Creating inflatable latex hip pants

By KigYui (www.kigyui.com) first revision April 2025

Make your own latex inflatable hip shorts adjusting the pattern provided with Seamly2D!

It may seem daunting but it's fairly straightforward and there are no complex tight curves. I'd say it is about as complex and about as much time (and material) as making a catsuit. What you really need is patience.

Follow the instructions here

Part 1 : Introduction

I've been searching for the perfect latex inflatable hips. There are a three or four companies that make inflatable hips at various price points, but all have some slight issues. Some don't have the right shape. Some easily break due to too much pressure on the seams. Some are super expensive.

So can we come up with a design that looks great, make it fairly simple to pattern and construct, and then make the pattern available for all?

I've been making catsuits for a while, loosely based on a pattern generated by reading guides from https://www.catastacharisma.com/working-with-latex.html

The pattern for the shorts is based on that catsuit pattern, removing parts that are not needed. It does mean that to save time making a new pattern you do end up needing a couple of measurements that are probably not essential, like inside leg, but they all help get the length right so I'm going to leave them in for now.

So if you fancy making one yourself or are just interested in my process, follow along! Note that although it may seem much cheaper to make one yourself, by the time you have invested in the sheeting, tools, proper glue and thinner, and not forgetting your time, you'll wonder how any of the latex clothing companies make any profits at all!

Here's what I needed for making the hips:

- 0.5mm latex in Radical Rubber mannequin. I ended up using about 2.5m in length because I messed up a couple of panels and had to remake them. I chose this colour because it is mostly invisible underneath a lycra skinsuit (hadatai), but transparent may also be okay. I chose 0.5mm to give just a little extra structure than a default 0.4mm sheet.
- The proper glue and thinner and all the accessories you'd usually use to make later (see later)

And here's how long it took:

- Pattern printing, cutting it out: 1 hour

- Transferring to latex, cutting it out: 2 hours
- Latex assembly: 8 hours
- (Messing up two panels and having to remake them, 3 hours)
- Testing, leak testing: various

Now on to part 2, downloading and adjusting the pattern

Part 2: Download and alter the pattern

In theory we could make a few standard measurement patterns in PDF for download, like a "small" "medium" "large" kind of thing, but really these are better made to measure.

We'll be using Seamly2D for altering the pattern. I've tried to make everything in the pattern based on a formula so it can be altered to your size, but you do need to carefully look at it and do some adjustments of some lines. I'll explain those steps here.

First download the pattern and sample measurements from the files in the src directory

The "val" file is the main pattern, and the "vit" file contains my measurements (you'll alter these next).

Your measurements

Open Seamly2D open the main pattern and go to the menu to edit the "My measurements". Take the measurements the pattern needs and enter ones to match you. Latex is forgiving a little, but you must use your exact measurements, don't pull the tapemeasure tight or have it loose. The pattern is designed to reduce the measurements to ensure a nice tight fit. I've seen friends get bad fitting made to measure latex because they assumed they needed to adjust the measurements to make things tight themselves.

Since we're making shorts that will inflate to give hips we want the measurements to include the final hip size, near enough, so if you have existing foam or silicone hips use these as they'll affect your hip and upper thigh measurements. Each measurement in Seamly has a little description and some have diagrams to help figure out where the measurement is taken. Our pattern includes all the leg down to the ankle at the moment even though we cut off just above the knee.

Eyeball the pattern

Go to the 'draw' section in Seamly2D.

At this stage the pattern should adjust itself to your measurements. Take a look and compare it to mine to see if it looks vaugely correct. Some of the curves may have not worked right, and we'll deal with those next.

	Name	Full name	Calculated value (mm)
1	height	Height: Total	1,890
2	waist_circ	Waist circumference	880
3	highhip_circ	Highhip circumference	970
4	hip_circ	Hip circumference	1,120
5	crotch_length	Crotch length	760
6	leg_thigh_upper_circ	Leg: Thigh Upper circumference	620
7	@leg_thigh_lower_circ	Leg: Lower Thigh	410
8	@leg_hip_to_upper_thigh	leg: hip to upper thigh	110
9	@leg_upper_thigh_to_mid_thigh	leg: upper thigh to mid thigh	130
10	@leg_mid_thigh_to_lower_thigh	leg: mid thigh to lower thigh	150
11	@leg_lower_thigh_to_knee	leg: lower thigh to knee	65
12	@leg_knee_to_ankle	leg: knee to ankle	460
13	leg_thigh_mid_circ	Leg: Thigh Middle circumference	530
14	leg_knee_circ	Leg: Knee circumference	380

Figure 1: img

Make sure the butt pad circle (in red) fit just within the pattern piece. If not you can adjust the radius in the Variables table. You could also adjust the "thickness" of the butt pad in the Variables table. I just made a guess default and it seemed ok.

Adjust the curve from G0 down the leg, and G0B down the leg so that it roughly aligns with the points A19 and G12R. Since this is inflatable it's not important to be accurate, see my example above where we're close but not exact.

Some of the pieces we join together have curves, and those curves are different on the two pieces, but the lengths of the curves have to be the same. Latex doesn't look good if you end up having one piece more stretched than another. Because we can't have this work automatically we have the concept of "pattern zeros". What we do is take away the difference between the length of the two curves of the pieces being joined and show a line with ten times the length. If your pattern is correct then all those pattern zeros will be either in the same position, or no more than 10mm (which is 1mm in reality) different from each other. If they are not, don't worry, we'll adjust them now.

Adjusting the curves

So if the line G12Move exists we need to adjust the angle of G12 until it's nearly zero length. Click on G12 and adjust the angle in 0.1 degree increments and watch until G12Move line reduces. Then do the same with G14 angle until G14Move goes mostly away.

Next look at Z32 and Y32. They should both be about the same distance from the red circle as each other (on mine they touch it, but they don't need to touch it). Adjust the curve GXADJ-G3 and GXADJ-G12 so they're similar. We have to join those two curves later and they need to be the same length.

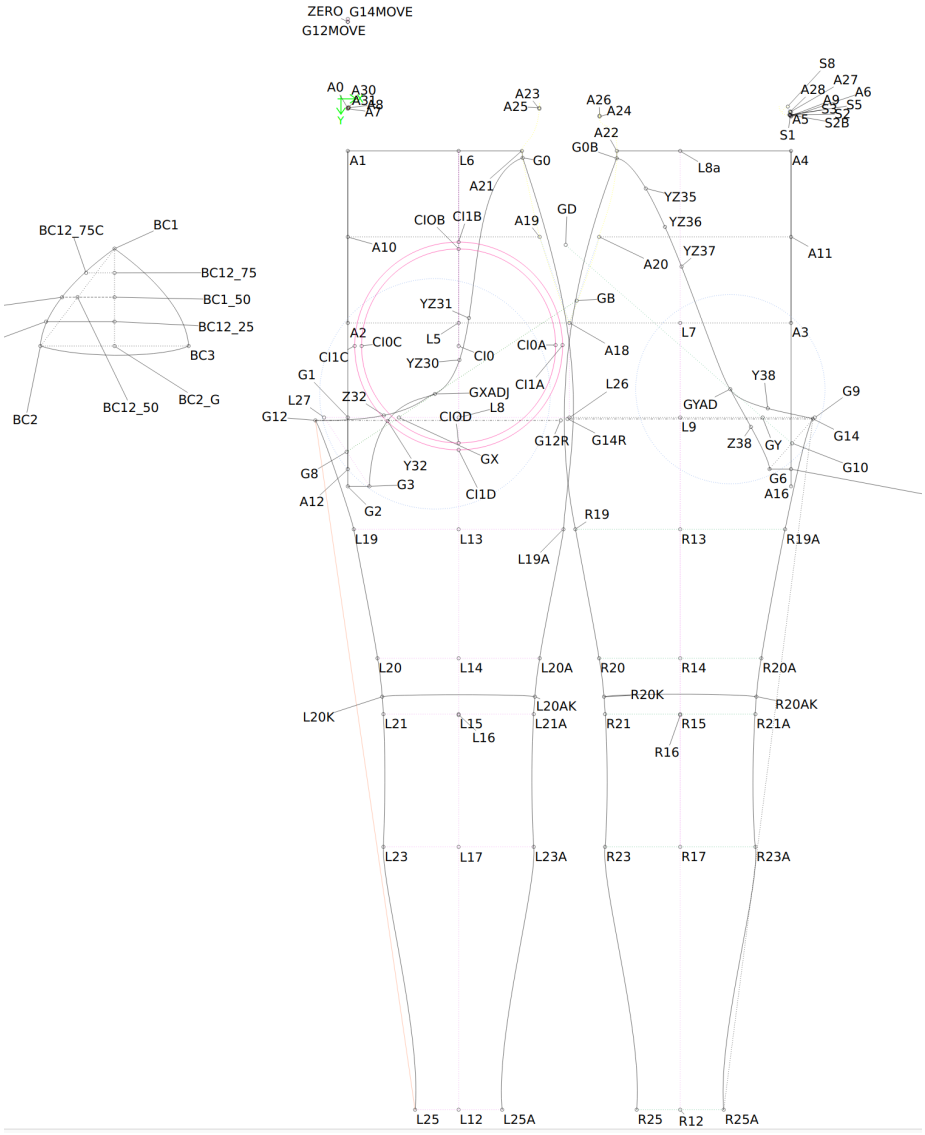

ZERO_G14MOVE
G12MOVE
BC12_75C
BC1
BC12_75
BC1_50
BC12_25
BC3
BC2
BC12_50
BC2_G
A0
A30
A31
A8
A7
A23
A25
A26
A24
A22
G0B
L8a
A4
S8
A27
A28
A6
A9
S5
A5
S2
S2B
S1
A1
L6
G0
A21
ClOB
Cl1B
A19
GD
YZ35
YZ36
YZ37
A11
A10
A20
YZ31
GB
A2
ClOC
L5
Cl0A
A18
L7
A3
Cl1C
YZ30
Cl0
G1
Cl1A
L26
Y38
G9
L27
Z32
GXADJ
GYAD
G12
ClOD
L8
L9
G14
G12R
G14R
Z38
GY
Y32
GX
G10
G8
G3
G6
A12
Cl1D
A16
G2
R19
L19
L13
R13
R19A
L19A
L20
L14
L20A
R20
R14
R20A
R20K
L20AK
R20AK
L20K
L21
L15
L21A
R21
R15
R21A
L16
R16
L23
L17
L23A
R23
R17
R23A
L25
L12
L25A
R25
R12
R25A

Figure 2: img

This is what happened when I didn't pay attention to this the first time. These two bits should have been the same length. Oops.

We don't care about anything below the line of L20K-L20AK and R20K to R20AK.

Print the pattern and cut it out

Okay, that's our pattern done and ready to print.

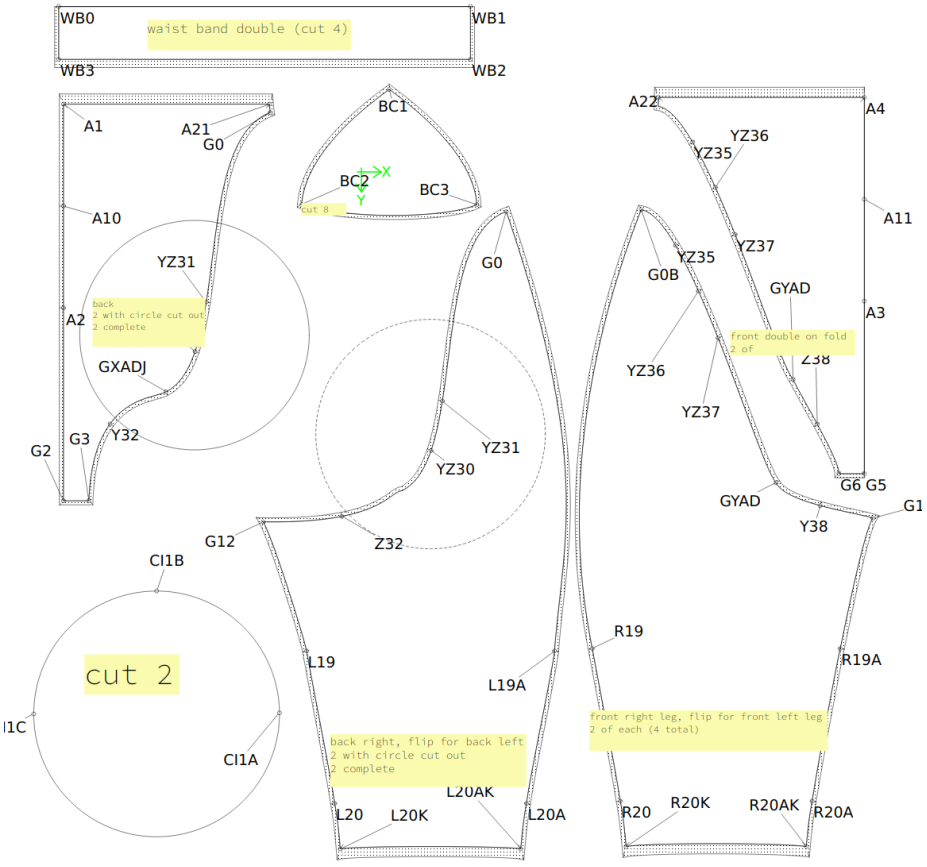


Figure 3: img

Go to the 'Details' section in Seamly2D. You can export this now as a SVG file. I imported it to Inkscape, drew a grid over it for alignment, then poster printed it onto separate sheets, cutting and sticking them together.

Label the pattern

It's also worth now labeling the pattern; the butt pad parts need to be the right way up as all the sides are not the same length, and you don't want to end up cutting latex down a line which is actually a fold line (like on the front, collar and back pieces). Notch the alignment marks, it'll help transfer them to the pattern. I use this device which creates nice alignment notches: https://www.amazon.co.uk/Professional-Garment-Pattern-Stainless-Designer/dp/B07FKQNMWM/

This step always takes much longer than you expect.

Now on to part 3: transfer pattern and cut the latex

Pattern transfer

So now you have a paper pattern cut out and ready to transfer to latex.

You now need to transfer that onto the latex sheet, being careful not to stretch the sheet. One piece of the pattern is actually folded on the centre line, so when you transfer it to latex be sure to flip it and not cut down that centre line. I did this in inkscape and printed it with both sides so I didn't forget.

Some pieces you need to cut out twice because we have an inner and an outer layer. So you should have:

outer layer: * front right leg part, two of these, flip and do two more for front left leg * back centre piece one of these normal, one fipped * back leg piece one of these normal, one flipped * waist band sections. I made four of these and laminated each pair of them so the band was a total of 1mm thick.

inner layer: * eight segments of butt cups (4 per butt cup) * a circle, we need two of these, for the back of the butt cups * front piece that was flipped on the centre line, one of these * back centre piece with the partial circle cut out, one of these normal, one flipped * back leg piece with the partial circle cut out, one of these normal, one flipped

Do make sure that you label the pieces and transfer the registration marks. Note the butt cups have one side different to the other two (and that is the "bottom") so make sure to label that.

It's always good to mark the matt side of the latex too because it's easy to not pay attention and end up putting a panel in the wrong way around (foreshadowing?)

Now you have a pile of latex ready to assemble. Relax and have a nice cup of tea. At this point I usually just end up putting it all in a bag ready to assemble on another day as cutting the latex is time consuming.

Now on to part 4: construction


front double on fold
2 of
front right leg, flip for front left leg
2 of each (4 total)
back right, flip for back left
2 with circle cut out
2 complete
back
2 with circle cut out
2 complete

Figure 4: img

Figure 5: img

Construction (Inner)

I decided to have the shiny side of the latex of the outer layer facing outwards, and the matt side of the latex of the inner layer facing inwards, but it's not visible so not really important. And I messed up and my front panel is actually reversed. That's fine no one will know.

The pattern is designed for 8mm seams for most places, but more when we come to attach the outer and inner layers.

So let's make the inner shorts. Start by assembling the inflatable butt cups by joining 4 of the petals.

Figure 6: img

You'll end up with something that looks like this. Make two of them. Pay attention to the middle join where you have 4 overlapping pieces as this is the

place where you're most likely to have air leaks. I added extra glue here and really made sure it was rolled well. You can also add a small circle of latex over the top (it's not visible in the final shorts) to help with this.

Figure 7: img

Next attach the two parts of rear panels that have the circle cut out, again make both the left and right

Now attach the butt panel into the rear panel. I glued the shiny side of the butt panel to the matt side of the hole, so it 'pokes through'. This becomes important later when we put the back piece on.

Next make some valves. This can be annoying. I had some spare latex medical grade tubing available which sticks with latex glue, so I made a small hole in a piece of scrap latex, added glue, pulled the tubing through which created a moderately good seal. Then a small strip of 8mm latex with glue on both sides was wrapped around it, making this:

You'll eventually need four of them. I made another hole in the circle, glued the valve piece to that, and added another 8mm latex strip around the back side of it.

Figure 8: img

Figure 9: img

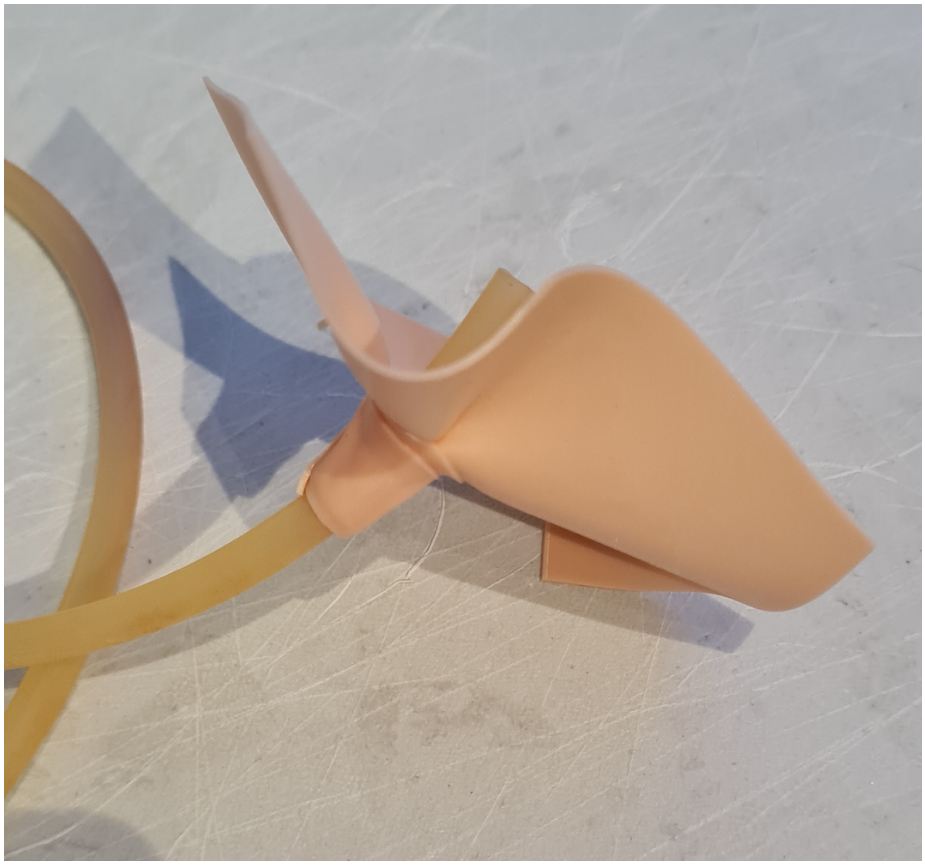


Figure 10: img

Figure 11: img

Next attach that circle over the top of the butt pad. Here it's on the matt side of the panel. So the circle completely covers the butt pad and has a nice 8mm overlap.

And this is what it looks like from the other side. This is a good time to test and add some air and make sure there are no leaks. You should have two of these now.

Next let's prepare the front panel.

Attach the front sides to the front panel. I put my front panel matt side outwards by mistake here.

Let's join the back pieces together too

Next join the front and back pieces at the crotch and down the inside legs, so the sides are still open.

Then join the sides to each other

Add in the valves for the two hip sections. They don't do anything yet until we have the outer layer.

And now the inside shorts are complete.

Now on to part 4b: construction outer

Construction (Outer)

Let's not procastinate and get the outer layer done. It's cut out and prepared. I actually did it the next day. With lots of gaps between each section where I questioned why I was making them. Don't give up! You got this far!

We join the two parts of one of the back panels. Then join the completed back panel to one of the front panels down the crotch and inside leg.

Now the complex bit where we attach this half over the inner shorts. You need to add glue seams to the inner shorts down the centre back seam, across the crotch, up the front panel, and across the top band. Around the crotch and across the top I used a 20mm seam instead of 8mm. Then attach the outside layer. Note that you're not attaching the outside hips of the inner or outer layer, and not attaching the inside legs of the inner and outer layer together.

This really might need an annotated picture. Ask me for one if it's really confusing.

Okay, so that's one hip complete. You could test this now and make sure it's air tight. Repeat for the other side. Here are some pics after a test inflation.

Figure 12: img

Figure 13: img

Figure 14: img

Figure 15: img

Figure 16: img

Figure 17: img

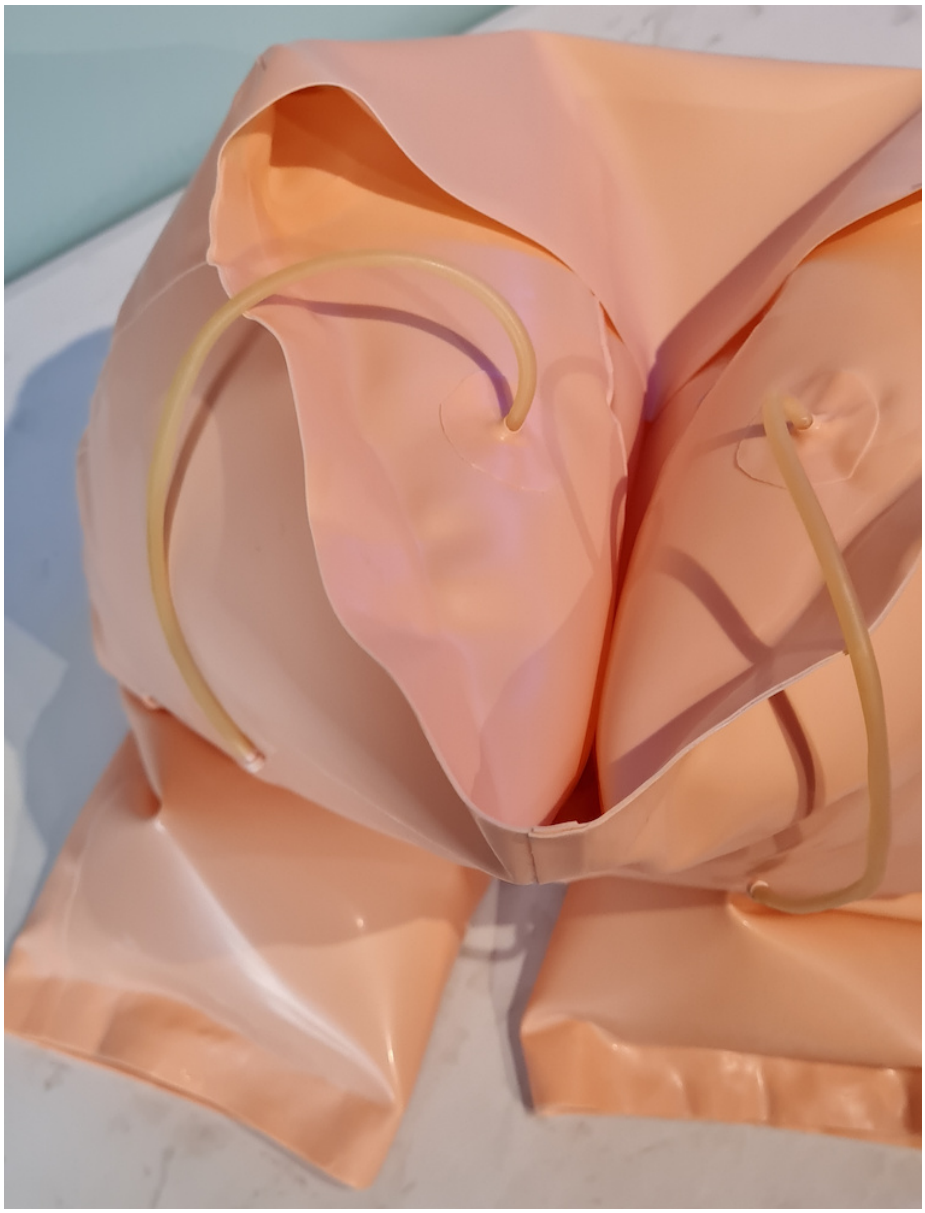
Figure 18: img

Figure 19: img

Figure 20: img

Figure 21: img

Figure 22: img



Then add the waistband to the top. I don't have any pics of this step, it was just a straight 60mm wide laminated strip (so 1mm thick) in two parts, one for the front and one for the back, added with a 8mm seam to the inside of the shorts.

Now on to part 5: finished

Finished

Figure 23: img