3D Industries - FlashForge Bed material

1. FlashForge bed material

This is often referred to as "**BuildTak equivalent**". However in practise it has shown to be far superior to the black **BuildTa**k.
Whilst **BuildTak** is black in colour, **FlashForge** is Blue. It also has a backing of **3M Adhesive.**

While there are many "solutions" to printing with ABS for the bed surface, after extensive testing FlashForge is the only surface recommended by 3D Industries.

This document and the recommendations contained herein refer to the use of **FlashForge** on 3D Industries 3D printers with the material stuck to the glass bed.

2. Cautions

Printing to the bed is performed without putting any other coating on the bed surface. Acetone will ruin the bed surface for example.
Also avoid where possible touching of the bed surface with fingers where oil from the skin can be transferred.
See below for bed surface maintenance.

3. Usage

It is recommended that a heated bed is used. 100C – 110C for ABS.
The FlashForge can also be used with PLA where the recommended bed temperature is 60C.
Other filament materials should be tested for suitability.
Flexi filament for example works best using glass with an adhesive.

4. Installation

The glass should be thoroughly cleaned by washing with mild detergent and rinsed with hot water and allowed to dry naturally in a dust free area.
Where the FlashForge sheet is smaller than the glass, central positioning can be performed by cutting a piece of white paper the same size as the FlashForge material and placing the glass on top so that the paper is central. The backing of the FlashForge material can then be removed and the material easily and accurately positioned on the glass using the paper below as a guide.

5. Set Up

The FlashForge material on the glass will be thicker than the glass alone so the Z gap should be increased. The FlashForge bed temperature can be raised to a high value (over 120 C), but it can be burnt by a hot nozzle if this is allowed to press onto the bed. It is best to adjust the Z gap initially using a cleaned but cold nozzle initially and using the LCD Control unit to test and the Z Gap adjuster knob to set the gap.

With a level bed, position the nozzle over the center of the bed and put a piece of paper between the nozzle and the bed surface.
On the LCD Controller:

- Press and then rotate the knob to select "Utilities"
  Select "homeZ"
- When the Z axis is homed check the gap by sliding the paper and testing its resistance.
- Repeat the adjustment and testing until correct
  Test by resetting the printer power and then printing a cube or bed level test object.
  make any Z gap adjustments necessary

6. Printing and Object removal

After the Z gap has been set and a small object tested, use the glass with the FlashForge bed material as normal.

See section below for advice on spatula tools.

There are different points of view on object removal with some people advising the cooling of the object first and others insisting that the removal from the heated bed is easiest.
3DI experience is that a warmer bed makes removal easier.

The FlashForge bed is very strong and is not damaged by pulling the object from its surface, however it can be cut by sharp instruments therefore it is best to use a spatula and a very low profile (Almost parallel with the bed.)

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The recommendations are to try and get the edge of the spatula underneath a corner or part of the object that has an angle and move the spatula back and forth gradually increasing the area of the object that has been separated from the bed until it is free,
At all times keep the spatula very close to horizontal with the bed

7. Bed Surface maintenance

Different users have various preferences, but generally a couple of spatulas are reserved for the bed. One is the normal heavier spatula with a bevelled sharper edge.
Another is a thin spatula with a very sharp edge.
Some users round one or both of the corners of the spatulas to prevent accidental cutting of the bed.

If plastic residue adheres to the bed over time, this is not a serious problem. A sharp spatula should be used to scrape of the plastic that is proud of the surface using a controled forward scraping motion. It can help if the bed surface is heated. Exercise some patience here.

When the bed is smooth there may be some discolouration of the surface but this will not affect the performance.
The bed surface should be cleaned only by washing under very warm water and using some dishwashing liquid and then rinsing very thoroughly and allowing drying naturally. Do not use a tissue or cloth (particularly a tissue) on the surface.

8. Tips and suggestions

The size of the FlashForge sheet is 265 mm by 255 mm, this fits nicely on the Model J printed bed with space around of glass exposed where the glass can be clipped to the aluminium bed.

A single FlashForge sheet can also be positioned in the centre of the Model W bed which is elongated. Some users use two FlashForge sheets to cover the entire model W bed and trim off the excess with a sharp knife.

The FlashForge bed material should be considered as a consumable, however carefully used and cleaned regularly hundreds of prints can be made on the bed.

Where a filament material is to be printed on plain glass with adhesive, the glass with the FlashForge bed material can be placed upside down and the filament printed to the glass with adhesive.

Many users obtain multiple glass beds so that after completing one print another print can be made on a different glass and there is no pressure to quickly remove the printed object from the first glass.

Allow more time when the bed is heating for the FlashForge surface to reach the same temperature as the aluminium bed.

9. Support

For any problems or issues please contact 3D Industries support.
3D industries would be pleased to hear of any experiences or suggestions for printing with FlashForge and object removal.
