PRODUCT BULLETIN

APPLICATION GUIDE
Polyurethane films:

PRINTABLE FLEX FILMS: PRINTFLEX
(UFLEX5S / UFLEX7PV2 / UFLEXCLEAR / SILKPRINT / NYLPRINT / BLOCKPRINT / SLIMPRINT)

REQUIRED EQUIPMENT

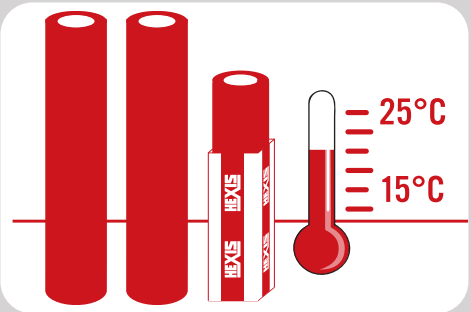
- A printer
- A plotter
- A new cutting blade (for UFlexClear)
- Printable flex film
- A fabric
- A squeegee
- Tape according to references (see chart on page 1)
- A silicone or parchment paper
- A TEFLEX protection sheet (optional)

STORE YOUR FILMS UNDER APPROPRIATE CONDITIONS

Store in a dry place.

Keep the films away from light and heat.

Shelf life:
The shelf life of this film is 1 year when stored in its original packaging at a temperature ranging from 15 °C to 25 °C (+59 °F to +77 °F) with relative humidity between 30 % and 70 %.



FEATURES

	UFlex5S	UFlex7Pv2	UFlexClear	SILKPRINT	NYLPRINT	BLOCKPRINT	SLIMPRINT
FINISH							
Matt opaque white	✓	✓		✓	✓	✓	✓
Clear			✓				
COMPATIBILITY WITH FABRIC							
Cotton	✓	✓	✓	✓			✓
Nylon®					✓		
Polyester	✓	✓	✓	✓			✓
Acrylic				✓			✓
Sublimated Polyester						✓	
SIZE OF LOGOS / IMAGES							
Small (less than 1 cm)	✓	✓		✓	✓		✓
Medium (between 1 and 2 cm)	✓	✓		✓	✓	✓	✓
Large (over 2 cm)			✓	✓	✓	✓	✓
TRANSFER TAPE							
HEX860	✓	✓		✓	✓		✓
HEX960		✓		✓	✓		✓
HEX750						✓	
Without tape (tape included)			✓				

For further technical information, please refer to the data sheets available on the "Professionals" pages on our website at www.hexis-graphics.com.

CONTENT

Application methods are based upon HEXIS' experience and are non-restrictive. Comply with instructions to ease application of HEXIS films.
HEXIS also offer training sessions for beginners and professionals to achieve optimum results.

1. RECOMMENDATIONS:

› To confirm the compatibility between the flex and the fabric, please refer to the chart on page 1.

› Before application, carry out preliminary trials on the resistance of the fabric to the press's temperature and the compatibility of the flex film with the fabric.

› Apply to a previously-washed fabric.

› For optimum durability, avoid application of the flex films over seams.

2. FILM PRINTING AND CUTTING TEST:

Prior to printing, prepare the cut-out.

The films should preferably be stored in the same environment as the cutting-printing station.

The pressure of the blade has to be adjusted depending on the film.

If the pressure is too high, the protective liner may slightly crack causing adhesive bleeding. This would make the weeding process more difficult.

In most cases, it is recommended to weed the material immediately after the cutting.

⚠ *For the UFlexClear film, a minimum ink drying time of 2 hours must be applied before carrying out any weeding if the cutting must be done within the printed graphic.*

2.1. Introduction to plotting:

The smallest possible size to be cut depends on the condition of the blade, pressure, cutting speed and plotter. In general, an acceptable height is 10 mm (0.4 in) at medium speed and with a blade in good shape. Smaller letters can be obtained by reducing the speed.

⚠ *For the UFlexClear film, it is necessary to use a new blade.*

For instance, the recommended maximum speed for a ROLAND® SP300 cutting plotter is 30 cm/s (7.87 in./s). However, when the logos are thin or small, cutting at 20 cm/s (8 in/s) is recommended to obtain a better result.

Note: In any case, carefully read the cutting plotter's instructions and carry out a preliminary plotting trial.

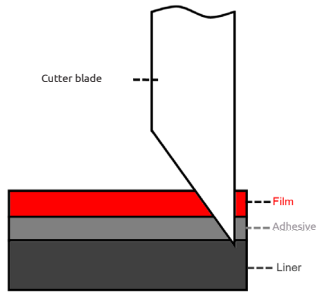


Figure 01

The blade must cut the polyurethane film and the adhesive-coated surface. (Fig. 01)

A blunt and worn blade will impair the quality of the cutting and will require a higher pressure. Weeding will also be more difficult.

2.2. Preliminary plotting test:

In order to determine the plotter settings, we advise you to carry out a preliminary test:

Figure 02

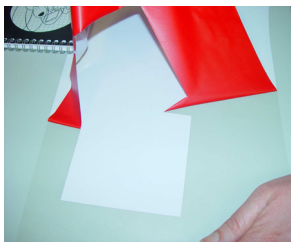


Figure 03

› Cut a square of 10 cm x 10 cm (3.94 in. x 3.94 in.).

› Weed (Fig. 02) (Fig. 03): remove any excess material.

› Check:

- › that the cut square adheres well to the liner;
- › that the liner is free of any incision.

› Weeding will be successful if the plotter is properly set up (pressure, speed, shape of the blade).

3. PRINTING, CUTTING AND WEEDING:

	UFlex 5S	UFlex7Pv2	UFlexClear	SILKPRINT	NYLPRINT	BLOCKPRINT	SLIMPRINT
Printing							
in positive mode	✓	✓		✓	✓	✓	✓
in mirror mode			✓				
Cutting* within the graphic							
after printing	✓	✓	✓	✓	✓		
after 24 hours						✓	✓
Weeding**							
right after cutting	✓	✓	✓	✓	✓	✓	✓
2 hours after cutting	✓	✓	✓			✓	✓

Chart 1: Printing, cutting and weeding conditions upon the Flex used

⚠ *Refer to the printer-plotter instructions.*

* For the UFlexClear film, cutting must be done on the inner periphery or within the graphic in order to be sharp. For the other flex films, it is necessary to carry out a cutting test and to adjust, according to the result, the plotter parameters prior to any series production.

****** Weed = remove any excess material. (Fig. 04) (Fig. 05) (Fig. 06)

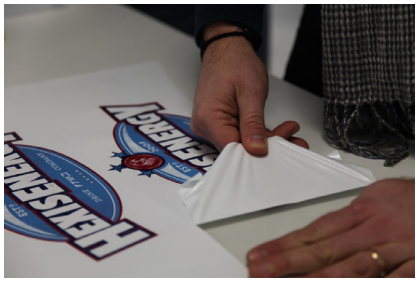


Figure 04

Figure 05

Figure 06

4. TAPE APPLICATION:

(For all references except for UFlexClear)

› Use the appropriate tape (refer to compatibility chart on page 1).

› Remove the tape from its protector (liner). (Fig. 07)

Figure 07

› Position and apply the tape to the printed, cut-out and weeded film. (Fig. 08)

Figure 08


Figure 09

› In a dust-free environment, push the tape with a squeegee, pressing firmly over the contours (Fig. 09) to avoid any folds or bubbles.

Special note for UFlexClear: This reference (clear flex) is used without tape. The liner acts as tape.

5. GRAPHIC APPLICATION:

5.1. Heat press setting:

(Fig. 10)


Figure 10

› Pressure: high depending on the type of press (except for SILKPRINT: medium pressure and NYLPRINT: low pressure).

› Adjust the press temperature.

Flex	Indicative press temperature:
UFlex5S	from 140 °C (284 °F) on cotton from 130 °C (266 °F) on polyester
UFlex7Pv2	140 °C (284 °F)
UFlexClear	140 °C (284 °F)
SILKPRINT	30 °C (266 °F)
NYLPRINT	150 °C (302 °F)
BLOCKPRINT	150 °C (302 °F)
SLIMPRINT	160 °C (320 °F)

Chart 2: Indicative temperature depending on the fabric and flex used

Advice: In any case, always perform a preliminary trial so as to best adjust the pressing conditions before carrying out large series.

5.2. Fabric's preheating:

Purpose: to remove humidity from the textile.

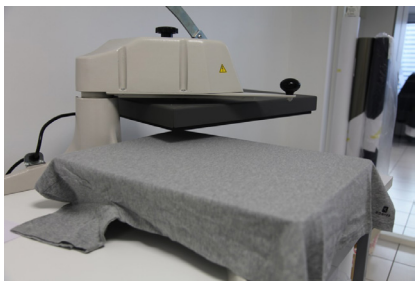


Figure 11

› Position the textile. (Fig. 11)


Figure 12

› Press to preheat the fabric. (Fig. 12)

Conditions:

› Temperature: Refer to chart 2 in paragraph 5.1.
› Time: 5 seconds (3 seconds for NYLPRINT).

5.3. Separating the graphic from the liner:

(For all references except for UFlexClear)

› Make sure that the tape is face up.

› Apply to an even surface.

› Carefully remove the tape from the liner.

› Check if the graphic remains stuck to the tape.

5.4. Textile cleaning:

(Only for the reference UFlexClear)

› Remove dust particles, extraneous textile fibres, etc. from the surface to be covered using HEX860 or HEX960 tape pieces to take them off.

Due to the UFlexClear transparency, these impurities would be permanently visible on the unprinted parts once the film has been applied.

5.5. Positioning the graphic:

Position the image. (Fig. 13)

Figure 13

› Some fabrics/clothes may have a non-uniform thickness (seams, rivets, buttons, etc.) and therefore require an additional support between the fabric and the press table, which should be:

- as large as the graphic or slightly larger,
- thick enough

This is done to allow the flex film to fit perfectly with the hot plate during pressing. (Fig. 14)

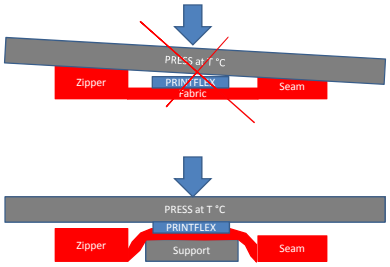


Figure 14

5.6. Pressing:

(Fig. 15)

Conditions:

Flex	Indicative press conditions
UFlex5S	5 seconds at ≥ 140 °C (284 °F) on cotton 5 seconds at ≥ 130 °C (266 °F) on polyester
UFlex7Pv2	15 seconds at 140 °C (284 °F)
UFlexClear	15 seconds at 140 °C (284 °F)
SILKPRINT	5 seconds at 130 °C (266 °F)
NYLPRINT	8 seconds at 150 °C (302 °F)
BLOCKPRINT	20 seconds at 150 °C (302 °F)
SLIMPRINT	15 seconds at 160 °C (320 °F)

Chart 3: Pressing temperatures and durations

Figure 15

5.7. Tape removal:

(Fig. 16)

Figure 16

› Depending on the combination fabric / flex, it may be easier to remove the tape while the flex is hot, warm or cold, depending on the specific case encountered. Please refer to chart 4 for further guidance:

Flex	Removal of the liner while the flex film is
UFlex5S	hot.
UFlex7Pv2	hot.
UFlexClear	cold (< 40 °C (104 °F)).
SILKPRINT	hot.
NYLPRINT	hot.
BLOCKPRINT	warm.
SLIMPRINT	hot.

Chart 4: Tape removal conditions

Figure 17

› Result: Image with satin aspect (single run). (Fig. 17)

5.8. Several graphics:

Figure 18

› In the case of an additional graphic, position it and protect the first transferred image. (Fig. 18)

⚠ *The final appearance of the graphics can be influenced by the protector used during the first transfer (please refer to paragraph 4).*

6. FINISH:

(For all references except for SLIMPRINT)

For best results and optimal adhesion:

Figure 19

› Place on the graphic's surface either a TEFLEX protection sheet or a silicone or parchment paper. (Fig. 19)

› Different outcomes and surface finishings can be obtained depending on the protection sheet used during a second passing in the heat press.

Silicone paper ➔ silicone-coated side to be placed on the graphic.

› Press everything together.

Conditions:

› Temperature: Refer to chart 2 in paragraph 5.1.
› Duration: 10 seconds (5 seconds for UFlexClear and SILKPRINT).

The effect of this second run is to let the flex film penetrate between the textile fibres, thus improving its adherence.

› Remove the protector while the fabric's temperature is ranging from 30 °C (86 °F) to 60 °C (140 °F).

7. CARE OF FLEX FILM FABRICS:

› After pressing, wait for at least 24 hours before washing the garment. For a better ink durability, it is preferable to wait for one week before carrying out the first washing.

FLEX	Maximum washing temperature of the FLEX film
UFlex5S	60 °C (140 °F)
UFlex7Pv2	60 °C (140 °F)
UFlexClear	40 °C (104 °F)
SILKPRINT	60 °C (140 °F)
NYLPRINT	30 °C (86 °F)
BLOCKPRINT	40 °C (104 °F)
SLIMPRINT	80 °C (176 °F)

Chart 5: Washing temperatures

Please always refer to the washing temperature indicated on the textile label.

› Use laundry products without chlorine bleach.

› The use of softeners is not recommended since it can cause an alteration of the flex adhesion to the fabric.

› Tumble drying is prohibited (except for SILKPRINT with a maximum drying temperature of 100 °C (212 °F) and SLIMPRINT).

› We recommend you to wash and iron your garment inside out.

The UFlexClear and the NYLPRINT films should not be ironed at all.

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