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Heat Transfer Guide

Heat transfers have only three process variables to consider when applying them to your substrate. These are time, temperature and pressure. There is also a confusion as to the several different types of transfers on the market. Before we talk about the process variables, the different types of transfers needs to be defined.

Cold Peel: A transfer where the paper is allowed to cool prior to removal. These types of transfers are on a release type of paper and all of the ink is transferred from the paper to the substrate. Also "Flock" transfers generally are cold peel. (Note: always consult the transfer manufacturer for the proper time, temperature and condition of the peel.)

Foils: A metallic film which is either printed with an adhesive or is sometimes used with Puff transfers: A two-part type of transfering gives a shining glittering look to the transfer. Foils come in a variety of colors and are usually the type of transfer one would find in the boutiques because they give the appearance of flash and definitely draw attention to themselves, especially on dark colored fabrics.

Hot Peel: A transfer with some of the look and feel of a hot split but can be used on dark fabrics.

Hot split: A transfer which is peeled immediately upon the completion of the transfer dwell time. These transfers are printed on a bond paper with a hot split ink allowing for the ink to literally split in half. When peeled the ink splits leaving half on the paper and half on the garment allowing for the look and feel of a direct print vs. that of the ordinary cold peel transfer.

Puff: A hot split specialty transfer that has a chemical blowing agent that reacts (at approx. 350°F) with the ink and "puffs up" giving an added dimension to the transfer. Puff inks are used in transfers either singularly or in combination with hot split inks to give a special highlighted effect to the transfer. Note: If puff (chemical blowing agent) does not occur, check the temperature and pressure. Always consult the transfer manufacturer for the proper time, temperature and condition of peel.

Sublimation: A transfer medium that was originally designed for synthetic substrates. A sublimation is a dye, which when heated, forms a gas and dyes itself to the synthetic substrate. The sublimation process is now utilized in the laser printer and copier type of transfers that are printed on a specialized type of paper allowing for transfer on high (80%) polyester fabric. It is also used in the printing of coffee mugs and even specialty neckties as it has very soft hand to it and the garment remains flexible.

Substrates: The item being printed on. Whether a T-shirt or a coffee mug, that which is to receive the transfer.

Thermal transfer: These are a relatively new hot peel transfer produced from specially produced waxy but durable and washable color ribbon printer on special thermal transfer paper. These transfers are seen in copiers and color printers driven by computers and scanners.

Description	Pressure	Temperature°F	Time (sec)	Peel
Cold Peel	Firm	350	10-15	Cold
Hot Peel	Firm	375	12-15	Hot
Hot Split	Firm	375	8-12	Hot
HIX Flock	Light	350	10-12	Hot/Cold
Competitor Flock	Light	350	10-12	Cold (only)
Puff	Firm	375	10-12	Hot
Sublimation	Firm	400	10-20	Hot
Litho Cold Peel	Firm	350	10-12	Cold
Litho Hot Peel	Firm	375	10-12	Hot
Foil	Firm	375	10-12	Hot

The window for deviation from the above recommendations is fairly broad. Some companies may recommend 10-15 seconds at 350°F for Hot Split while others recommend 8-10 second at 400°F. Experimentation will determine your optimum settings (i.e.: more time/less heat or less time/more heat).

There seems to be a common misunderstanding throughout the heat transfer manufacturers when it comes to "appropriate" pressure. Most say you need 90 lbs. of pressure for "firm" pressure and 40 lbs of pressure for "light" pressure. This pressure relates to platen pressure as it is applied to the transfer. It is **NOT** a lbs per sq. inch of pressure on the platen. There is no manual machine on the market capable of 90 lbs of platen pressure per sq. inch.

Our machines do deliver the necessary pressure for all heat transfers on the market. **Note:** Testing of any new type or brand of transfer is recommended.

Our manual machines are very easy to adjust from firm to light pressure. The best machines for determining the exact pressure with no guess work are the air actuated automatic machines. A light pressure transfer is about 20 psi "air pressure" and for firm pressure transfer is about 40 psi "air pressure"; note the pressure is defined by pounds per sq inch of air pressure **NOT** platen pressure.