

Process Color Management Seminar

Location: Harris A. Smith Auditorium

Day 1

- 8:30 Program Overview and Introductions
- 8:45 Process Color Workflow: Design-to-Print and Key Indicators Map press, prepress, design and customer; review key components in each section; review how components integrate with process color.
- 9:15 Color Metrics, Measurement and Instrumentation Spectral reflectance curve and physics of color; illuminants and observer; CIELAB and CIE LCh; density, dot area and dot gain; △E - DL, DC and Dh formulas; instruments, bulbs, geometry and agreement; handheld, tethered and in-line.
- 10:15 Break
- 10:30 Color Systems, Dots and Gray Balance

RGB and CMYK; additive and subtractive; CMYK ink trapping and overprints; tone reproduction with CMYK theory; tone reproduction in practice (intro to Dot%, NPDC and LPI); visual gray balance theory; gray balance in practice - grayscale, intro to G7 gray.

- **11:30** Color Specifications and Standards ISO 12647-6; FIRST process color specifications; preserving hue and maximizing chroma.
- 12:00 Lunch
- 1:00 Flexo System Optimization I: Ink and Anilox

Substrates and ink film thickness; ink concentration and resulting color; anilin volume, CPI, color strength, coverage and wear; banded anilin test and controlled experiment.

1:30 Flexo System Optimization II: Plates Plate dot structures including translation from file to plate; implications of the highlight dot to process color workflow; optimization with mounting - slur, mottle and coverage; solid patterning.

2:00 Breakout Sessions

Session A: Press Calibration

Press testing 101; press colors to ISO 12647-6; sample measurement; nearneutral calibration; curve generated; establishing a process control benchmark.

Session B: Banded Anilox Evaluation

Anilox roller selection; capability analysis; LPI evaluation and selection; highlight optimization; hands-on densitometers and dot area plot.

Session C: Ink Analysis and Formulation

Drawdowns with different anilox on different substrates; basic color measurement; analysis of color strength and chroma, return on investment and ink film thickness.

5:30 Group Dinner

Day 2

8:30 Curves and Prepress Workflow

Accounting for press and flexo system variability with prepress curves; curve selection and continuous improvement; near-neutral calibration methods; halftone angles; total ink limit.

9:45 Break

10:00 Digital Proofing for Flexo

Flexo proofing considerations; technology available; screened and contone; ICC deficiencies; certified proofing.

11:00 Breakout Sessions

Session A

Plate process control; anilox process control; print IT8 and color test; dial-in to established benchmark; documentation.

Session B

Color reference file; color measurement; color data analysis compared to standard data-sets; profile generation; profile analysis.

Session C

Photoshop color evaluation; separations to GRACoL; separations to custom; output proofs; proof certification.

12:00 Lunch

1:00 Breakout Sessions (Continued)

- 3:00 Break
- 3:30 Print Quality Assurance

Global and multi-plant perspective; ink, anilin and plate; pressroom process control; tone strips: 100, 70, 30, 10, min; linear vs. curved; plate control, print control and curve control.

4:30 Process Overview and Final Job Preparation Review entire process color characterization workflow and prepare images for final job (RIP and inspect).

5:00 End of Day

Day 3

8:30 Managing Flexo Expectations: Customer Perspective Process color in packaging; managing creative expectations through proofing; process control for packaging repeatability.

9:15 Expanded Gamut Process Color Printing CMYK integration within ECG; extra process inks defined; curve calibration with ECG; intro to color management in ECG.

9:45 Break

11:00 Breakout Sessions

Session A

Inspect and measured samples of process print defects to determine root cause of problem.

Session B

Running to the numbers; final job printing; samples; proof-to-press evaluation.

11:30 Evaluations and Adjourn