



Fabricating a Mouthguard with a Strap

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.

Mouthguard Facemask Strap

- o Two step lamination mouthguard design.
- o Built-in safety release allows mouthguard to be easily removed from the facemask.
- o Materials:
 - 1/8" (OD) x 1/16" (ID) vinyl tubing.
 - 0.060" Weed Wacker line.
 - 1/8" wood dowel.
 - Great Lakes Adhesive.



- 1 The mouthguard with facemask attachment is fabricated in a similar manner as the single or two-step lamination process.

- 2 First, a 2mm or 3mm clear or colored mouthguard material is formed over the dental model.



- 3 With a hot lab knife, cut away excess formed material while the material remains on the model.



- 4 A 15mm long, 1/8th inch diameter wood dowel is attached to the labial incisal surface of the plastic at the central incisor region. Heat this surface lightly to tack the dowel in place.



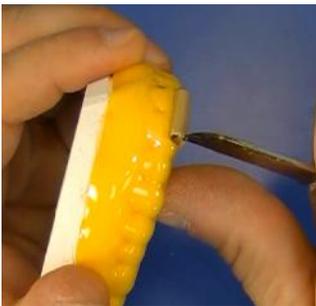
- 5 A Great Lakes quick-setting adhesive is used to further stabilize the dowel onto the plastic.



- 6 Clamp a 2mm thick clear mouthguard material onto the chamber. Swing the lamp over the material to start the heating cycle for 60 seconds. Turn the heat gun on the high setting to initially warm the unit. Heat formed material on the model with the heat gun for the final 25-30 seconds of the initial heating cycle. Once the time has ended, discontinue using the heat gun, remove the lamp from the chamber and swing the chamber over the model on the platform. Initiate forming and cooling phase. Allow the formed material to cool under pressure for 2 minutes.



- 7 Once the cooling phase has ended, release the pressure from the chamber. Unlock the chamber and clamped material. Swing open the chamber and remove the model with formed material from the platform.

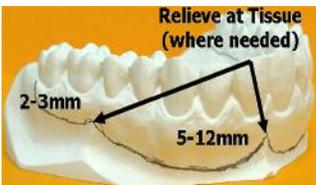


- 8 A rough cut-out of the mouthguard is done using a torch and a lab knife. Heat the knife to cut through the mouthguard material. Cut along the tissue anatomy at the model base and a few millimeters behind the last tooth in the arch. Also cut about 5mm below the gingival margins in the palate. Remove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

Heat the lab knife with the torch and cut the mouthguard material from the ends of the wood dowel. Soak the appliance in cool tap water to loosen the dowel from the material.



- 9 Invert a carbide cutting bur and then secure it into a lab handpiece. Press the blunt end of the bur against the wood dowel to remove it from the mouthguard.



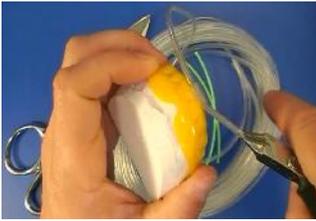
- 10 Trim and finish the mouthguard according to the parameters outlined in the Mouthguard Trimming and Finishing procedure. Some additional steps are needed to finish the facemask attachment.



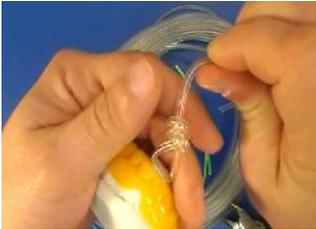
- 11 Smooth the ends of the tube-like form at the central incisor region with a carbide taper bur in a lab handpiece. Smooth the trimmed areas with a chamois buff on a high speed lathe or with a satin buff and a lab handpiece on medium speed.



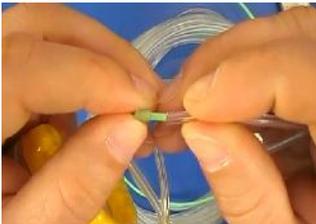
- 12 Carefully, flame the trimmed tube area at the central incisors. Over flaming will cause mouthguard to deform. Cool in water. Evict water and evaluate shine. Re-flame as needed.



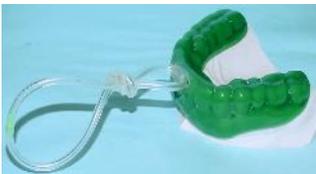
13 Once the mouthguard has been completed, the facemask attachment is made. Thread the tygon tubing through the tube that was made in the front of the mouthguard. Pull the tubing through allowing about 8-12 inches of tubing length available. A total length of about 18-20 inches is most often used. Cut the tubing at this length with lab shears.



14 Incorporate a knot in the two halves of the tygon tubing about 1 inch from the mouthguard.



15 Insert a .080inch diameter weed-wacker line about 3-4mm into one end of the tygon tube. Cut the weed-wacker line 3-4mm after the tube and thread the opposite end of the tygon tube over the cut weed-wacker line.



The clinician, parent, or athlete will need to adjust the length of the tygon tube to attach to the facemask with the mouthguard and helmet in place.

Items featured in technique:

- 235-010 Astro Spec Safety Glasses (reg./blue)
- 235-062 N-Dex Non-latex Gloves (Med)
- 021-031 Clear 2mm Round Mouthguard Material
- 021-032 Clear 3mm Round Mouthguard Material
- 021-045 Asst. 2mm Round Colored Mouthguard Material
- 021-046 Asst. 3mm Round Colored Mouthguard Material
- 030-025 Assorted Multi-Colored Bioplast
- 175-034 Separator
- 075-007 Separator Brushes
- Tygon Vinyl Tubing
- 0.080in. Weed-Wacker Line
- 1/8in. Wood Dowel
- 175-041 Great Lakes Adhesive
- 080-006 Micro Torch
- 080-009 Gas Refill
- 170-005 Lab Knife
- 1100-1200watt Heat Gun
- 150-025 Lab Handpiece
- 145-008 Air Handpiece
- 085-009 Carbide Taper Bur
- 085-027 Carbide Cutting Bur
- 086-037 Miniature Satin Buff
- 086-043 Dimo-Wheel
- 220-023 No. 55 Plate Shears



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