

WWW.PROTEGE323.TK // HOW-TO // LOW COST & BULLETPROOF SOUND DEADENING / DOOR DAMPENING

by TSStarGermany (Thanks to Poseur for motivating me to do that ^^)

"so you wanna be a music player but your doors ain't fly? you gotta hit us up, we're gonna deaden your ride"

Conversion info:
1m² = 10,7639 Square feet
1cm = 0,394 inches
1mm =0,0394 inches

PART 1 : THE OUTER DOOR PLATE
I decided not to take thick and heavy mats but instead I tried a special sound deadening paste called "Alfablue" from Alfatec (similar products are "Ex-Vibration" from Brax and "NoiseX" from Dietz). You can also try normal industry dampening pastes, but they must not contain any solvent, must not corrode metal, must not repel water and must be stable at temperatures up to 80°C / 176°F.

PART 2 : THE INNER DOOR PLATE
Again I decided against the common anti-noise mats like from manufacturers such as MXM, Sinus Live, Dynamat etc. Those mats maybe good, but they're simply too expensive.
And yes there's a worthy alternative: **Aluminum plated bitumen**. This material is available at your local DIY-store. Only buy solvent-free bitumen and do not buy lead plated bitumen! Too many people are unconcerned about being exposed to dangerous substances but I'm not...and you shouldn't be either.

PART 3 : THE DOOR TRIM
The door trim gets a simple treatment: a single layer of bitumen mats (1,5mm thick). It won't really need more since we already made a bulletproof door in Part1+2.

Part1

Needed Materials



Proceed

Step 1A
Take off the door panel, the rain foil and the speaker assembly (if you don't know how to do that, go to my site and look up the corresponding DIY.

Step 1B
Clean the plates which face you. **Do not try to clean the back** of the inner door plate because there are wires, greased levers, guard rails etc (Look at the next picture).

There will be a lot of dirt and grease inside the doors (especially on the floor area) and on the plates. As soon as you removed all the rough dirt, use the cleaning tissues to remove any fuzz that still might be on the plates.

Put special attention on cleaning the **narrow channel in the bottom** of the door, use the Q-tips & the purifying agent to clean it. After that you can use the hollow sealing on the channel but do not plug up the 3 drainage openings on the bottom.

Leave the black glue where it is, we will need it again later on.

That's the inner life of the door...

Step 1C
Use the masking tape to cover all those "guts" so you won't smear the Alfablue paste on it when you're working.

Do this properly & extensively because those little items are responsible for your door lock and your power window.

Step 1D
Remove the styrofoam block by unplugging the 2 clips. Just push the middle pin of each clip from the back side and they will pop out (small sketch on the pic)...

(While you're at it...just unplug all the clips in the circles now, they will get their special treatment in Part2.)

Step 1E
Put on your rubber gloves...

How to handle Alfablue paste:
Basically it's about using the scraper and your fingers to cover all free parts of the outer plate with **at least 3mm** of paste (the more = the better). You will need at least ~2kg for 1 door...

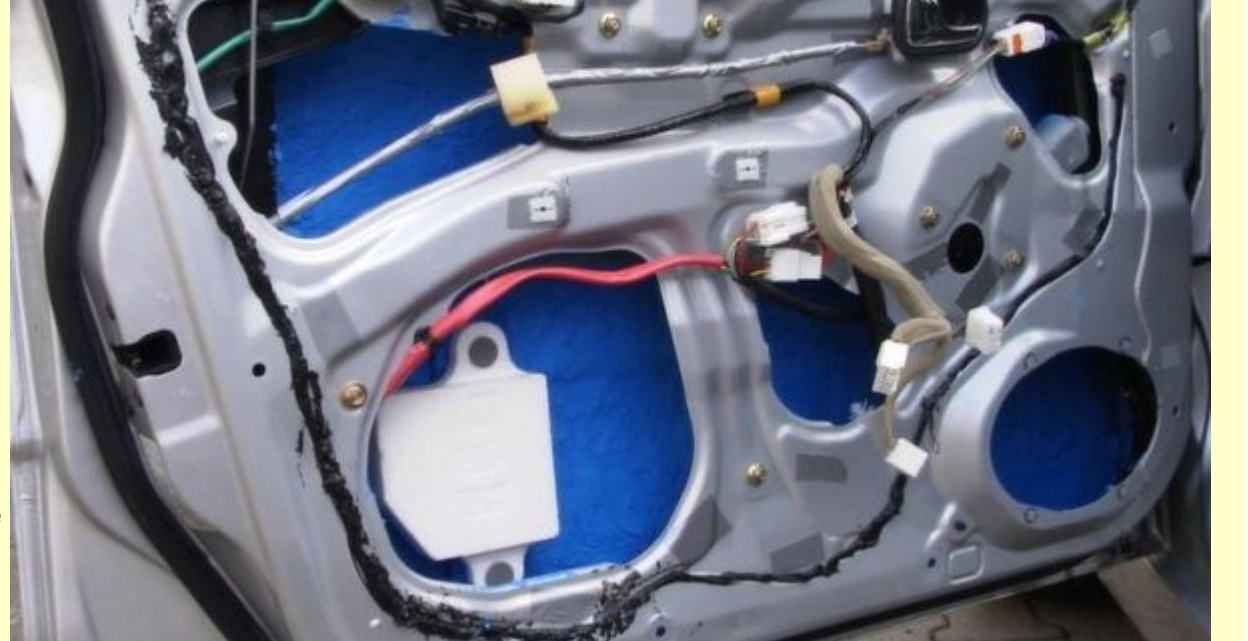
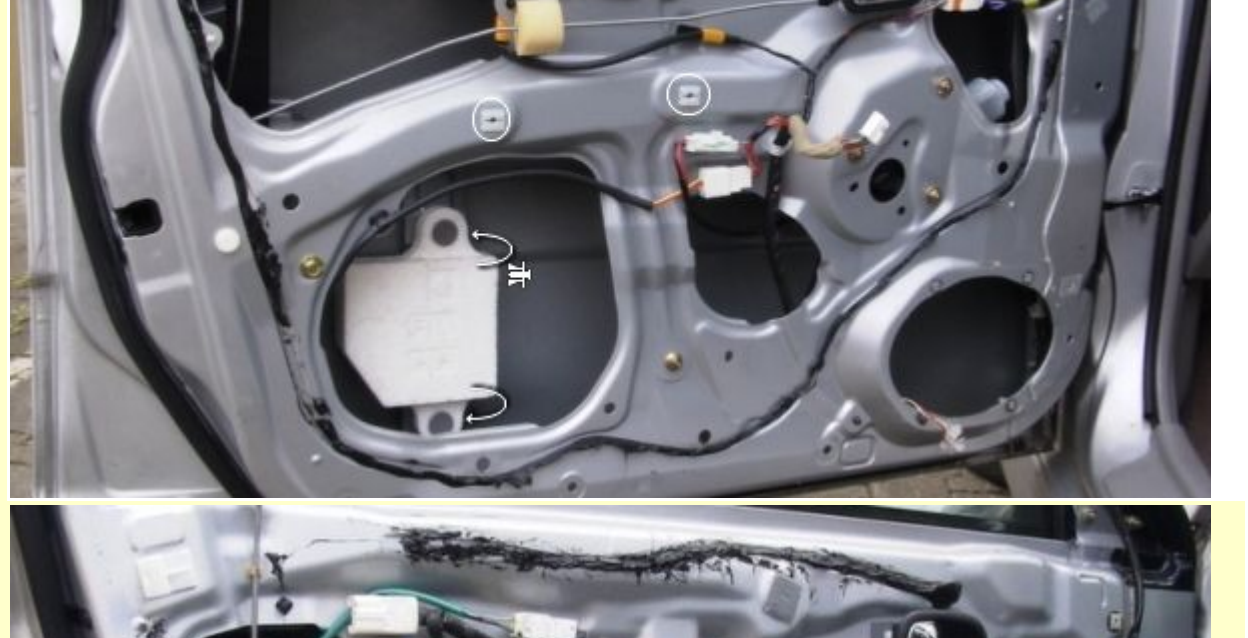
Always work from **up->down** and **far->near**.

- The **1st layer** of paste **must not** be thinned with water. Just put a thick chunk of paste on the plate and start to spread it with the scraper. Watch out that you don't let small "holes" come into the surface of the paste. The plate really needs to be completely covered.

- The **2nd layer** of paste **must be "thinned"** with water, otherwise you will scratch off the 1st layer. "Thinning" this paste works like this: Put a chunk of paste on your scraper, quickly dip it into the water and then paste it on the 1st layer. Do not try stir it up because it will not stick to the 1st layer but only pour down.

If you can't reach a certain area with the scraper, just use **one finger** to cover that area, not your whole hand. Smearing the paste on the plate with fingers is tricky and the scraper remains the weapon of choice..

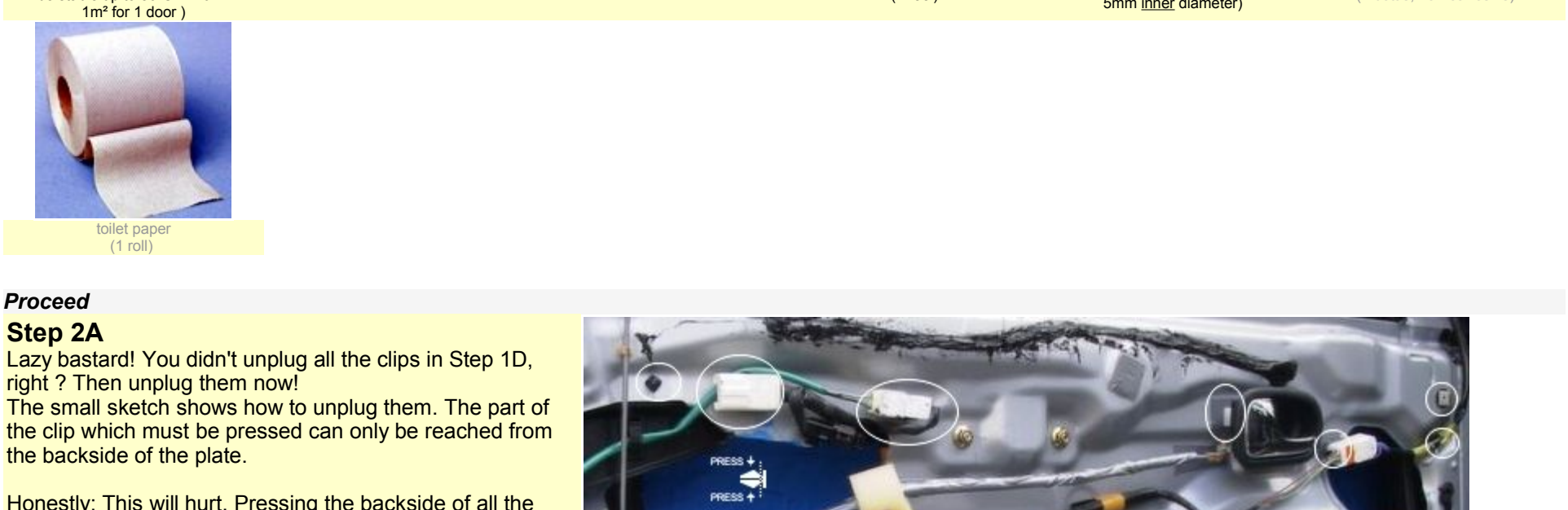
Let those 2 layers dry for 8h and repeat the procedure.



Step 1F
Put back the styrofoam block and remove all the masking tape from the inner door. Quickly plug in your window control panel to test if everything electrical works alright. Then unplug it and put it aside.

Part2

Needed Materials



Proceed

Step 2A
Lazy bastard! You didn't unplug all the clips in Step 1D, right? Then unplug them now!
The small sketch shows how to unplug them. The part of the clip which must be pressed can only be reached from the backside of the plate.

Honestly: This will hurt. Pressing the backside of all the clips so hard will cause pain...at least for me it did. I had to use some vaseline and herbage treatment and still my fingertips' senses haven't fully recovered.

The idea behind that is that loose plastic parts can cause unwanted noise.

Cover all holes on the surface with slices of duct tape and then stick the clips back into their places (through the duct tape).

Step 2B
Since we're going to apply this **highly adhesive** bitumen reel onto the inner plate some parts must be protected.

In the picture you can see the **small rod** which holds the **door lock knob**. This rod must be able to move freely all the time, which wouldn't be possible anymore if the bitumen glue had contact with it.

Unscrew the knob, cut of a **10cm long piece of the silicon tube** and stick it over the rod. Fixate a slice of the bitumen reel to hold the silicon tube into place. Check if the rod freely moves within the tube.

That's how we protect mobile parts ! Do the same with the **door opener rod**.

Step 2C
And we should protect other parts, too...

Again: the bitumen reel's glue is -really- heavily adhesive, so we don't want to enwrap sensitive parts with it (because if we must gain access to those parts in the future, we simply wouldn't be able to due to the bitumen holding on to them)...

Therefore we enwrap those parts with duct tape. As soon as we did that, we can freely put the bitumen reel onto those covered parts.

Step 2D
Cut of slices of the bitumen reel and place them all over the inner plate. Always stay **within the borders** of the rain foil's black glue.

Be aware that correcting a slice's position will be somewhere between hard and impossible, so take your time for this work. **Do not cover the clips or holes** that need to be free.

Always press the bitumen slice firmly onto the plate and always press the slice around/onto the contours of the stuff lying beneath it. This door is going to be hermetically sealed.

We can't just put some slice over the huge hole...remember? The rainfoil has a cavity in which the 2nd styrofoam block (which lies in the door drim) is pressed. And now what?

Step 2E
Reinstall the rainfoil, pull it to each corner so it fits really tight.

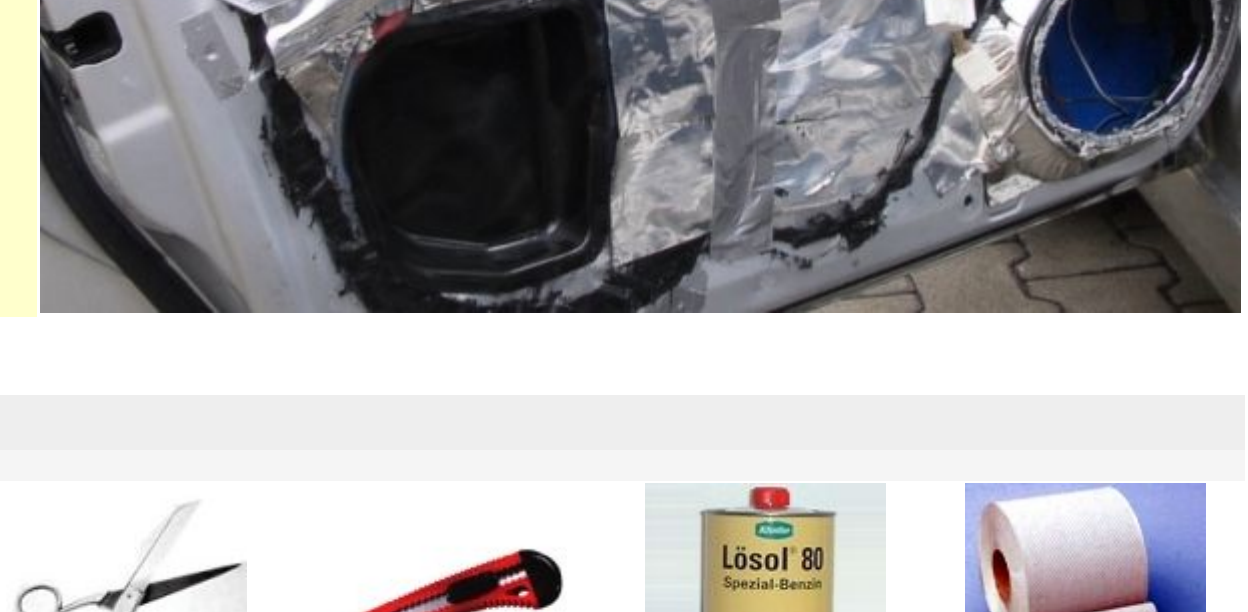
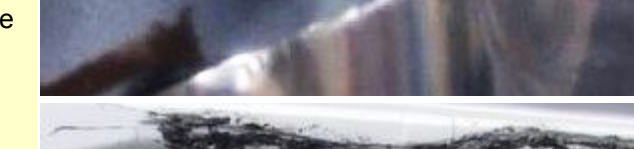
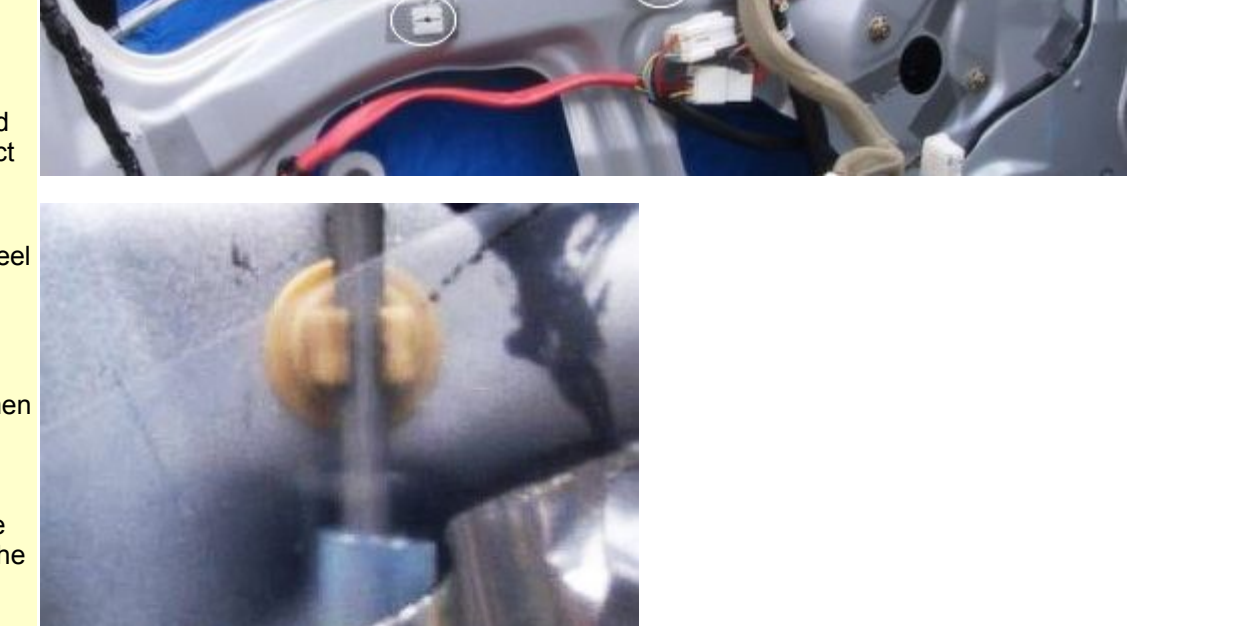
Take the carpet cutter and cut the rain foil at the red dotted line.

Wait and see! I think I've found a smart solution.

Step 2F
Put slices right around the black cavity on the one side and on the other side slide it underneath the rainfoil.

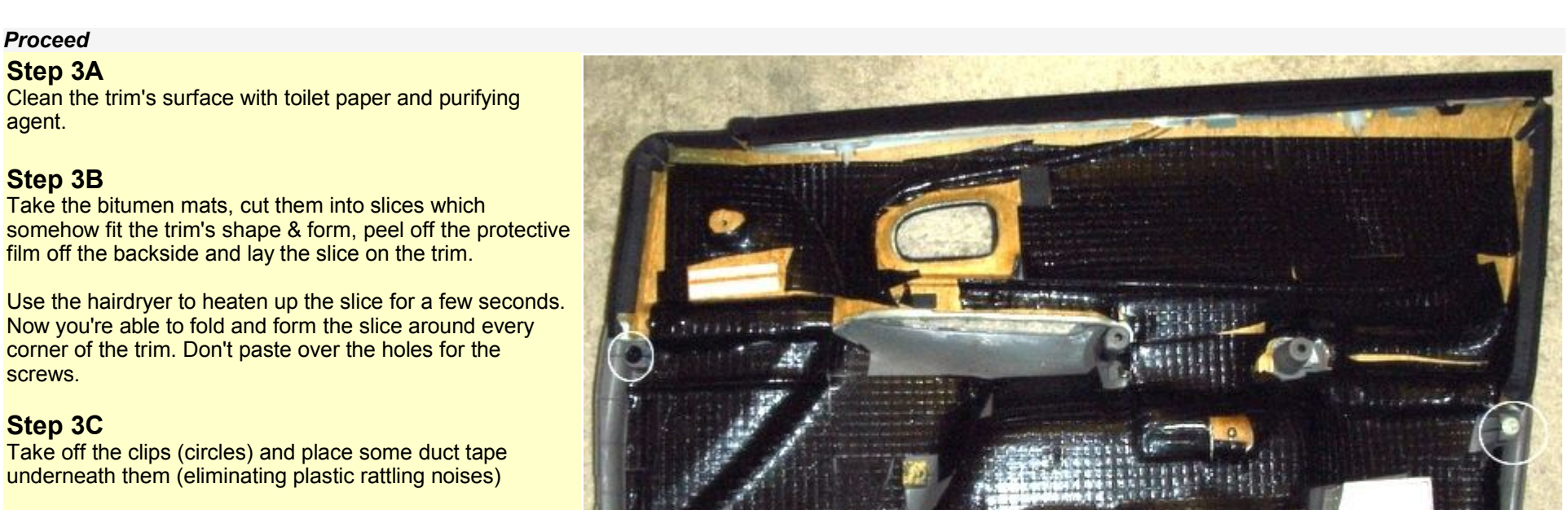
Step 2G
Now seal the upper part of the rainfoil with duct tape.

Step 2H
Et voilà ! This door has been officially sealed ! Airtight & waterproof.



Part3

Needed Materials



Proceed

Step 3A
Clean the trim's surface with toilet paper and purifying agent.

Step 3B
Take the bitumen mats, cut them into slices which somehow fit the trim's shape & form, peel off the protective film off the backside and lay the slice on the trim.

Use the hairdryer to heaten up the slice for a few seconds. Now you're able to fold and form the slice around every corner of the trim. Don't paste over the holes for the screws.

Step 3C
Take off the clips (circles) and place some duct tape underneath them (eliminating plastic rattling noises)

Finished.!

Yes, I could've made the door trim so much better but I was running out of bitumen sheets (I only had 0,75m² for both doors) and since the Part1+2 results were so good I just thought the door trim wouldn't need much more attention.

Of course you can always use more and better material for what I've done in Part1,2 and 3 but if you don't want to spend a huge amount of money on your dampening, this HowTo/DIY might have been a good help.

Cheers.

