



Using the cardboard model as a guide, I created a CAD design in SOLIDWORKS. I designed the part as a sheet-metal part, allowing the three-dimensional design to be flattened.



Figure 5 Cardboard model

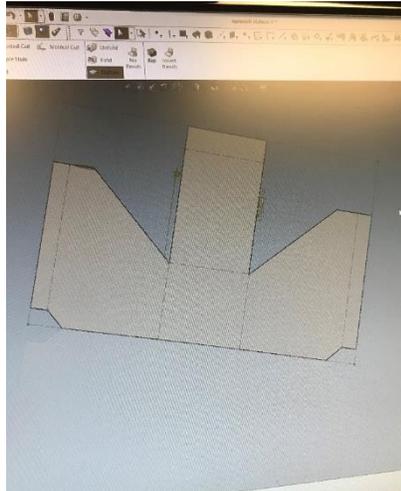


Figure 3 Flattened model



Figure 4 3D/folded model

After completing the CAD design, I created a program and location file using Mastercam to be used by the CNC router. Using this file, I was able to cut a 45" by 35" piece of 0.118" polycarbonate on a Thermwood CNC Router.

Next, I used a calrod to heat bend the polycarbonate to form the three-dimensional shape of the eyewash-station cover.

To completely attach the top edges of either side with the top of the cover I needed to bend corner attachments the same length of these sides and rivet them to the main cover. I did so with 18.25" by 2" pieces of polycarbonate which I also bent with a calrod. After making the attachments, I placed them in their designated placements on the cover. I then drilled holes through these pieces and the cover every 2 inches. I attached all of the components together using rivets.

After attaching the edges with rivets and peeling off the protective film, the cover was ready to be mounted. I used a level and a tape measure to ensure the correct placement and mounted the cover with two drywall screws.

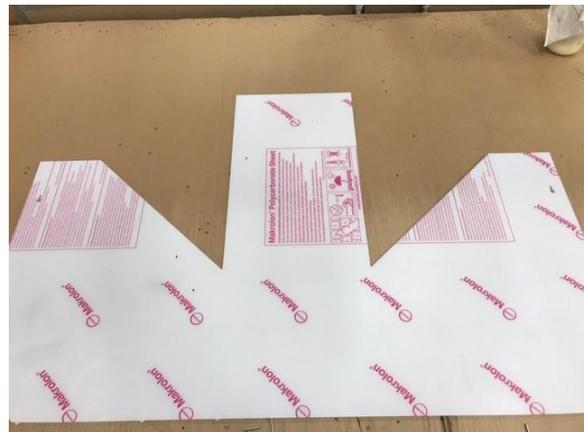


Figure 6 Polycarbonate after CNC Routing



Figure 7 First bends on the eyewash station cover



Figure 9 The corner attachments



Figure 8 The attachments and cover attached with rivets



Figure 10 The finished eyewash-station after installation.