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## Hotfix Application



# Hotfix Application

## •The SWAROVSKI ELEMENTS Hotfix Assortment

- Flat Back Hotfix Stone
  - Crystal Transfers
  - Crystaltex Banding & Motifs
  - Crystaltex Chaton Banding & Motifs
  - Crystal Mesh
  - Crystal Fabric
  - Crystal Rocks
- Swarovski's Hotfix technology allows crystals to be applied quickly and easily using a simple ironing press, conventional iron or a single stone setting tool.
- Even better results can be achieved by using an iron with no steam holes in the sole plate.
- Transfers and Flat Backs Hotfix Stones are particularly well suited to ironing.
- Transfers, which come in many different motifs, as well as single flat back hotfix stones can easily be ironed on t-shirts, jeans or a variety of other textiles.



# Hotfix Application

## Basic Hotfix Principles – Makeup of Hotfix Stones

- Hotfix elements have a coating of hot-melt glue on the back, enabling swift, simple application.
- This glue is activated by heat and bonds with the carrier material.
- When cooling, the glue hardens and securely and permanently fixes the elements in place.
- The Swarovski Hotfix adhesive is characterized by its wash resistance and easy-care properties.
- The temperature, application time and pressure can be varied according to the carrier material.
- The Hotfix Stones are include four layers:
  - The crystal layer
  - M Foiling: The specially developed coating guarantees optimal brilliance and an excellent bond with the primer.
  - The primer: The primer improves the bond between the glue and the foiling.
  - The Hotfix glue: This transparent glue, developed by Swarovski, allows crystals to be applied onto various carrier materials.



# Hotfix Application

## Basic Hotfix Principles – Carrier Materials

- Before beginning the application process, you should always check to make sure the carrier material is suitable for Hotfix application. Please check the following criteria:
  - Heat resistance (min. 120°C/250°F)
  - Resistance against pressure
  - Application area of the product
  - Suitability of surface properties and absorbency
    - Some textiles and special finishes are unsuitable for Hotfix application, due to a lack of absorbency.
    - Checking absorbency via the water drop test - a quick and easy way to get an initial idea of the absorbency of the carrier material.
      - Apply a couple of drops of water onto the carrier material. If the material quickly absorbs the drops, it offers good absorbency.
      - If the water pearls off the carrier material, or if it takes a long time to be absorbed, the material offers insufficient absorbency. This can impair the effectiveness of Hotfix application.



# Hotfix Application

## Basic Hotfix Principles – Carrier Materials

- This is a list of unsuitable carrier materials and finishes:
  - very tightly woven textiles
  - smooth leather and smooth imitation
  - hydrophobic or water-repellent treatments (silicone, synthetic resin as a waterproofing agent)
  - Teflon coatings
  - stain-resistant treatments
  - easy-to-care treatments
  - fluorocarbon finishes
  - softening agents
  - select dyes (dyes with metal pigments)
  - enzymatic treatments
  - Special care needs to be taken on very thin fabrics, e.g. organza and application on these types of materials is not always recommended.
- It can sometimes be helpful to wash the carrier material before application, in order to remove any unsuitable finishes (particularly softening agents), and thus improve absorbency.



# Hotfix Application

## Basic Hotfix Principles – Parameters

- Generally, the following parameters are most important when carrying out Hotfix applications of SWAROVSKI ELEMENTS:
- Temperature
- Pressure
- Application time
- Application side



# Hotfix Application

## Parameters – Temperature

- Swarovski Hotfix adhesive is activated within a temperature range of 120°C to 170°C (250°F to 340°F). A suitable application
- Temperature can be selected from this range according to the carrier material and its sensitivity to heat.
  - With heat presses, the temperature selected on the display does not always reflect the actual temperature on the surface of the press.
  - Often, the temperature can be distributed unevenly, or one heat plate may be defective.
    - It is therefore recommended to regularly check the temperature with a laser measuring device or temperature measuring strips at various points on the heating surface, to ensure the temperature is distributed evenly across it.
    - Checks should be carried out regularly (once per week), particularly during production.



# Hotfix Application

## Parameters – Pressure

- The pressure setting depends on the Hotfix elements to be applied, the carrier material, and the technical equipment (machines, etc.) available.
- Too much pressure can cause the adhesive to be spread out and can also affect the surface of the carrier material.
- Too little pressure, however, can result in a weak and insufficient bond between the crystal and the carrier material.
- In general, the pressure should be applied directly to the crystal elements (e.g. Flat Backs Hotfix, Transfers, Crystal Mesh).
  - It is therefore necessary to check if there are any buttons, zippers or other raised parts surrounding them. Always use a compensating pad to even out the surface.
  - When applying SWAROVSKI ELEMENTS of different heights, a compensating pad should always be used. Silicone foam or foam rubber can be used here.



# Hotfix Application

## Parameters – Application Time

- In general, the application time should be sufficient to allow the hot-melt glue to be fully activated, and then penetrate the carrier material.
- The necessary application time depends on the Hotfix elements, the temperature selected, the machine used, the carrier material and the application side.



# Hotfix Application

## Basic Hotfix Principles – Application Side

- Hotfix elements can usually be applied from the front or the back.
  - A shorter application time can be achieved with thinner fabrics by applying crystals from the back, as the heat reaches the adhesive through the carrier material faster, activating it immediately.
- When applying Hotfix products on thick or multi-layered fabrics (such as seams) the application side selected should be the one that allows the heat to be transferred to the hot-melt adhesive quickest. This ensures fast, optimum activation.
- The shape and size of many items (e.g. Pearls, Creation Stones) will only allow an application from the back as they cause irregular temperature penetration.



# Hotfix Application

## Optimum application parameters

- Adhesive has been successfully activated when, using a magnifying glass, it is possible to see a thin edge of glue formed around the crystal.
- On thin fabrics, the optimum application parameters are chosen when the glue will have lightly penetrated through the fabric and is lightly visible at the reverse.
- When parameters have been incorrectly selected, such as an extreme application temperature, pressure, or application time, significant amounts of glue can spread out.
- When the application temperature or pressure is too low, or the application time too short, the adhesive cannot be sufficiently activated, leading to problems with adhesion.



# Hotfix Application

## Application using a heat press

- A heat press is the ideal tool for applying Hotfix products as it can be used to apply even, adjustable pressure.
- All SWAROVSKI ELEMENTS mentioned in the product overview can be applied using the following steps.
- To adjust the application parameters and the aids to achieve an ideal balance, it is strongly recommended that tests are carried out with the original material.
  - Peel off the white protective film.
    - Not all Hotfix products are provided with a protective or support film (e.g. Crystaltex).
  - Place the product in the desired position.
  - Make sure to apply the elements from the recommended side and use the correct pressing aid.
  - To protect the heating surfaces from any glue residue, it is best to cover them with Teflon® film.
  - After the pressure, time and temperature is set, close the heat press.
  - After the application is finished, use a pressing cloth to apply additional pressure to the product.
  - Once the product is at least hand warm, the transparent film can be removed at an acute angle.



# Hotfix Application

## Application using a heat press (continued)

- If adhesion is insufficient following the application process, it can be repeated, adjusting the parameters (such as pressure, time and temperature).
  - Please ensure that the application process is repeated from the very beginning, and that the initial application time is combined with the additional time.
    - For example: After application, it is clear that the application time of 10 seconds was insufficient. Pressure should not just be applied for a further 5 seconds—the process must be repeated in its entirety, with an application time of 15 seconds.



# Hotfix Application

## Application using a single stone applicator

- Single stone applicators are a cost-effective way to apply XILION Flat Backs Hotfix (SS 6 to 34) onto the carrier material.
  - Choose an applicator point to match the size of the crystal, so that the crystal cannot tilt out of place.
  - Heat the applicator to a suitable temperature and pick up the crystal.
  - As soon as the Hotfix adhesive on the back of the crystal has melted, position the element on the carrier material, which should be resting on a solid base (e.g. glass, metal).



# Hotfix Application

## Application of Crystal Transfers With an Iron

- In general, an iron can be used for the application of all Hotfix elements.
  - However, as pressure and temperature can only be controlled to a limited extent, the use of a heat press is recommended.
- Always iron on a firm, flat and even base
- An iron without steam vents is recommended.
  - Pressure cannot be applied at these vents, and water droplets and steam have a negative effect on the application results.
  - Teflon plate covers can be used on irons with steam vents, but do not solve all of these issues.
    - Make sure that there is no water in the iron and that the steam function is turned off.
- Choose an iron temperature between 120°C and 170°C (250°F – 340°F, or choose the symbol for silk/wool or a similar moderate temperature.
- A Teflon pad will protect the plate from glue residues.
- If necessary, tuck a piece of thick paper into the item of clothing to protect it from indentation marks caused by crystal elements.
- Put the iron directly on the transfer (turn inside out) and apply moderate pressure **without** moving the iron.
- To finish, let the piece cool and then carefully remove the transparent foil.



# Hotfix Application

## Additional notes:

- Hot-melt adhesive generally requires 24 hours to cure completely.
  - Any washing or quality assurance should take place after this period.
- Undesired film marks on sensitive fabrics can be avoided by cutting the transparent film close to the edge of the motif.
  - Apply the product for a short time, using a small amount of pressure. Then remove the transparent film and press again following the recommended time and pressure settings.
  - If the film has already left marks, the surface structure of the carrier material can usually be restored by brushing, using a steam iron or by re-pressing it in the heat press.
- Using Hotfix on non-textile carrier materials
  - The Hotfix glue was specially developed for use with textiles. However, experience shows that Hotfix applications can also be carried out on other materials such as wood, paper or metal.
  - In such cases it is very important to carry out application tests beforehand, and to check the surface properties.



# Hotfix Application

## Tools

- Single Stone Setting Tool
- Iron
- Heat Press Machine
- Teflon Paper
- Compensating Pad





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