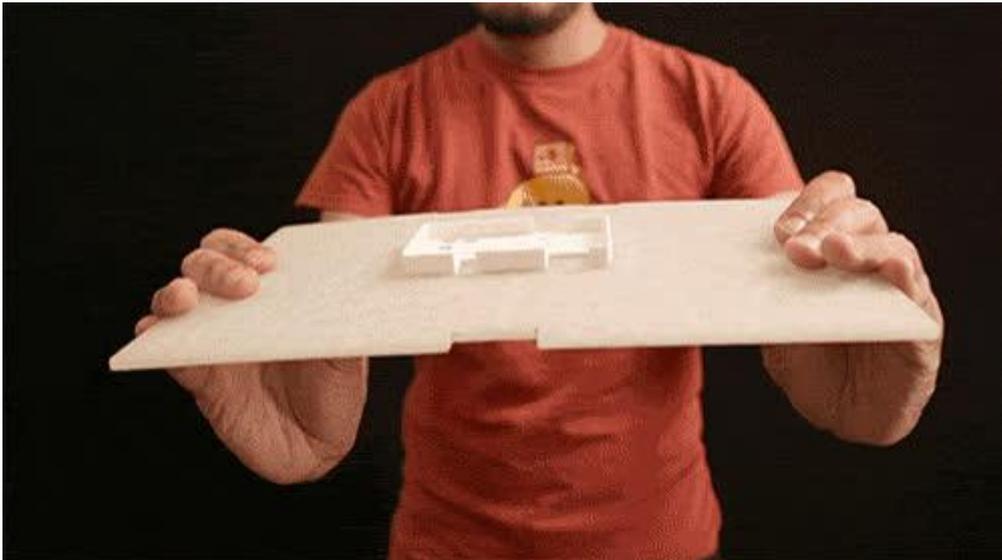




# 3D Printing on PRINTinZ: Flexible Build Plate

Created by Ruiz Brothers



<https://learn.adafruit.com/3d-printing-on-ninjaplate-flexible-build-plate>

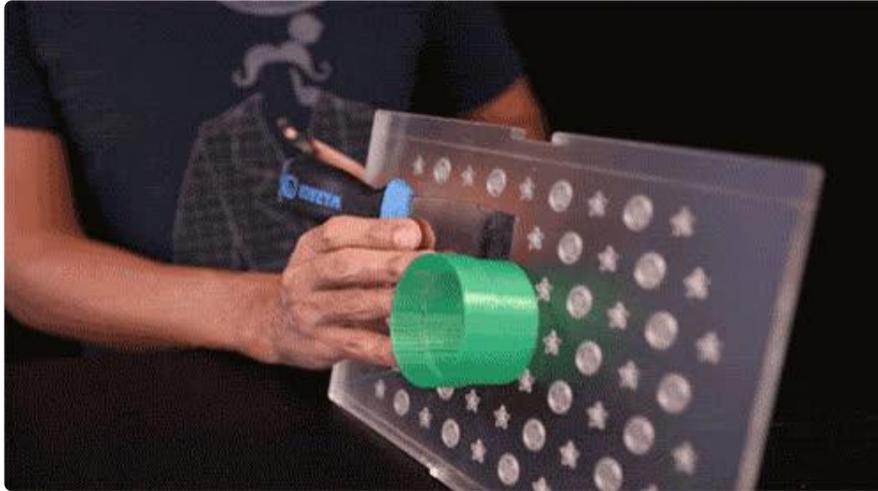
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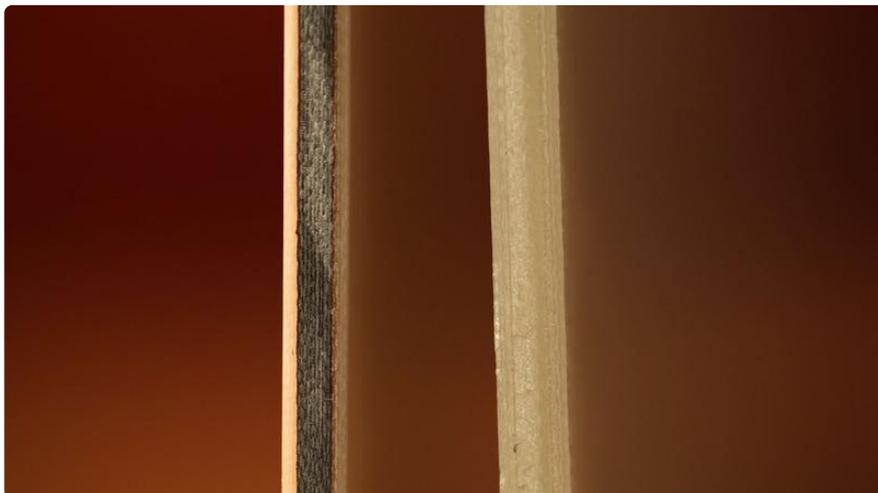
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# Overview



Printing surfaces like glass or tape are the most common among FDM 3d printers, but today we're talking about a very special build plate, one that actually makes it easy to remove prints, and eliminates the use of tape, glue, hair spray, and other messy substances.



The PrintInZ Plate is a neat alternative and serves as an add on to most printers. This flexible platform is made out a unique substrate, giving it the proprieties that making it easy to remove prints.

This plate works with PLA, ABS, Ninajflex and can be safely heated to about 90c. Its extremely strong and far less likely to break than glass. The texture on the surface is very similar to blue painters tape and gives a rather leathery look to printed parts. It also features double-sided action, so you can print on both sides!

[Check Out PrintInZ Data Sheet](#)

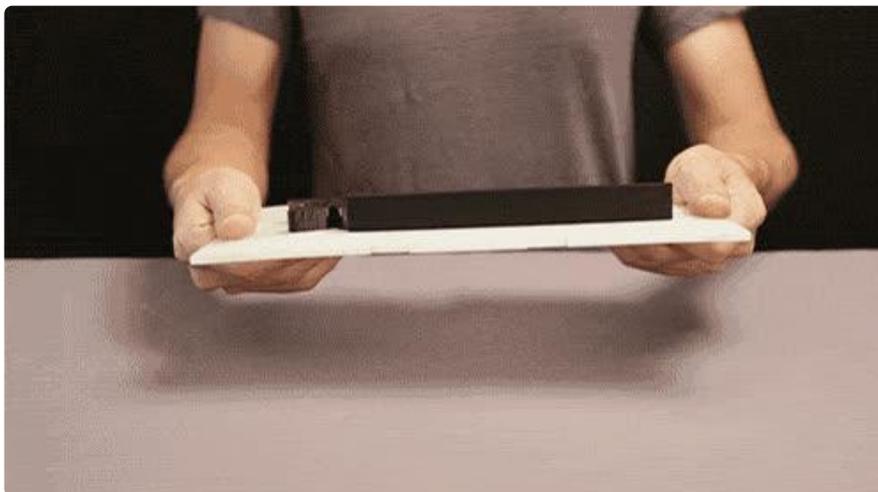
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# Properties

This plate is a 3.5mm thick double layered fiberglass laminate sandwiched into an acrylic substrate. PRINTinZ plate is designed to be attached to your build platform.



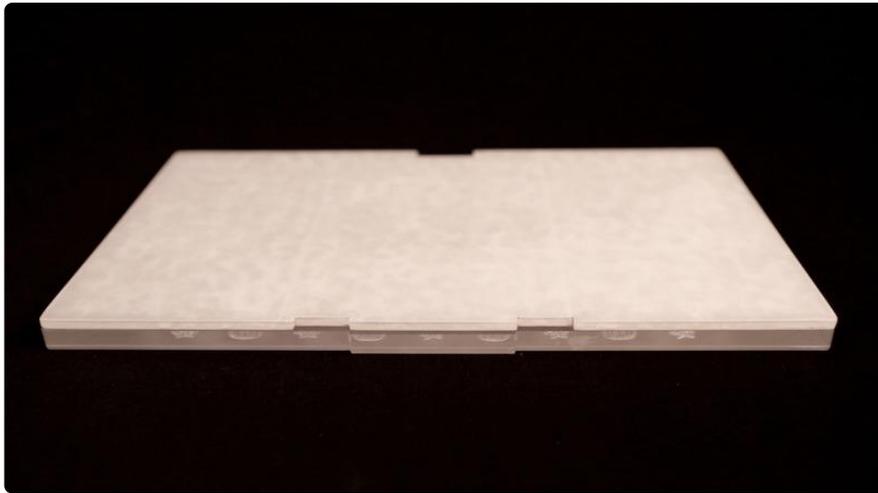
The plate is very strong and is far less likely to break than glass. We doubt you could bend it far enough with your bare hands to crack it, but we recommend only bending it enough to aid in removal of your print.



## Machining

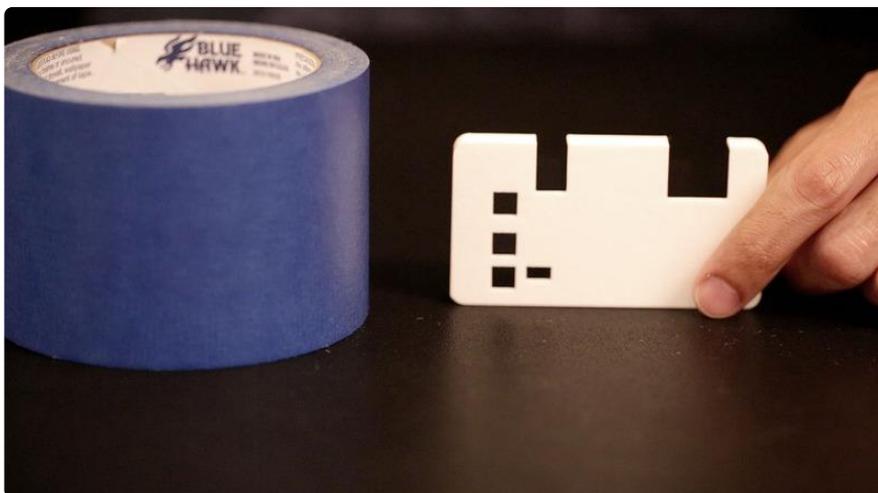
You can machine the surface to fit a custom build plate.

You can saw the plate to a smaller size. A band saw is recommended for this. You can also drill holes if necessary using standard practices for acrylic, such as tapered drill bits. Rough edges of the fiberglass laminate skin can be very sharp - please take precautions.



## Surface texture

The surface texture is very similar to blue painters tape. You can sand it completely smooth, but you may not find this having much affect on adhesion. Again, filaments vary and your results may differ. We have found that setting the correct nozzle height is a more important factor in the bond strength of the first layer to the plate. You want the first layer to be pushed into the texture of the plate, so set your zero close to the plate.



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## Usage

[Check out the complete User Guide](#)

## Preparing

There isn't any need to use blue painters tape or adhesives to get your prints to stick to the surface. Both sides can be used to print. It's safe to use solvents to prepare and clean your plate. Acetone won't damage the surface.



## Material Types

The plates have been tested successfully with PLA and ABS. Some limited testing was also done with Laywood and it printed well. [NinjaFlex \(http://adafru.it/1690\)](http://adafru.it/1690) works too!

## Settings

Start with the same settings used for other surfaces and adjust from there if needed. Ideally you want to print just hot enough to get good layer bonding. We have also heated the plate to about 40C to print PLA and this helps adhesion.

## Heat

PLA can be printed without heating the plate.

It is not recommended to heat the plate so the top surface is above 80C. This may cause excessive adhesion, which may result in damage to the plate or print.

The plate does warp when heated. Since the bottom surface of the plate is hotter than the top, the acrylic substrate expands more on the bottom than the top causing it to bow up slightly around the edges. The fiberglass skin limits this somewhat, but when the plate cools it will return to its original flat configuration. Binder clips can hold the edges down while printing. You can always add more clips to help if

necessary, but we have found four to be enough. Replace the clips every so often because they will weaken over time. It is recommended that you allow the plate to pre-heat until the temperature stabilizes (~15 min) before setting your nozzle height.

[PrintInZ Datasheet](#)