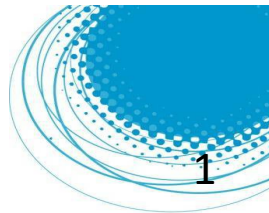


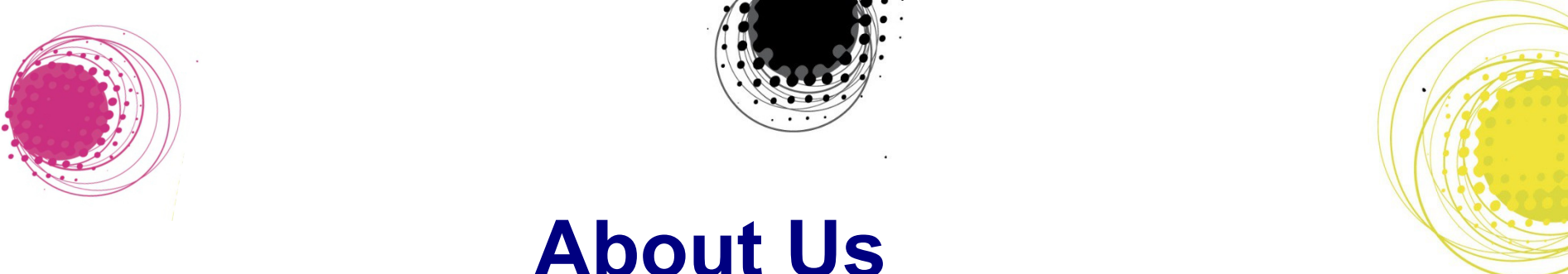
NPES-ICC Color Management Conference 2015

**“Manufacturing Success with
Color Management”**



Our Location



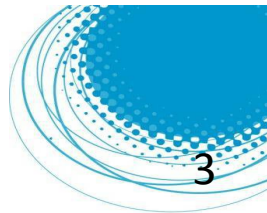


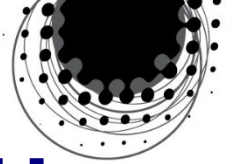
About Us

- We print 2.3 m Newspapers a day
- 16 printing centers within the country and 3 locations out side India
- 42 magazines
- Our reach in TV, ONLINE, & in FM



Malayala  **Manorama** ESTABLISHED 1888



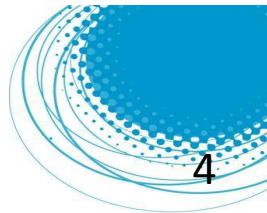


About Us

- **Editorial System - Smart Flow**
- **Ad flow -PPI**
- **Prepress - 1bit postRip flow**
- **Proofing -Star proof using Epson**
- **Presses – Manugraph
Smartlines,TKS,Mistubishi,Komoris and Harris**



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Color Management - Our Experiences

- Started standardisation process in 1994
- ISO certified in 1998
- We have written procedure for all the processes
- Started density measurement and Gray bar





Color Management - Our Experiences

Press Standardisation:

- **Test Formes are being Printed on all the Press Color Towers once in six months .**
- **Corrective Actions are Taken for the Defects Noticed .**

Color Management - Our Experiences

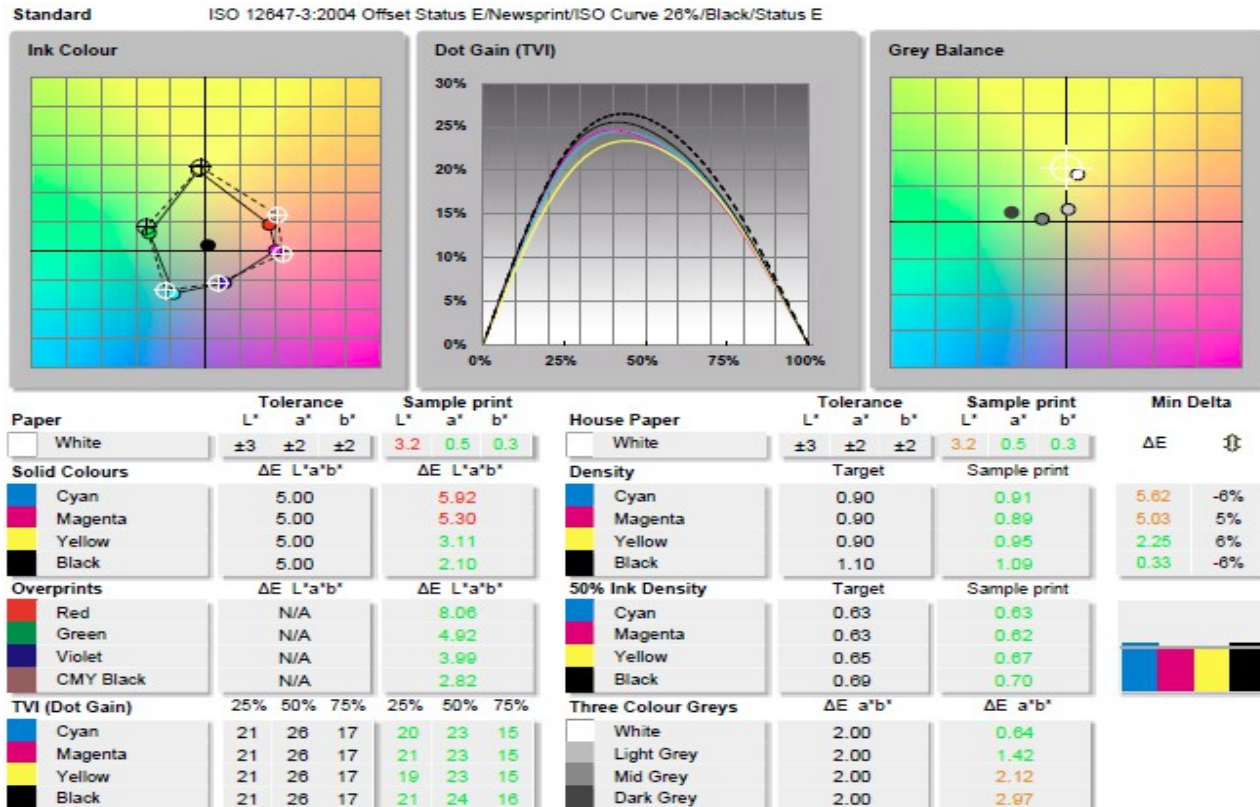
- X Rite instruments being used for the Color measurements

- Color registration
 - Vertical and Horizontal
- Dot Area /Dot Gain
- Slurring/ Doubling
- Horizontal Inking/Vertical inking
- Ink Shade
- Print Through at standard inking
- Ink Starvation



Color Management - Our Experiences

Press/ Proof calibration



Color Management - Our Experiences

Press / Proof calibration

Standard ISO 12647-3:2004 Offset Status E/Newsprint/ISO Curve 26%/Black/Status E						
Solid Colours		L*	a*	b*	Tot ΔE	Print ΔE
Cyan	Target	57.00	-23.00	-27.00	5.00	5.92
	Print	54.02	-18.34	-29.10		
Magenta	Target	54.00	44.00	-2.00	5.00	5.30
	Print	51.73	39.94	0.55		
Yellow	Target	78.00	-3.00	58.00	5.00	3.11
	Print	76.67	-4.32	55.52		
Black	Target	36.00	1.00	4.00	5.00	2.10
	Print	33.92	1.32	4.01		
Overprints		L*	a*	b*	Tot ΔE	Print ΔE
Red	Target	52.00	41.00	25.00	N/A	8.06
	Print	52.09	36.42	18.37		
Green	Target	53.00	-34.00	17.00	N/A	4.92
	Print	51.81	-32.33	12.53		
Violet	Target	41.00	7.00	-22.00	N/A	3.99
	Print	41.99	10.86	-21.77		
Three Colour Greys		L*	a*	b*	Tot ΔE	Print ΔE
Light Gray	Target	N/A	0.41	2.09	2.00	1.42
	Print	62.74	0.09	0.71		
Mid Gray	Target	N/A	0.34	1.73	2.00	2.12
	Print	51.78	-1.10	0.17		
Dark Gray	Target	N/A	0.30	1.53	2.00	2.97
	Print	45.79	-2.50	0.54		
CMY Black	Target	40.00	0.00	1.00	N/A	N/A
	Print	42.75	-0.64	0.93		

TVI (Dot Gain)		0%	25%	50%	75%	100%
Cyan	Target	0.0%	21.9%	26.0%	17.2%	0.0%
	Print	0.0%	20.6%	23.8%	15.8%	0.0%
Magenta	Target	0.0%	21.9%	26.0%	17.2%	0.0%
	Print	0.0%	21.2%	23.6%	15.2%	0.0%
Yellow	Target	0.0%	21.9%	26.0%	17.2%	0.0%
	Print	0.0%	19.0%	23.0%	15.5%	0.0%
Black	Target	0.0%	21.9%	26.0%	17.2%	0.0%
	Print	0.0%	21.6%	24.7%	16.0%	0.0%

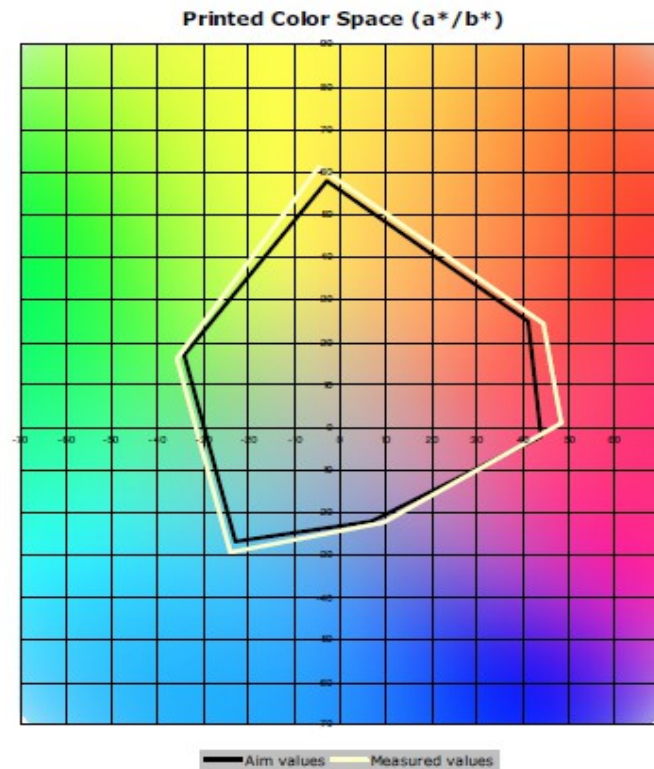
White Paper		L*	a*	b*
Target		82.00	0.00	3.00
Print		78.79	0.52	2.63
ISO Tolerance		3.00	2.00	2.00
Error		3.21	0.52	0.37
House Target		82.00	0.00	3.00
Error		3.21	0.52	0.37

Density		0%	25%	50%	75%	100%
Cyan	Target	0.23	0.43	0.63	0.79	0.90
	Print	0.26	0.45	0.63	0.79	0.91
Magenta	Target	0.24	0.44	0.63	0.79	0.90
	Print	0.26	0.45	0.62	0.77	0.89
Yellow	Target	0.27	0.46	0.65	0.80	0.90
	Print	0.31	0.49	0.67	0.83	0.95
Black	Target	0.22	0.45	0.69	0.92	1.10
	Print	0.26	0.48	0.70	0.91	1.09

Color Management - Our Experiences

Paper & Ink

The following diagram shows the measured color space compared to the ISO 12647-3 color space for Malayala Manorama :



**Prepress ,Print
standards are
based on ISO
12647-3 &
12647-2 .**



Color Management - Our Experiences

Paper & Ink

- **We have Standard Specifications for each Consumables that We Use**
- **SS to the Vendor Prior to the Purchase**
- **Insist Test Certificate from each Supplier for Quality Conformity.**

Color Management - Our Experiences

The Malayala Manorama Co. Limited

Doc. Type	Standard Specification	Doc No. : SS/00.82.01
Doc. Title	STANDARD NEWSPRINT	Issue No.: 2 ISO 9001 : 2008 Clause no. :7.4.2

1.0 INTENT AND APPLICATION:

- In Malayala Manorama Standard Newsprint is used for printing in both heat set and cold set process.

2.0 SPECIFICATIONS:

PARAMETERS	SPECIFICATIONS	SPECIFICATIONS
2.1 Basis Characteristics:	45gsm	42.5 gsm
(a) Basis Weight g/m ²	45 ± 0.5	42.5 ± 0.5
(b) Moisture content %	8 - 9.5	8 - 9.5
2.2 Mechanical Characteristics		
(a) Tear Index CD mNm ² /g.	> 4.8	> 4.8
(b) Tensile Index MD Nm/g.	> 45	> 45
2.3 Structural Characteristics		
(a) Porosity/Air-permeability (Bendsten) ml/min.	<600	<600
(b) Caliper/Sheet thickness (microns).	65-86	63-86
2.4 Optical Characteristics		
(a) Shade CIE		
L*	83 ± 2	82 ± 2
a*	0 ± 2	0 ± 2
b*	3 ± 2	3 ± 2
ΔE (Delta E)	3.5	3.5
(b) Opacity %	> 92.5	> 92
2.5 Dimensional Characteristics		
(a) Width, Cm.	As per purchase order (35 to 140 cm) Tolerance ± 0.2	As per purchase order (35 to 140 cm) Tolerance ± 0.2
(b) Diameter of reel, cm.	As per purchase order (100 - 125 cm)	As per purchase order (100 - 125 cm)
(c) Core inside diameter, mm.	76±2	76±2
(d) Permissible maximum Reel Oblong, mm.	8	8
(e) Permissible maximum Core		

The Malayala Manorama Co. Limited

Doc. Type	Standard Specification	Doc No. : SS/00.82
Doc. Title	STANDARD NEWSPRINT	Issue No.: 2 ISO 9001 : 2008 Clause no. :7.4

Dislocation, mm.	5	5
(f) Permissible maximum Reel width Non-Parallelism, mm	5	5
(g) Permissible minimum weight -Per roll in Kg		
70.0 cms	400	375
35.0 cms	190	175
76.2 cms	435	410
38.1 cms	210	195
81.5 cms	460	430
105.0 cms	890	840
140.0 cms	1150	1085

2.5 General :

- Reels must be free from defects on sheet, core and windings.
- Reels without joints are preferred.
- The maximum number of joints shall not exceed, two per 100 reels.
- In no case the number of joints in a single reel shall exceed two.

3.0 STORAGE CONDITIONS:

- Temperature - Room Temperature : (20 - 45° C)
- Relative humidity - 50 - 95%

4.0 PACKING & MARKING:

- Standard Newsprint shall be wound tightly on the core.
- Core and Wrapping shall be of appropriate strength.
- The reels shall be marked with the following information:
 - Consignee
 - Supplier.
 - Grammage.
 - Product Description.
 - Width cm.
 - Diameter cm
 - Weight (Kg.)



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Color Management - Our Experiences

Paper & Ink

- **Internal Trials and External Tests are Conducted to Verify the Quality and the Performances .**
- **Meetings with the Suppliers once in 3 Months .**
- **Vendor Rating Vs Consumable Quality**



Color Management - Our Experiences

Paper & Ink

- **As we are using 42.5 GSM newsprint , the 'print through' is comparatively high ! .**
- **Started advanced GCR by using ink saving softwares. We use 'Oncolor Eco' and 'Color Manager' .**



Color Management - Our Experiences

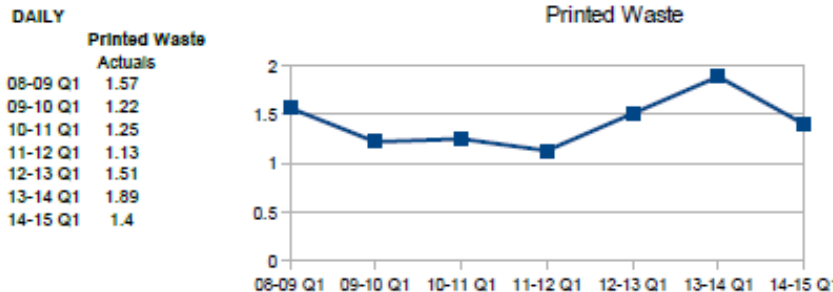
Paper & Ink

- In addition to that our Trials are on FM and other Screening Technologies to Reduce the 'Print Through'
- TIC to 220% is in Progress.
- The Required Color Gamut at Lower Density

Color Management - Our Experiences

Wastage Reduction Without Compromising Quality

- If the GSM get Reduced by 0.5, we get an extra Mileage of 2.46 Pages /kg
- If we Reduce the Paper Width by 0.75cm, we will get an extra Mileage of 2.5 Pages /kg





Color Management - Our Experiences

How we can optimise the productivity and Quality ?

Internal & External Training

**The Team should Aware of the Technology
and the Cost Aspect**

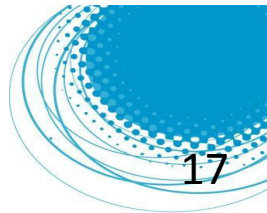
Sinapse
Print Simulators

**They should be Motivated to Improve
Quality and Reduce Waste**

Daily Meetings Before the Production



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Color Management - Our Experiences

How we can optimise the productivity&Quality ?

- **Cross Training is also Imparted for the Editorial ,Marketing and Circulation Divisions.**

- **We do conduct Training Programs for our ad Agencies also to Enhance the Color .**

CMS,profiles,TIC,Printable Gamut,over print,Transparency,
display calibration,proofing

Color Management - Our Experiences

Daily Quality review is conducted to see the production defects

Analysis of Printing Quality- Daily -MM										Malayala Manorama co Limited										Division -works																			
Defects	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TOTAL														
Scumming																									0.00														
Mis registration																									0.00														
Margin variation																									0.00														
Set off & Grip roller mark																									0.00														
Density variations/fluctuations																									0.00														
Grey balance																									0.00														
Ribbon register / Folding																									0.00														
Color picture quality on print																									0.00														
BW picture quality on print																									0.00														
Disturbing print through																									0.00														
Wrinkles/Creasing																									0.00														
Hickies/Picking/ Motting/fluff																									0.00														
Doubling / Ghosting																									0.00														
Plate scratches																									0.00														
Overall visual appearance																									0.00														
Total page																									0.00														
Analysis of Printing Quality - Daily - MB																																							
Defects	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	TOTAL														
Scumming																									0.00														
Mis registration																									0.00														
Margin variation																									0.00														
Set off & Grip roller mark																									0.00														
Density variations/fluctuations																									0.00														
Grey balance																									0.00														
Ribbon register / Folding																									0.00														
Color picture quality on print																									0.00														
BW picture quality on print																									0.00														
Disturbing print through																									0.00														
Wrinkles/Creasing																									0.00														
Hickies/Picking/ Motting/fluff																									0.00														
Doubling / Ghosting																									0.00														
Plate scratches																									0.00														
Overall visual appearance																									0.00														
Total page																									0.00														
F/00.83.03										Rev No: 5										Issue Date:17-12-14										issue no:2									
										Authorised by CGM/GMWorks																													



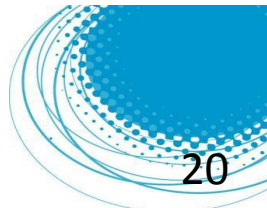
Color Management - Our Experiences

What We Gained ...

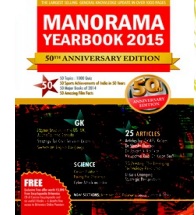
Consistency in Color Quality
Ad Rejections Drastically Reduced
Production Cost of Consumable Reduced
Satisfied Customers
Upward Trend in Circulation
Member in IFRA INCQC



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Color Management - Our Experiences



Thank you



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