



Fabricating a Mouthguard Over Brackets

Safety glasses should be worn for all lab procedures as well as gloves when handling acrylics. Items featured in this technique are found on the last page.



- 1 When fabricating a mouthguard for a patient with moderate spacing, orthodontic treatment, or erupting dentition, model relief must be provided. Relief can be accomplished using a quick setting stone material or thermal forming a 1mm Copyplast material over the model. Both techniques are outlined here.



- 2 For both relief techniques, the model is prepared prior to applying model relief. Remove non-anatomical model imperfections with a lab knife and fill holes with stone. Prior to this process, model bases are reduced with trimmer. Base should be flat and square to outer surface. Using a lab knife, define model anatomy.



- 3 When filling diastimas or relieving for tooth eruption, the stone material is applied then a small paint brush is used to sculpt the stone with water before it sets. The same block out procedure is used for orthodontic appliances such as brackets or arch wires. Also, allowances need to be made for moderate tooth alignment. Stone can be added to the labial or lingual tooth surface for the tooth that is intended to move.



- 4 Approximately 10-15ml of Snapstone is mixed with cold water to a thin custard-like consistency. With a #7 spatula, apply stone along brackets and archwire area. Also place stone around buccal tubes. Blockout stone should be applied near occlusal tooth tips and extend to alveolar mucosa. Moisten a #3 model brush in water and contour stone to model before it sets. Allow the stone to set 15-20 minutes before beginning the process to fabricate the mouthguard.



- 5 An alternative step to provide a uniform relief for tooth movement between the model and the mouthguard may be implemented. Apply liquid separator to the model using a brush. Place the model on the center of the platform of a Biostar® or MiniSTAR® machine with the heel of the model facing the open chamber on the left side of the machine. A relief material such as 1mm Copyplast is used and clamped onto the pressure chamber.



- 6 Enter the heating time of 50 seconds or Biostar® code 162 into the machine. Swing the lamp over the chamber to initiate the heating cycle. Once the heating cycle has ended, remove the lamp and swing the chamber over the model on the platform. Lock into place to initiate the forming process. Allow the material to cool under pressure for 1-2 minutes. Release the pressure at the end of the cooling cycle. Unlock the chamber and clamped material. Open chamber and remove formed plastic and model from machine.



7 With a torch, heat a lab knife to cut away excess plastic from model. With a hot lab knife, cut along the vestibular and sulcus area of model where tissue meets model base. Continue along heel of model to a 5mm depth below the gingival margin in palatal area. Create a cut from model cutout to outer edge of the disc. Remove excess plastic from model.



8 Process the mouthguard using a single or 2-step lamination technique. Also a mouthguard strap or multi-colored design may be made. Heat and form material using a Biostar® or MiniSTAR® thermal-forming machine.



9 A rough cut-out of the mouthguard is done using a torch and a lab knife. Heat the knife to cut through the mouthguard material. Cut along the tissue anatomy at the model base and a few millimeters behind the last tooth in the arch. Also cut about 5mm below the gingival margins in the palate. Remove excess material from model



10 If the optional relief step was incorporated using Copyplast as outlined above, remove it from the formed material using a lab knife.



11 Trim and finish the mouthguard according to the parameters outlined in the Mouthguard Trimming and Finishing procedure.

Items featured in technique:

- 235-010 Astro Spec Safety Glasses (reg./blue)
- 235-062 N-Dex Non-latex Gloves (Med)
- 215-020 SnapStone
- 075-004 Model Brush
- 175-027 Resimix Cup
- 165-004 Spatula
- 021-031 2mm Clear Round Mouthguard Material
- 021-032 3mm Clear Round Mouthguard Material
- 021-045 2mm Assorted Round Colored Mouthguard Material
- 021-046 3mm Assorted Round Colored Mouthguard Material
- 030-025 3mm Assorted Multi-Colored Bioplast
- 175-034 Separator
- 075-007 Separator Brushes
- 030-014 1mm Copyplast
- 080-006 Micro Torch
- 080-009 Gas Refill
- 170-005 Lab Knife



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