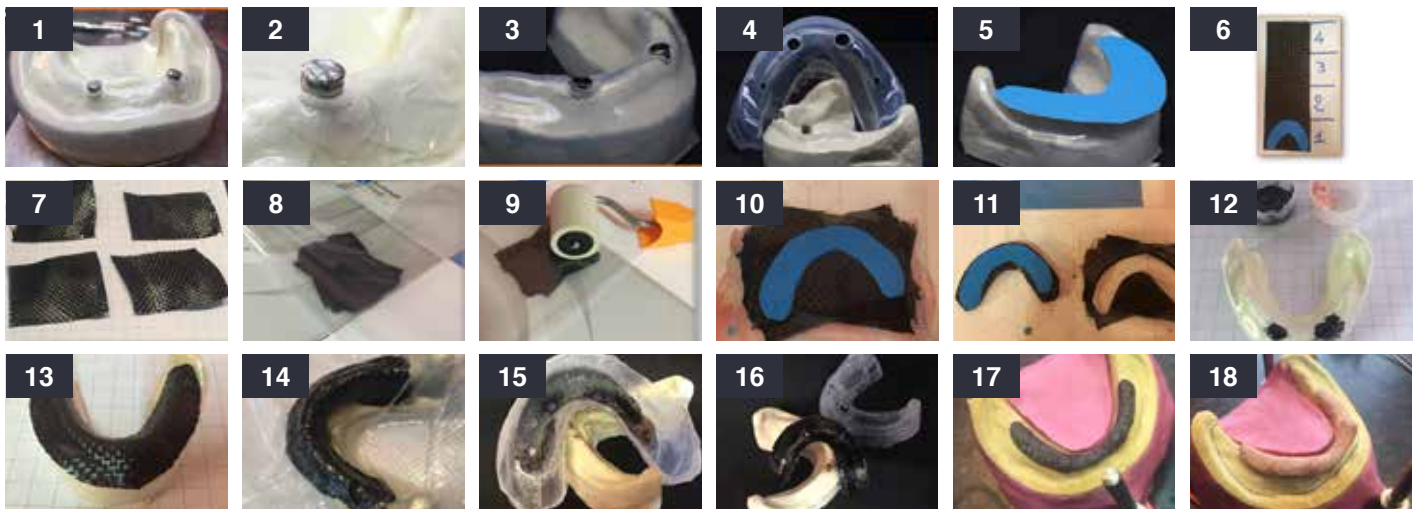
## Protocol for the preparation of a substructure in Ruthinium Fibra UHM using a flask

- Master mould with structure to be produced. Minimum thickness of turrets: 1.5mm. Minimum thickness of bar: 5mm x 7mm. Maximum 1 tooth per cantilever. [\[image 1-2-3\]](#)
- Incorporate the mould with Duplistar 90 silicone at the muffle base. To slow down the curing of the silicone, add a retardant to the Duplistar 90 Base. [\[image 4-5\]](#)
- Starting from the mould, cover the entire surface of the silicone with Plastiwax. [\[image 6-7\]](#)
- Make some reference points in wax on the turret holes, to identify the bridge screw entry points when the mould is finished. [\[image 8\]](#)
- Make the countermould with Duplistar 90 silicone. [\[image 9\]](#)
- Open the muffle and free the turrets. [\[image 10\]](#)
- Sandblast the turrets with 110/130 micron aluminium oxide and re-screw them on the mould. [\[image 11\]](#)
- Insulate the turret holes with cotton impregnated with silicone insulator. [\[image 12\]](#)
- Make a paper template not much larger than the substructure to be produced. [\[image 13\]](#)
- Mix 9 ml of Base Resin with 3 ml of Catalyst. The mixing ratio is always 3:1.
- Impregnate the whole UHM fabric sheet with the resin. Distribute the resin using the silicone spatula, ensuring that the fabric is completely impregnated. Remove any excess material. With a pair of scissors, trim the outer edges bordered by the paper adhesive tape. The fabric will not fray as it is impregnated.
- From the impregnated fabric, cut rectangles large enough to contain the tem-  
plate.
- Overlap the rectangles cut (minimum 13 sheets), changing by 10-15 degrees the direction of the fibres between each sheet. [\[image 14\]](#)
- Compress the overlapped sheets using the roller provided to expel the air between the various layers (lamination). [\[image 15\]](#)
- Place the paper template on the lamination sheets and trim them around the edge of the template. [\[image 16\]](#)
- Mix the finishing powder\* with the previously activated Ruthinium Fibra Base Resin and Catalyst, and apply the mix to the turrets with a brush. [\[image 17-18\]](#)
- For a perfect reproduction of the details, trim and crumble the excess laminating fibre and place it around the turrets and the muffle countermould. [\[image 19\]](#)
- Place the laminated fabric on the turrets. Create holes using a pointed instrument near the turrets and fit the fabric on them. [\[image 20\]](#)
- Close the muffle and insert it in a (food grade) vacuum bag. Draw out the air and seal to avoid contact with water. [\[image 21\]](#)
- Put in water at room temperature and bring to 80°C. Keep the product at a temperature of 80°C for 2 hours.
- After the post-curing cycle, remove the product, allow it to cool and finish it. [\[image 22-23-24\]](#)
- Sandblast with 110/130 micron aluminium oxide. Brush the product with 96% ethanol. Important: do not vaporise.
- Apply a layer of primer and wait for it to be absorbed by the substructure. Apply a second layer of primer and blow to remove any excess. At this point it is possible to light-cure following the manufacturer's indications. Opacify with a light-curing matt, observing the manufacturer's instructions. [\[image 25\]](#)



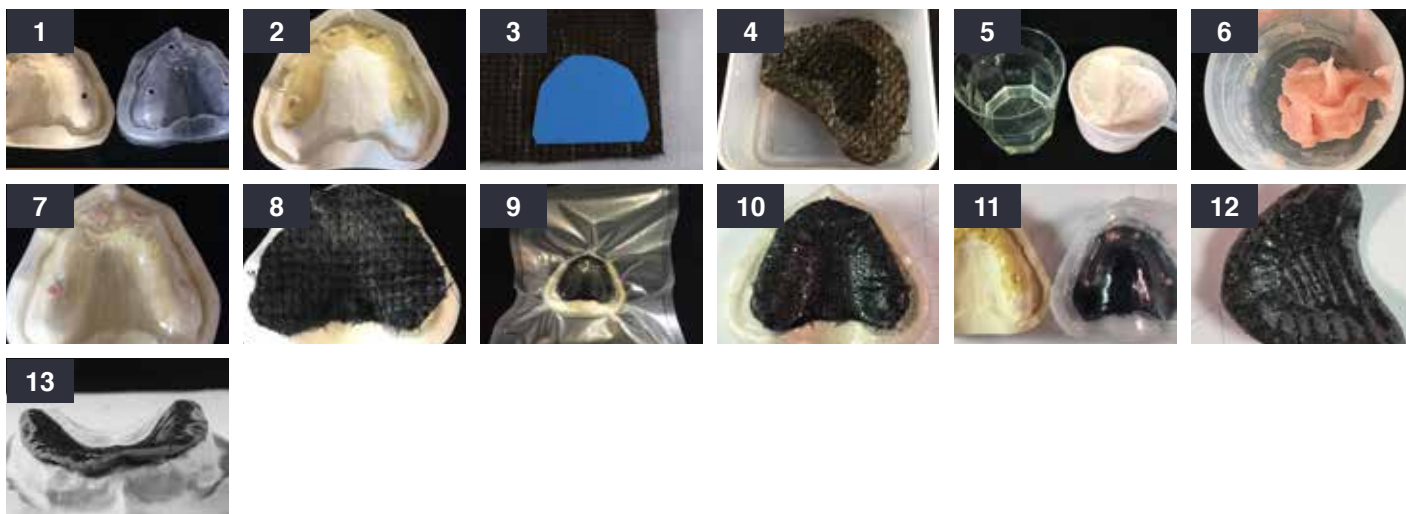
## Protocol for the creation of a Special reinforcement for removable dentures in the presence of OVERDENTURES

1. Mould on a master mould on a thermoplastic disk to the desired thickness (1mm, 1.5mm, 2.0mm, etc.) according to the required spacing. The thickness determines the space between the reinforcement and the mucosa. Use a soft thermoplastic disc that acrylic does not adhere to. [\[image 1\]](#)
2. Release any attachments if you want to incorporate them in the reinforcement. [\[image 2-3\]](#)
3. Make some stops and insulate the mould with an insulating silicone at the stops. [\[image 4\]](#)
4. Make a template from reinforcement paper. [\[image 5\]](#)
5. Cut the required quantity of fabric to be impregnated for the lamination of 4 sheets, marking the borders obtained with paper adhesive tape. [\[image 6\]](#)
6. Mix 6 ml of Base Resin with 2 ml of Catalyst. The mixing ratio is always 3:1.
7. Impregnate the UHM fabric with the resin. Distribute the resin using the silicone spatula, ensuring that the fabric is completely impregnated. Remove any excess material.
8. With a pair of scissors, trim the outer edges bordered by the paper adhesive tape. The fabric will not fray as it is impregnated.
9. From the impregnated fabric, cut 4 rectangles large enough to contain the template. [\[image 7\]](#)
10. Overlap the rectangles cut, changing by 10-15 degrees the direction of the fibres between each sheet. [\[image 8\]](#)
11. Compress the overlapped rectangles using the roller provided to expel the air between the various layers (lamination). [\[image 9\]](#)
12. Place the paper template on the lamination sheets and trim them around the edge of the template. [\[image 10-11\]](#)
13. Mix the finishing powder\* with the previously activated resin and apply the mix to any attachments to be incorporated with a brush. Afterwards, fill the stops with Acry Self OP1 resin. [\[image 12\]](#)
14. Place the laminated fabric on the mould. [\[image 13\]](#)
15. Insert the master mould with the fibre placed inside a (food grade) vacuum bag and seal after vacuuming. [\[image 14\]](#)
16. Put in water at room temperature and bring to 80°C. Keep the product at a temperature of 80°C for 2 hours.
17. After the post-curing cycle, remove the product, allow it to cool and finish it. [\[image 15-16-17\]](#)
18. Sandblast with 110/130 micron aluminium oxide. Brush the product with 96% ethanol. Important: do not vaporise.
19. Apply a layer of primer and wait for it to be absorbed by the substructure. Apply a second layer of primer and blow to remove any excess. At this point it is possible to light-cure following the manufacturer's indications. Opacify with a light-curing matt, observing the manufacturer's instructions. [\[image 18\]](#)



## Protocol for the creation of a reinforcement for full removable dentures with Ruthinium

1. Mould a master mould on a thermoplastic disk to the desired thickness (1mm, 1.5mm, 2.0mm, etc.), according to the required spacing. The thickness determines the space between the reinforcement and the mucosa. Use a soft thermoplastic disc that acrylic does not adhere to. [\[image 1\]](#)
2. Make some stops and insulate the mould with a silicone insulator at the stops. [\[image 2\]](#)
3. Make a template from reinforcement paper.
4. Mix 9 ml of Base Resin with 3 ml of Catalyst. The mixing ratio is always 3:1. With a pair of scissors, trim the reinforcement from the MAT fabric by following the template previously made. [\[image 3\]](#)
5. Completely impregnate the MAT fabric reinforcement with the resin. [\[images 4\]](#) Ensure that the fabric is completely impregnated and remove any excess resin with absorbent paper.
6. Fill the stops with AcrySelf OP1 resin. [\[image 5-6-7\]](#)
7. Place the impregnated MAT fabric on the mould. [\[image 8\]](#)
8. Insert the master mould with the fibre placed inside a (food grade) vacuum bag and seal after vacuuming. [\[image 9\]](#)
9. Put in water at room temperature and bring to 80°C. Keep the product at a temperature of 80°C for 2 hours.
10. After the post-curing cycle, remove the product, allow it to cool and finish it. [\[images 10-11-12-13\]](#)
11. Sandblast with 110/130 micron aluminium oxide. Brush the product with 96% ethanol. Important: do not vaporise.
12. Apply a layer of primer and wait for it to be absorbed by the substructure. Apply a second layer of primer and blow to remove any excess. At this point it is possible to light-cure following the manufacturer's indications. Opacify with a light-curing matt, observing the manufacturer's instructions.



\* To obtain the finishing powder, impregnate a sheet of Ruthinium Fibra Mat with activated resin. Place the sheet inside a (food grade) vacuum bag and seal after vacuuming. Put in water at room temperature and bring to 80°C. Keep the product at a temperature of 80°C for 2 hours. Mill the fibre and place the powder inside a suitable container.

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