



“Analysis of different flexible printing substrate at after printing, lamination is done then there is variation in shade of color”

Azad Singh

Assistant Professor Department of printing technology, OSGU Juglan Hisar, Haryana.

ABSTRACT

Printing is art science and technology in which we do all types of printing. We know that there is more roll of ink or color theory in printing. If our color shade is good, then all our art is good. We have seen that printing time print shade same to master copy but after lamination print shade is not match due to master copy. Therefore, we have analysis this paper to know which technology that our set changes during the time of printing and lamination, so we can to improve technology and it's to control and manage print shade card and also take a techniques in apply lamination process this search of paper of various flexible printing substrate ie. PET, BOPP, Plain BOPP, Pearlisted BOPP, CPP, White Poly etc.

Keywords: shade color theory, color profile, lamination and flexible substrate.

INTRODUCTION:

Color theory also involves a color's darkness or lightness, or color values. You can change a color's hue by adding white for tint, which will give you lighter pastel colors, and black for shade to darken and dull color. When gray is added to a primary, secondary or tertiary color, it creates a tone. This scientific study concerns the visual color effect caused by the thin polyethylene coating extruded on printed packaging material. The origin of the phenomenon is discovered and characterized mathematically. CIE delta E 2000 theory is adapted in the research for mathematical judgments of visual difference. The report handles the procedure of defining the character of the visual distortion and a characterization of the effect. In this process it discusses areas as dot gain, color shift and production parameters. It as well covers the background of color and printing science. The aim of the work is to create a model that predicts the visual effect of lamination in the proofing stage of the production.

Shade band is a color standard range for color evaluation process of finished garments to get garments within buyer standard color range

Color psychology on Print shade:

Color is the aspect of things that is caused by differing qualities of light being reflected or emitted by them. Radio waves are observed by your eye and translated by your brain's neural impulses into color; therefore the human eye can see a wide spectrum of colors.

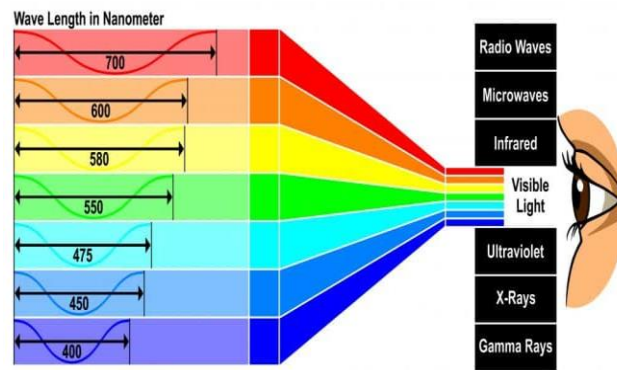


Figure: 1. visual color by human eye on the printed shade

Color view of print shade:

As a result, CMYK has a smaller color gamut, than RGB. You should remember that with the CMYK color profile it is simply not possible to print bright red, bright green or bright blue colors. If you use the RGB color system to create your designs, the printed result can be quite disappointing.

METHODOLOGY:

To characterize the visual impact caused by the lamination process, spectral data from laminated and unlaminated Prints was analyzed. A printing test form was designed, evaluated and a mathematical model of the visual impact of the lamination was constructed

ANALYSIS:

When choosing laminated flexible substrate or flexible substrate for a packaging product material, whether it is a pouch or bag, several significant facts need to be taken into consideration. The behavior of the laminated printed roll is related to the appearance of your luxury packaging, that is why it is important to get acquainted with the various factors which determine the outcome of applying laminate over ink.

After lamination:

The colors of the printed flexible roll may feature different shades compared to the non-laminated substrate. The laminate that is applied directly over the printed material causes a variation in the path of the light hitting the flexible print shade: first directly on the printed substrate and after lamination, through the plastic film. Since the colour perception is affected by the light's path, this phenomenon must be taken into account. The colour change of the ink in the light is amplified by the plastic film. the contrast and intensity of colors may be decreased.

A factor that helps us understand the differences between a laminated printed sheet and a non-laminated one is the dot gain value. This value increases significantly with lamination. It is obvious that the dot gain is not physical but instead optical, i.e. due to the film layer that amplifies the visual perception of the dot dimensions. It is as if the film acts as a magnifying glass. Due to this effect, if the dot gain increases, as a result the print contrast decreases.

The laminate may be detached from the sheet along the creases of a laminated paper product. It is crucial that the inks are completely dry both on the surface and internally; otherwise the lamination process may determine an undesired reaction, resulting in anomalies that affect the plastic film, making the film detach and making the printed sheet non-compliant. This most often happens when the sheets are fully printed in solid colour. That is why we need longer production time for proofing of printing shade.

RESULT AND DISCUSSION:

In this research work in lamination process take a most impact on the print shade and also take problems in various types of flexible substrate. The problem in the proofing process lies in the visual transform that occurs when the printed material is laminated. The flexible print shade proof serves two reasons; the first is as a printer proof of what to print and the second being a customer assurance of what to deliver. One proof cannot be used for both reasons while the visual impact of the lamination occurs after the printing process. This project will create a deeper understanding within the area and result in a workflow compensation curve to apply in the proofing process creating the second customer dedicated proof.

CONCLUSION:

The purpose of the proofing process is to make sure that you are producing the customer approved result. Understanding the visual impact of lamination is a necessary part to secure this process. The laminated substrate gives the impression of halftone dots appearing visually larger than they are. The phenomenon has the character of ordinary dot gain where the amount of the distortion is dependent on the coverage of the area. The distortion can be regulated using a compensation curve controlling the dot area. In addition to these results it has also been stated that the full tone color shift is not the dominant cause of the visual impact of lamination. The dot gain phenomenon may disturb the colour balance in a design and create an unwanted visual result. Differently coverage percentages respond different to the dot gain phenomenon. This could imply a larger dot area increase in one colour than in another and the colour balance in the image is disturbed. The solution to the problem is neither ink supplier nor paperboard supplier dependent. The compensation model only covers the dot gain phenomenon, which is recorded to be, within the tolerances of the production, equal for different ink suppliers, paperboard suppliers and laminators. It is important to have a controlled lamination process to avoid air entrapment between the paperboard and the polyethylene coating. A bad lamination procedure may cause haziness and reduce the colour fullness in the print. This visual problem is not related to this study and cannot be corrected for by using the model. The model is limited by the production variation and does not present.

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