Understanding the Difference Between Thermal Transfer & Direct Thermal Printing

Labels have grown to be one of the overriding factors in marketing a product. It displays crucial information like name, the company it is affiliated with, the ingredients used in it, etc. New techniques to print labels sprung up to match its rising importance out of which, thermal printing is preferred where there is a need for high quality, accurate printing with good speed.

There are two types of thermal printing—Thermal transfer printing & direct thermal printing. Let us understand what both of them are, followed by a side-by-side analysis to recognize the best method for your needs.

Thermal Transfer Printing

Thermal transfer printing uses heat to transfer the image from the printer ribbon onto the label. The labels produced can be simple or colourful with high print quality. You can use different materials for the labels used in this printing and get durable results every time. For the best results, find the ribbon-label combination that works best for your needs.

Direct Thermal Printing

Direct thermal printing also uses heat to print on labels but doesn't use the ribbon of the printer. The label stock is heat activated & specially formulated to react to heat and present accurate printed results.

This is best for a fast-paced environment where longevity isn't desired, such as the ticketing & retail industry.

Side-by-side Analysis

Printer

Thermal transfer: Printers used in thermal printing have more parts & supports both thermal transfer & direct thermal types of printing. They have hardware that controls the movement of the ribbon, which is responsible for the printing process. It can also print on a wide range of media stock, scoring points on versatility.

Direct thermal: Printers used for direct thermal are compact. This is because of the absence of ribbon & other hardware, as direct thermal printing only needs the label & the printhead.

Print Quality

Thermal transfer: It delivers high-quality text & graphics with excellent colour reproduction and image stability.

Direct thermal: This approach produces crisp, scannable results but can only deliver them in black & white. However, it does so with minimum wastage & can also use recyclable materials.

Lifespan

Thermal transfer: Labels printed with thermal transfer have a long life of more than a year. This is because of the rub resistance it offers, coupled with durability against factors like chemicals & high temperature.

Direct thermal: Labels printed with this approach remain chemically active after printing. This gives them less resistance against light, water & chemicals, increasing their chances to fade & giving them a shorter life compared to its counterpart.

Cost

Thermal transfer: The printer used in this is expensive but can print using thermal transfer & direct thermal methods. Maintenance could prove costly as more parts increase the chances for repairs & replacements.

Direct thermal: As it doesn't need toner, ink or ribbon to print, it is a cost-effective option. Besides that, it needs little to no maintenance or replacement of supplies.

Uses

Thermal transfer: Used where longevity is needed, like product identification labels, asset tagging, cold storage, outdoor applications, etc.

Direct thermal: Used where cost-effective, short-term solutions are needed like receipts, barcodes, temporary identification, tickets, etc.

The best printing method for you depends on the needs & budget of your organization. Direct Thermal Printable (DTP) films by Cosmo Films offer another solution. Our BOPP-based films have a proprietary coating for printing & a protective layer over them to protect against mechanical abrasion, chemical products, climatic factors, etc. It is suitable to print with UV & water-based flexo and gives out labels with a crisp print paired with excellent rub, scuff & water resistance. You can use our films to print airline baggage tags, retail price marking, logistics labels, & more.

Contact us to connect with our team of experts and know more.