

Capacitive Sensor Fabrication Procedure

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1. Mix thoroughly equal volumes of Parts A & B of EcoFlex 00-30 (approximately 20 ml total).
2. Carefully pour the silicone mixture into the mold, avoiding bubbles as much as possible. Level out with a wooden stirrer. Let cure at room temperature for four hours.
3. Identify the stretchable axis of the conductive fabric. This must be the direction that the fabric is tensilely strained in. Cut two pieces of fabric according the dimensions of the inner mold and include a single "flap" that measures 10 mm x 15 mm (see the drawing on the GitHub). These flaps will be where the alligator clips connect. Also cut two square 20 mm x 20 mm pieces of regular fabric.
4. Carefully lay one of the cut pieces of the conductive fabric onto the cured mold. Laminate the fabric with a thin layer of well-mixed EcoFlex 00-30 to adhere it to the mold. Be sure to not get any silicone elastomer on the flaps. In addition, place one small square of regular fabric along the flat portion of the mold, overlapping with some of the cured silicone but making sure not to touch the conductive fabric.
5. After a couple of hours of curing, carefully remove the sensor with the now-adhered fabric from the mold using the Xacto knife. Flip over, lay the other piece of cut conductive fabric on this side so that it is aligned with the other piece of fabric on the opposite side, and laminate as before, taking care to not get any silicone on the flap. Adhere the square piece of fabric as before also.
6. After curing for a couple of hours, carefully removed the sensor from the mold again, and trim as necessary, making sure to keep a consistent border of silicone around the conductive fabric.