How to Make a Boffer

It's highly recommended you read this through and have a plan before moving forward into each step. Matching the outer diameter of your core to the inner diameter of your foam will save you some trouble, just make sure it isn't too tight. Check the pipe with the foam before buying to make sure it fits well but not too loose or too tight.

Tools

The primary tool needed is a pair of scissors. A long boxcutter-style razor can make certain parts easier but isn't necessary. For the cover choosing to sew a cloth cover requires more tools than using duct tape.

Getting Started – what are you making?

Pick a weapon to make

For your first weapon we recommend you start with something simple, like a sword. A one handed sword at Anomaly is between 18" and 45", but pvc swords get too heavy and whippy when over 35". The estimates below are based on a 30" weapon.

Core

The length of your core will be the length you want your weapon minus 3". If you want a 30" sword, start with a 27" core. Because of differences in foam it will not be exact – if you are over a little bit, the weapon will be accepted. Also, a longer weapon isn't really a better weapon. If you have a core of 27", a 30" sword is an excellent weapon.

First, determine your core material. You will always want a tube if possible as opposed to a rod, though it can be hard to find fiberglass tubes (easy to find fiberglass rods). Cost listed is per long weapon.

Carbon Fiber - extremely light and stiff, and tough, but relatively expensive and length options are limited. The diameters available DO NOT work perfectly with foam options, you would want a 10mm or 12mm carbon fiber core for cost, but then will have to add a layer of craft foam bumpers to get the fit right. A good carbon fiber tube isn't whippy at any length. Between $10 and $50.

Fiberglass – a good middle ground, good weight to strength, fairly inexpensive. It's possible to use old golf club shafts, but they are too thin for what we're doing here and require different construction. Fiberglass can be 'whippy' at long lengths, and the rods are often too thin to work for simple boffers. Between $0 and $25.

PVC – the classic, ½" up to ¾" pvc pipe from your local hardware store. Inexpensive, but heavy. Whippy at all but short length. Max length of a PVC core weapon is 35". About $4. For our example we'll use PVC.

Other – no other material is allowed at this time. If you find a safe new core material, let us know! No wood (splinters when it breaks) or metal (too stiff, very sharp edges when it breaks).

Padding – pipe insulation

Now you will need to find foam to fit your core. This is also easy to find at your local hardware store, it is sold as insulation for copper tubing, in lengths of roughly 6 feet. If you can get the pre-sealed version, it's a better choice. Make sure it fits over your core. About $1.

Other padding – yoga mat

You will also need yoga mat material, which can be found as a yoga mat, or other tough and durable but soft foams. It needs to be at least ½", and retain the strong outer finish on both sides. It will play a critical role in the safety of your weapon, so it is mandatory. It doesn't take much though – one yoga mat is enough to make 50 weapons, or

more, of the type we're making here. Ask – the game owner may have some, or other people who are making weapons. About $0.50 (upwards of $20-$30 for the whole mat).

Other Other Padding – yellow foam

Basic yellow foam, often bought in sheets large enough to make hundreds of weapons, but also recycled from furniture. The yellow foam goes at the tip of the weapon. You'll be using roughly 2" tall and 2" or 3" diameter cylinder of it. About $0.25.

Glue

We'll be using standard rubber cement, DAP, only use DAP, the other ones just don't work. A 3oz of DAP will make more than 20 weapons, you can ask the game owner or anyone else making a weapon to borrow some. About $0.25.

Reinforcement

You'll need a rectangle of light, non-stretchy fabric, about 8" x 4". We use lining material, same as the cover.

Cover

For this weapon we'll be using a sewn cover. Duct tape can also be used quite effectively. About $0.50.

Step 1 – core and pipe insulation

Have the store cut your core to the length of your weapon minus 3". We're making a 30" sword from PVC, so we cut our PVC to 27". You can also cut it yourself with a hacksaw if needed.

Then, hold the core in your hand like a sword, and put the pipe insulation over it. Mark the foam to length so it gets to the end of the pipe and leaves room for your hand, and so covers the entire length of the blade.

Then cut the foam at your mark. Try to cut as straight across as possible. This is easier with the razor, but scissors work fine. Cut another piece of the pipe insulation about 1.5" long – this will be your pommel.

Step 2 – glue, yoga, and yellow foam

Cut a piece of the yoga mat to go on each end of the pipe so it will cover the end of the pipe insulation. Cut one piece of yellow foam so it will cover one piece of yoga mat (once trimmed) to a depth of about 2", at the end of the blade.

With everything disassembled, put glue on the core where the blade goes, and while it is still wet, slide the pipe insulation over the core until the end is flush. Make sure you use plenty of glue, especially near the tip. Smush it all around by grabbing the foam and moving the core around. Then line up the end of the core and the foam and let the glue dry. This takes about 5-10 minutes. When it's fully dry, squeeze the foam around the core so the glue makes contact all the way around. It's critical that the foam will not come loose over time.

Now spread glue on the exposed end of the blade, you should be putting glue on pvc and foam on this step. Also, put glue on both sides of the yoga mat material, and one side of the yellow foam. Leave it be for another 5 minutes, until dry.

Be aware that when two glued pieces come into contact, they will immediately bond. With this in mind, carefully but confidently place the yoga mat onto the end of the blade, and press it together. Then take the yellow foam and press the glued side to the yoga mat. Now all pieces should be glued and bonded permanently.

Now follow the same process for the pommel, but without the yellow foam.

Once all the pieces are glued, trim them to fit. You'll have something like this:

Step 3 – profit, reinforcement, grip and cover

Once trimmed, you now have a usable sword, if not yet complete.

For reinforcement, put DAP near and around the yoga mat on the tip, to cover about a 4" wide strip centered on the yoga mat and all the way around about an inch and a half above and below it, and coat one side of the reinforcement fabric. Once dry, firmly adhere the reinforcement all the way around. You'll have to add glue to the fabric as it makes it around, to glue the back side.

Grip is personal preference. You can use rubber cement to apply a leather grip. I prefer to use rubber cement to glue a thin rope wrapped to the handle, then cover that with some sort of grip or hockey tape.

For your covers, if you're handy with sewing or know someone who is, take a slightly stretchy fabric for your first attempt, if you make it a little smaller than the weapon itself it'll stretch in place perfectly. Yes covers plural, don't forget to make a pommel booty. Put the covers on, trim the ends to length, and tape the ends in place. Once you're good with the stretchy covers, use lining material and make it just slightly larger than the circumference.

You can also use different colors of duct tape to make something unique. If done carefully this can come out looking fantastic. Be sure not to compress the foam too much with the tape when you put it on, and use a single layer of duct tape, with only enough overlap to hold it in place.

Now you have something like this, except it cost you $7.50 instead of $50, is of lower quality and weighs more. B3 makes excellent weapons and we recommend them. They aren't cheap though, and take a while to deliver them. The one shown here includes a small guard made of eva foam (easy to add), a fiberglass core, and costs $80.