

Thermal Transfer versus Direct Thermal

Our thermal labels cover a wide range of products, we supply millions of labels and tags each year into many industries all of which have been proven in some of the harshest environments – this is what you need when there is no room for failure

1. Direct thermal.

This is a method of printing where the label material itself is reactive to heat. Apply heat (normally 80 degrees Celsius to 100 degrees Celsius) to the label surface and it turns black. This is an excellent print method where typical usage is approximately 200,000 units per annum or more.

As paper is abrasive, it is paramount that a label material of relevant quality is used. The higher the quality then the superior the print result. This is governed by:

- Paper smoothness
- Paper whiteness
- Thermal reaction by temperature and time
- Any coatings on the paper
- Moisture barrier properties on both the top side and under side of the paper stock.

If a paper material is utilized that does not match the customer's requirement (printer type, volume, environment, quantity) then the print quality will be poor, barcode scanning very problematic and maintenance costs to the printer will be excessive.

Due to the technology and exact nature of the label material the cost of Direct Thermal material is higher than that of 'conventional' label stocks.

2. Thermal Transfer.

This method of printing is where a more conventional label material is used, where the material is NOT reactive to heat. For this material we must use a 'Thermal Transfer Ribbon'. The thermal transfer ribbon is reactive to heat and bonds to the label top sheet under heat (thermal) load and pressure.

This method allows for a 'branded' label to be printed (e.g. with a photograph image, etc) and then 'overprinted with text and data.

Thermal transfer is an excellent print method for logistical labeling where the manufacturer prints 200,000 units or less per annum. This is due to the thermal transfer ribbon roll having a lubricant which contacts the thermal head in the label printer resulting in excellent print and a reduction in repairs and maintenance due to minimizing the abrasion in the label printing.

Once again, label materials are paramount, the better the quality of label, the superior the print via the label printer. However, with thermal transfer it is also critical to utilize a quality thermal transfer ribbon which is also matched to the label material. If there is an incompatibility between the thermal transfer ribbon and the label then print will be poor and problematic.

3. What is best for me?

Today's Direct Thermal material has improved greatly and now allows a 'longer' life for a thermal print head. Your choice between both methods is very dependent on the type of substrate you are applying your label too, where it ends up, the volume you will use and how long it needs to stay on.

At Kiwi Labels we have solutions, advice, technology and materials to ensure our customers thermal labeling is hassle free, high quality, low in machinery repairs and maintenance cost and performs to the environment.

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