

# White base coat CIELAB values for Flexography and Offset packaging printing on non-absorbent substrates



**Enn Kerner, Grafitek, Estonia  
Martti Lemendik, Metaprint, Estonia**

# A Brief background:

*Enn Kerner*

- *MSc technology engineer graduated 1987 from Moscow State University of Printing Arts*
- *the flexography technology knowledge from DFTA and HDM Stuttgart by Prof. Meyer, 2000*
- *the diploma study at Tallinn University in field of vocational and adult teaching, 2004*
- *with experience ~25 years of practical works*
- *associated Fogra PSO Partner, 2008*

# Content:

- *Market trends*
- *ISO Standards*
- *Substrates*
- *White base coat*
- *Quality Management*

45<sup>th</sup> International Circle Conference 2013



A photograph of a Ryerson University building. The letters 'RU' are visible on a blue sign above the entrance, and 'RYERSON' is written vertically on a grey sign below it. The building has a modern, angular design with light-colored stone or concrete. In the background, there are large green trees.

# *Market trends*

45<sup>th</sup> International Circle Conference 2013



Global printing market by print product  
2006 by 2011 (USD million)

Sector	2006	2011	Growth
Books	36 539,10	42 984,10	17,60%
Catalogs	33 215,30	35 075,20	5,60%
Directories	11 383,10	13 016,50	14,30%
Magazines	62 010,40	73 532,40	18,60%
Newspapers	46 433,80	54 679,90	17,80%
Direct mail	33 092,20	39 328,00	18,80%
Brochures and Pamphlets	31 407,40	36 848,90	17,30%
Inserts	13 507,70	15 968,80	18,20%
Coupons and tickets	2 614,30	2 937,10	12,30%
Posters and banners	12 918,40	15 212,70	17,80%
Business forms	12 316,20	13 128,80	6,60%
Financial and legal printing	17 376,00	20 658,70	18,90%
Packaging	175 599,40	211 254,40	20,30%
- Corrugated/solid fiber	88 820,60	105 497,30	18,80%
- Cartons	37 262,90	45 458,30	22,00%
- Flexibles	49 515,90	60 298,80	21,80%
Labels	25 165,00	29 461,80	17,10%
Oters	96 230,20	116 602,80	21,20%
Total	609 808,50	720 690,10	18,20%

Source: NPES/PRIMIR/PIRA

45<sup>th</sup> International Circle Conference 2013



Global printing market by print product  
2006 by 2011 (USD million)

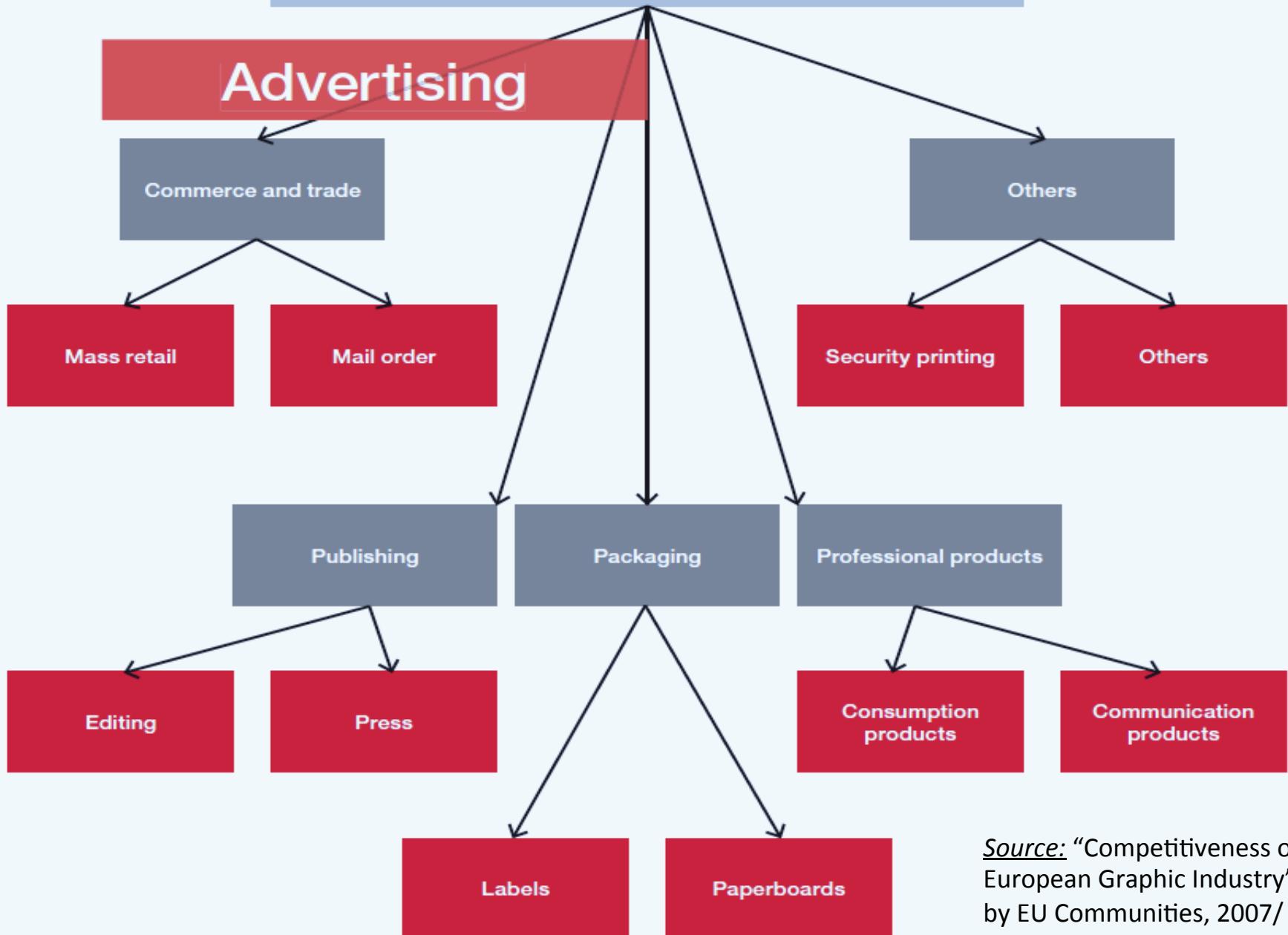
Sector	2006	2011	Growth
Books	36 539,10	42 984,10	17,60%
Catalogs	33 215,30	35 075,20	5,60%
Directories	11 383,10	13 016,50	14,30%
Magazines	62 010,40	73 532,40	18,60%
Newspapers	46 433,80	54 679,90	17,80%
Direct mail	33 092,20	39 328,00	18,80%
Brochures and Pamphlets	31 407,40	36 848,90	17,30%
Inserts	13 507,70	15 968,80	18,20%
Coupons and tickets	2 614,30	2 937,10	12,30%
Posters and banners	12 918,40	15 212,70	17,80%
Business forms	12 316,20	13 128,80	6,60%
Financial and legal printing	17 376,00	20 658,70	18,90%
Packaging	175 599,40	211 254,40	20,30%
- Corrugated/solid fiber	88 820,60	105 497,30	18,80%
- Cartons	37 262,90	45 458,30	22,00%
- Flexibles	49 515,90	60 298,80	21,80%
Labels	25 165,00	29 461,80	17,10%
Oters	96 230,20	116 602,80	21,20%
Total	609 808,50	720 690,10	18,20%

Source: NPES/PRIMIR/PIRA

45<sup>th</sup> International Circle Conference 2013



## The Printing Industry Markets



Source: "Competitiveness of the European Graphic Industry" by EU Communities, 2007/ pg. 88

# *Accompany the dynamic of the EU Graphic Industry*

## Visions, Prognosis, Scenarios: Future of the Graphic Industry in 2 Decades

**Technological Development,  
Markets (Performance,  
Functionality, Applications)**

Internet

Mobile

TV

OLED

Radio

**Technological Development  
(Printing Technology)**

Digital printing

Ink-

Jet/Electrophotograph  
y Traditional Processes

Printed Electronics  
RFID

Advertising Markets (global,  
continental, regional)

Marketing Strategies

Advertising Control, Media  
(Expenses, changes in  
media)

**Effects/  
Conclusions**

Print- and Media service  
providers tomorrow  
Product Requirements  
Online synergies  
Co-existence Print /  
Online

Societal and social  
development  
(Information-,  
Communication- and User  
behaviour)

Demographics

Social Networks

Virtual Worlds

Security

Prosperity

User Requirements

Appeal to all  
senses

Source: "Prospects for the EU Graphic  
Industry to respond to its structural  
And technological challenges"  
by EU Commission, 2009/ pg. 16

# *ISO Standards*

45<sup>th</sup> International Circle Conference 2013



# *ISO Standards establish:*

- *the process control parameters and aim values*
- *the visual characteristics of the half-tone and production print values*
- *general terms of process control*
- *measurement methods*
- *ISO 12647-6 Flexographic Printing*
- *ISO 12647-2 Offset Printing*
- *ISO 12647-7 Proofing processes working directly from digital data*

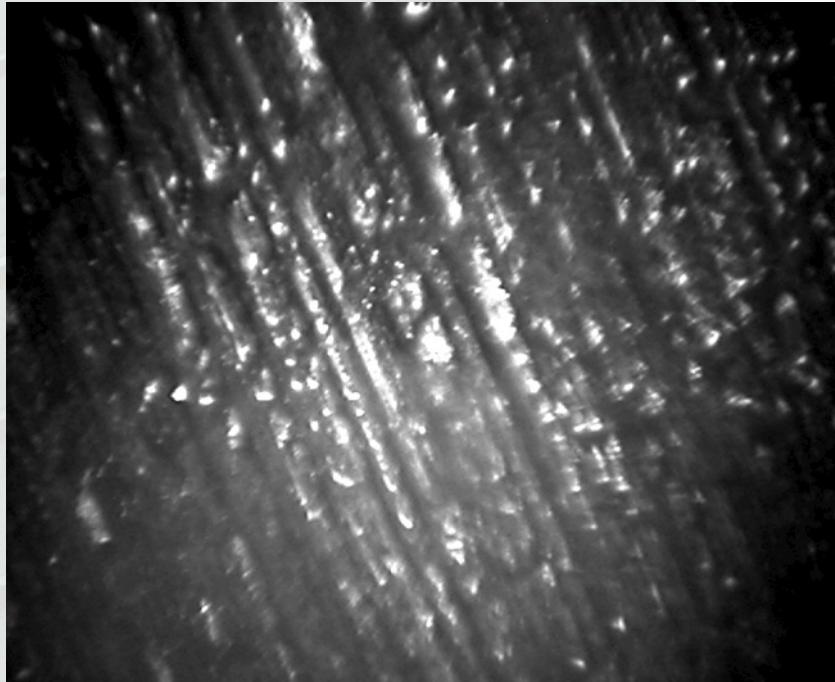
A photograph of a modern university building with a light-colored facade. On the left side, there is a blue sign with white letters 'R U'. On the right side, there is a vertical sign with the word 'RYERSON' in white capital letters. The building has multiple levels and a flat roof. In the background, there are trees and a clear sky.

# *Substrates*

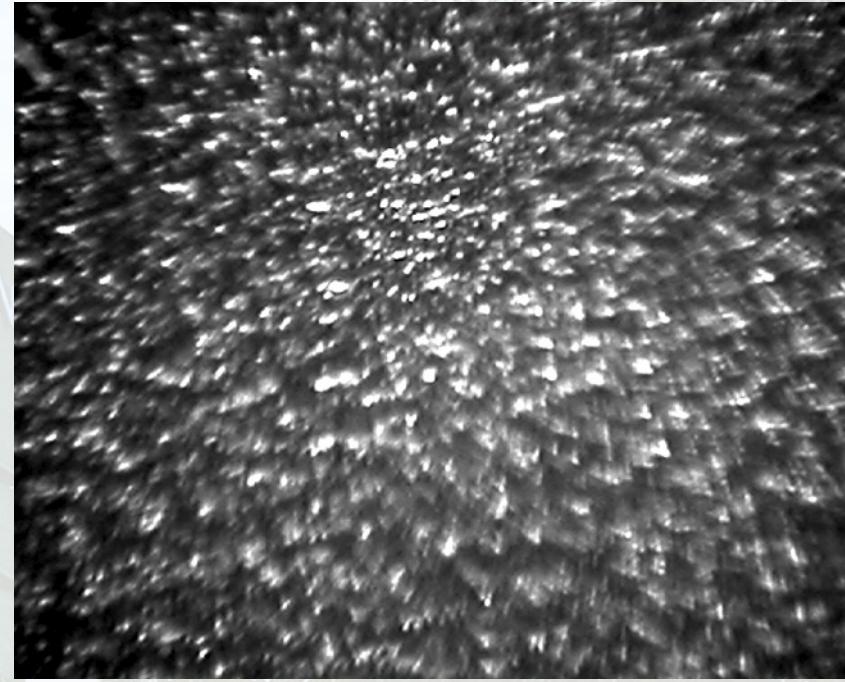
45<sup>th</sup> International Circle Conference 2013



Steel surface structure

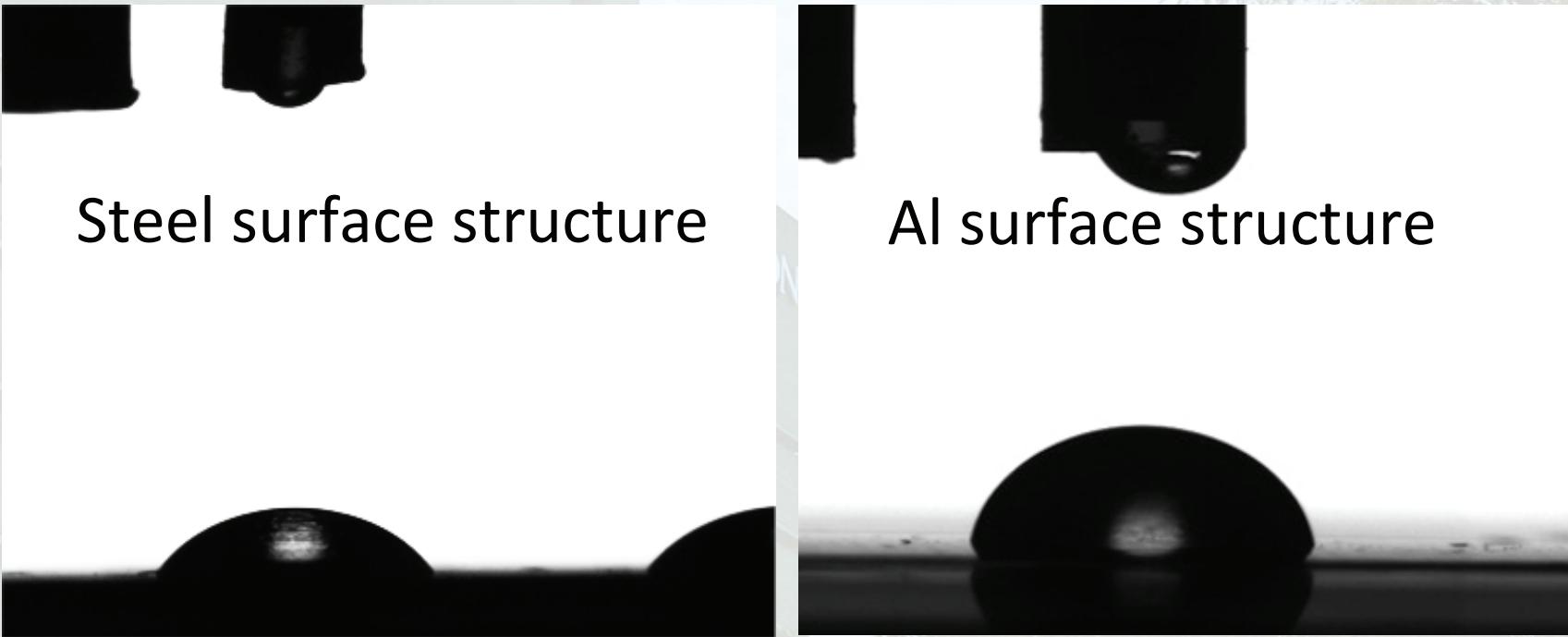


Al surface structure



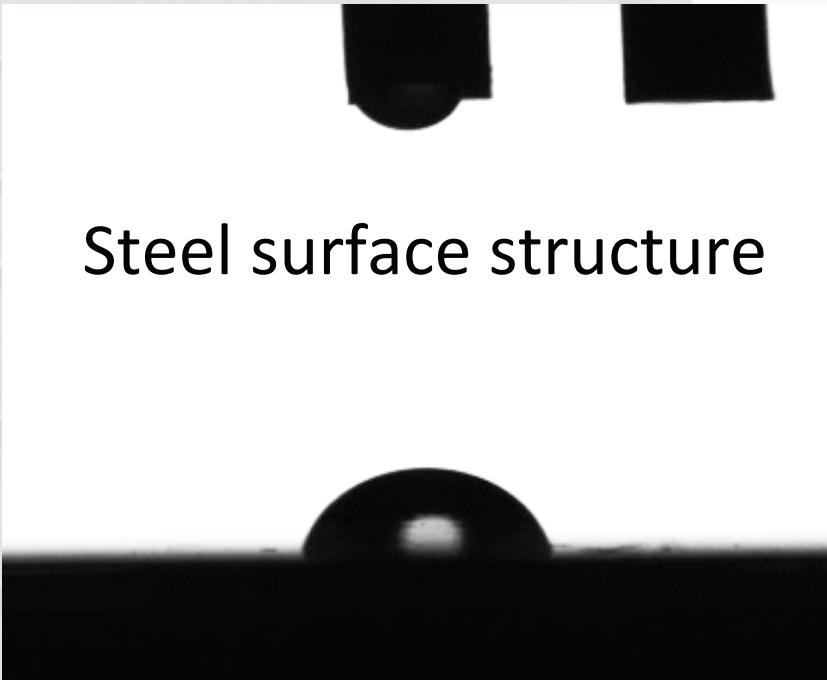
45<sup>th</sup> International Circle Conference 2013



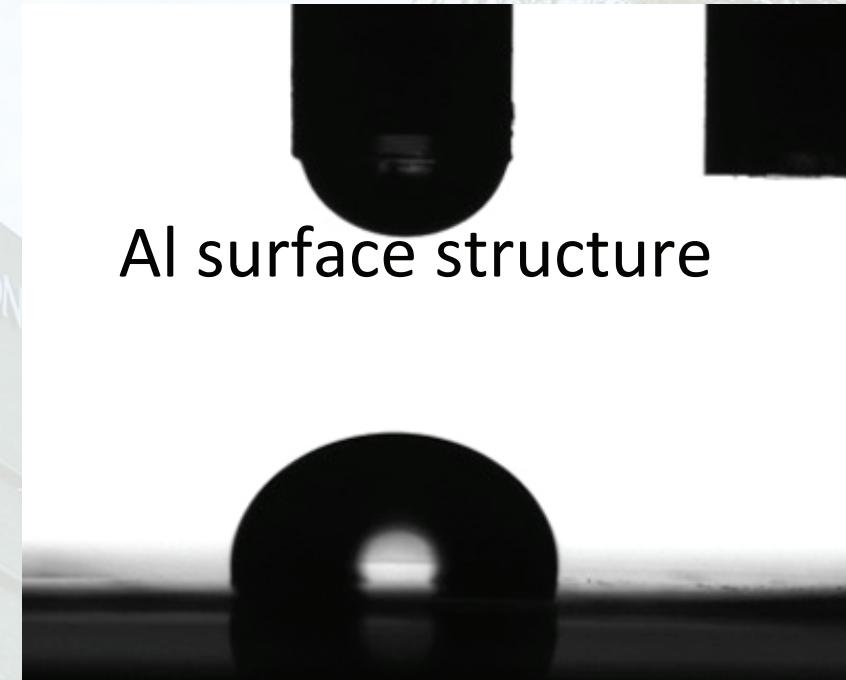


45<sup>th</sup> International Circle Conference 2013





Steel surface structure



Al surface structure

45<sup>th</sup> International Circle Conference 2013



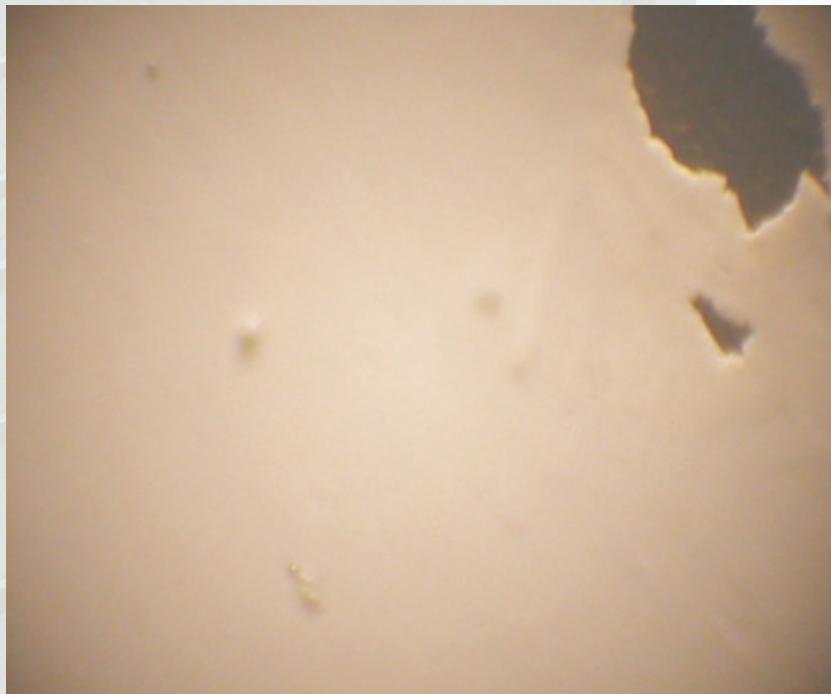
A photograph of a modern university building with a light-colored facade. On the left side, there is a blue sign with white letters 'RU'. On the right side, there is a vertical sign with the word 'RYERSON' written in white capital letters.

# *White base coat*

45<sup>th</sup> International Circle Conference 2013



Steel white base structure

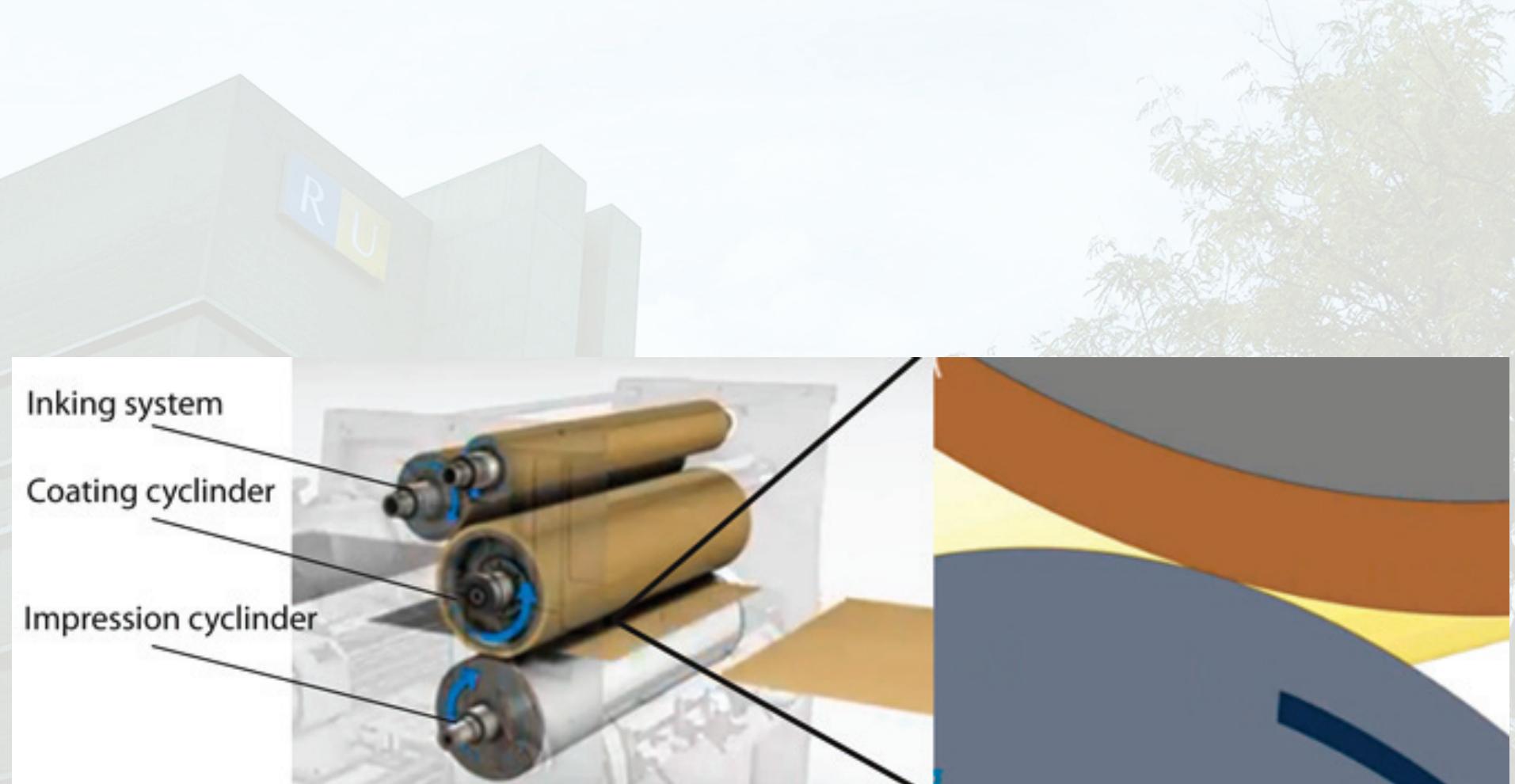


Al white base structure

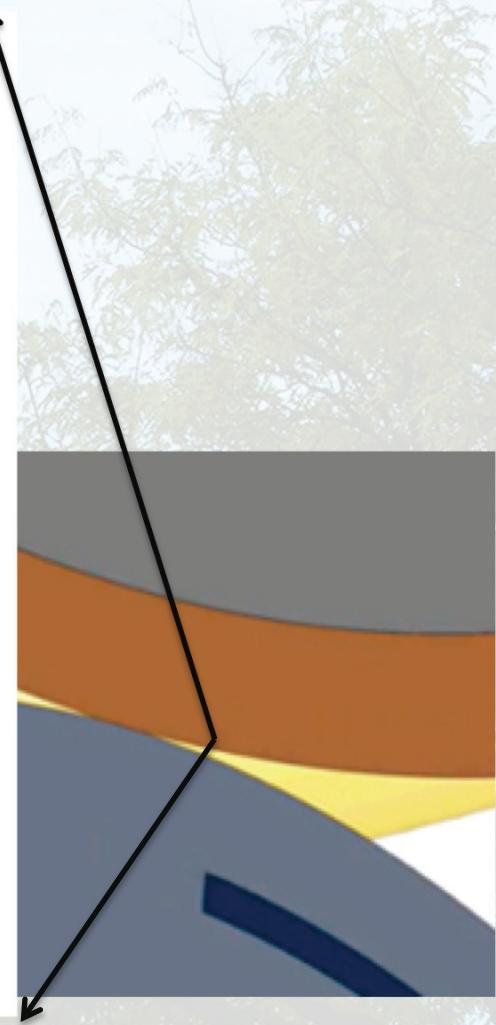
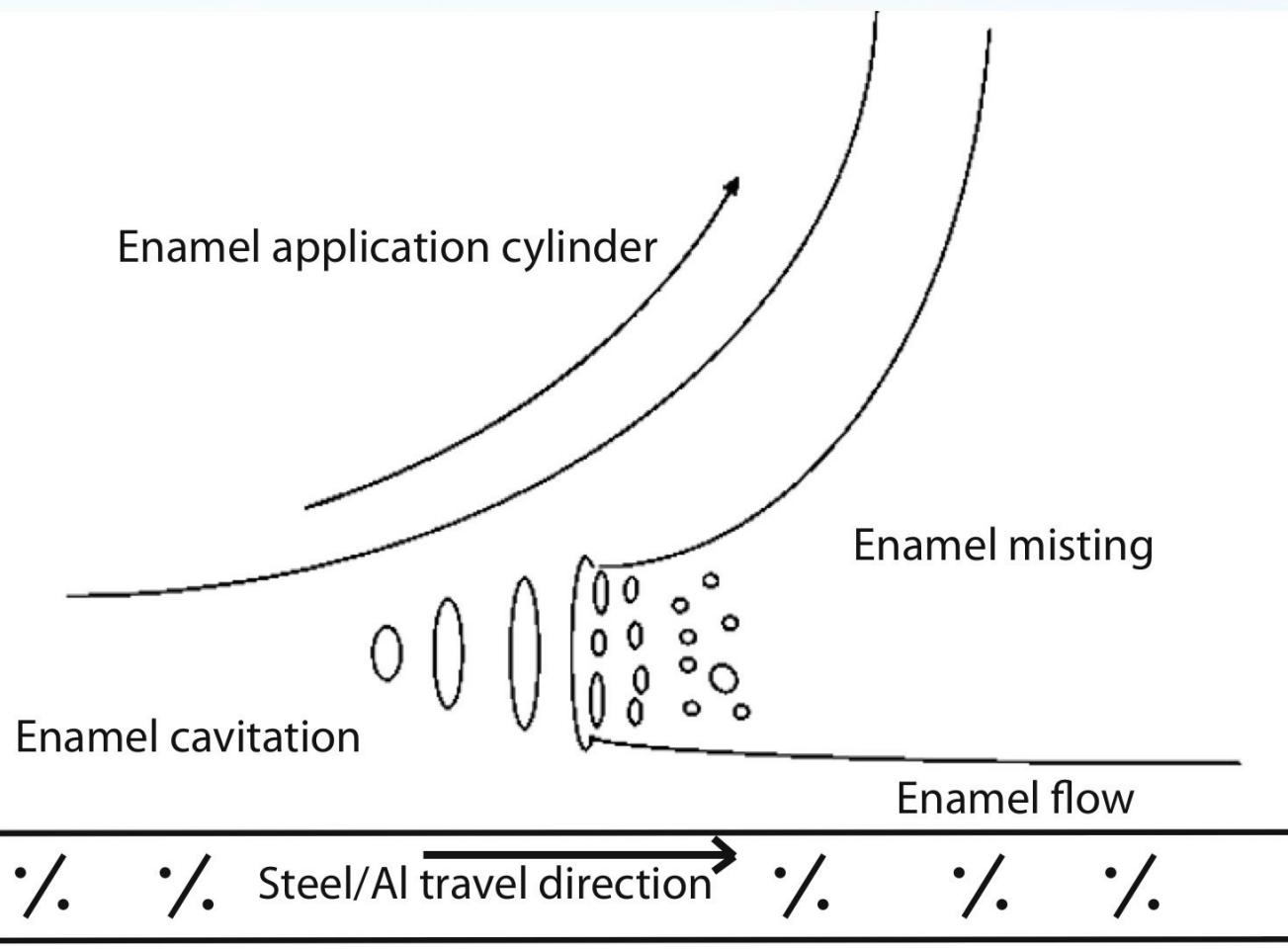


45<sup>th</sup> International Circle Conference 2013





45<sup>th</sup> International Circle Conference 2013



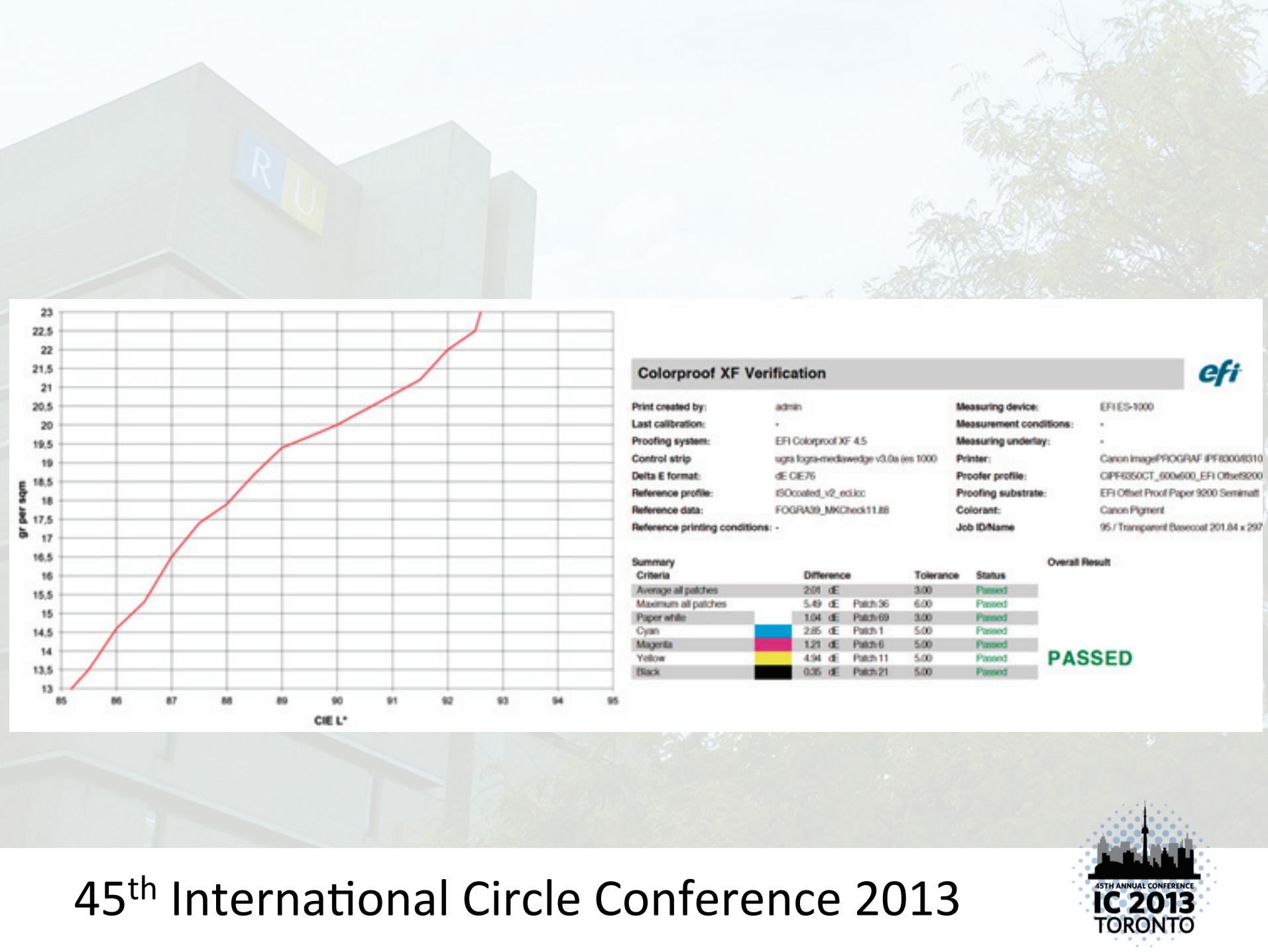
45<sup>th</sup> International Circle Conference 2013

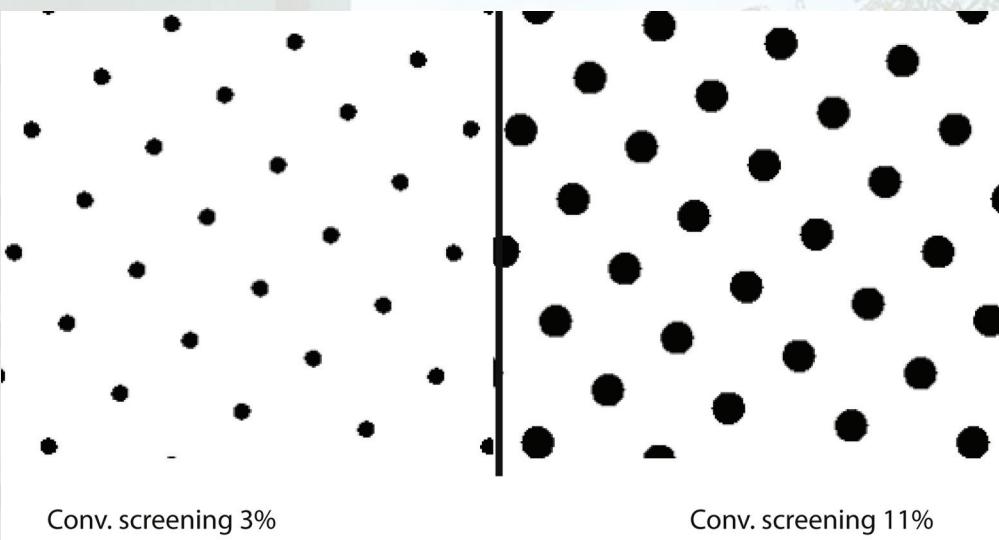


# *Quality Management*

45<sup>th</sup> International Circle Conference 2013

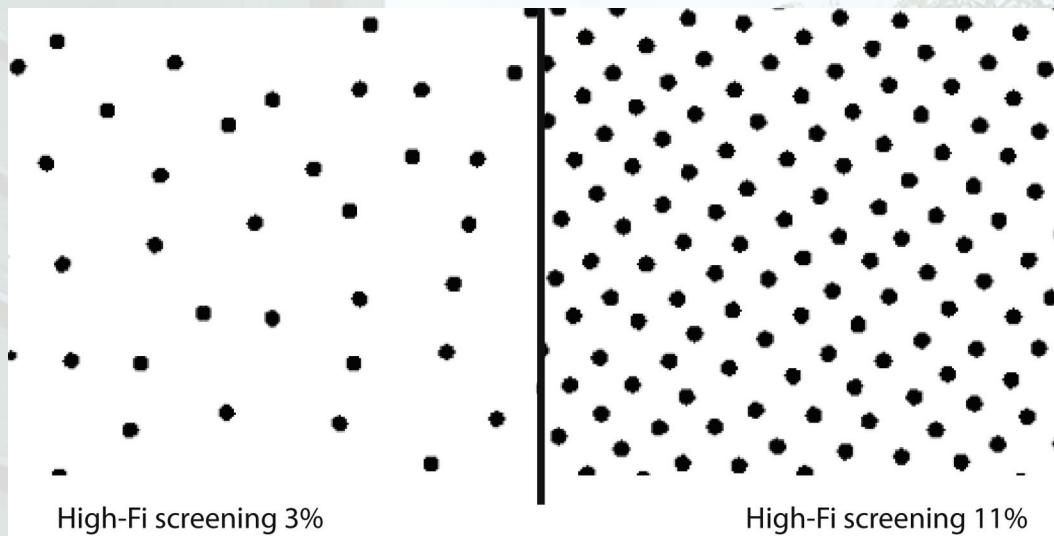






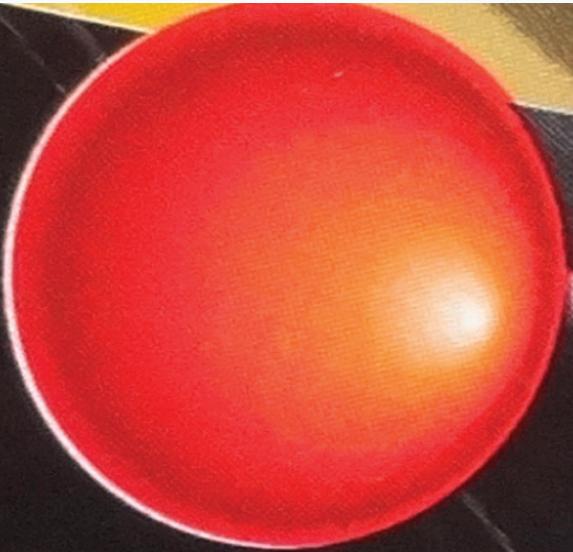
45<sup>th</sup> International Circle Conference 2013



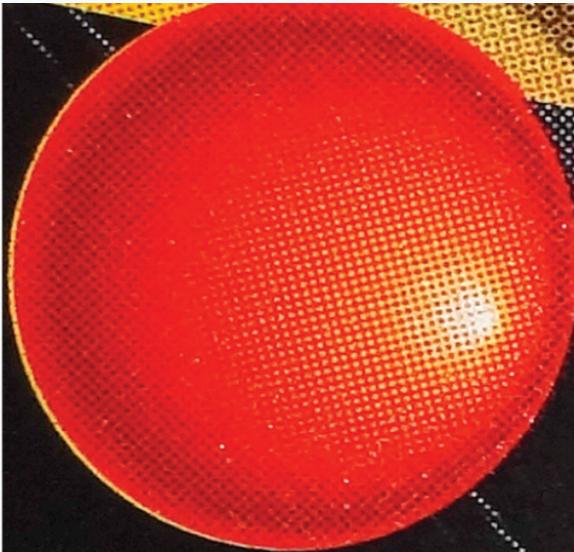


45<sup>th</sup> International Circle Conference 2013

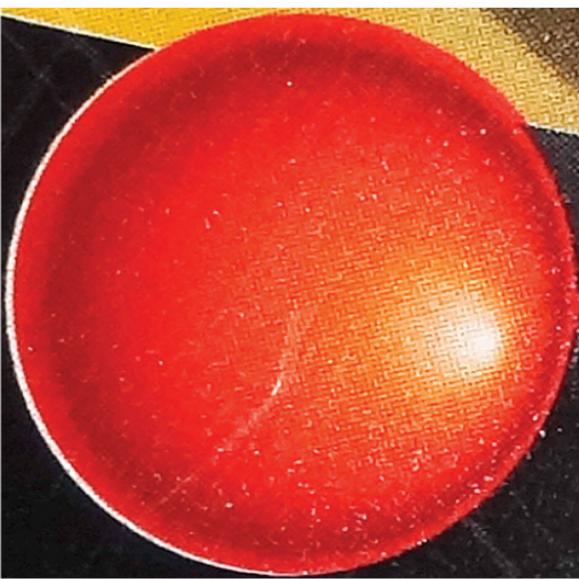




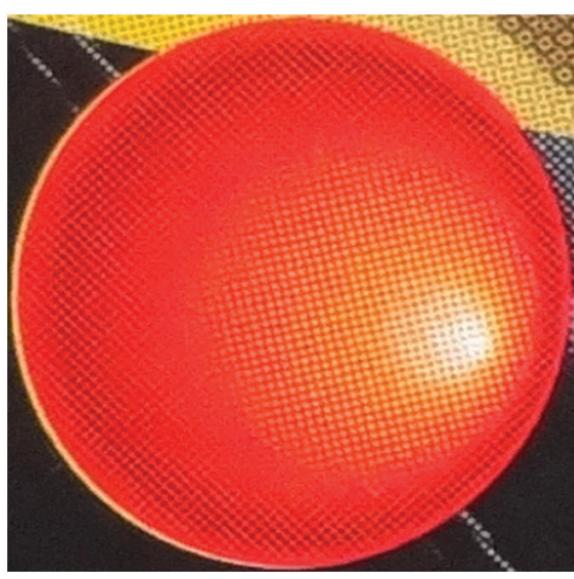
High-Fi screening



Conventional screening



High-Fi screening



Conventional screening

45<sup>th</sup> International Circle Conference 2013

# Summary:

- *Packaging industry flexography and offset technology*
- *Co-operation between industry and universities, new skills and competences*
- *Comparable production from different printing technologies, ISO standard base process standardisation*
- *Process standardisation, learning process limitations*
- *Engineering study, introduction in early stage the new skills and competences of process standardisation*

A photograph of a modern university building, likely Ryerson University, featuring a large sign with the letters "RU" and the word "RYERSON" on its side. The building has a light-colored, angular facade. In the background, there are trees and a clear sky.

Thank You for listening!

45<sup>th</sup> International Circle Conference 2013

