

OstoSeal: Waterproof and reusable ostomy pouch shower cover

Client: Mrs. Tami Mlodik

Advisor: Prof. Duc-Huy Nguyen

Team Members:

Eve Vosters (evosters@wisc.edu) - BWIG

Cassity Dechenne (dechenne@wisc.edu) - Co-Leader

Addison Tanner (artanner@wisc.edu) - Co-Leader

Kira Schienke (kschienke@wisc.edu) - Communicator

Lilli Tanner (ltanner5@wisc.edu) - BSAC

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Date: October 1st, 2026 - October 8th, 2026

Problem statement

This project will work towards the creation of a safe, comfortable and effective ostomy pouch and wafer adhesive cover meant to keep the two components dry during showering. Current methods of keeping ostomy pouches and adhesives are often unreliable or inconvenient which negatively impacts the users quality of life. This cover is intended to work with a schedule of at least daily showers, and must be durable and easy enough to use in order to accommodate this stipulation. This device should be firmly waterproof and compact to support a schedule of daily use. Also, it must fit the variety of pouch sizes and waistline shapes and sizes that a person could have.

Brief status update

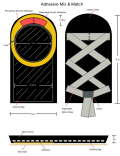
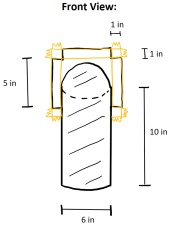
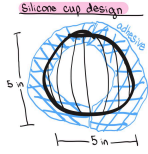
- 3D modeled both notch and wedge ring designs
- 3D printed the notch ring design prototype out of resin, assessed design, adjusted 3D model
- Meeting with client Thursday evening

Difficulties/advice requests

None at this time

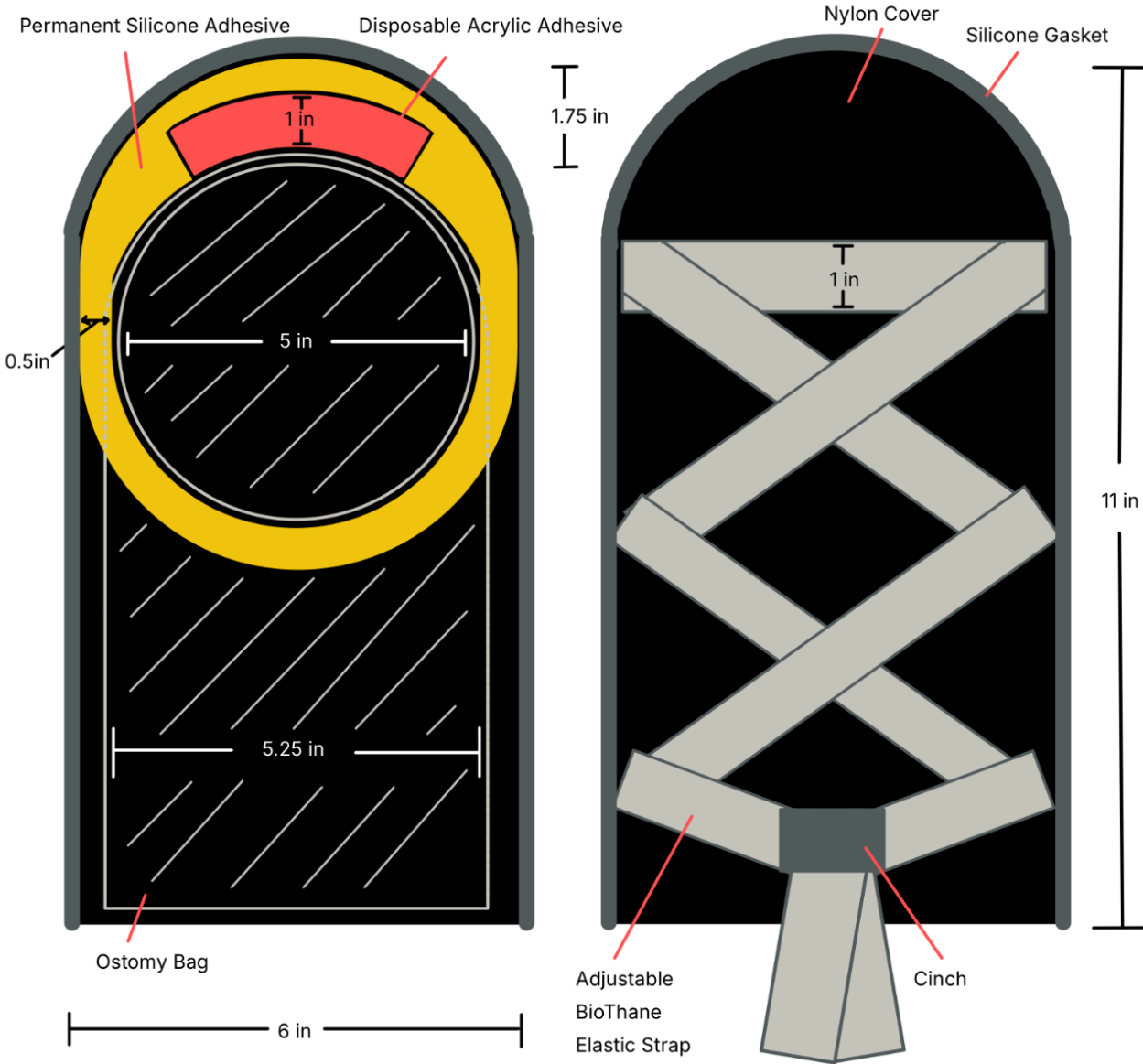
Current design

Ostomy Shower Pouch Design Matrix

		Adhesive Mix and Match 		Adhesive Strips on Flaps 		Silicone Cup Design 	
Criteria	Weight	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score
Waterproofness	25	4/5	20	5/5	25	2/5	10
Ease of Use	20	4/5	16	3.5/5	14	5/5	20
Reusability	15	3/5	9	2/5	6	5/5	15
Comfort	15	4/5	12	4/5	12	2/5	6
Ease of Fabrication	10	3/5	6	4/5	8	5/5	10
Adjustability	10	5/5	10	2/5	4	0/5	0
Cost	5	4/5	4	5/5	5	5/5	5
Total	100	Sum	76	Sum	74	Sum	66

Leading Design

Adhesive Mix & Match



Materials and expenses

BPAG Expense Spreadsheet

The team has ordered a silicone adhesive tape for skin attachment, waterproof silicone-coated polyester fabric for pouch fabrication, and Biothane elastic strap material for the adjustable component. The team has also completed 3D printing with resin filament provided by the UW–Madison Wendt Commons Makerspace (no reimbursement needed).

Item	Description	Manufacturer	Mft Pt#	Vendor	Vendor Cat#	Date	#	Cost Each	Total	Link
Non-UW										
	Silicone Scar Sheets	LotFancy	N/A	Walmart	N/A	10/10/2026	1 pack	\$27.41	\$27.41	https://www.walmart.com/ip/Lot-Fancy-Silicone-Scar-Sheets-10-Pcs-Silicone-Scar-Tape-for-Scar-Treatment-Reusable-4-x-7-in/5440459187
	1.1oz Silpoly (Black)	Ripstop by the Roll	N/A	Ripstop by the Roll	N/A	10/10/2026	1 yd	\$17.43	\$17.43	https://riptopbytheroll.com/products/1-1-oz-silpoly
	BioThane®, 520 Beta, 2.5mm Thick	BuckleGuy		BuckleGuy		10/19/2026	6x1ft	\$1.38	\$18.21 (\$8.28 + \$8.99 shipping)	
UW Makerspace (@Wendt)										
	Resin Filament			Wendt Makerspace		10/20/2026			\$1.87	
									\$0.00	
								TOTAL:	\$64.92	

Major team goals for the last week

1. Reiterate the first prototype by making improvements.
2. Run testing protocols on purchased materials/prototype.

Major team goals for the next week

1. Prepare for show and tell
2. Add the 3D-printed ring to our prototype and begin testing on it

Last week's individual goals

- Addison Tanner: Construct a timeline with Cassity and Kira to help continue guiding the design process. Conduct research to make sure we don't have an issue with waterproofness between the objects of our final design. Brainstorm ways on how to fabricate our ring as the Makerspace said our original way would not work. Divide up who is going to fabricate what part.
- Eve Vosters: Become more familiar with fabrication techniques, including heat sealing, sewing, and ensuring the waterproofness of the bag while using various fabric addition techniques. Conduct research on the best ways to ensure the waterproofness of joints between different materials. Brainstorm ways to fabricate the ring that will connect the bag to the adhesive and what material should be used for this purpose. Improve the prototype using materials ordered.
- Kira Schienke: Create a progress timeline with Addy and Cassity to identify important due dates and share these with the team. Use campus resources and online resources to become more familiar with necessary fabrication techniques. Assist in creating the team's first prototype.
- Lana Schardt: Work to fabricate low-fidelity prototypes with the team to practice sewing and 3D printing techniques, and determine whether any additional materials need to be ordered.
- Lilli Tanner: Fabricate our design with alternative materials to practice fabrication techniques and figure out changes we may need to make to our design before fabricating with our final materials. Continue researching materials and fabrication techniques.
- Cassity Dechenne: Use Wendt cheap nylon fabric to practice sewing the bag portion of our design. Construct a timeline of due dates with Addie and Kira to help guide the design process. Continue research. Divide up responsibilities for figuring out fabrication of different aspects of the design.

Next week's individual goals

- Addison Tanner: Add to the initial prototype by including the 3D-printed ring. Begin testing on the ring connection to the bag to make sure that no water is able to leak through. Prepare for show and tell and hope that our material for our bag shows up this week.
- Eve Vosters: Reiterate the initial prototype including the 3D printed ring. Perform testing on the ring connection to the bag to ensure waterproofness of the connection. Brainstorm and design a connection mechanism between the silicone adhesive and the 3D printed ring that will ensure reusability and the ability to replace the adhesive.
- Kira Schienke: Do additional research for further design options for the adhesive ring. Draw an updated design drawing.
- Lana Schardt: Prepare for show and tell by starting to brainstorm our elevator pitch. Work with team to design adjustable straps that work with our current prototype, and determine if any additional iterations are needed.
- Lilli Tanner: Continue prototyping now including the 3D printed ring and brainstorm possible ways to connect the ring/bag to the silicone adhesive ensuring reusability and ease of use. Brainstorm and prototype connection for the adjustable straps. Prepare for show and tell.
- Cassity Dechenne: 3D print the notch and wedge rings with the improved Solidworks design. Discuss budget with client to ensure multiple printed ring prototypes will be suitable for the project. Prepare for show and tell.

Timeline

Activities

Name	Date	Activity/Previous Week's Accomplishments	Time (h)	Week Total (h)	Sem. Total (h)
Addison Tanner	10/23/2026	- Updated the group lab archives notebook - Began to look into statistical models for our testing procedures - Continued to research fabrication and testing procedures	0.5 1 1.5	3	25.5
Eve Vosters	10/23/2026	- Continued research on fabrication techniques for ensuring waterproofness of the sewed seams. - Completed the mill section of the Intro to Machining training. - Attended a client meeting to ask about further specifications of the design and to receive feedback on the prototype created.	1.5 2.5 1	5	30.0
Kira Schienke	10/23/2026	- Worked with Cassity to 3D model the ring design and print a prototype part. - Trimmed elastic ring from the 3D print scaffolding. - Continued research and recorded annotations in labarchives. - Set up and attended a live client meeting to describe our prototyping progress to our client.	2 1.5 1 1	5.5	22.5
Lana Schardt	10/23/2026	- Continued research on user interactions with medical devices and the best ways to create straightforward user instructions. - Attended client meetings to receive feedback on current design choices and prototypes. - Ordered Biothane straps for the adjustable element	1 1 .5	2.5	24
Lilli Tanner	10/23/2026	- Completed mill section of Intro to Machining training - Completed the chemical safety and biosafety training modules - Continued research on materials, fabrication methods, and how to communicate proper care of the device with the client - Attended a client meeting to receive feedback on our current design/prototype	2 2 1.5 1	6.5	25.5
Cassity DeChenne	10/23/2026	3D modeled notch and wedge ring designs in Solidworks 3D printed the notch ring design	2	4	23

		in resin • Reworked 3D models based off of prototype assessment • Continued material research and planned for future testing on ring (stress/strain/tension/compression tests)	1 1		
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