

SHOULD YOU HELP?

POSSIBLY. MAKE SURE SOMEONE NEEDS FACE SHIELDS AND CAN ACCEPT THEM.

If you are a maker space, a light manufacturer or just a handy family, this may be a way for you to give back. There are a just a few things you need to make this happen.

Connections to hospitals

You should figure out who to talk to at a hospital see if they have a need for face shields.
See if their Infection Control department or their Materials department will approve use of this mask.
Be very clear that this mask is **intended for one-time use and might be difficult to disinfect before or after initial use.**

Money

It's about \$1,500 in materials to make 1,000 face shields.
We suggest selling these to the hospitals, not donating them to make sure your organization will be able to keep working on this and not lose steam. Incentives work.

Equipment

You will need a laser cutter or steel rule die, a stapler, a shear and a heat sealer.
You could probably get by with scissors, an Xacto, a stapler and Ziplocs.
Wear gloves and find an area you can keep segregated and kept clean.
The shields don't need to be sterile, but good manufacturing practices are important.

Labor

You need people to assemble them, package them and ship or transport them.

REVISIONS

V1 INITIAL RELEASE

V2 TALLER SHIELD, SHORTER FOAM, REVISED STAPLING

V3 FEWER STAPLES, ADDED "HOW TO" AND THIS COVER PAGE

V4 UPDATED DISCLAIMER. STAPLE DESCRIPTION AND DIMENSION ADDED.

LEGAL DISCLAIMER

This face shield design and specifications are being provided as a free service to the community during this public health emergency. This face shield is not intended to prevent specific diseases or infections. Individuals or organizations that manufacture face shields utilizing the design and specifications are responsible for any federal or state regulatory requirements that apply to the manufacture of face shields intended for medical use, and are responsible for informing health care providers to which the masks are supplied that they are responsible for decisions regarding appropriate personal protective equipment for their personnel. Individuals and organizations are free to use, copy and share this design and specifications, including for commercial manufacture, without payment of any fees or charges, but may not assert ownership in the design and specifications, ownership of which belongs to the Board of Regents of the University of Wisconsin System and/or the individuals who created the design. EXCEPT WHERE SPECIFICALLY PROHIBITED BY LAW, NO WARRANTIES OF ANY KIND ARE OFFERED FOR THE FACE SHIELD DESIGN AND SPECIFICATIONS, INCLUDING WARRANTIES OF NON-INFRINGEMENT AND FITNESS FOR A PARTICULAR PURPOSE.



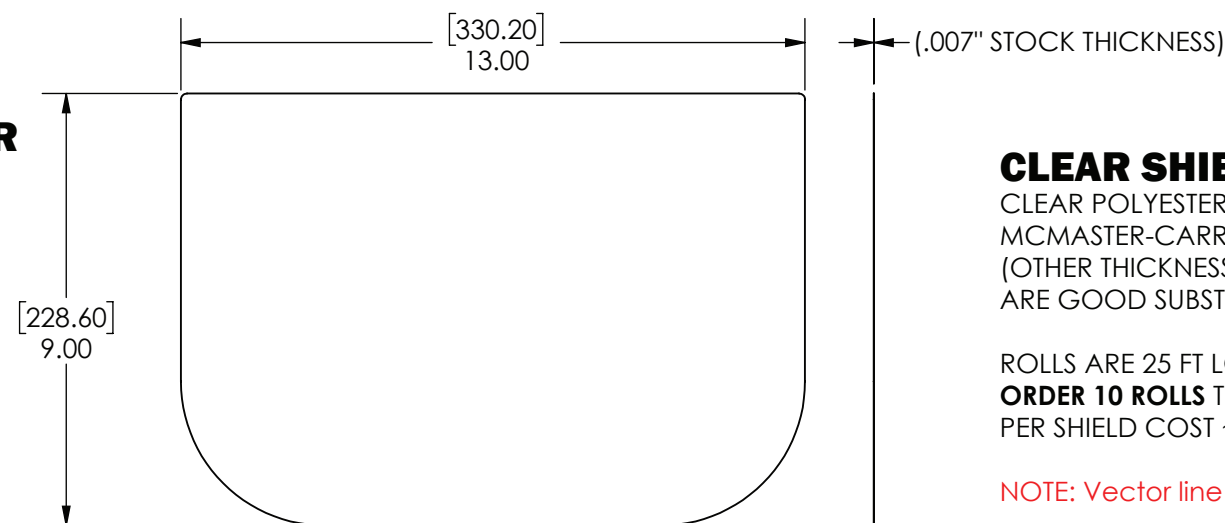
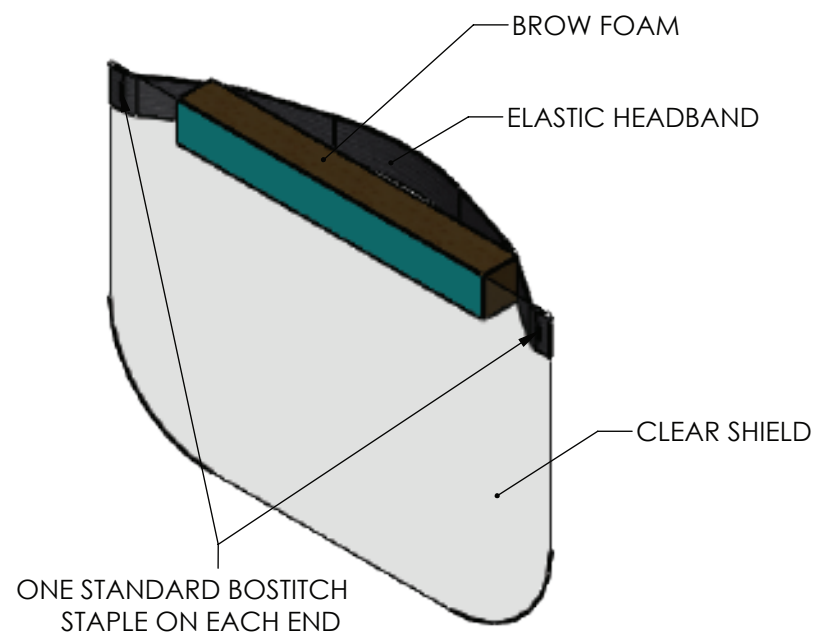
OPEN SOURCE FACE SHIELD V4

DELVE | MIDWEST PROTOTYPING | UW MAKERSPACE
WWW.DELVE.COM EMAIL JESSE.DARLEY@DELVE.COM WITH SUGGESTIONS
<https://making.engr.wisc.edu/shield/>



MATERIALS LIST

~ \$1,500 TO MAKE 990 FACE SHIELDS WITH MCMASTER-CARR PARTS AND A STAPLER

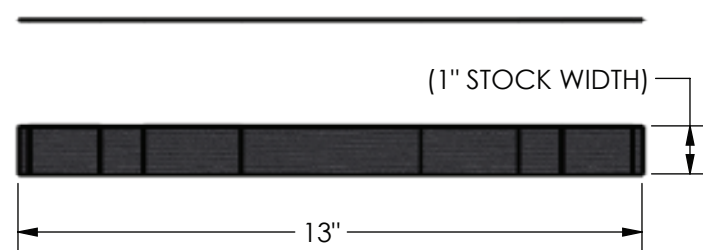


CLEAR SHIELD

CLEAR POLYESTER FILM - 0.007" THICK
MCMASTER-CARR PART NUMBER 8567K64 (<https://www.mcmaster.com/8567k64>)
(OTHER THICKNESSES AND MATERIALS SUCH AS PET, PETG, POLYCARBONATE ARE GOOD SUBSTITUTES. BONUS FOR ANTI-FOG COATING.)

ROLLS ARE 25 FT LONG X 40 IN WIDE AND COST \$78. YOU CAN GET 99 PARTS FROM A ROLL.
ORDER 10 ROLLS TO MAKE 999 SHIELDS
PER SHIELD COST ~\$0.79

NOTE: Vector line work is included on Page 4 of this drawing for laser and die cutting

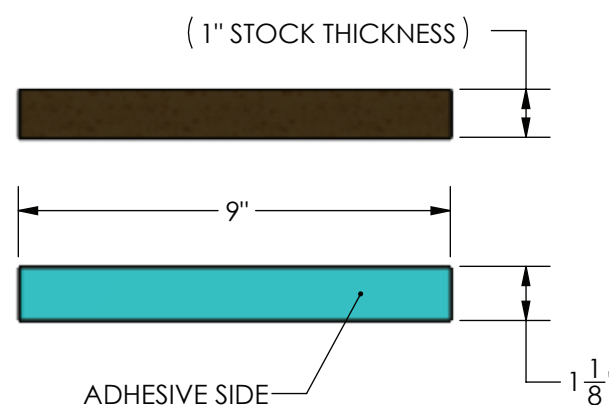
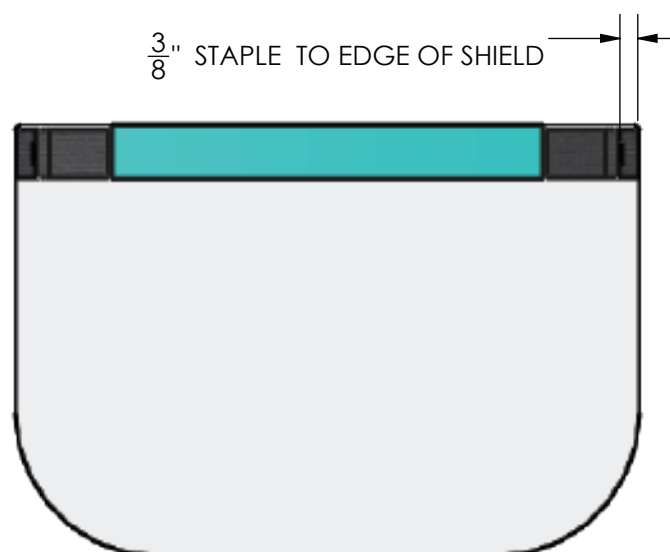


ELASTIC HEADBAND

ELASTIC LATEX FABRIC (1" WIDE X 13" LONG)
MCMASTER-CARR PART NUMBER 88225K68 (<https://www.mcmaster.com/88225k68>)

ROLLS ARE 36 FT LONG AND COST \$11. YOU CAN GET 33 PARTS FROM A ROLL.
ORDER 31 ROLLS TO MAKE 1000 SHIELDS
PER SHIELD COST ~\$0.34

Please note that this elastic **has latex** and some people are allergic to it. It is highly preferred to use a non-latex elastic but McMaster does not offer one. Hospitals **MAY** accept latex **IF** it is clearly labeled.



BROW FOAM

ADHESIVE BACKED POLYURETHANE FOAM (1" TO 1 3/8" THICK)
MCMASTER-CARR PART NUMBER 8614K84 (<https://www.mcmaster.com/8614k84>)

SHEETS ARE 60" X 54" AND COST \$112. YOU CAN GET 288 PARTS FROM A SHEET.
ORDER 4 SHEETS TO MAKE 1000 SHIELDS
PER SHIELD COST ~\$0.40

A NOTE ON MATERIAL SELECTION

We chose these materials because they are simple to order and come from one supplier. As this design catches on, it's likely that McMaster-Carr will struggle to keep up. We encourage you to find alternative suppliers. Many different clear plastics will work, even transparency film! Many foams will work and glue can be substituted for adhesive backing. We know this can be daunting, but you can do it. Use your inner MacGyver!

SIZE B SHEET SCALE 1:4

OPEN SOURCE FACE SHIELD V4

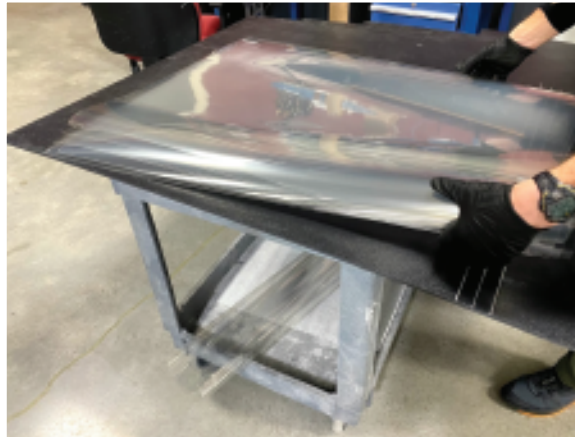
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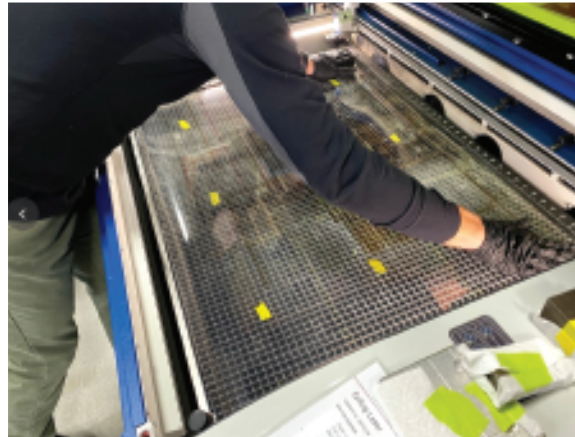
HOW TO MAKE IT

THIS IS OUR METHOD, BUT PLEASE EXPERIMENT AND FIND A BETTER WAY.

PREP COMPONENTS



Cut clear plastic into rectangles that fit your laser cutter bed.



Mark centers of each shield on bed of cutter.



Weigh down each shield to avoid curling. Experiment with speed and power of laser.

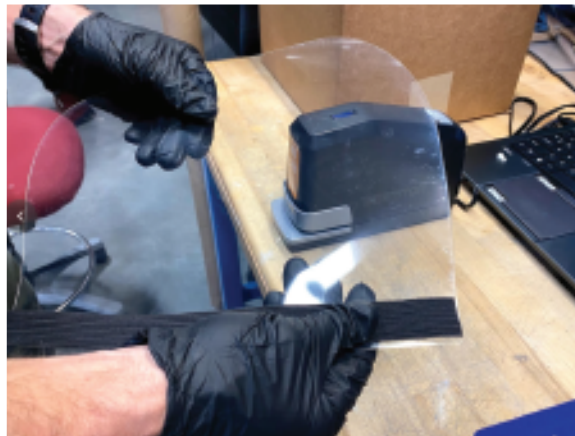


Cut elastic straps to length.



Cut foam to length and width using a shear, Xacto blade or scissors.

ASSEMBLE



Line up elastic with edge of shield, slightly below the top of the plastic.



Insert into electric stapler. This should staple about 3/4" from end of strap.



Remove liner from foam to expose the adhesive.



Center foam along top edge of shield and press down to get the adhesive to stick.



Compress the foam with your thumb to get the elastic to lay flat. Staple the other end of the strap.

BAG (10 PER BAG)



Find a bag that will fit the number of shields you want to ship. We ship in packs of 10 and use a heat sealer to cut and seal the bags.



Finished bag ready to be boxed and delivered.



We use 16" x 16" x 16" boxes that hold 100 face shields each (10 bags of 10).

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