Can NinjaFlex be used with support material?

Yes, NinjaFlex works well in prints with support material and can easily be removed once the print is complete.

Are there any safety concerns or considerations when using NinjaFlex?

NinjaFlex should be used in a well-ventilated area according to recommended operating conditions. TPE products are capable of releasing small amounts of fumes at high temperatures. While these fumes are generally considered tolerable and less odorous than ABS, care should be taken to minimize exposure, particularly among sensitive persons.

Is NinjaFlex able to accommodate any bridging (crossing open unsupported spans)?

Yes, NinjaFlex behaves similarly to ABS in this regard and may be substituted in prints designed for ABS.

Any other tips for using NinjaFlex?

When switching from another polymer (such as ABS or PLA) purge thoroughly before starting a print. As with other materials, when preheating, use a lower temperature (~180-200°C / ~356-392°F) to prevent excess material from draining prior to starting a print.

Example Makes:

http://www.thingiverse.com/search?q=ninjaflex

Other Useful Links:

http://www.youtube.com/watch?v=gTlFs_ILu1w

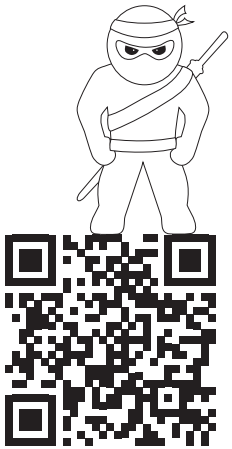
http://www.thingiverse.com/thing:169086

https://groups.google.com/forum/#!topic/makerbot/KUwEIXMIVtk

http://www.youtube.com/watch?v=EpkvHo6a888

http://www.youtube.com/watch?v=ul6s9khCXHY

http://forums.reprap.org/read.php?1,269018



NinjaFlex™

Slice open a world of possibilities, limited only by your imagination. **NinjaFlex**™, a cutting-edge filament for 3D printers, is a specially formulated thermoplastic elastomer (TPE) that produces flexible prints with elastic properties. Patent pending technology allows for smooth feeding and clean, high-quality printed parts.

Best Suited For

- Fused Deposition 3D printers that use 1.75mm or 3mm filament.
- 3D printers that accept other types of filaments such as ABS and PLA.

Features

- Filament shore hardness of approximately 85A
- Consistent diameter and material properties provide reliable, high quality prints
- Patent pending technology allows for smooth feeding
- Low tack, low CoF exterior allows smooth feed through filament guides
- High elasticity and excellent abrasion resistance
- Outstanding heat and water resistance
- Excellent build platform adhesion and bonding between layers
- REACH and RoHS 2002/95/EC Directive Compliant
- 1.75mm filament spool = .50 kg
- 3.00mm filament spool = .75 kg

Processing Guidelines

- Recommended extruder temperature: 210-225°C (410-437°F)
- Recommended platform temperature: 20-50°C (68-122°F)
- Recommended print speed: 30mm/s

To learn more about or purchase NinjaFlex, please visit: www.fennerdrives.com/3d

US +1 800 243 3374
+1 717 665 2421

UK +44 (0) 870 757 7007
+44 (0) 1924 482 470

NinjaFlex FAQs

Will NinjaFlex work with my 3D printer?

While NinjaFlex has been used successfully on many 3D printers (MakerBot Replicator 1, Replicator 2, Replicator 2x, MendelMax, RepRap, Ordbot, and Airwolf), it has not been tested on every model. In general, NinjaFlex performs best in printers with direct-drive extruders using settings similar to standard rigid ABS filament.

Will NinjaFlex work with Bowden extruders?

Bowden extruders are not ideal for printing flexible filaments such as NinjaFlex due to the excessive distance between the stepper motor and the extruder head. However, some users have generated successful prints using reduced speeds.
http://www.b3dgeable.com/2013/10/11/talpadks-review-of-ninjaflex-flexible-filament-for-3d-printers-3/

I am unable to get NinjaFlex to feed. Any suggestions?

In order for flexible filaments such as NinjaFlex to feed properly, a spring-loaded feed mechanism with a roller bearing is required. Also, the extruder must support the filament between the exit of the drive gear and the entrance to the melt chamber. Figure 1 below shows an example of a well-configured print-head. Figure 2 shows a print-head without filament support. In this case, the flexible filament will buckle under compression and cause the print-head to jam. Figure 3 shows an extruder using a plastic plunger to create the nip force. This arrangement creates too much friction on the flexible filament for reliable prints.

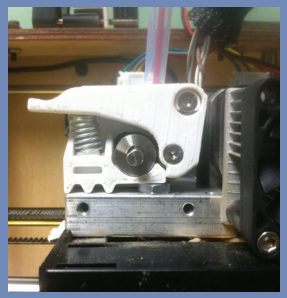


Figure 1

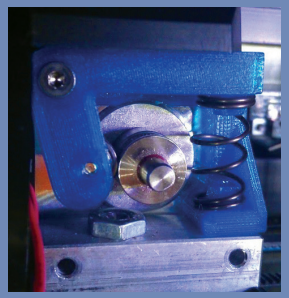


Figure 2

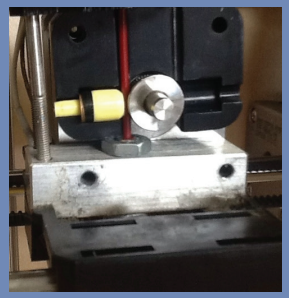


Figure 3

Will NinjaFlex feed well through plastic guide tubes?

While the low coefficient of friction surface of NinjaFlex has been formulated to reduce surface tack and allow the filament to feed more easily, the use of PTFE guide tubes may be beneficial to further reduce pull at the extruder.

Is a heated build plate required in order to print with NinjaFlex?

While each printer may have unique settings, in most printers, a heated build plate is not required in order to successfully print with NinjaFlex.

Is it necessary to coat the build platform with Kapton® tape or hairspray?

NinjaFlex bonds well to most surfaces (including aluminum and glass, blue painters tape, etc.), so coating the build platform is not necessary. Kapton tape can be used with NinjaFlex, but the adhesion of the printed part to the tape may be stronger than the adhesive holding the tape to the build platform.

Are there any special printer settings that need to be adjusted for NinjaFlex?

NinjaFlex generally works well at similar extruder settings to ABS; however, adjusting the printer's retraction settings can improve stop/start print quality. Also, it may be necessary to reduce the print speed to approximately 30mm/s.

What is the maximum recommended temperature for printed NinjaFlex parts?

The recommended maximum temperature for NinjaFlex printed parts is 66°C (150°F).

What is the minimum recommended temperature for printed NinjaFlex parts?

The recommended minimum temperature for NinjaFlex printed parts is -30°C (-22°F).
Below this temperature, printed parts will become increasingly brittle and may shatter.

My prints are coming out stringy. What can I do to improve quality?

The strings are caused by the material not freezing off quickly enough at stop/start. There are multiple factors that come into play: extruder temperature, build platform temperature, ambient temperature, and retraction settings. As the melted filament comes out of the extruder, it should have just enough energy to re-melt the existing surface (to provide adequate bonding). The colder the ambient, the build platform, and the starting temperature of the filament, the more quickly it will freeze off. If temperatures cannot be adjusted, the amount of filament that is retracted at start stop may be increased. For 1.75mm filament, 2-3mm of retraction works well. Another option is to increase convection heat transfer with a ducted cooling fan.