

PRODUCT BULLETIN

APPLICATION GUIDE Polyurethane film: **FLEX DAO: (200 - 300 - 400 and 600 Series)**

REQUIRED EQUIPMENT

- › A plotter
- › A heat press
- › Flex DAO
- › A textile
- › A TEFLEX protection sheet, or silicone paper or parchment paper (optional)

FEATURES

Plotter films for heat transfer:

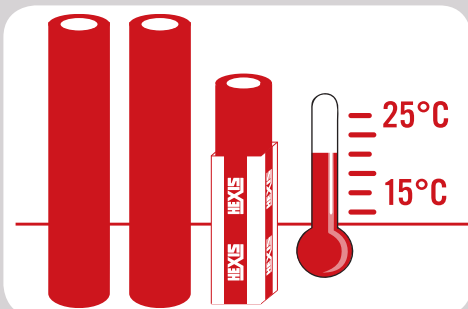
	200 Series	300 Series	400 Series	600 Series
Thickness (µm)	90	70	110	120
Material of the film				
Polyurethane	✓		✓	
Polyurethane and Polyamide		✓		
Retro-reflective				✓
For fabrics				
Cotton	✓			
Polyester	✓			
Nylon		✓		697N
Sublimated			✓	

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

STORE YOUR FILMS UNDER APPROPRIATE CONDITIONS

Keep the films away from any major source of heat (radiators and heaters, direct exposure to sunlight, etc.):

Shelf life: 1 year when stored in their original packaging at a temperature ranging from 15°C to 25°C (59°F to 77°F) with relative humidity between 30% and 70%.



SUMMARY

1. RECOMMENDATIONS:	2
2. CUTTING THE FILMS:	2
2.1. Introduction to plotting:.....	2
2.2. Preliminary plotting test:	2
2.3. Mirror plotting and weeding:.....	3
3. GRAPHICS APPLICATION:.....	3
3.1. Customising your heat press:.....	3
3.2. Textile preheating:.....	3
3.3. Positioning the graphics:.....	4
3.4. Pressing:	4
3.5. Removing the liner while being warm or cold:	4
3.6. In the case of an additional graphics, positioning it as follows:	5
3.7. Pressing:	5
3.8. Removing the liner while being warm or cold:	5
3.9. Final result:.....	5
4. CARE OF TEXTILES WITH FLEX DAO:.....	6

Application methods are based upon HEXIS' experience and are non-restrictive. Comply with instructions to ease application of HEXIS films.

1. RECOMMENDATIONS:

- › To protect delicate fabrics against possible shine caused by direct contact of the fabric with the hot metal of the press, you can use any of the following:
 - a TEFLON® TEFLEX protection sheet;
 - a silicone or parchment paper.
- › Prior to any first application, carry out different tests about:
 - the resistance of the fabric with the press temperature.
 - the compatibility of the PLOTTER FLEX film with the fabric.
- › Apply to a previously washed fabric.
- › For optimum durability, avoid application of the PLOTTER FLEX film over seams.

2. CUTTING THE FILMS:

The films should preferably be stored under the same environmental conditions as the plotter.

! *Important note specific to Flex600: The Flex600 films feature a flexible and thin soft blue-green protection film at their surface. This film must be removed before plotting the film.*

The pressure of the blade has to be adjusted depending on the film. It is recommended to carry out a plotting test before starting a production run.

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

In any case, it is recommended to weed the material right after cutting.

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.), with serifs of 1.5 mm (0.06 in.), at medium speed and with a blade in good shape. Smaller letters can be obtained by reducing the speed.

For instance, the recommended medium speed for a ROLAND® GX24 cutting plotter is 20 cm/s (7.87 in./s).

Note: In any case, carefully read the operating manual of the cutting plotter and carry out a preliminary test.

The blade must cut the polyurethane film and the adhesive 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:

- › 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).

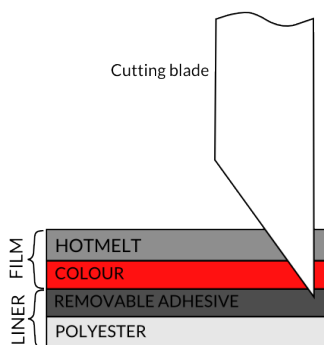


Figure 01



Figure 02



Figure 03

2.3. Mirror plotting and weeding:

(For Flex600 only)

- › Remove the thin protection film from the surface of the film. (FIG. 04)

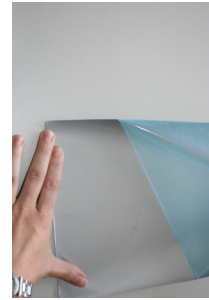


Figure 04

(For all PLOTTER FLEX)

- › Cut a mirror image. (FIG. 05)

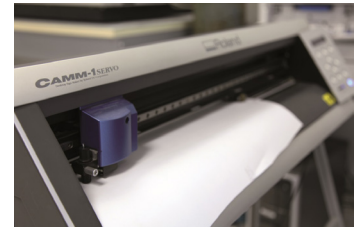


Figure 05

- › Weed (FIG. 06) (FIG. 07) (FIG. 08): remove any excess material.

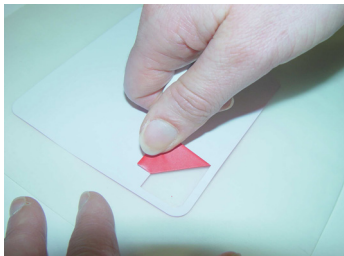


Figure 06

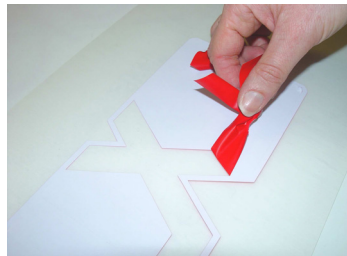


Figure 07

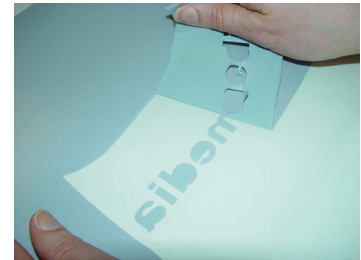


Figure 08

3. GRAPHICS APPLICATION:

3.1. Customising your heat press:

(FIG. 09)

- › Pressure: medium depending on the type of press used.

PLOTTER FLEX	Indicative press temperature
FLEX 200	160 °C (320 °F)
FLEX 300	150 °C (302 °F)
FLEX 400	160 °C (320 °F)
FLEX 600	160 °C (320 °F)



Figure 09

3.2. Textile preheating:

Purpose: removing humidity from the textile.

- › Position the textile on the press. (FIG. 10)



Figure 10



Figure 11

› Press for 3 seconds to preheat the textile. (FIG. 11)



Figure 12

3.3. Positioning the graphics:

› When the textile is returned to ambient temperature, position the lettering/graphics viewed in the normal reading direction (the liner is on top and the polyurethane film must be in direct contact with the fabric). (FIG. 12)

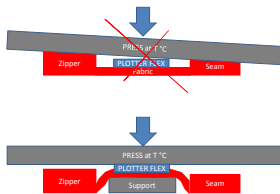


Figure 13

› Some fabrics/clothes have an irregular 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 graphics or slightly larger,
- thick enough

to allow the PLOTTER Flex to perfectly fit the hot plate. (FIG. 13)

3.4. Pressing:

(FIG. 14)



Figure 14

PLOTTER FLEX	Indicative press temperature without fabric protection	Indicative press temperature with fabric protection
FLEX 200	160 °C (320 °F) - 20 s	180 °C (356 °F) - 30 s
FLEX 300	150 °C (302 °F) - 15 s	170 °C (338 °F) - 25 s
FLEX 400	160 °C (320 °F) - 20 s	180 °C (356 °F) - 30 s
FLEX 600	160 °C (320 °F) - 20 s	180 °C (356 °F) - 30 s

3.5. Removing the liner while being warm or cold:

(FIG. 15) (FIG. 16)

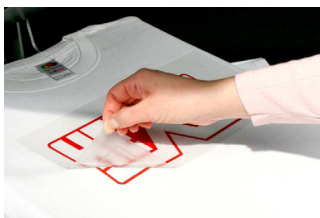


Figure 15



Figure 16

PLOTTER FLEX	Remove the tape when the Flex is:
FLEX 200	Warm (between 30 °C and 60 °C (86 °F and 140 °F))
FLEX 300	Warm (between 30 °C and 60 °C (86 °F and 140 °F))
FLEX 400	Warm (between 30 °C and 60 °C (86 °F and 140 °F))
FLEX 600	Warm (about 30 °C (86 °F))

3.6. In the case of an additional graphics, positioning it as follows:

(FIG. 17)

- › As a precaution, you may protect the entire graphics by means of:
 - the previously removed protective liner,
 - a TEFLEX TEFLON® protection sheet,
 - a silicon or parchment paper.



Figure 17

3.7. Pressing:

(FIG. 18)

Plotter FLEX	Indicative press temperature without fabric protection	Indicative press temperature with fabric protection
FLEX 200	160 °C (320 °F) - 20 s	180 °C (356 °F) - 30 s
FLEX 300	150 °C (302 °F) - 15 s	170 °C (338 °F) - 25 s
FLEX 400	160 °C (320 °F) - 20 s	180 °C (356 °F) - 30 s
FLEX 600	160 °C (320 °F) - 20 s	180 °C (356 °F) - 30 s



Figure 18

3.8. Removing the liner while being warm or cold:

(FIG. 19)

- › Textile temperature ranging from 30 °C to 60 °C (86 °F to 140 °F).



Figure 19

3.9. Final result:

(FIG. 20)

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

For best results and optimal adhesion:

- › Place on the graphics's surface either:
 - a TEFLEX protection sheet or
 - a parchment or silicone paper.



Silicone paper → silicone-coated side to be placed on the graphics

- › Press the entire layer assembly.

Conditions:

- › Temperature: 170 °C (338 °F)
- › Time: 10 seconds

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



Figure 20

4. CARE OF TEXTILES WITH FLEX DAO:

- › After pressing, wait for at least 24 hours before washing the garment.
- › The maximum machine washing temperature is 40 °C (104 °F).
- › Use laundry products free of chlorine bleach.
- › Tumble drying is not recommended.
- › We recommend you to wash and iron your garment inside out.

For further technical information, please refer to the Technical Data Sheets available for free download from our website www.hexis-graphics.com, on the "Professionals" pages.

Due to the great variety of substrates and the growing number of new applications, the installer must check the suitability of the media for each application. All the published information does not however constitute a binding guarantee. The seller cannot be held liable for indirectly related damages and assumes no liability for claims that are higher than the replacement value of the purchased product. All specifications are subject to potential changes without prior notice. Our specifications are automatically updated on our website www.hexis-graphics.com.



www.hexis-graphics.com

HEXIS S.A.

Z.I. Horizons Sud - CS 970003
F - 34118 FRONTIGNAN CEDEX
FRANCE
Tel. +33 4 67 18 66 80
Fax +33 4 67 48 38 79
E-mail: assistance@hexis.fr