

Fabrication Experience Logs

Building a Seat from Rigid Foam

Created By: Yaron Adar
yadar@u.rochester.edu

Motivation

Needed to recreate a foam-core fiberglass seat for Baja SAE's new car. This is how we make foam shapes for molds in general.

Safety

Never put your hand in the path of a cutting blade.

Carving foam makes a LOT of dust. If you have a respiratory condition, wear a dust-mask.

Safety Equipment:

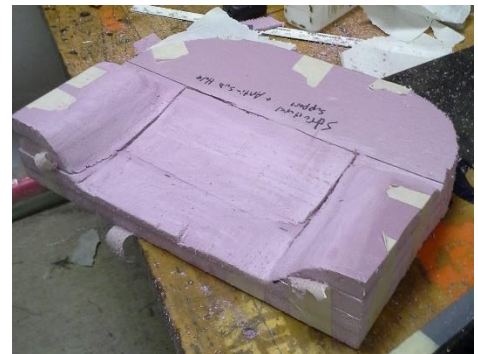
- Safety Glasses
- Work Gloves if you are concerned about cuts

Tools and Resources

- XPS (extruded polystyrene) Insulation Foam
- Drawing Tools
- Hand Saw
- Plaster Rasp
- Sand Paper
- Masking/Duct Tape
- A small workspace where you can make a lot of dust.

Steps

1. Get a foam block, or a stack of taped foam blocks, that is about the size of the seat you want.
2. Draw where you want to cut/carve/add blocks on the top and sides of the foam block.
3. Cut the perimeter and other easily-cut sections. Use the rasp to carve-out the rest.
4. Tape the uncarved additional blocks to the main block.
5. Using the rasp and sandpaper, carve and smooth the curves of the seat.
6. Cover with duct tape or fiberglass to keep the foam sections together.



Tips

- When making complicated cuts (e.g. between adjacent sides) draw solid lines where the cut starts and ends and dashed lines between those lines' end points. This will help you orient your blade, keep the cut on-track.
- Cutting first, rasping second, sandpaper third helps with accuracy and fine details.
- Duct Tape and Masking Tape work well for joining blocks. I have never had a good experience using spray adhesives with this type of foam.