



# HOW TO 3D PRINT WITH CD CASES

## **3D Printing with CD Cases**

By: Filabot

The CD case, first released in 1982. There are three main types of CD cases, a Jewel Case, a CD single, and a Slimcase. CD cases, as you can imagine, protect CDs from scratches, grime, or other hazards. We are sure that most of us would lose our nerd status for not putting the right CD back into the right case. Somehow we always end up with more cases than CDs

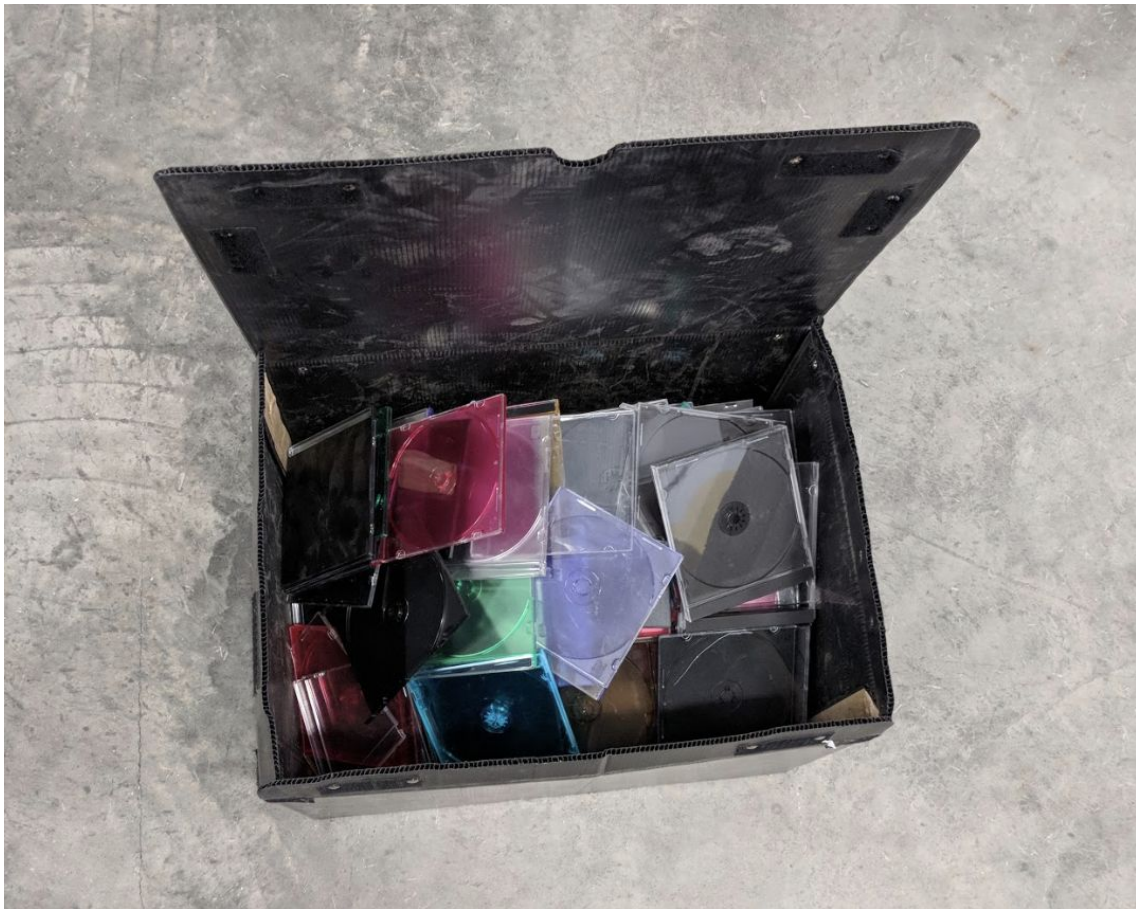
After a trip to a local recycling facility we had collected enough CD cases to run through our gauntlet of tests to see if 3D printing with CD cases is possible. As it turns out, it is possible. The steps below outline our process for 3D printing with CD cases.

If you would like to snag a sample of CD case filament, head over to [Filabot.com](http://Filabot.com) and check out the sample section.

## HOW TO 3D PRINT WITH CD CASES

### Step 1: Plastic Identification

The first step to any processing of plastic is to identify the what grade the object is made from. Most of our cases were similar in feel, bending, snapping, etc. With the only exception of color. We assumed that the different colors were made from the same material. After some digging on the interwebs we concluded that the cases we had were made from [Polystyrene](#). This grade of plastic has a melt temperature of about 240°C, this will change from grade to grade within this family, a good starting point no less.





**Step 2: Grinding**

The CD cases needed no preparation, other than sorting out cases that had stickers or painted on labels. Grinding the cases was simple and quick. The cases could be put into the grinder without needing to be cut down to a smaller size, where in the last study we had to “chunk” the parts down before feeding into the grinder. The brittleness of the cases made the material grind up quickly.



### Step 3: Filament Making

For making filament we used the Filabot EX6 system. We almost always lean towards using this system because with the extra heat zones we have a lot more control with temperatures and speeds, two critical variables when working with polymers. The Filabot EX2 was not tested with CD case plastic but we do believe that it would perform just fine after seeing the results from the EX6.

The extrusion setup:

- Filabot EX6 with Stock Screw
- 1.75mm Nozzle - no filter
- One Airpath for cooling
- Filabot Spooler

The final working temperatures that were found to work best are as follows: Front zone 174°C, Middle zone 240°C, Rear zone 145°C, Feed zone 30°C. We did not use a filter because the material was clean therefore we were not concerned about contaminants clogging the nozzle of the printer.



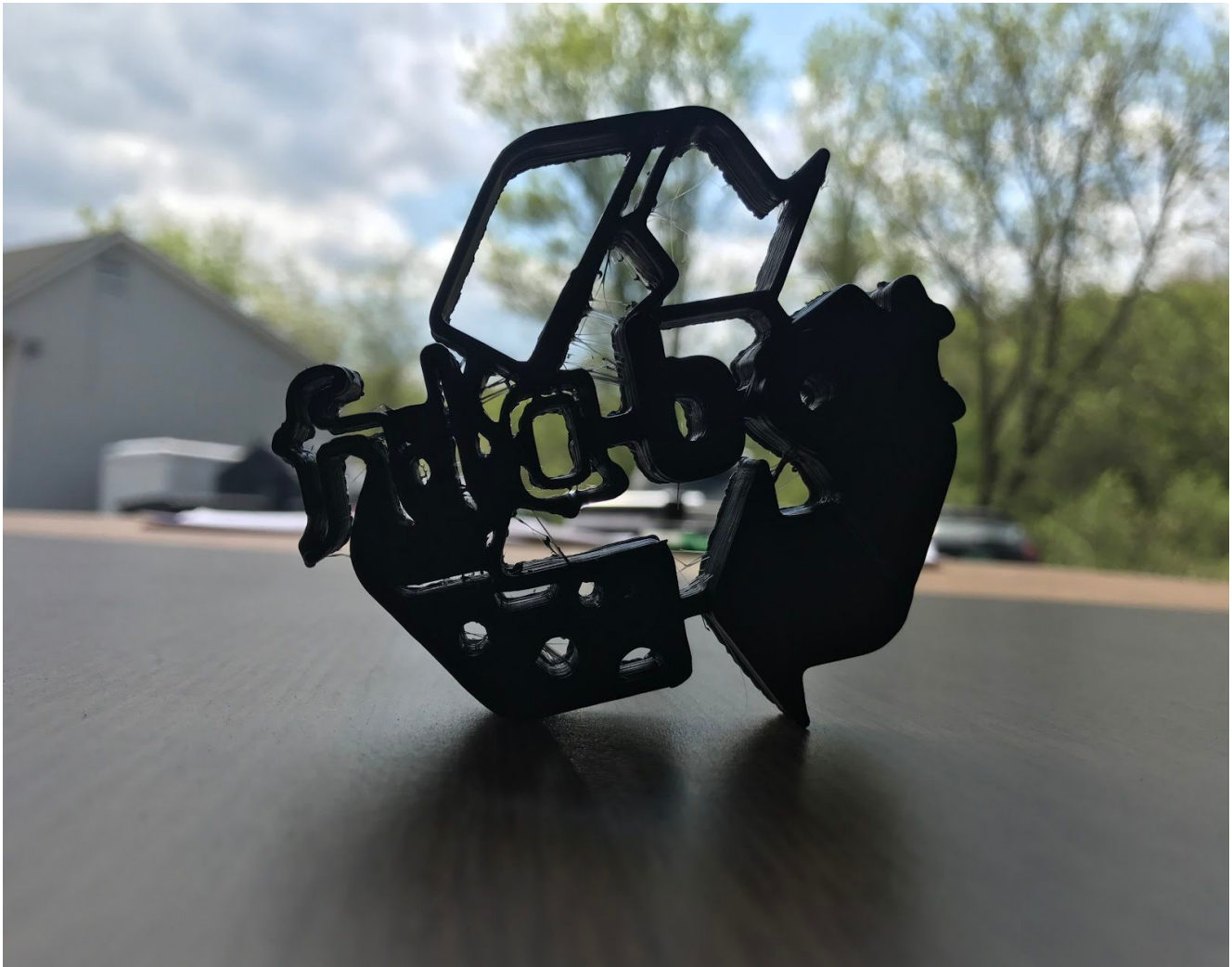


#### Step 4: Test Print

Test printing is always an important step, even if the test print is with a simple object. We loaded up our “Filabot Test Print” changed a few slicers settings and pressed print. The main setting that we changed was the hot end temperature, that was set to 260°C. For the bed we used the Velcro method as described in the last few studies.

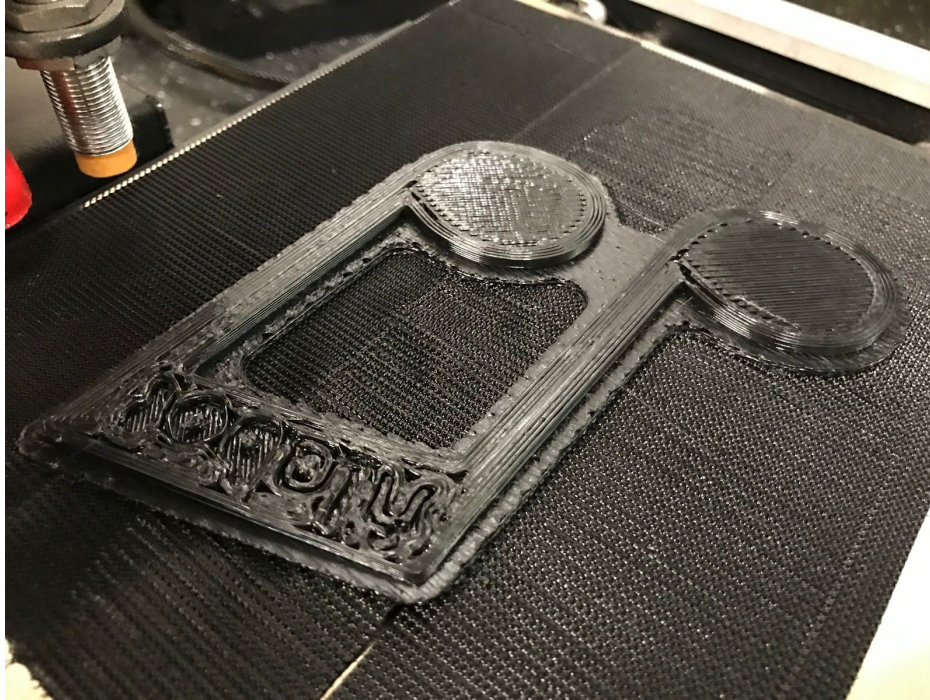
A great test print by our standards, printed from old CD cases!

Check out this link for the “Filabot Test Print” ([Thingiverse number: 2844384](#)).



### Step 5: Final Print

For the final print we made a music note and a headphone organizer, something a little more useful. The headphone is our logo, for the audio jack plug we used the “O” in the “Filabot.” Simple and sweet. We did have some larger goals of prints, however the wrapping was a issue that needed to be solved only by using an enclosed build area. Something that we do not have at this point.



### Conclusion

3D printing with CD cases works well. We didn't have any issue that we could not work around. We were able to take old CD cases, grind, extrude into filament, and 3D print. So if you have an abundance of cases our setup will work great for converting them back into something useful and relevant. If you would like to try out CD case filament go over to our website and grab a sample.

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### About Filabot

Since 2011, Filabot has grown into a leading brand, researching, developing, and producing filament makers. The company has sold its systems globally to customers who are using the system to make positive impactful changes, while using waste plastic.

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