

Approximating Surface Matrix Band for Dentist to Use for Patients

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Date: October 5th, 2025 - October 9th, 2025

Client: Dr. Donald Tipple

Advisor: Prof. Beth Meyerand

Team:

Roshan Patel - rgpatel3@wisc.edu (Team Leader)

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Problem statement

Surface matrix bands are devices used by dentists to separate adjacent teeth during restorations of interproximal cavities (cavities found in-between two teeth). The matrix band serves to support the restoration material, to provide shape and contour to the tooth being restored, and to protect the adjacent tooth. Ideally, the width of the space between the two adjacent teeth is just large enough to fit one matrix band in order to ensure close proximal contact area, which prevents food impaction and decay. In the case of two cavities on two adjacent teeth, this process is tedious, as the dentist must complete the process from start to finish for each adjacent tooth individually. The goal of this project is to create a dental matrix band that effectively partitions adjacent teeth for more efficient tooth restoration procedures on interproximal cavities by making it possible to complete two adjacent restorations simultaneously.

Brief status update

The team has finished its preliminary report and has started discussing manufacturing processes.

Summary of weekly team member design accomplishments

- Roshan Patel
 - Worked on preliminary report
- Keleous Lange
 - Worked on preliminary report
- Tanya Predko
 - Completed assigned sections of the preliminary report
 - Collected research on topics pertaining to the preliminary report
- Joseph Koch
 - Completed preliminary report sections
 - Worked on fabrication and testing plans
 - Material selection

Difficulties / advice requests

There are no difficulties at this time.

Current design

N/A

Materials and expenses

Item	Description	Manufac-turer	Mft Pt#	Vendor	Vendor Cat#	Date	#	Cost Each	Total	Link
Category 1										
									\$0.00	
									\$0.00	
Category 2										
									\$0.00	
									\$0.00	
								TOTAL :	\$0.00	

Major team goals for the next week

1. Finalize design goals
2. Meet with design advisor
3. Work on the manufacturing plan

Next week's individual goals

- Roshan Patel
 - Do more background research on design manufacturing
 - Look at online vendors for material acquisition
- Keleous Lange
 - Look into fabrication methods
- Tanya Predko
 - Do more background research on design manufacturing
 - Look at online vendors for material acquisition
 - Begin working on the expenses spreadsheet
- Joseph Koch
 - Order materials
 - Schedule design consultation
 - Finalize fabrication plans

Timeline

[illegible]

Update	X														
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Filled boxes = projected timeline
X = task was worked on or completed

Previous week’s goals and accomplishments

- Completed preliminary report