



iPhone X NinjaFlex + PLA Bumper Case

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<https://learn.adafruit.com/iphone-x-ninjabflex-pla-bumper-case>

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Table of Contents

[Overview](#) 3

- [Telescope Adapter](#)

[3D Printing](#) 6

- [Flexible Filament](#)
- [Settings for Flexible Filament](#)
-
- [3D Printer & Slice Setting](#)
-
- [Print Hotter](#)
-
- [Bed Adhesion](#)
-
- [Printing Speeds](#)
- [Clean up](#)
- [PLA Filament](#)
- [Slice Settings](#)
-
-

Overview

In this project we finally update our popular bumper case design for the iPhone X!



We designed two different models to easily print with flexible or PLA materials. This bumper prints great with NinjaFlex but also works well with other flexible materials.

Features cutouts for camera, speakers and mute switch. Beveled buttons are on the side for adjusting the volume and power button.



Both models have padded backs to protect and level the camera bump on the back!

NinjaFlex and PLA filaments are both available in the Adafruit Shop!



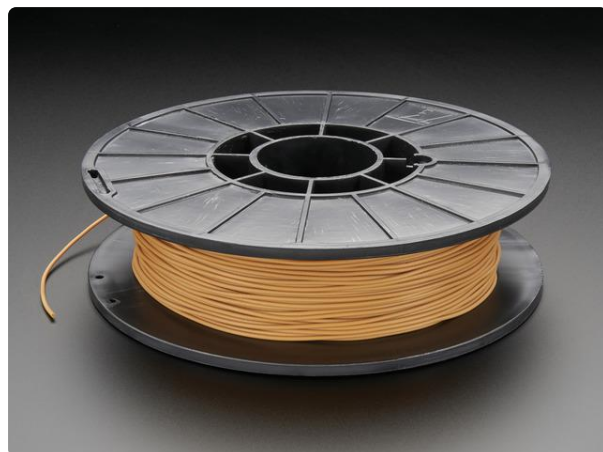
Telescope Adapter

We've also updated our CELESTRON FirstScope Telescope adapter to fit the iPhone X.

Check the guide and download here: <https://learn.adafruit.com/3d-printed-camera-tripod-adapter-for-telescope/3d-printing> ()



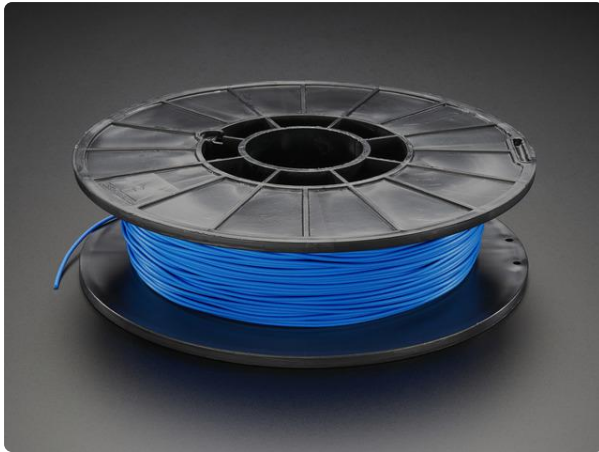
This updated design utilizes the built-in telephoto lens to give the telescope a longer focal length while producing higher quality images with its optical image stabilized lens.



[NinjaFlex - 1.75mm Diameter - Caramel Candy - 0.5Kg](#)

Looking beyond ABS? Tired of PLA? Open a world of possibilities, limited only by your imagination. NinjaFlex, a cutting-edge filament for 3D printers, is a specially formulated...

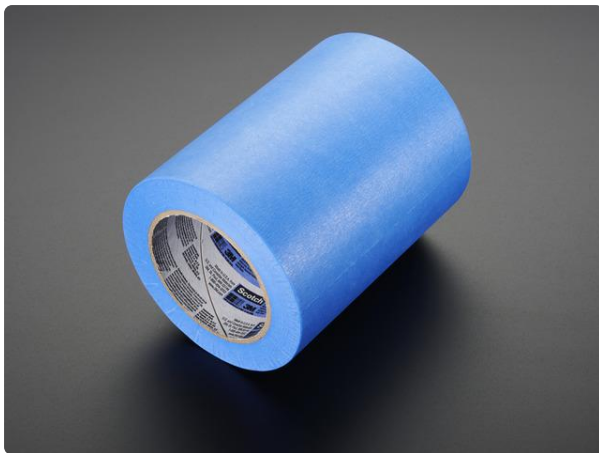
<https://www.adafruit.com/product/2382>



NinjaFlex - 1.75mm Diameter - Sky Blue - 0.50 Kg

Looking beyond ABS? Tired of PLA? Open a world of possibilities, limited only by your imagination. NinjaFlex, a cutting-edge filament for 3D printers, is a specially formulated...

<https://www.adafruit.com/product/2563>



Blue Masking Tape for 3D Printing Plates

OK yes, it's just masking tape. A big honkin' roll of I'm blue da-ba-dee-da-ba-die masking tape. Removing 3D printed parts can be tough. Sometimes pieces get stuck to...

<https://www.adafruit.com/product/2416>



Type A Machines Series 1 Pro 3D Printer

Built to last and better than ever. The Series 1 Pro 3D printers from Type A Machines offer durability, modularity and one of the largest...

<https://www.adafruit.com/product/2412>

3D Printing



The 3D printed parts are fairly easy to make with most common home desktop 3D printers that are on the market.

And if you don't have access a 3D printer, you can order our parts by visiting our Thingiverse page and have someone local 3D print the parts and ship them to you.

This case design is only for flexible material! It will not fit an iPhone if it's printed in hard plastic!

Files for the PLA version are listed below!

[Download Fusion360 source](#)

[Download from Thingiverse](#)

[Download the Youmagine](#)

[Download from Pinshape](#)

Flexible Filament

TPU (thermoplastic polyurethane) filament is a flexible material that's ideal for gaskets, plugs, leveling feet, and mobile phone cases! There's different types of TPU, some which more elasticity than others and others with more grip.



Settings for Flexible Filament

240C Extruder Temperature

65C Heated Bed (glass, PrintInZ, BuildTak, kapton, etc.)

Blue Painters Tape for Non-heated Bed

30mm/s default print speed

First Layer, Top and Bottom Layer Print

Speed: 50% of 30mm/s

3D Printer & Slice Setting

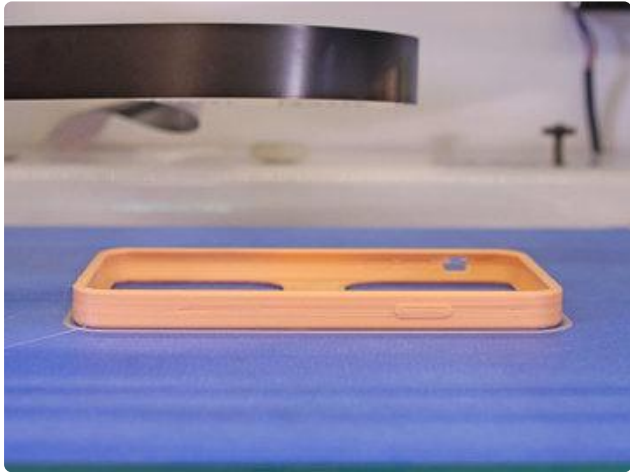
TPU filament can be rather difficult to 3D print. Follow our recommended settings below for a good starting point. We've found TPU works best with direct-drive extrusion, however bowden style extruders with 2.85mm diameter will work fine.



Print Hotter

TPU extrudes best at 230C-245C temperatures. It has a higher melting point and requires more heat than regular PLA or ABS.

Bed Adhesion



65C temperatures for heated beds. For non-heated beds, blue tape works well.

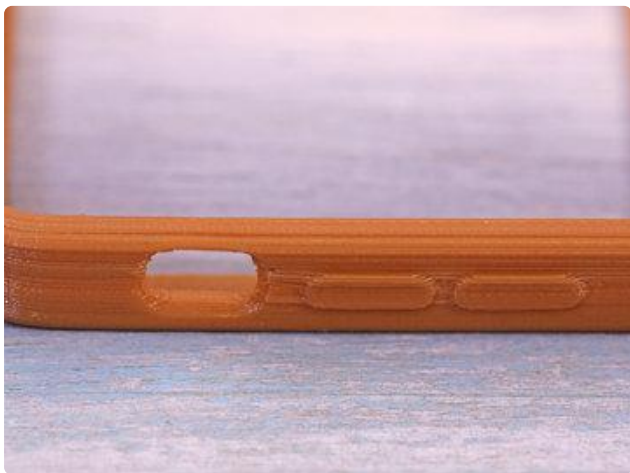
Printing Speeds

30mm/s for default printing speeds. 50% slower for the first, top and bottom layers. A slow print speed allows for better layer bonding and good adhesion to the bed.



Clean up

We used a flush diagonal cutter to clean up stringing around the port openings and around the enclosure.



Make sure the openings for the slide switch and Lightning ports are cleaned before plugging in cable. Use a hobby knife to help cut away stringing that could block the volume switch.

PLA Filament



Slice Settings

Download the STL file and import it into your 3D printing slicing software. You'll need to adjust your settings accordingly if you're using material different than PLA.

230C Extruder Temp
No heated bed (65C for heated)
1.0 Extrusion Multiplier
.4mm Nozzle
0.48 Extrusion Width
.2mm Layer Height
30% infill
No Supports
90mm/s | 120mm travel speed

[Download PLA design for Fusion360](#)

[Download PLA design from Thingiverse](#)

[Download PLA design from Pinshape](#)

[Download PLA design from Youmagine](#)