

Instructions for Homemade Medical Grade Fabric Masks

DO NOT SPRAY THIS MATERIAL WITH ANY TYPE OF DISINFECTANT AS IT COULD CAUSE OUR CARE GIVERS TO POSSIBLY BREATHE TOXIC CHEMICALS AS WELL AS DEGRADE THE MATERIAL

This mask consists of two layers of HALYARD H600 medical fabric. The blue side is the right side and will face out.

The mask has passed the Respirator Fit Test. **Please note that the masks will be sterilized after they are returned to the hospital.**



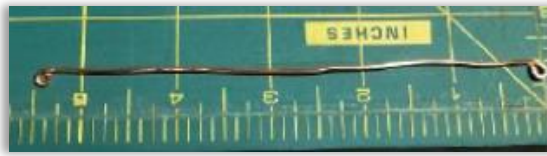
Supplies

- ✓ Medical grade fabric (Halyard H600) (supplied by hospital). The blue side will be the outside of the mask and the white side the inside of the mask.
- ✓ One 6" piece of 18 – 20-gauge that can be formed to the nose and it maintains its shape. (not aluminum as it is too soft). **It is the instruction of Infection Prevention to use of 18 – 20-gauge stainless steel, galvanized steel, steel with copper core, or .042 aircraft stainless steel lockwire. We will also accept brass and copper.** (Supplied by hospital when possible)
- ✓ Yarn, size medium # 4 (used for ties) **OR** Tight weave cotton (quilting cotton) can be used to make the ties.
- ✓ Cutting mat, ruler, rotary cutter if available
- ✓ Sewing machine, **Cotton thread**, scissors, sewing clips/paperclips, seam ripper
(NOTE: To avoid holes in the fabric, do not use pins)
- ✓ Jewelry pliers or needle nose pliers and wire cutters

Please experiment on a scrap of the material and report to the group what the best size needle is for this material. Also, please let us know how many masks you can make before the needle dulls.

Directions:

1. Prepare the wire. Make a small loop on each end of the wire and press flat. The loops should be facing the same way. Make sure there are no rough edges that could poke the wearer or damage the mask.



2. The material will come to you in sheets of different sizes Lay out instructions for each size are at the end of these instructions. If you can think of a way to improve them, please report to the group. When you cut the material the plys, one blue and one white will come apart on their own. The blue side will be the outer side of the mask, and the white side will be the inside of the mask. This distinction is important for sterilization.
3. Cut one two-ply piece of the Halyard fabric to 7" x 8" (mask body - one blue, one white) and one 1" x 34" piece for the ties. (tie/binding fabric). The mask will be made using both the blue and white ply. The 7" sides will be the width across the top and the bottom of the mask. The 8-inch sides will be pleated. Three pleats will make the final mask 4" deep. The ties will be made using just one ply, so separate the blue and white plys. If you are making ties from one ply you will need to cut two 36" strips.
4. Layer the 2 pieces of 7" x 8" fabric on top of each other (one blue, one white). Sew a 1/4" seam allowance on the 7" sides. The blue side will be the outer side of the mask and the white side the inside of the mask.
5. Turn the mask right side out. Finger press and topstitch the 7" sides with 1/4" seam allowance.
6. Insert the prepared wire into one of the 1/4" seam allowances. Center and put a clip on the prepared wire. This is now the TOP of the mask. When the ties are applied to the sides of the mask the wire should not be caught in those seams.
7. Mark 2" down from the TOP edge of the mask on both sides. Make three 1/2" accordion-style pleats along the 8" side as follows:

Make the 3 half-inch pleats starting at the 2" mark and clip each pleat. Space the pleats one after the other and clip them to make the mask 4" wide. Adjust the pleats accordingly. Repeat on the other side. When finished, the pleats will all be going down.

The pleats do not have to be perfect as long as the mask is 4 inches deep. This is VERY important because if the mask is too short, it won't go under the chin in some cases, and if the mask is too long, it could leave too much of a gap on the side of the face.

Do not change the number of pleats as the bottom pleat is especially important to the curvature of the mask under the chin.



8. Sew the pleats down using a 1/4" seam allowance.

9. Ties/Binding: Cut four pieces of yarn 34" long. The yarn is used to make the ties stronger. Using two pieces of yarn for each side, mark the center of the yarn and clip to the center of the mask where the pleats are. Mark the center of the 34" single-ply strip and place under the edge of the mask where the yarn is. (You want it halfway under the edge.) Fold the other side of the fabric strip over the top encasing the yarn, and clip in place (this is the "binding").



Using a 3/8" seam allowance, start sewing where the pleats are. As you sew keep the yarn in the fold of the tie/binding fabric. Stitch down the edge of the mask. Keep folding the fabric in half lengthwise and stitch all the way to the end. (***See message below**) Flip it over and sew the 3/8" seam all the way to the other end of the strip. **To reinforce, sew a second line of stitching on both sides of the mask where the pleats are.** Repeat on the other side. Note: the medical fabric does not fray so a single fold is sufficient.

Alternative Cotton Ties:

1. Cut a 2" x 34" tight weave cotton (quilting cotton) fabric. Fold in short ends over by 1/4".
2. Fold the fabric down middle and press to mark center.
3. Open and fold raw edges on both sides to center.
4. Press and clip to hold it together along the length of the tie. This will eliminate the raw edges on the binding and no need for the yarn.
5. Find the center of the tie and center of the pleat sides of mask. With centers together, insert mask into binding and clip into place.



***If you do not have the wire at this step, leave an opening in the tie/binding at the point where the wire would go. Once you receive the wire, insert and close.**

UF has a Video with instructions that can be found at:

<https://anest.ufl.edu/clinical-divisions/alternative-n95-mask-production/>

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Medical Grade Fabric (Halyard – H600) Material information and Cutting Instructions

When you receive the material, it may or may not need to be groomed. The mask itself needs to be two-ply and only two-ply thick. Some of the material is three-ply. It has been determined that the three-ply area is okay to use for the mask body, no need to separate.

Some of the material will have pieces of tape adhered to one side. Remove any tape very carefully as to not affect the integrity of the fabric as it will easily tear. The Green/blue tape is the hardest to remove, therefore, Infection Prevention has determined that it is okay to leave the tape and create mask bodies EVEN if it has tape on it, however, you want to limit the amount of tape across the mask body as much as possible.

There will be some areas around the edges of the larger sheets that are only one ply thick. Use those to make ties. You will notice that the edges of the material are fused together, sort of like selvages. You can use these to make ties but do not incorporate them into the mask itself.

Minor damage is ok, like on the left. Damage like on the right is not okay and will need to cut around or discarded.



The blue and white “Flags” can be ripped away and discarded. This material is wrinkled and CANNOT be ironed.

There are 5 different sizes of material.

SUGGESTED LAYOUTS

TWO-PLY SQUARE

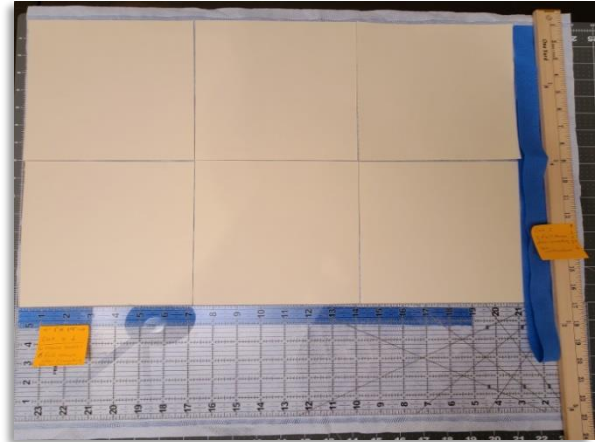
22 x 24

The length of these squares will require piecing together two "HALF" ties to make a full 36 inch tie.

This material will yield 6 mask bodies and 8 tie sets following the layout in this image. If laid out as shown on this size material, you will have 6 inches across the bottom portion to use for the HALF ties, and two HALF ties from right side.

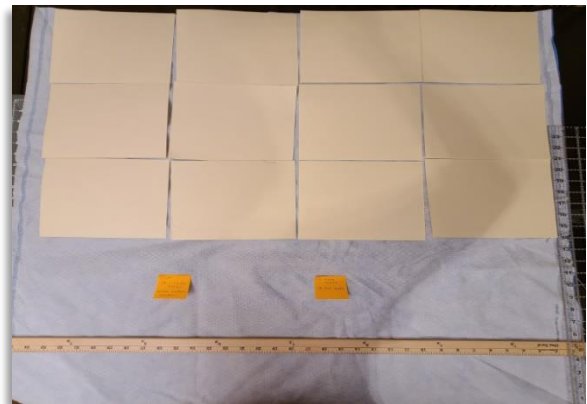
Sewing instruction for the HALF ties:

These strips are 19 inches long. Overlap 1 inch and box stitch with X inside. This will create a tie 36" long.



35 x 36

This material will yield 12 mask bodies and 14 tie sets following the layout in this image. If laid out as shown on this size material, you will have 14 inches across the bottom portion to use for the ties.



TWO-PLY WITH STRIPS

Two-Ply with two strips (three-ply) – All shaped like image. The blue strips across the white is a third ply that will need to be removed carefully. I found it easier to remove AFTER I cut the mask bodies out. You could also remove before cutting and use for ties.

39 x 46; This size will yield 12 masks and 12 tie sets and 1 single tie

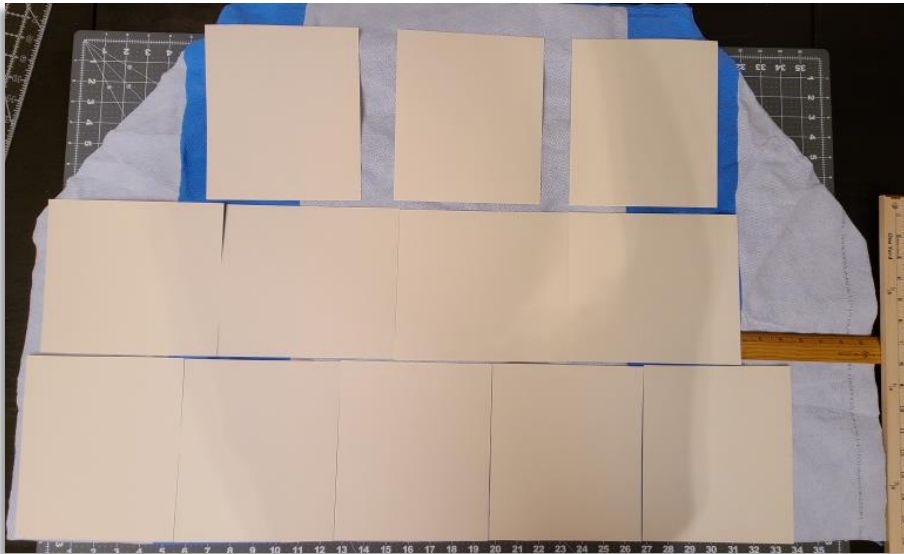
40 x 54; This size will yield 14 masks and 14 tie sets and 1 single tie.

47 x 60; This size will yield 20 masks and 20 sets of ties.



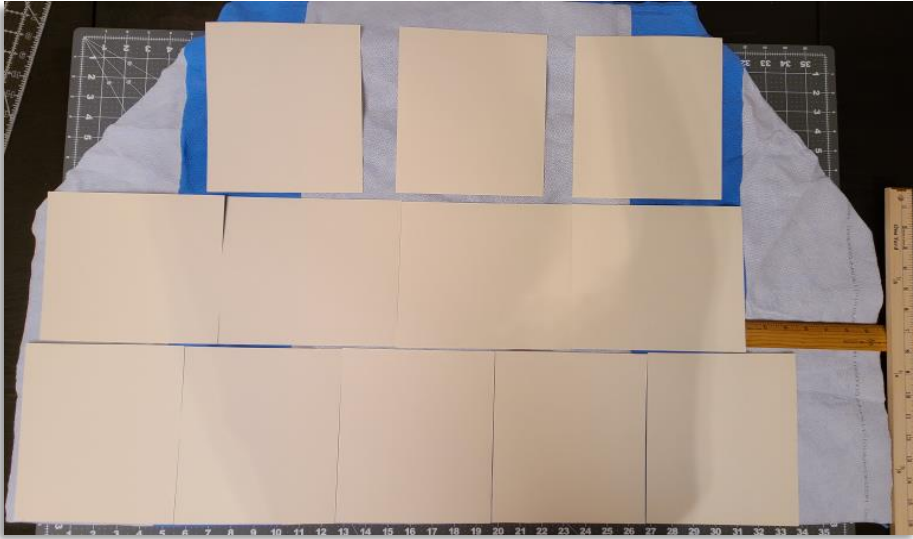
Below are the layouts for each size:

39 x 46

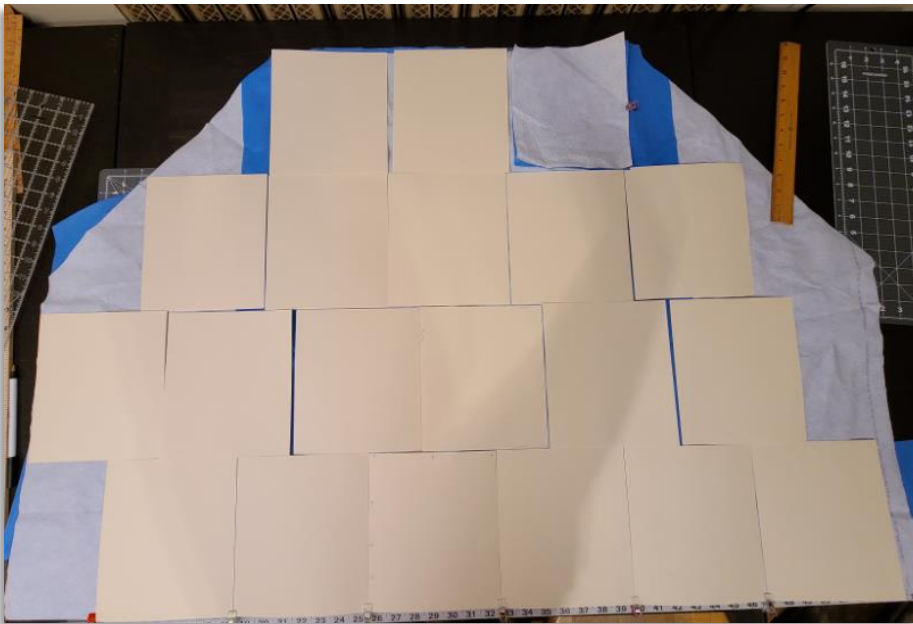


40 x 54

This is a bit wider than the previous one, so you can add a fourth to the top row giving you 13.



47 x 60



TMH Halyard Face Mask. Version 3.4-7-20