OstoSeal: Waterproof and reusable ostomy pouch shower cover

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Advisor: Prof. Duc-Huy Nguyen
Team Members:
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Date: November 13th, 2026 - November 20th, 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

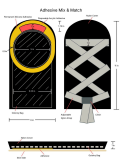
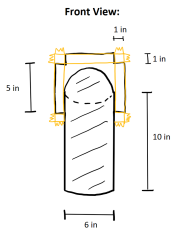
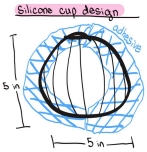
- Met as a group to fabricate official prototype
- Printed out more iterations of the ring.
- Used the laser cutter to test its behavior with the silpoly material/cut out outlines of silpoly bag.

Difficulties/advice requests

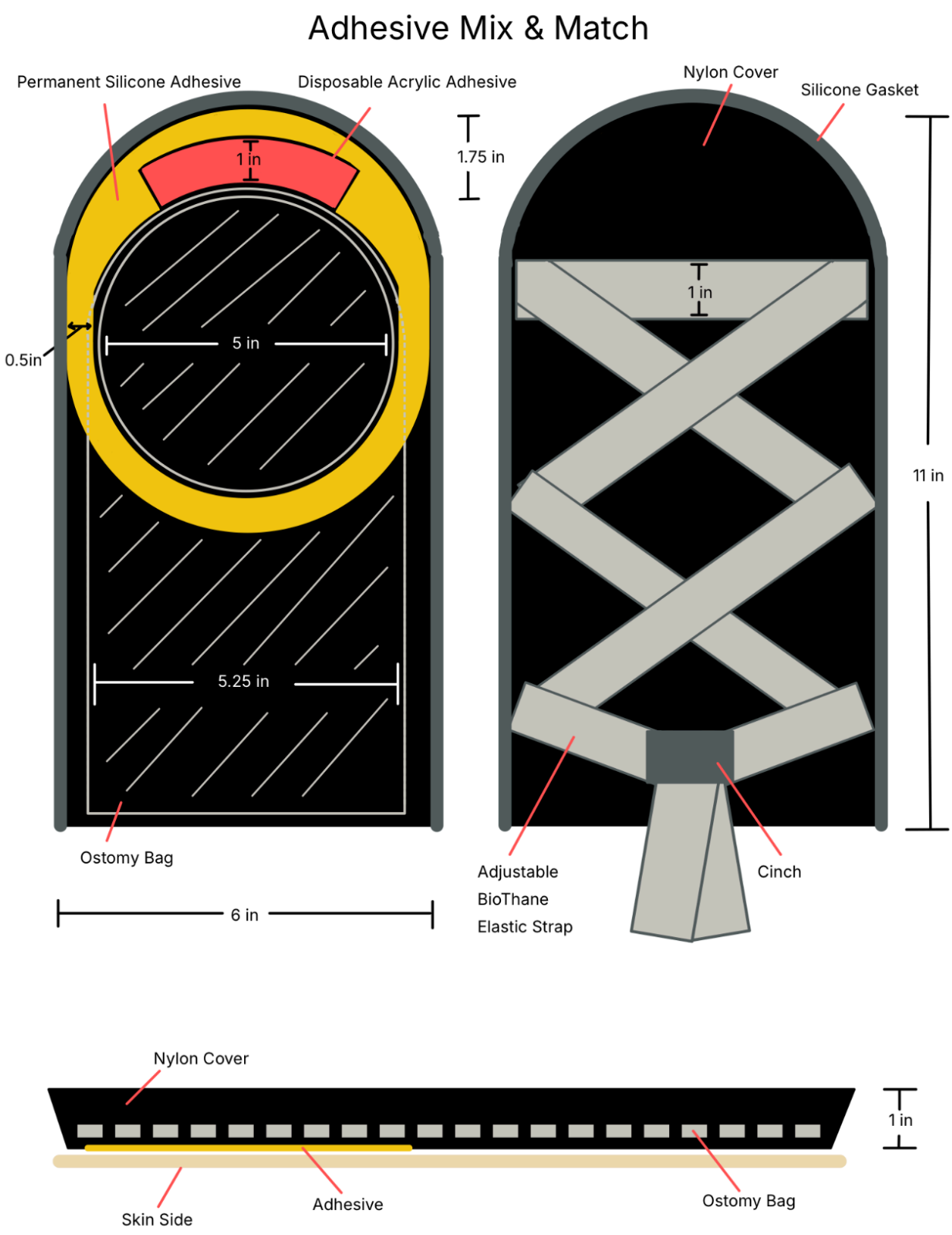
None at this time

Current design

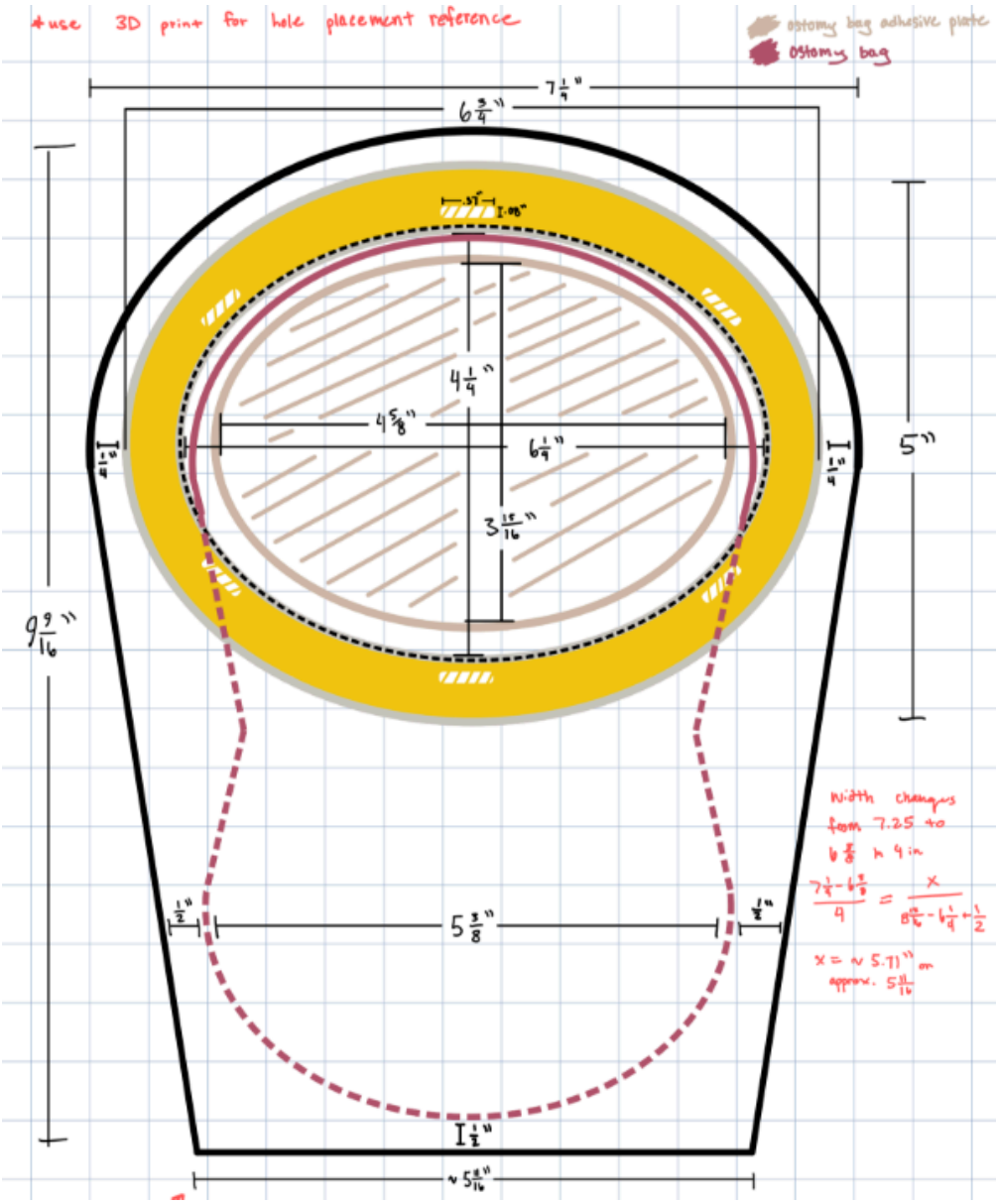
Ostomy Shower Pouch Design Matrix

		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 (9-30-2026)



Updated Design (10-27-2026)



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/LotFancy-Silico

										ne-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://ripstopbytheroll.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. Figure out the most viable option for cutting the small and large holes in the silpoly fabric.
2. Continue experimenting with fabric-to-ring, ring-to-silicone adhesive, ring-adhesive-skin connections.
3. Finalize ring design.

Major team goals for the next week

1. Complete majority of projected tests.
2. Create and finalize a schedule for the remainder of the semester.
3. Have 1+ completed and tested final prototypes

Last week's individual goals

- Addison Tanner: Figure out if we are going to use the laser cutter or if there is a different fabrication technique that we should use. Refine the ring design to make sure that it is easy to use for the client. Make sure we have a steady plan for the rest of the semester by talking with the other 300s

- Eve Vosters: Brainstorm replaceability of the silicone adhesive to ensure long term use of the entire product. Refine ring design and bag to ring connections using different fabrication techniques. Improve sewing techniques to make bag shape more accurate to design and ensure waterproofness of corners.
- Kira Schienke: Cut fabric for prototype using laser cutter or rotary cutter if laser cutter produces complications. Sew together cover using silpoly fabric. Adhere silicone adhesive to TPU ring. Attach TPU ring to cover without silicone epoxy.
- Lana Schardt: Test the final ring and bag prototype connection and see if any changes need to be made. Examine laser cut fabric for fraying or ripping and find solutions to reinforce fabric edges if needed. Help the team keep the labarchives notebook up to date.
- Lilli Tanner: Test waterproofness of seams in the most current bag prototype and improve sewing technique to make the final bag form more uniform and accurate to design dimensions.
- Cassity Dechenne: Create a final formulation of the ring design. Figure out the final process for cutting silpoly fabric (both the small and large holes). Test silicone with ring designs in shower-like conditions.

Next week's individual goals

- Addison Tanner: Stay on track with the schedule created for the rest of the semester. Do lots of testing and start planning our final poster and report so that we can get ahead.
- Eve Vosters: Complete a prototype for the final iteration of the design using the silicone glue, TPU rings, silicone adhesive, and silpoly fabric. Assist with testing on the ability for the silicone adhesive to hold the weight of the bag, and decide if adjustability straps seem feasible for the project based on these results.
- Kira Schienke: Work with the team to create a prototype that completely matches our fabrication protocol and includes the final materials and specifications of our product. Update and improve the design drawing to match any final iterations to the design.
- Lana Schardt: Help team assemble first high-fidelity prototype, and test the waterproofness of the TPU-silpoly fabric connection.
- Lilli Tanner: Test waterproofness of old bag prototype now that seam sealant is added. Work with the team to fabricate a final iteration of the design and help conduct necessary testing.
- Cassity Dechenne: Send in new iterations of ring design. Test ring with silicone adhesive in a shower-like setting and write up results from testing. Create and send out a schedule/itinerary for the remainder of the semester.

Timeline

OstoSeal Project Timeline

Activities

Name	Date	Activity/Previous Week's Accomplishments	Time (h)	Week Total (h)	Sem. Total (h)
Addison Tanner	11/13/2026	• Met with my teammates to create an iteration of a final prototype • Started to plan for the rest of the semester as it comes up quickly! • Looked further into what statistics can be used for our final report	1.5 0.5 0.5	2.5	36.5

Eve Vosters	11/13/2026	• Meet with teammates at Wendt Design & Innovation Labs to work on the final iteration of the design using all of the final materials and prepare for future testing. • Compiled list of tests and iterations that must be completed in the next couple weeks before the project ends	2 0.5	2.5	38.5
Kira Schienke	11/13/2026	• Worked on a new design drawing for a different view of the cover • Met with team members to work on prototype that encompasses our final design	1 2	3	35
Lana Schardt	11/13/2026	• Reviewed list of tests that need to be completed in the next couple week and created a timeline for the team to follow and make changes if needed • Helping teammates prototype on friday	1	1	30
Lilli Tanner	11/13/2026	• Conducted preliminary testing on waterproofness of material and seams using bag prototype • Met with team members to fabricate next prototype	0.5 1.5	2	33.5
Cassity DeChenne	11/13/2026	• Applied silpoxy to initial no-hole bag design in order to test for seam waterproofness. • Created additional ring iterations. • Utilized the laser cutter on silpoly material. • Helped teammates to create an initial final prototype.	0.5 1 1 1	3.5	35.5