

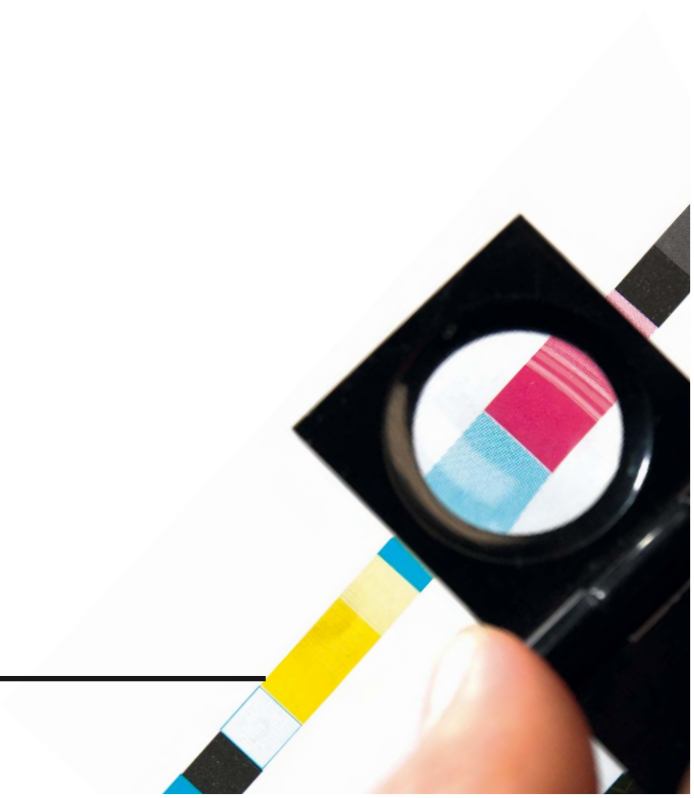
TAGA DOC

Supporting Documents and Publications

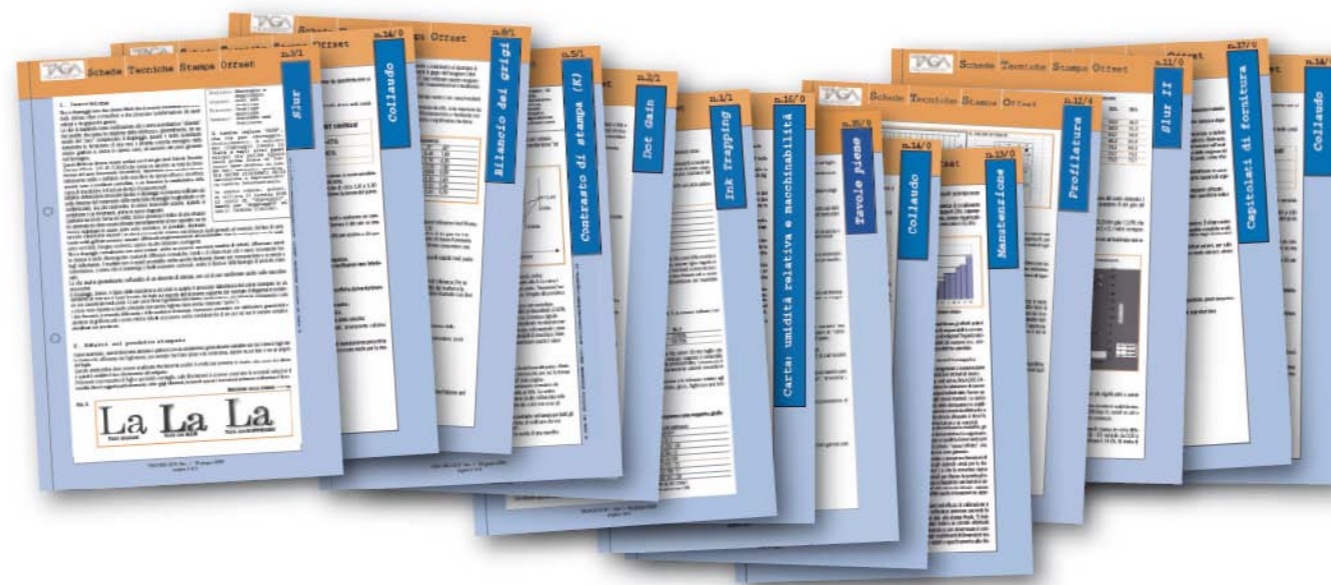
PSN Printing Standard Network - 2nd European Expert Meeting

www.taga.it

Carlo Balestrini - carlo@balestrini.eu

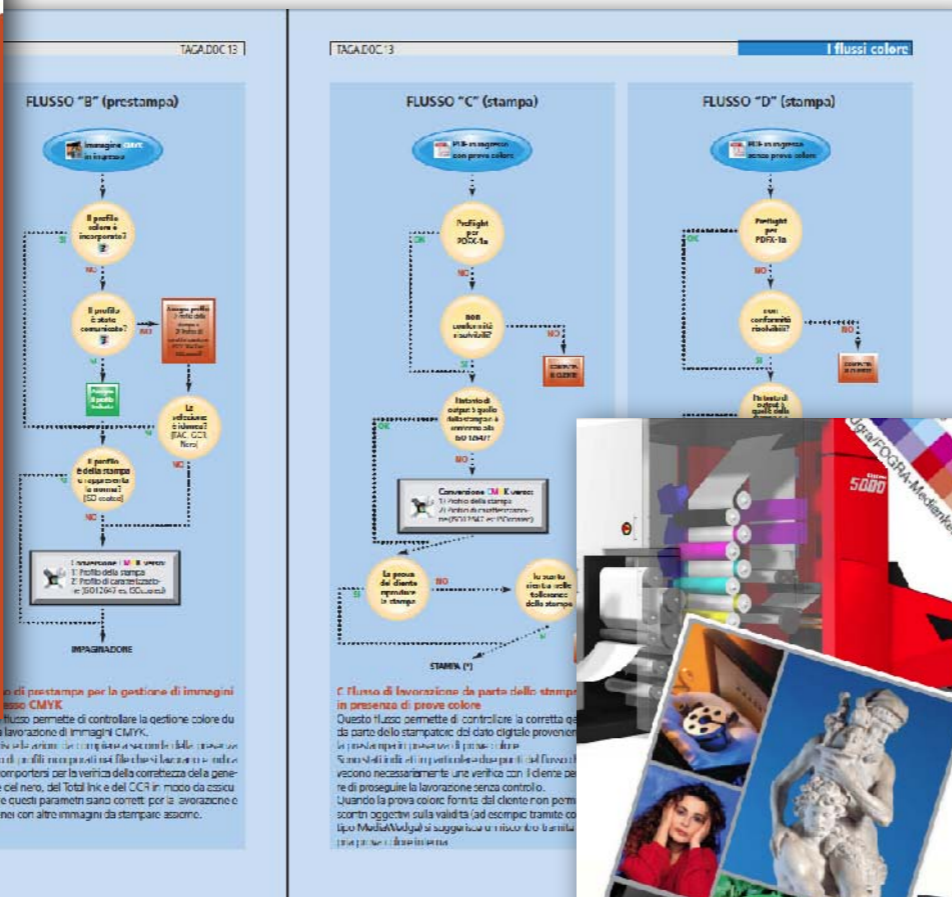
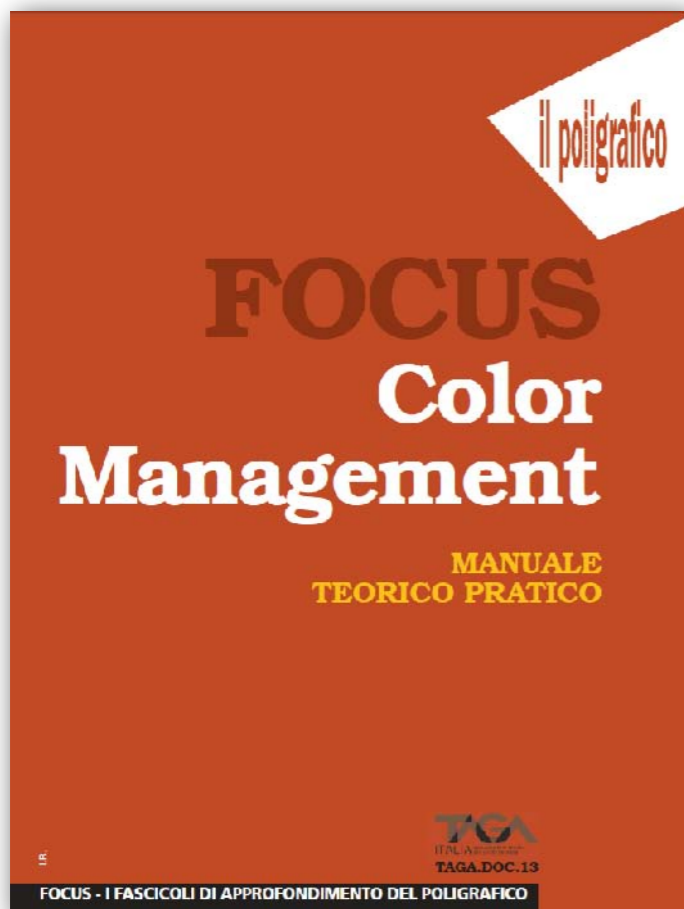


Born in 1983 TAGA Italia with its 300 members represents the experience of 200 Companies known as the technical reference for the Italian market for Offset, WebOffset and Gravure process.



**TAGA Italia means especially Technical Committee (Working Group)
Every year we have in progress 2 or 3 Working Group
making experimentation, study and developing technical Guide Lines
Every Committee starts its job referring with the related norms and
at the end produces a technical documentation (guideline)**





Digital Printing

Color Management

**STAMPA ELETTROFOTOGRAFICA
DIGITALE A COLORI AD
ALTA PRODUTTIVITÀ**

Ugra/FOGRA-Medienkeyl CMYK-T177 V2.09

Mira di risoluzione.

Scale dei colori primari e sovrapposizioni dei quattro colori. Serve per il controllo della riproduzione tonale.

Illustrazione con dell'aglio a differenti fattori di riduzione per il controllo del potere risolvibile nei sistemi. Scansione da negativo 35mm su scanner piano con profilo ECI ISO coated.

File in CMYK da archivio digitale TAGA.

Comice di 0.025mm per il controllo del registro. I crocini in negativo hanno spessore di 0.025, 0.050, 0.075 e 0.100 mm.

Dia 6x6 scansione effettuata con scanner a tamburo.



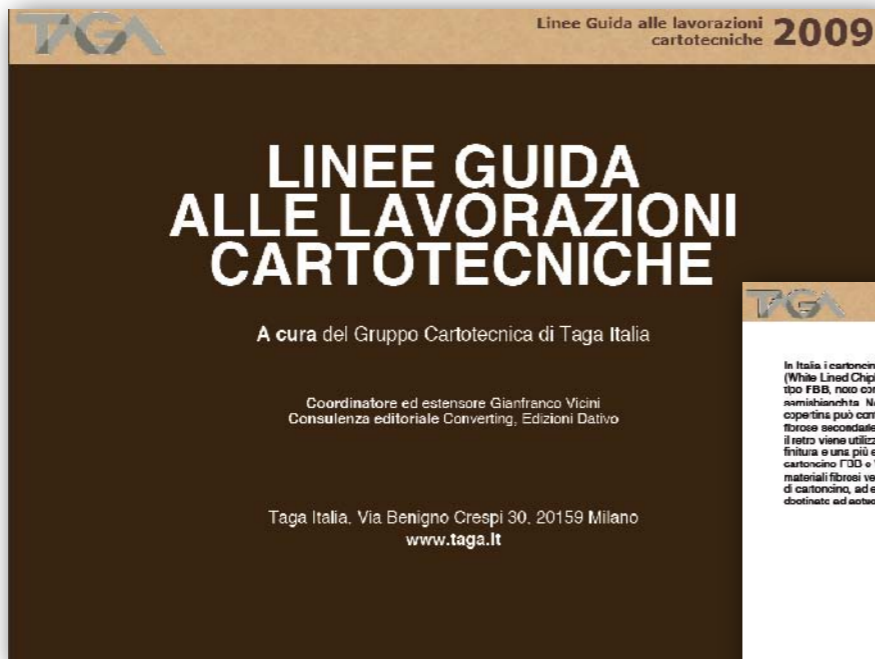
Binding

TOLLERANZE DI PRODUZIONE DEL LIBRO CARTONATO

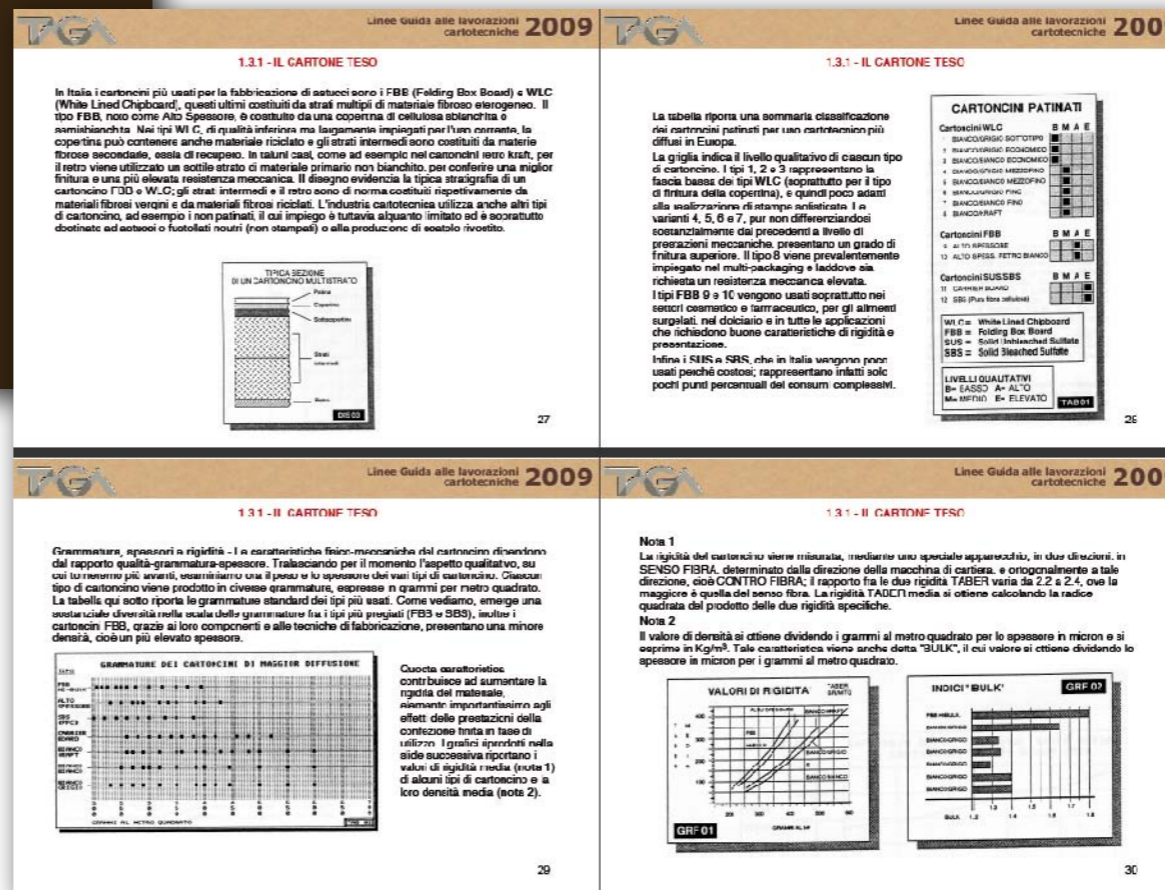
	Tolleranze industriali (corrispondenti a 2 c) ¹
cartoncino	± 0,6 mm ± 0,6 mm ± 0,2 mm ± 0,2° ± 564 ml/min ² parallela al dorso
dorso rispetto ai quadranti da foglio (o dorsino rigido)	± 0,4 mm
qualità da bobina	± 0,4 mm ± 0,4 mm ± 0,8°
vestimento	± 0,4 mm ± 0,4 mm
qualità a	± 1,0 mm ± 0,6 mm ± 0,6° parallela al dorso
mpa	+ 2,0 mm + 0,6 mm
ne delle copertine	
qualità	± 0,6 mm + 0,6 mm ± 0,2°
plance copertine finite	± 0,6 mm + 3,8 mm
stampe a caldo in uno o più passaggi	± 0,4 mm
lavorazioni cartonato (vedi illustrazioni di pagg. 58-59)	
Angolo di inclinazione dei libri in piedi	± 0,6°
Squadratura dei blocchi libro	+ 0,2°
Parallelismo delle arrotondature del blocco libro (dorso-controdorso)	± 5,0°
Centatura della copertina sul blocco libro	± 1,2 mm
Posizionamento del capitello	± 0,8 mm
Tolleranza del falso	± 0,6 mm
Scarti di produzione: entro il 4% (per lavorazioni speciali a preventivo)	

Fonte: Tolleranze delle dimensioni nella produzione di copertine di libri, RVDIM 2003.
¹ Per 2 c si intende una quantità di prodotto pari a circa il 95% della produzione complessiva (v. allegato "A").
² Metodo "Bendtsen".

**14 processes, from cutting to palletizing,
also detailed production tolerances**



Packaging



Also:

- Label Printing

- Offset Trouble Shooting

- Printing Press Characterization

2. Detecting the printing characteristics, aim values and tolerances, fixing the control conditions

Table 1: Tested features

Characteristics	Aim values and tolerances	Control conditions
MECHANICAL FEATURES		
2.1 Register	Image register ± 0,025 mm B (good) ± 0,050 mm S (sufficient) > 0,075 mm I (insufficient) B/F register (4 positions max) ± 0,5 mm B (good) < 1,0 mm S (sufficient) > 1,0 mm I (insufficient)	Press speed 80% of the press max speed Control elements Register marks D (25 mm) with thickness reference at 0,050 and at 0,075 mm Measurement point at gripper edge and within the first third of the printed sheet Check a sample of 15-20 sheets in sequence recording the most relevant deviations and leaving out obvious errors
2.2 Slur/Doubling (SD)	Difference (dot %) between vertical and horizontal lines of patches On gripper edge < 1.2% (→ zero). Within 1/3 of the sheet ± 3% B (good) < 4% S (sufficient) > 4% I (insufficient)	Press speed 80% of the press max speed Control elements 43 l/cm screen ruling, 0° and 90°, 50% area covered Measurement point at gripper edge and within the first third of the printed sheet Difference on plates between vertical and horizontal patches (max 2%)
2.3 Inking uniformity from gripper to tail edge of the sheet	Ink density differences cm 123x100 ± 4% B (good) < 6% < 6% S (sufficient) < 8% > 6% I (insufficient) > 8%	Press speed 80% of the press max speed Control elements Solid colour bars located from gripper to tail edge in the centre of the printed sheet. Measurement point Gripper edge, centre and tail of the printed sheet
2.4 Mechanical ghosting	Maximum colour differences ΔE* ≤ 2,0 B (good) ΔE* ≤ 2,5 S (sufficient) ΔE* > 2,5 I (insufficient)	Press speed 80% of the press max speed Control elements Green sector with white profile Measurement point At the maximum of the phenomenon at the points R2 and R3
2.5 Pressure streaks	They shouldn't be visible on the printed table. The acceptable tolerance value is: ΔE* ≤ 1,0 B (good) ΔE* ≤ 1,5 S (sufficient) ΔE* > 1,5 I (insufficient) Between positive and negative parts of the pressure streaks.	Press speed 80% of the press max speed Control elements 4 colour tint of the Test forme with 50m40y40k30 values Measurement point Full area of the printed sheet For different paper or board check even with smaller sizes
TOPE AND COLOUR CHARACTERISTICS		
2.6 Solid ink values	Values for paper type 1 and 2 (glass coated and matt-coated, non-free paper) Den Tol L*a*b* (sb) C 1,5 ±0,25 39/37/39 M 1,5 ±0,15 49/41/33 Y 1,35 ±0,26 89/59/3 K 1,8 ±0,20 100/0 Tol L*a*b* ±3/±2/±2 If differences between Den and L*a*b* values occurs, L*a*b* values take priority.	Press speed 80% of the press max speed Control elements 60-70 l/cm colour bars at gripper and tail edge of the printed sheet Measurement point colour bars located within the first third of the printed sheet NOTE 1: With certified ISO246-1 inks once the correct L*a*b* values have been achieved, density measurements can no longer be used for production run control. NOTE 2: The area uniformity on the sheet should be within the tolerances specified in section 2.0

2.7 Tone value (Dot Gain)	Tone Values for paper type 1-2 CMY K Toll 50% 13 16 ±3 60Lcm 60% 15 18 ±3 70Lcm Maximum spread CMY < 4% Warning: the values and tolerances here specified are lower than the standards, Tables 5 and 6, (see also 2.7m) Press speed 80% of the press max speed Control elements 60-70 l/cm colour bars Measurement point colour bars located within the first third of the printed sheet NOTE: for press check up a 60-70 l/cm screen ruling is used and the specified values refer to linear plates. For other screen or screen types suitable values and test conditions have to be agreed with the press supplier
2.8 Grey balance	Background areas composed with CMY and CMYK tints should appear neutral grey with the following tolerances: ΔE* ≤ 2,0 B (good) ΔE* ≤ 3,5 S (sufficient) ΔE* > 3,5 I (insufficient) Press speed 80% of the press max speed Control element Neutral grey CMY and CMYK areas and bars Measurement point full area of the printed sheet
2.9 Sequence sheet test	Sequenced sheets should present minimum or null chromatic and local differences. Possible variations, expressed as ΔE*, between the sheet left and the maximum of the sheets, should correspond to: media ΔE* ≤ 1,0 B (good) media ΔE* ≤ 1,5 S (sufficient) media ΔE* ≤ 2,0 I (insufficient) Press speed 80% of the press max speed Control elements Neutral grey CMY and CMYK areas and bars
2.10 Press run variability	Press run production sheets be uniform in colour within the tolerance expressed as ΔE*, between the reference (R1 sheet) and the production sheets: media ΔE* ≤ 1,5 B (good) media ΔE* ≤ 2,0 S (sufficient) media ΔE* > 2,0 I (insufficient)

NOTE: the variability parameters indicated by ISO 128 document at point 2.10, different parameters and name production control but a specific check up operation is

3. Performing the check up procedure

In order to point out immediately any anomalies of register, etc., that should be eliminated before perform the various proofs in the sequence indicate Record the proof results relevant to the different your final opinion.

3.1 Check mechanical features (diagnostic) as Regulate the register and adjust the inking system indicate a temporary OK sheet. Print 33-50 sheet speed.

ANNEX B:

Test Form setting up

The function and the disposition of the graphic objects used for the TAGA Italia Test Form (see www.taga.it), are described here below, from section 2.1 to 2.10 (the same numbering used in Table 1 and for the Analysis and data processing sheet in ANNEX C).

Elements for the control of the printing characteristics (Table 1)

- Image register and B/F register 2.1: register marks of mm 0.025 are placed on the edges and inside the printing area.
- Slur/Doubling (SD) 2.2: control scales and SD strips either in the middle and on the edges of the printed sheet. The difference on plates between vertical and horizontal SD patches should be zero or, at least less than 2%.
- Inking uniformity from gripper to tail edge of the printed sheet 2.3: solid colour bars.
- Mechanical ghosting 2.4: green sector (c100m0y100k30) with white profile. Measure the deltaE between R1, R2 and R3 and record the maximum difference value.
- Pressure streaks 2.5: a Neutral Grey Area (c40m32y32), located in the central part of the printed area, is used to detect pressure streaks caused by printing irregularities.
- Colour max density 2.6: detectable on control bars located at gripper and tail edge. Values can be adjusted within tolerance limits to achieve the established tone values (dot gain) and guarantee grey balance. Colour bars (Fig. 1) allow to detect quality parameters at any point of the printed sheet, including conformity to ISO12647 2 Standard.



Fig. 1: TAGA control scales (see website: www.taga.it)

- Tone value reproduction (dot gain) 2.7: an extended step wedge showing primary and secondary colors, grey balanced CMY scale, is used for checking tone value increase (TVI), evaluate grey trend in lights, middle tones and shadows and eventually define the pale compression curves when necessary.
- Grey balance 2.8: a grey CMY (c40m32y32) bar about 2 cm thick next to a corresponding black bar (K44) is placed at gripper (and at tail) edge of the sheet. A large grey area with the same values is placed around the illustrations and shall be used to check visually and instrumentally the printing uniformity on the whole forme and among production sheets or in sequence (sequence sheet test 2.9 and press run variability 2.10). A Grey balance Variable Wedge is also included. Keeping fixed c40 value it presents a variation of YM components from y32 to y27 and from m32 to m27 and can be used to identify visually or with the use of a spectrophotometer, the optimum grey balance for the printing system involved.

Other elements to complete the Test Form

- Colour target (2.1): it is used for the characterization of the printing system under control and is selected in the version suitable to the available method of automatic data collection. The colour target shall be located in the centre of the sheet starting from gripper edge. Leave the lower and the upper parts white or even grey in order to reduce mechanical ghosting.
- Continuous tone scales (vignette) (2.12): to detect banding problems during the preparation of the printing plates.
- Resolving power (2.13): highly detailed illustrations are used to assess possible moiré effect with loss in legibility, along with elements with positive and negative tests necessary to assign this feature a numerical value.

Printing Press CheckUp Procedure

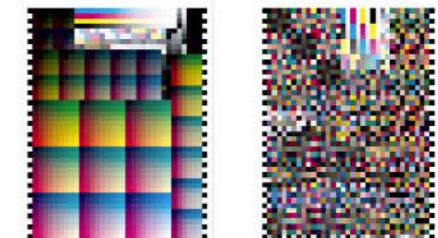


Fig. 2 - Color target ECI2002; detail visual random layout

- Illustrations for appraisal and visual assessment (2.14): choose illustrations that represent the type of product normally worked (cosmetics, fashion, furniture, decoration, etc) to facilitate the visual control of the obtained tone and colour performance. If possible, always use the same illustrations as reference for easy interpretation for Operators.
- Total Area Coverage (2.15): six fields with CMYK overprint in proportions varying from 400% to 220% (400%-c100m100y100k100, 300%-c85m83y83k95, 310%-c80m70y70k90, 280%-c73m61y61k85, 290%-c54m53y53k80, 270%-c55m45y45k74) can be used to evaluate the correct amount of a colour according to paper and printing system.
- CMS problem (2.16): vector included on raster backing area with the same percentage values (c40m32y32) of the backing area itself. If it is interpreted and modified by RIP, "CMS problem" appears in negative or positive on the backing.

The Test Forme structure for up to 70 x 100 cm sizes proposed by TAGA Italia is the following:



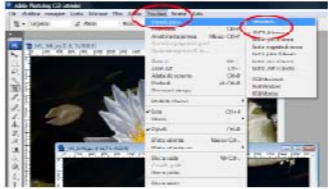
Accepted by all printing machines manufactures

Digital Photography

Environment
SoftProofing
Gravure WG:

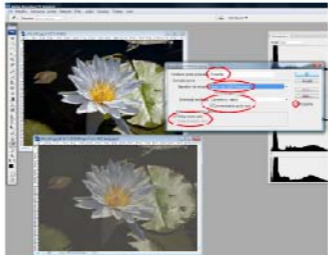
- process control table, parameters, tolerances
- test form for checkup and characterization

definiti nelle impostazioni colore di Photoshop, oppure un nuovo profilo di destinazione personale.



Se scegliamo di impostare un profilo personale, lo possiamo scegliere nella finestra che si apre e cui impostare anche l'intento di rendering e le relative opzioni.

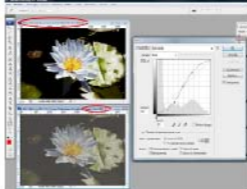
In questo esempio, per rendere maggiormente evidente il risultato, è stata scelta la soft proof per un profilo Newspaper (stampa su quotidiano) con intento colorimetrico relativo a simulazione colore carta e inchiostro nero.



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Ciò attivando l'antoprinta posso visualizzare il risultato delle mie impostazioni nella finestra con il pulsante **Soft Proof**.

Ora posso effettuare eventuali regolazioni o ritocchi mantenendo sempre visibile il risultato la simulazione del massimo nero e del bianco carta riferiti al profilo CMYK di destinazione, anche se stiamo lavorando su un file RGB.



Maschera di contrasto: applicarla o non applicarla?

Nella fotografia digitale esiste quasi sempre la necessità di aumentare la nitidezza dell'immagine.


È possibile controllare la nitidezza in 2 fasi del processo di lavorazione: a livello del file Raw, tramite un controllo apposito, e all'interno dei diversi software di elaborazione di immagini come nel caso della Maschera di Contrasto o USM (Unsharp Mask) di Photoshop.

Esistono comunque importanti differenze.

Il controllo sulla nitidezza effettuato in Raw, come gli altri parametri controllabili in tale modalità, ha a disposizione tutti i dati acquisiti dal sensore in fase di scatto, risultando quindi molto più accurato.

La maschera di contrasto di Photoshop, invece, lavora sulle elaborazioni effettuate in post-produzione, lavora sui pixel colorati calcolandone le variazioni esclusivamente attraverso algoritmi di interpolazione.

Il funzionamento della USM è ben visibile nelle immagini seguenti:



senza maschera di contrasto

con maschera di contrasto

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