

ABSTRACT

Colour management consists of a range of technologies which help in correct rendering, correct conversion, correct production and correct interpretation of the colour. A wide range of colour management systems already have been introduced and Mellow colour is one of the latest of them. Sheet-fed offset is production based industry in which the product has to be matched with standards using colour management software to check the deviations and to optimize the production quality. Five print jobs were taken into study and aim of this paper is to find various facilities and methods using which the production is matched with the standards using Mellow Colour management system.

KEYWORDS: Colour Management, Mellow, Colour standard, Solid ink density, Dot gain, Colour difference (ΔE).

I. INTRODUCTION

In digital imaging systems, color management is the controlled conversion between the color representations of various devices, such as image scanners, digital cameras, monitors, TV screens, film printers, computer printers, offset presses, and corresponding media. Printing colours need to be standardized for consistency and long run customer satisfaction. One way to achieve this is to follow colour management practices from any standardised agency. Mello colour is very recent colour management solution for printers to achieve target value colours. To describe the behaviour of various output devices, they must be compared (measured) in relation to a standard color space. Often a step called linearization is performed first, to undo the effect of gamma correction that was done to get the most out of limited 8-bit color paths. Instruments used for measuring device colors include colorimeters and spectrophotometers. Mellow & GMI allows us to print according to Industry set standards with consistency. Before starting the print process we will be evaluating the printing machine according to standards and if found any variation the same can be adjusted using the RIP process

- 1) Print the sample job with Color bar for measuring of printing condition while printing use the Densitometer for Density measurement With Densitometer measure the TVI value Also measure the Lab value using spectro-densitometer and run the Job as per industry standard values and try to achieve Delta value below 2 Measure minimum 5 sheet and average the value for better results
- 2) Measure the color bar with spectrophotometer and evaluate the values against standards Refer the chart for Industry standard values for Ink Lab values TVI (Dot Gain) values
- 3) If variation were found in TVI then generate the RIP curve using the above software tools and feed the correction data in RIP software and reproduce the Printing plates Measure the printed plate using IC Plate instrument to evaluate the effectiveness of RIP curve
- 4) Print the sample Job with corrected TVI Curve and measure the color bar

Mellow software allow the printed job to evaluate based on screening method and the considered points were Primary & Secondary color Lab Values

- 1) TVI Data
- 2) Gray Balance
- 3) Overprint for color trapping

- 4) Substrate Lab Value as per paper type standards
- 5) Paper Brightness

As per industry set standard above 80% scoring is considered as job is approved as per printing standard.

II. RESEARCH OBJECTIVE

The objective of this paper is to control the colour quality of printing through Mellow colour management system in sheet-fed offset process on a varieties of printing jobs.

III. RESEARCH METHODOLOGY

The whole study has been with the utilization of color quality control Mellow to improve sheet-fed offset to print the jobs with consistency and predictability and color quality along with the cost, efficiency, consumption of various printing substrate used in sheet-fed offset presses

The following methodology will be adopted during the study.

1. Study of different colour standards used in sheet-fed offset printing process available in Mellow.
2. Study of the colour control methods on various printing substrate used in sheet-fed offset work along with the cost, efficiency, consumption and predictability.
3. Different jobs of the " Sheet-fed Offset Presses" during project work consuming moderate amount of printing substrate will be selected and the study of colour quality control was conducted on each selected job.

The respective jobs were printed with the colour control strips generated with the help of Mellow colour and measured with ilbasic pro instrument available in the press. The automatic report was generated with the help of Print Spec software.

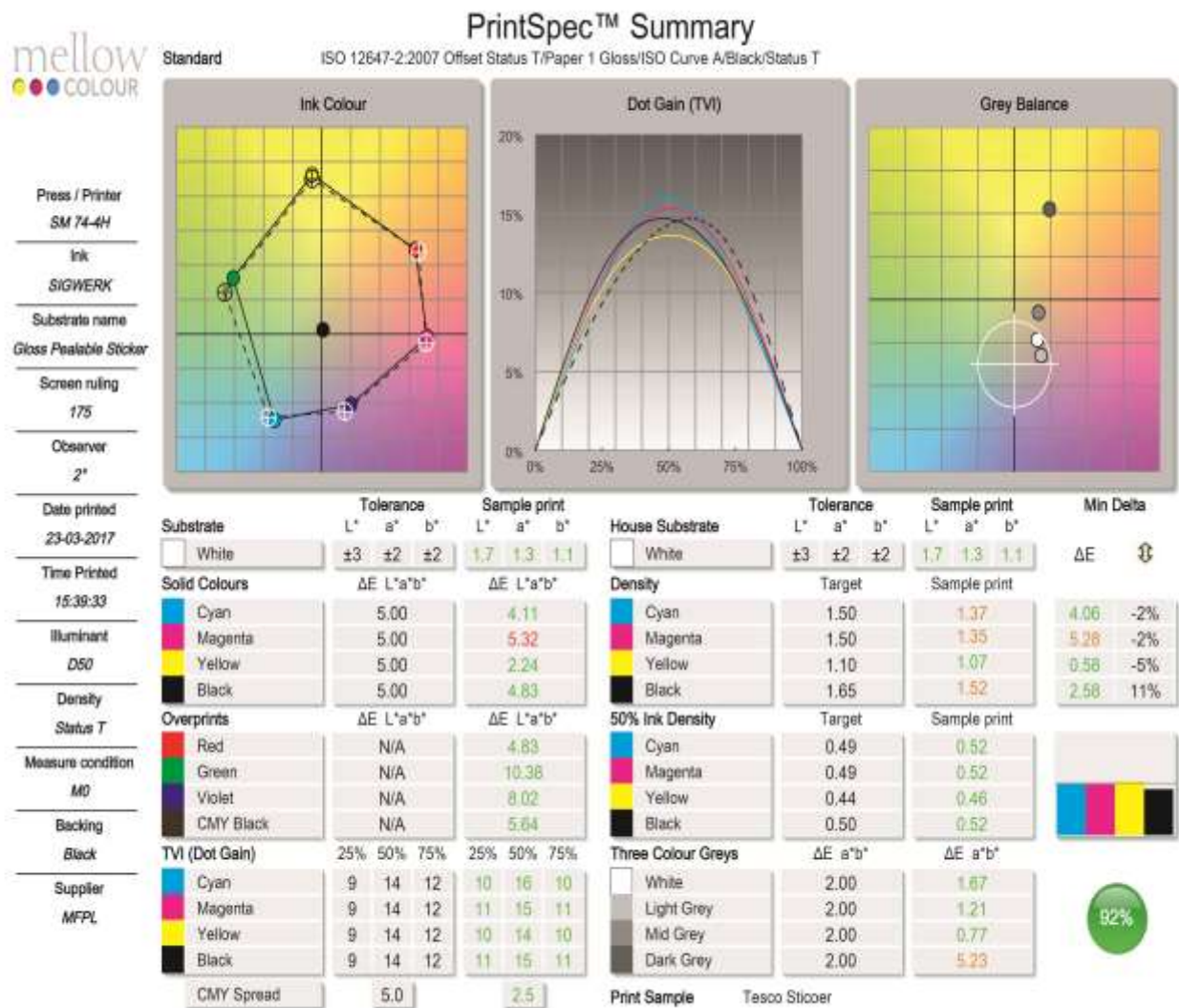
IV. DATA COLLECTION AND ANALYSIS

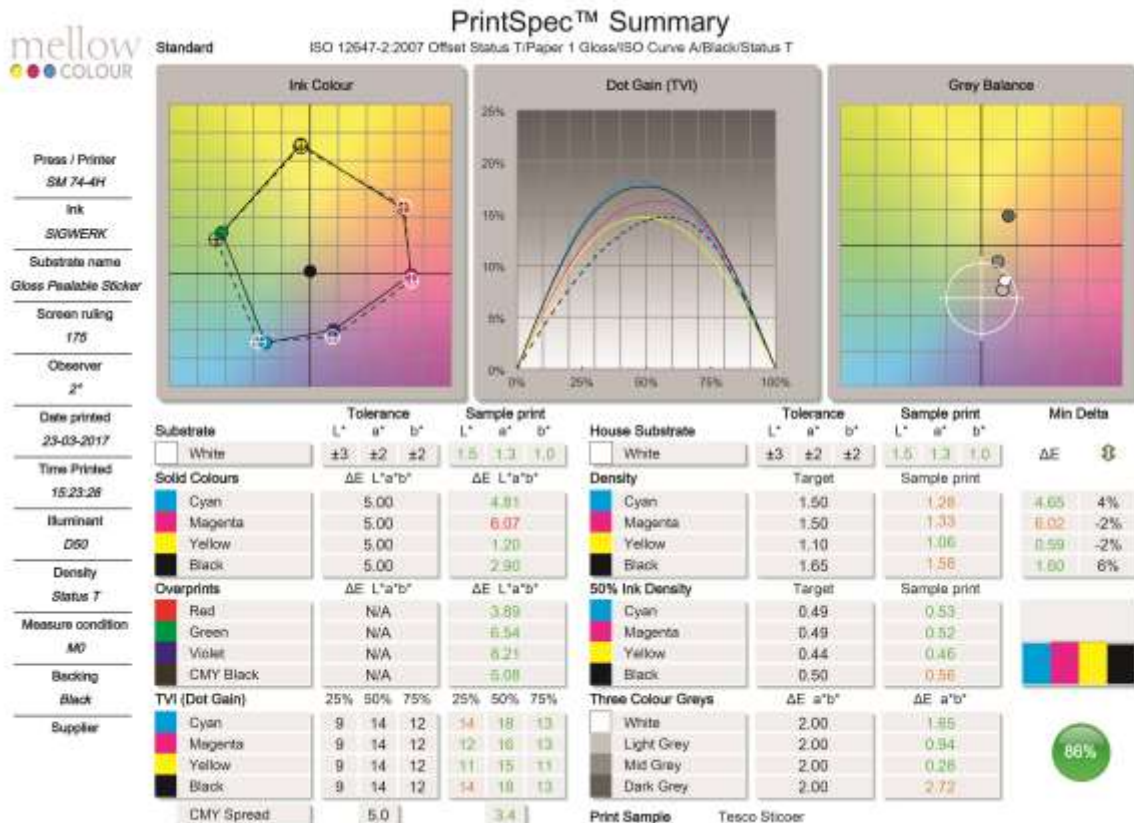
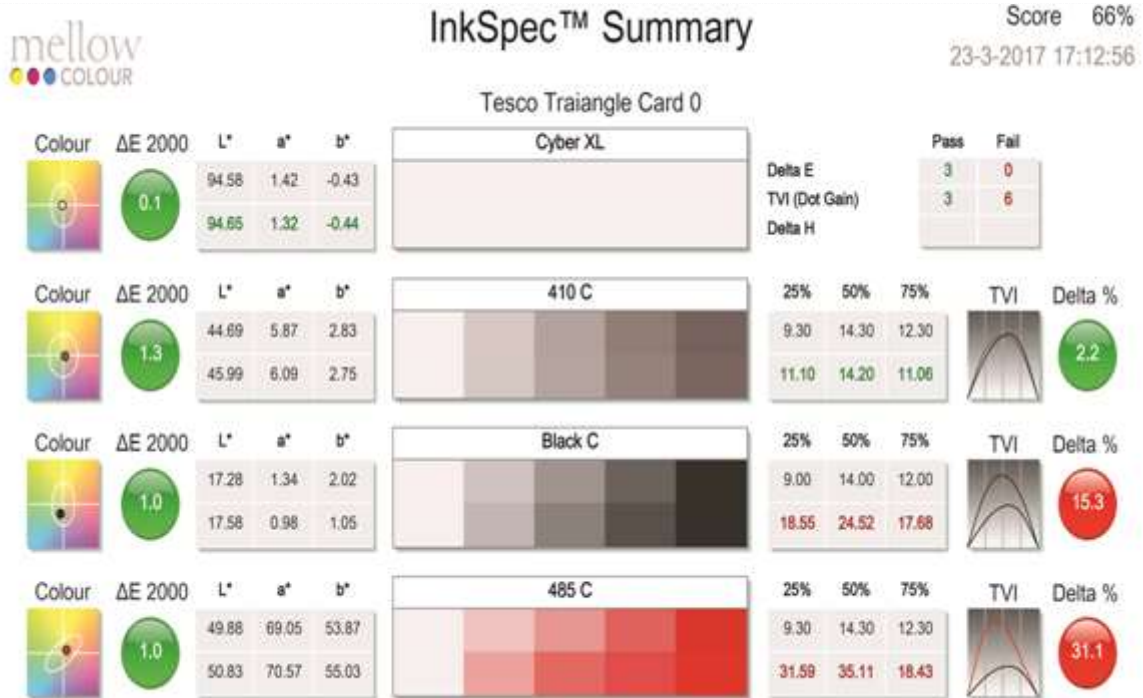
Table.1. Data of Printing on Coated Paper with Mellow Submission at Manohar Filaments Offset Printing Press, Sonipat for the Month of March, 2017

Sr. No	Name of Jobs	Dates	Substrate Used	Substrate Brightness	Qty. of Sheets	MELLOW Standard
1.	TESCO FnF HOME 4 PAGE SWING TAG 5054548608087	03/03/2017	350 ARTCARD C2S	86%	14,500	92%
2.	TESCO FnF HOME 4 PAGE SWING TAG 5054548636684	04/03/2017	350 ARTCARD C2S	87%	17,200	96%
3	TESCO FnF HOME 4 PAGE SWING TAG 5054548636721	07/03/2017	350 ARTCARD C2S	87%	23,765	94%
4.	TESCO FnF HOME 4 PAGE SWING TAG 5054548640568	09/03/2017	350 ARTCARD C2S	87%	28,503	96%
5	TESCO FnF HOME 4 PAGE SWING TAG 5054548636707	13/03/2017	350 ARTCARD C2S	87%	13,202	94%
6	TESCO FnF HOME 4 PAGE SWING TAG 5054548636707	15/03/2017	350 ARTCARD C2S	87%	12,200	92%
7	TESCO FnF HOME 4 PAGE SWING TAG 5054548636608	21/03/2017	350 ARTCARD C2S	87%	8000	96%
8	TESCO STICKER M10809	23/03/2017	350	87%	16,300	92%

[Singh * et al., 6(7): July, 2017]
ICTM Value: 3.00

			ARTCARD C2S			
9	TESCO TRIANGLE CARD	23/03/2017	350 ARTCARD C2S	87%	45,200	66% (FAIL)
10	TESCO_3JOBS	23/03/2017	350 ARTCARD C2S	86%	35,790	98%
11	TESCO_STICKER M10825	23/03/2017	350 ARTCARD C2S	87%	9000	86%





V. RESULT AND DISCUSSIONS

Following are the list of suggestion incorporated in printing section on sheet fed offset machine after consultation with various press authorities. These points will vary according to machine and press setup along with type of job.

- 1) Printing Inks should not be wide gamut
- 2) Inks should be free from XRF (heavy components)
- 3) Paper substrate & Ink should be used as per GMI & MELLOW standard to meet excellent results
- 4) Paper brightness should be as per standard
- 5) Colour standards should be updated or upgraded with latest standards or technology to achieve excellent colour quality submission results.

VI. CONCLUSION

1. Mellow gives advanced colour control facilities like automatic measuring colour control bars, patches and solid colours.
2. Mellow proves to be one of the best tools for auto generated quality control reports available in the market.
3. Depending upon press quality results as analysed by different job types it can be concluded that the colours can be standardized upto 98 % using Mellow colour solutions.
4. Mellow can act as a single solution provider for all quality control parameters like solid ink density, dot gain, print contrast, hue error, greyness etc.
5. Self-generated reports of quality can very easily examine the faults in printing and finally can easily be corrected by printers.

VII. REFERENCES

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