

Wing Construction Outline

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This is a step-by-step guide explaining how to construct the UAS wings out of foam.

Materials/Resources

- Large hot wire capable of reaching at least 12 volts
- Exacto knife
- Heavy weight
- EPP Foam (at least 6 ft x 1 ft x 2 in)
- Masking or duct tape
- Wood or metal (for airfoil template)
- Table or surface to work on
- Nearby outlet
- Box fans
- Two 1/8th inch screws
- Tape measure
- Sharpie or pen

Procedure

1. Create a wooden or metal template of the NACA 4512 airfoil. Make sure the material can withstand high heats and has screw two screw holes.
2. Measure out 2 ft 7 inches on the foam. Mark this length with a line across the foam.
3. Measure out 6 inches on the foam (width). Mark this length with a line across the foam.
4. Set up hotwire according to instructions. Make sure that the cord can reach entire distance while cutting.
5. Set up box fans and open doors so that fumes will exit the area while cutting.
6. Lay foam on cutting surface and place a heavy weight on the top of the foam.
7. Turn hotwire on to 12 volts.
8. Cut foam long ways first - across the 2 ft 7 in line. The key is to go very slowly without stopping. Do not apply much pressure - let the hot wire do work for you.

9. Turn hot wire off
10. Let wire cool before wiping any foam residue off with paper towel