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# The Implementation of the Standard ISO 12647-2 in Offset: Steps to Follow

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*What is standardisation?*

*Standardisation is the step  
from trade to  
industrial production*

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## Standardisation and quality control

Standardisation does not mean that everything has to be made uniform:

presses, paper, ink, blankets, plates.....

It does not mean that everyone has to use the same materials, components ... to achieve similar results.

Standardisation means that in reproduction, proofing and production, certain specifications concerning tone value transfer, paper quality and inking levels are observed, in order to ensure conformity of visual impression in proof and production print.

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## Standards and tolerances for different print processes

ISO 2846-1	Colour and transparency of ink sets for four colour-printing sheet-fed and heat-set web offset lithographic printing
ISO 2846-2	Coldset offset lithography and letterpress on newsprint
ISO 2846-3	Gravure
ISO 2846-4	Screen printing
ISO 2846-5	Flexo printing
ISO 12647-1	Process control - Parameters and methods
ISO 12647-2	Process control - Sheet-fed and web offset lithographic printing
ISO 12647-3	Process control - Coldset offset lithography for newsprint
ISO 12647-4	Process control - Gravure publication
ISO 12647-5	Process control - Screen printing
ISO 12647-6	Process control - Flexo printing
ISO/WD 12647-7	Process control - Direct printing - Digital Proof
ISO 13655	Colour measurement
ISO 13656	Densitometric and colour measurement
ISO 14981	Densitometer design

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Standardisation  
requires extensive means of  
process control  
and  
quality assurance  
in the pre-press and print production

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A. Quality assurance for data exchange and file generation

B. Quality control for proofing


C. Quality control for plate making and ctp

D. Quality control on press and during print

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**Digital control devices supplied by Fogra:**

- for general output and workflow evaluation
  - for digital output systems
    - for printing
- digital test formes for plate and print format evaluations

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– for general output and workflow evaluation:  
Ugra/Fogra Media Wedge CMYK V2.1 (EPS/TIFF)  
Ugra/Fogra Media Wedge CIELAB V1.1 (EPS/TIFF)  
Ugra/Fogra PostScript Control Strip V2.0 (EPS/PS)


– for digital output systems:  
Ugra/Fogra PostScript Control Strip V2.0 (EPS/PS)  
Ugra/Fogra Digital Plate Wedge V2.4 (C-, M-, Y-, K-EPS)  
Ugra/Fogra Media Wedge CMYK V2.1 (EPS/TIFF)  
Ugra/Fogra Digital Print Scale V1.0 (EPS)

– for printing:  
Ugra/Fogra Digital Print Control Strip V1.6 (PCS-EPS)  
Ugra/Fogra Digital Print Control Strip Newspaper (DKL-Z M1, M2, M3)  
Fogra/Prinect Digital Colour Bar V1.0

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Info sheets available as PDF can be redistributed.

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Quality Control for Proofing  
and Colour Management

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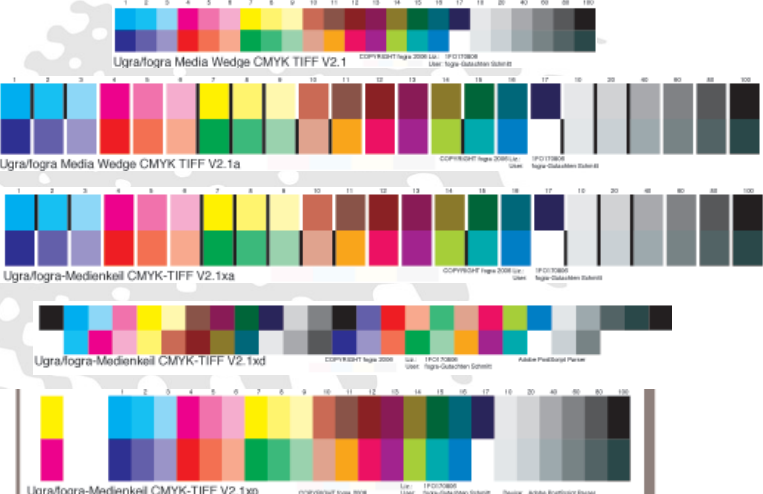
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## Quality Control for proofing


### Ugra/Fogra Media Wedge V2.1 Standard EPS (2006)



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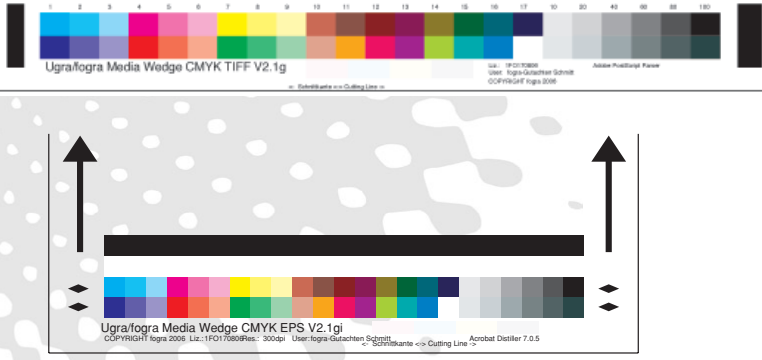
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## Quality Control for proofing

### Ugra/Fogra Media Wedge V2.1 Standard EPS (2006)



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## Quality control for proofing

### Viewing environment

Print			
Proof			
	day light	D-50	office light

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## Quality control for proofing

### Viewing environment



Red arrows point to the 'Meta-merie' text.

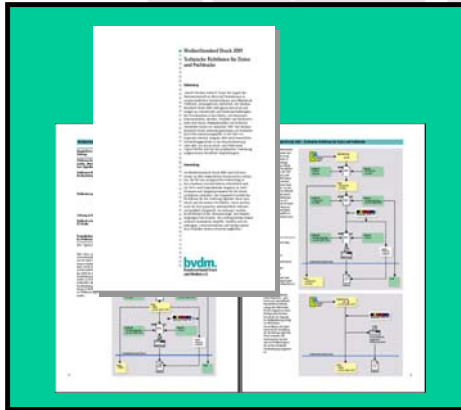


Red dashed circle highlights the 'Meta-merie' text.

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## Media Standard Print



Specification of file formats and output process (offset, rotogravure, commercial, screen print ...)

Guidelines for contract proof

Control devices



## Quality control for proofing in accordance to Media Standard Print

**every job**

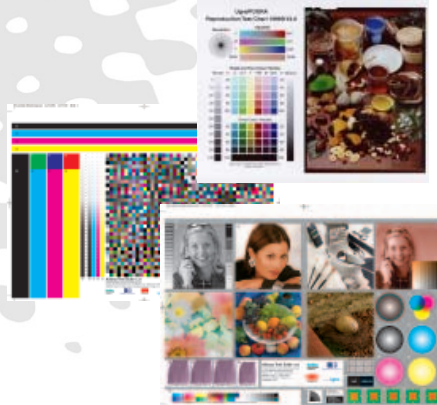


Ugra/Fogra MediaWedge CMYK (mandatory)


Ugra/Fogra Digital Print Scale



**periodically**

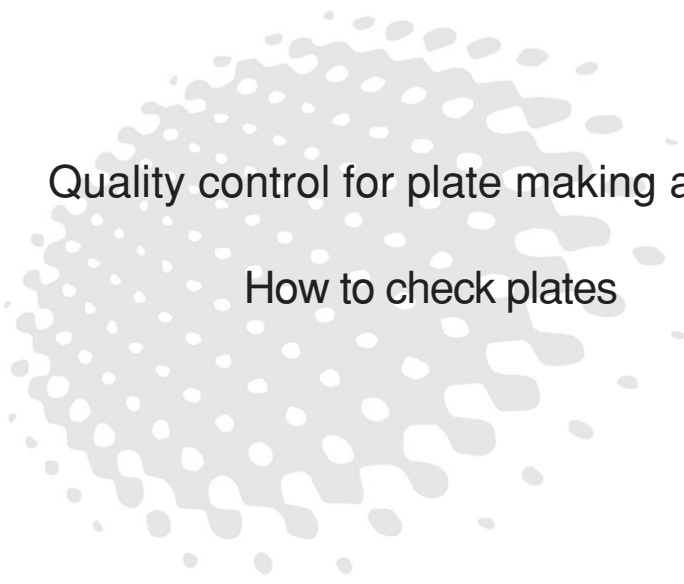


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Quality control for plate making and ctp


How to check plates



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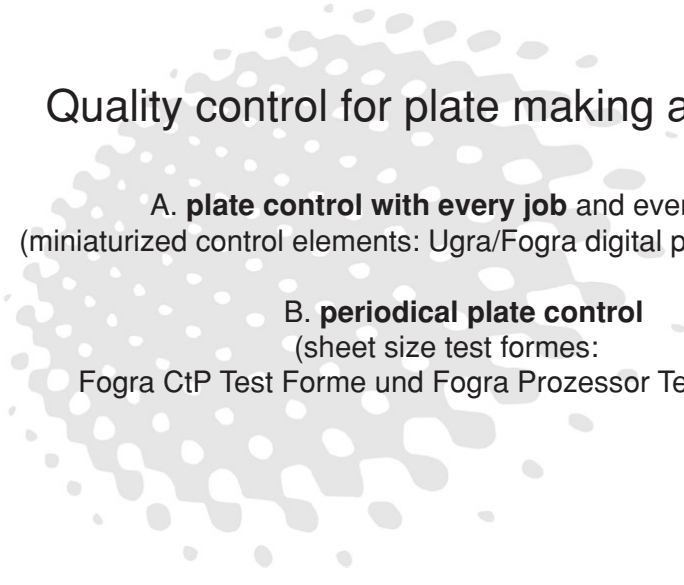
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Quality control for plate making and ctp

A. **plate control with every job** and every plate  
(miniaturized control elements: Ugra/Fogra digital plate wedge)

B. **periodical plate control**  
(sheet size test formes:  
Fogra CtP Test Forme und Fogra Prozessor Test Forme)



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## Which tools are needed for CtP?




Evaluation of imagingEvaluation of developer

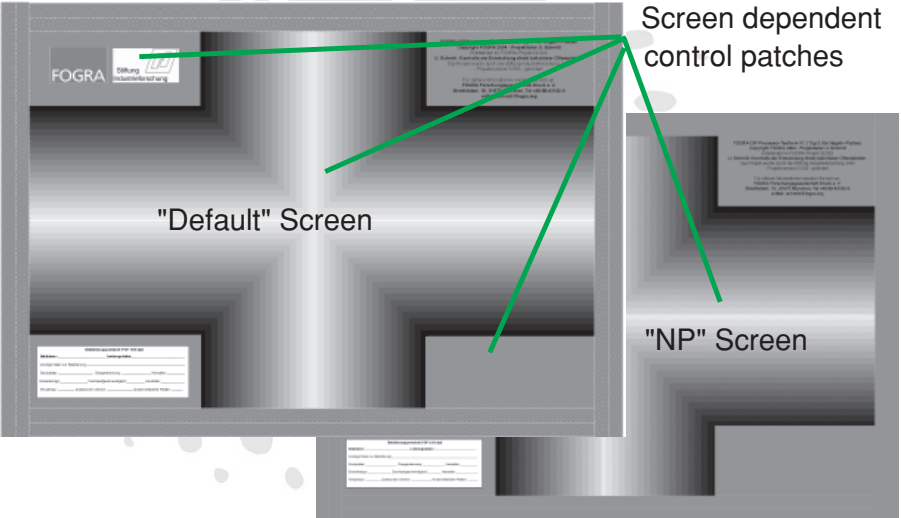


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## Quality control for plate making and ctp



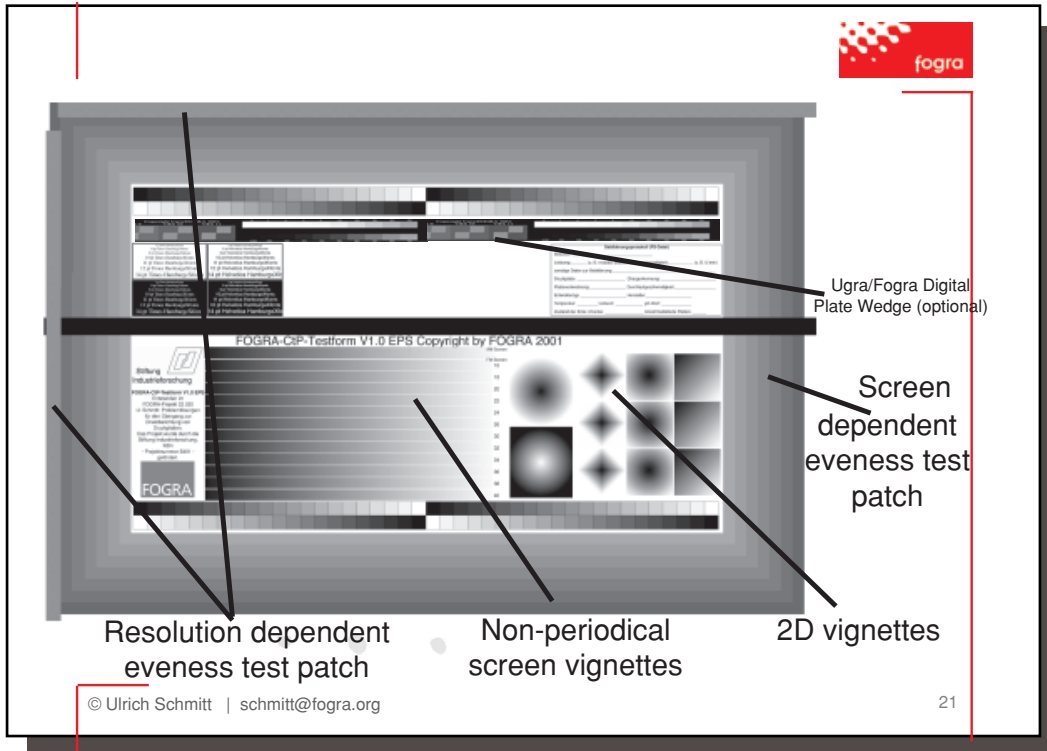
Screen dependent control patches

"Default" Screen

"NP" Screen

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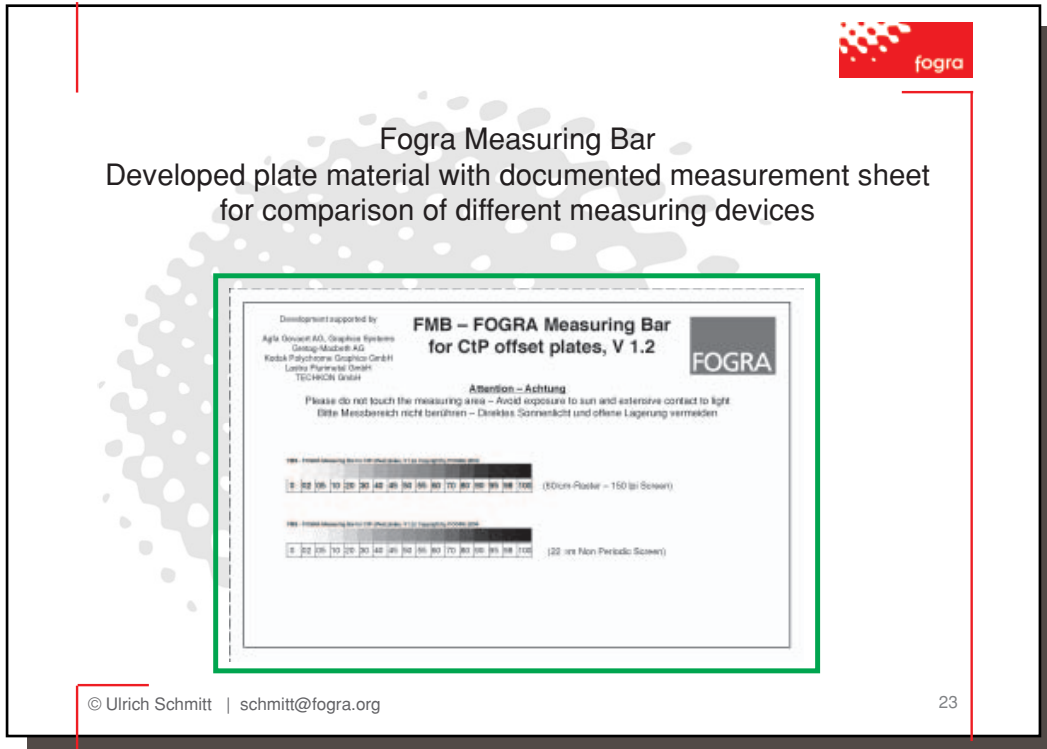
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The slide features a large, faint background watermark of a circular pattern of dots. In the top right corner, there is a red square logo with the word "fogra" in white. The main text is centered and reads: "Fogra Measuring Bar" followed by "Developed plate material with documented measurement sheet for comparison of different measuring devices". Below this text is a green-bordered box containing a measurement sheet. The sheet has a header with "Development supported by" and lists several companies: Agfa-Gevaert AG, Graphix Systems, Gateg-Maschinen AG, Kodak Polychrome Graphics GmbH, Letra-Fluxmedia GmbH, and Technische Bildet. The main title of the sheet is "FMB – FOGRA Measuring Bar for CtP offset plates, V 1.2" with the "FOGRA" logo. Below the title, there is a warning in German: "Attention – Achtung" and "Please do not touch the measuring area – Avoid exposure to sun and extensive contact to light" and its German equivalent. The sheet contains two sets of measurement bars: one for "50micr Postex – 150 lpi Screen" and another for "122 micr Non-Periodic Screen". At the bottom left of the slide, there is a copyright notice: "© Ulrich Schmitt | schmitt@fogra.org". At the bottom right, the number "23" is displayed.

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The slide features a large, faint background watermark of a circular pattern of dots. In the top right corner, there is a red square logo with the word "fogra" in white. The main text is centered and reads: "Quality control for printing" followed by "Requirements for quality control in commercial printing". At the bottom left of the slide, there is a copyright notice: "© Ulrich Schmitt | schmitt@fogra.org". At the bottom right, the number "24" is displayed.

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## Quality control for printing


### Print Control Strips

- Solid patches of CMYK
- Half tone 40 % und 80 %
- Shifting and doubling
- Screen set: 60/cm or 70/cm round dot

Non-periodic screen needs a mid-tone patch


40 % and 80 % are used for representation of the tone coverage range in a picture

### Ugra/Fogra PCS V1.6



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## Quality control for printing

### ISO 12647-2 specification and tolerances for tone value increase positive acting plate at 60/cm round dot screen - matt and gloss coated paper (paper type 1,2):

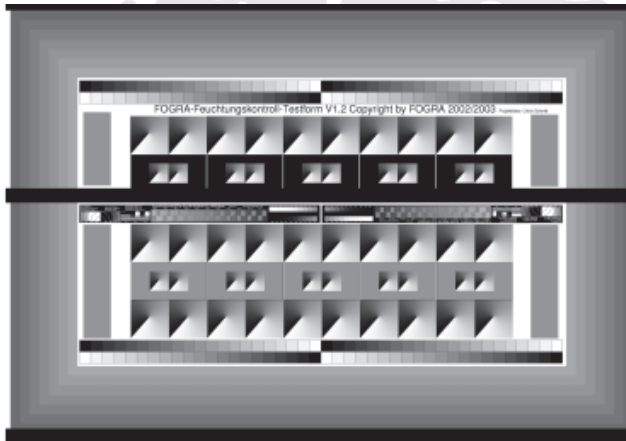
printed Sheet:	proof print	production run
40 % CMY	13 % ± 3 % K 16 % ± 3 %	13 % ± 4 % K 16 % ± 4 %
70 % CMY	13 % ± 2 % K 14 % ± 2 %	13 % ± 3 % K 14 % ± 3 %
80 % CMY	11 % ± 2 % K 12 % ± 2 %	11 % ± 3 % K 12 % ± 3 %
maximum spread of CMY in 40 % patch	4 %	5 %
deviation of CIELAB value in solidCMYK	ΔE 5	ΔE 5 to proof or okay sheet

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## Test form for the evaluation of correct mechanical setting and for the ink-water-balance in printing machines



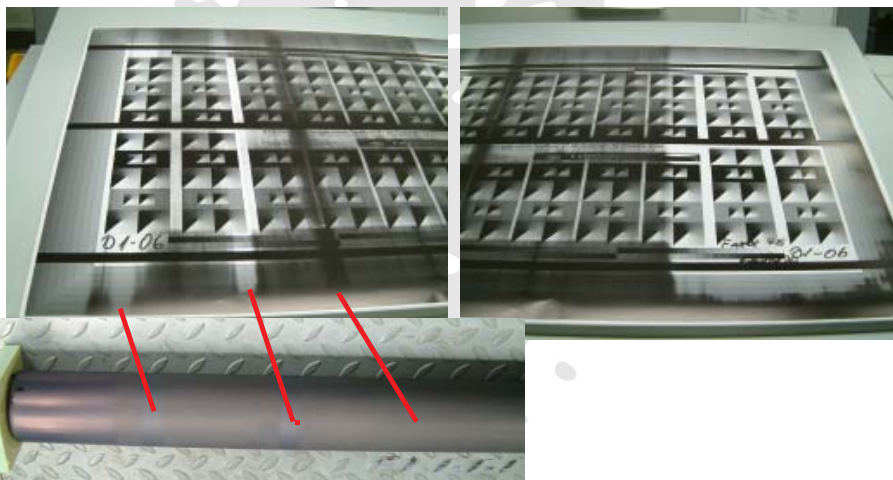
Available for any press format and designed to suit all types of printing machines


**Test form is only available as user fee service from Fogra**

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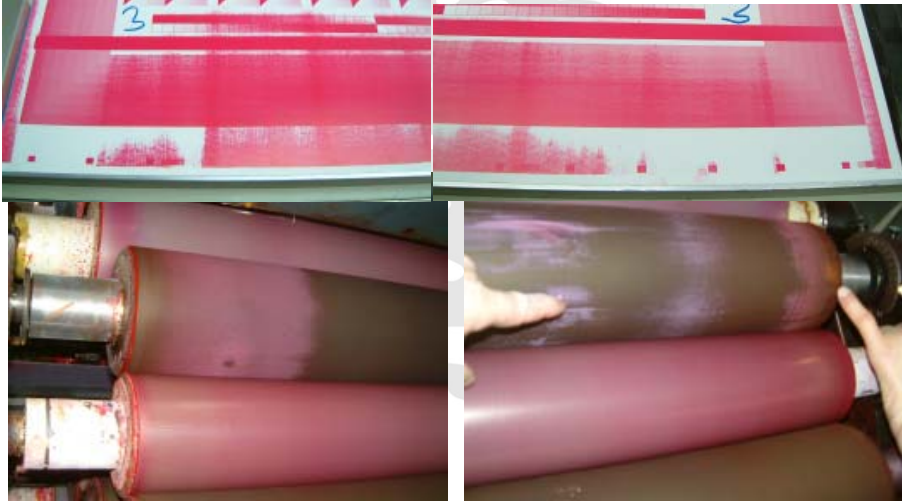
## Quality Control in Print Machine Setup Defects on new rolls






### Quality Control in Print Machine Setup

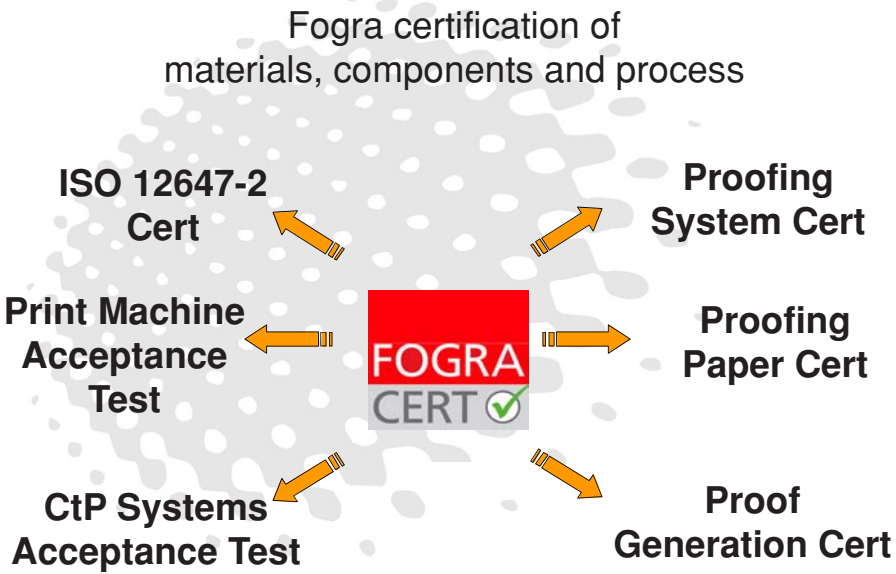
Lack of machine maintenance



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### Fogra certification of materials, components and process



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## Conclusions:

**Standardisation requires  
quality control in the areas of**

- digital proofing  
(Media Wedge, Altona Test Suite)**
- CtP plate production  
(CtP und Prozessor Test Forme)**
- print production  
(print control strips and fountain control)**

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# Thank you

**Further information on the Fogra web site**

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**direct contact: [schmitt@fogra.org](mailto:schmitt@fogra.org)**