



Owing to technological innovation in digital printers and their spreading in the market, there is a rising demand for digital printing certification. In order to contribute to the printing industry as a whole by promoting standardization and facilitating the further spread of digital printing, Digital Printing Process Control Certification was created as a part of Japan Color Certification System. It is ISO/TS 15311-1 compliant.

Outline

Major items examined in Digital Printing Process Control Certification are as follows.

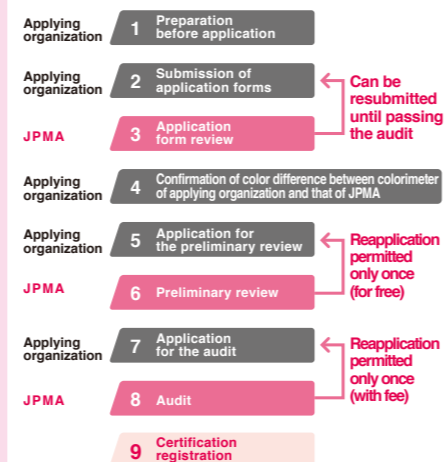
Item	Color measurement and confirmation positions*1	Criteria*2	Basis of judgment
Preflight inspections	Preflight results	Preflight results per JC_TEST_FORM 5_Ver1	Indicate all errors, warnings, and information. Indicate responses by the applying printer for warning items.
Large area uniformity	9 locations each in 3 types of charts in JC_TEST_FORM 4_Ver2 (3 types of gray)	$\Delta E00 \leq 2$	Measured value by JPMA
Tolerance between the standard value and measured value	All 54 patches	54 patches of ISO12642-2 (1617 patches) and 22 patches of 19 tones	Average $\Delta E00 \leq 2$ Maximum $\Delta E00 \leq 6$
	6 patches for gray balance colorimetry	6 patches for gray balance colorimetry among 22 patches in 19 tones	Average $\Delta Ch \leq 2.0$
	All 1617 patches	All 1617 patches of ISO 12642-2	Average $\Delta E00 \leq 2$ 95% $\Delta E00 \leq 4$
	Outer gamut patches	226 patches of ISO 12642-2	Average $\Delta E00 \leq 3$
	Substrate white	Substrate white (CMYK:0,0,0,0) of ISO 12642-2	$\Delta E00 \leq 3$
Deviation Tolerance	Color difference between each of 15 patches randomly sampled from 500 sheets and their average	Japan Color control strip (54 patches)	Average $\Delta E00 \leq 1$ 95% $\Delta E00 \leq 3$
Tolerance for difference from the reference value on all printed samples	Average color difference between the reference value and the average of randomly sampled 15 sheets	Japan Color control strip (54 patches)	Average $\Delta E00 \leq 3.0$
Tone reproduction	Tone value reproduction limits	Substrate white, 3% tones, 98% tones, and solid tones of C, M, Y, and K, of 22 patches in 19 tones	L* value for C, M, and K substrate white > 3% tone, 98% tone > solid tone b* value for Y substrate white < 3% tone, C* value for Y 98% tone < solid tone
	Reproduction of the minimum dots tone on a solid tone	5% dots on a yellow solid tone	Whether the distinction between the yellow solid tone and the tones of circles can be confirmed
	Tone jump	All C, M, Y, and K gradation circles	Whether no significant discontinuity in gradation is found
Image register and fonts	Central positions on each line in the three color registration test patterns on the upper left, the center, and the lower right of the test form sheet		Whether no color registration is displaced (by one line)
	C, M, and K positive, Japanese font of 5 point size, C, M, and K negative(reverse), Japanese font of 8 point size		Whether they are distinguishable
	0.5 point reverse line in C, M, and K		

Application procedure

Applying organization

While certification is conducted for each factory, it is a single digital printing press under application that is subject to the audit.

Application procedure



* "5. Application for the preliminary review" includes preflight inspections.

Re-certification

The validity period for Digital Printing Process Control Certification is 2 years. If a certification holder fails to pass the biennial renewal audit, the certification will be revoked.

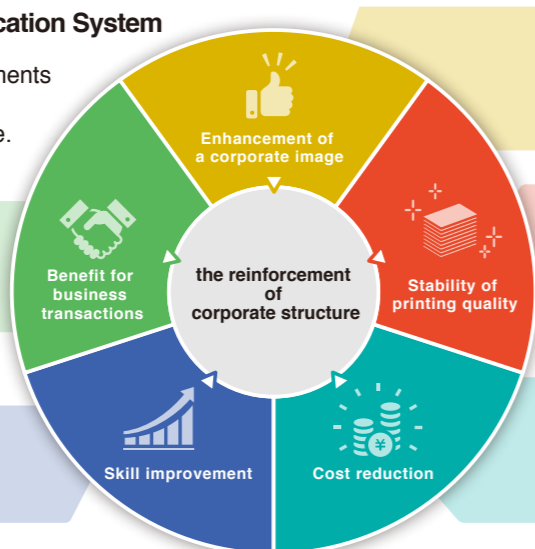
*1: Found in JC_TEST_FORM 6_Ver1 unless otherwise specified.
*2: Comparison with certification reference L*a*b* values unless otherwise specified.
* CIEDE2000 (denoted as $\Delta E00$ in documents, etc.) is adopted as the definition of color difference instead of CIE 1976(L*a*b*)

Benefits of the Japan Color Certification System

Its various benefits leading to improvements in quality and productivity lead to the reinforcement of corporate structure.

If printing standards are included in terms of transactions with customers, clients, etc. or tender conditions, a certification lets its holder conduct transactions advantageously.

Promoting company-wide standardization enables improving skills of employees.



Obtaining an ISO compliant certification lets its holder demonstrate a high ability to create print product and printing proofs not only to potential Japanese customers but also to potential customers abroad

Standardization enables creating printed matters of stable quality speedily

Printing in accordance with standard printing conditions reduces waste sheets and the amount of ink used, leading to improved productivity and realizing cost reduction.

For Stable Printing Quality and Improved Productivity

Japan Color Certification System

What Japan Color Certification System Is

The Japan Color Certification System complies with ISO international standards and provides certification based on Japan Color, which is the canonical standard for printing color in sheet-fed offset printing in Japan. Japan Color Certification System is composed of "Offset Process Control Certification," "Color Matching Accuracy Certification," "Proofing System Certification," and "Proofing Process Management Certification." Furthermore, Digital Printing Process Control Certification was newly added in May, 2017.

The good or bad of printed matter has traditionally been determined on the basis of how it looks, and printed matter has been created in the absence of clear standard. In most cases, printing companies respond to demands for color reproduction by clients, designers, etc. by repeated revisions and reprinting. The lack of canonical standard for the creation of printed matter and a certifying organization has been a major cause for such a situation.

Thus, in order to facilitate the spreading of Japan Color and facilitate standardization of printing for reducing unnecessary revisions and reprinting and other relevant purposes, the Japan Color Certification System was established, being conducted by a fair third party organization.

Offset Process Control Certification
Target: **Printing companies**

Offset Process Control Certification certifies a process control ability to create printed matter of stable quality through the maintenance, numerical value management, etc. of printing machinery.

Color Matching Accuracy Certification
Target: **Printing companies (with Offset Process Control Certification)**

On the precondition that the applicant has obtained Offset Process Control Certification, Color Matching Accuracy Certification certifies mainly an ability to match colors in printed matter to reference values within tolerance by using advanced color management technologies.

Proofing System Certification
Target: **Proofing system manufacturers vendors etc.**

Proofing System Certification certifies a proofing system that can output highly reliable printing proofs stably.

Proofing Process Management Certification
Target: **Design companies printing companies etc.**

Proofing Process Management Certification certifies mainly ability for stably outputting highly reliable printing proofs (sample outputs) that can be used for printing by correctly maintaining and properly operating individual proofing equipments in use.

Digital Printing Process Control Certification
Target: **Printing companies**

"Digital Printing Certification" certifies operational capacity to create high-quality printed matter stably through the maintenance, numerical value management, etc. of digital printing machinery.



Offset Process Control Certification

Certifies a process control ability that can creating print product of stable quality.

Outline

Offset Process Control Certification has following requirements for application.

- Printing press**
Any four (or more) color offset printing press supporting CTP plates. It does not matter whether single- or double-sided printing is supported. Audit is conducted on four single-sided printing.
- Colorimeter**
It must be able to obtain precise colorimetric values. It may be made by any manufacturer and be of any type, etc.
- CTP plate**
CTP plates must be used. It does not matter whether a platesetter is possessed.
- Screen ruling**
A high definition screen or FM screen will do if its screen ruling is 175 lpi or greater and dot gain is within the reference value of Offset Process Control Certification (14±3%).
- Ink**
Ink must be conformed with Japan Color. Ink may be made by any manufacturer and be of any brand.
- Print substrate**
Print substrate must be conformed with Japan Color. Paper type is categorized premium coated (PS1;ISO 12647-2:2013) Paper may be made by any manufacturer and be of any brand. Paper size must be kiku 4(469 x 318mm) or larger.
- "Japan Color 2007 Kit for Offset Printing" and "JIS X9201:2001"(SCID image) must be purchased.**

Major items examined in Offset Process Control Certification are as follows.

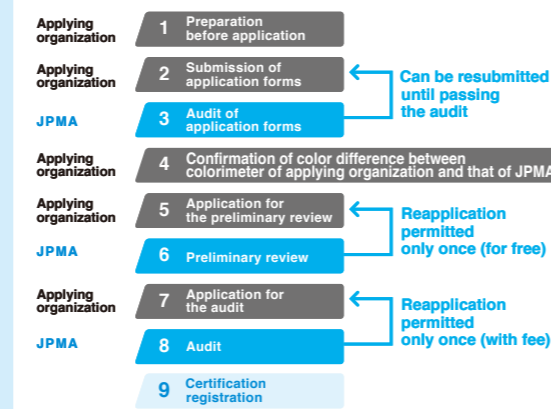
- In comparison with reference values for Offset Process Control Certification based on Japan Color2011, the L*a*b value for the C, M, Y, and K solid tones on an OK sheet must be within ΔE5 and the dot gain for 50% C, M, Y, and K tones on the OK sheet must be within 14±3%.
- On 21 or greater sheets of 30 sheets sampled from 5,000 consecutively printed sheets, the L*a*b value for the C, M, Y, and K solid tones must be within ΔE5 of that for the corresponding part on an OK sheet, and the dot gain for 50% C, M, Y, and K tones must be within ±4% of that for the corresponding part on the OK sheet.

Application procedure

Applying organization

- While certification is conducted for each factory, it is a single printing press under application that is subject to the audit.

Application procedure



Re-certification

- The validity period of Offset Process Control Certification is 2 years. If a certification holder fails to pass the biennial renewal audit, the certification will be revoked.

Proofing System Certification

Certifies a system that can output highly reliable printing proofs stably.

Outline

Major items examined in Proofing System Certification are as follows.

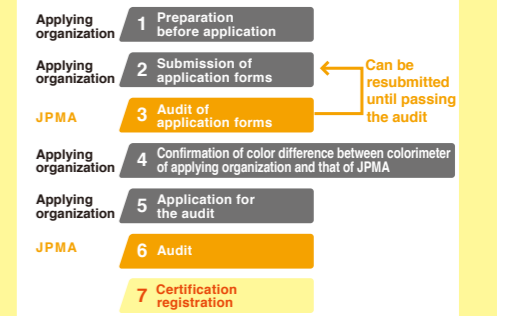
Item	Color measurement and confirmation positions*1	Criteria*2	Basis of judgment
Solid tones of chromatic primary patches	Solid tones of C, M, Y, and K of ISO12642-2 (1617 patches)	$\Delta E \leq 6$ $\Delta H \leq 4$	Measured value by JPMA
Large area uniformity	9 locations each on 3 types of charts of JC_TEST_FORM 4_Ver1 (3 types of gray)	$\Delta E \leq 2$ For the L* values for all 9 points, $SDL^* \leq 0.5$ For the a* values for all 9 points, $SDa^* \leq 0.5$ For the b* values for all 9 points, $SDb^* \leq 0.5$	Values submitted by the applicant
Discoloration	6 CMYGB patches of the Japan Color control strip (54 patches)	After storage in a dark place for 7 days, for all patches, $\Delta E \leq 1.5$	Measured value by JPMA
Light fastness	6 CMYGB patches of the Japan Color control strip (54 patches)	For all patches, after 24-hour exposure to a natural white fluorescent lamp for color evaluation, $\Delta E \leq 2$	Measured value by JPMA
Tolerance between the standard value and the measured value	All 54 patches	Maximum $\Delta E \leq 6$ Average $\Delta E \leq 3$	Measured value by JPMA
Outer gamut patches	226 patches of ISO12642-2	Average $\Delta H \leq 1.5$	Measured value by JPMA
All 1617 patches	All 1617 patches of ISO12642-2	Average $\Delta E \leq 4$ Average $\Delta E \leq 3$ 95% $\Delta E \leq 6$	Measured value by JPMA
Substrate white	Substrate white (CMYK:0,0,0,0) of ISO12642-2	$\Delta E \leq 3$	Measured value by JPMA
Consecutive output	54 patches (10 samples) of ISO12642-2 and 22 patches of 19 tones	For the average color difference on each of 10 printed samples between the average value and the measured value for each of 54 patches, $\Delta E \leq 1.5$	Measured value by JPMA
Stability of the system	Solid tones of C,M,Y,R,G,B tones and 40% C,M,Y tones in ISO12642-2	For all patches, in comparison with samples printed 24 hours before, $\Delta E \leq 1.5$	Measured value by JPMA
Tone value reproduction limits	Substrate white, 3% tones, 98% tones, and solid tones of C, M, Y, and K, of 22 patches in 19 tones	L* value for C, M, and K substrate white > 3% tone, 98% tone > solid tone b* value for Y substrate white < 3% tone, C* value for Y 98% tone < solid tone	Measured value by JPMA
Reproduction of the minimum dots on a solid tone	5% dots on a yellow solid tone	Whether the distinction between the yellow solid tone and the tones of circles can be confirmed	Confirmed by JPMA
Tone jump	All C, M, Y, and K gradation circles	Whether no significant discontinuity in gradation is found	Confirmed by JPMA
Image register and fonts	Central positions on each line in the three color registration test patterns on the upper left, the center, and the lower right of the test form sheet	Whether no color registration is displaced (by one line)	Confirmed by JPMA
Margin Information	C, M, and K positive, non-serif, western font of 2point size C, M, and K negative(reverse), non-serif, western font of 8point size 2 point reverse line in C, M, and K A human-readable commentary line printed on a margin	Whether they are distinguishable Whether prescribed conditions are indicated	Confirmed by JPMA

Application procedure

Applying organization

- An application for Proofing System Certification can be made by proofing system distributors, for instance, besides proofing system manufacturers.

Application procedure



Re-certification

- As no validity period is set for Proofing System Certification, a renewal procedure is not required.

*1: Found in JC_TEST_FORM 3_Ver2 unless otherwise specified.
*2: Comparison with certification reference L*a*b* values unless otherwise specified.

Color Matching Accuracy Certification

Certifies advanced color management ability.

Outline

Major items examined in Color Matching Accuracy Certification are as follows.

Item	Color measurement and confirmation positions*1	Criteria*2	Basis of judgment
Solid tones of chromatic primary patches	Solid tones of C, M, Y, and K of ISO12642-2 (1617 patches)	$\Delta E \leq 5$	Measured value by JPMA
Large area uniformity	Gray patches with 3 tone value combinations placed in 9 locations (27 patches in total)	Calculate a standard deviation for each of 3 readings on the basis of colorimetric values. For the L* value of each reading in 9 locations, $SDL^* \leq 1.5$ For the a* value of each reading in 9 locations, $SDa^* \leq 1.5$ For the b* value of each reading in 9 locations, $SDb^* \leq 1.5$	Measured value by JPMA
Tolerance between the standard value and the measured value	All patches of ISO12642-2	Average $\Delta E \leq 3$ 95% $\Delta E \leq 6$	Measured value by JPMA
Tone value reproduction limits	Substrate white, 3% tones, 98% tones, and solid tones of C, M, Y, and K, of 22 patches in 19 tones	L* value for C, M, and K substrate white > 3% tone, 98% tone > solid tone b* value for Y substrate white < 3% tone, C* value for Y 98% tone < solid tone	Measured value by JPMA
Reproduction of the minimum dots on a solid tone	5% dots on a yellow solid tone	Whether the distinction between the yellow solid tone and the tones of circles can be confirmed	Confirmed by JPMA
Tone jump	All C, M, Y, and K gradation circles	Whether no significant discontinuity in gradation is found	Confirmed by JPMA

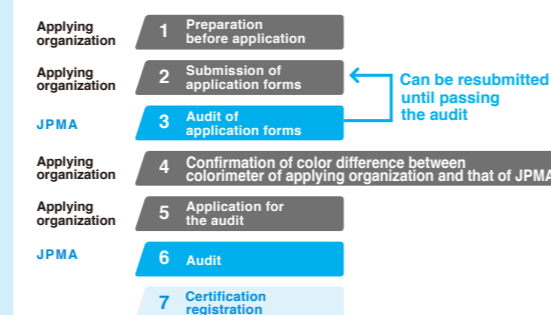
*1: Found in JC_TEST_FORM 3_Ver2 unless otherwise specified.
*2: Comparison with certification reference L*a*b* values unless otherwise specified.

Application procedure

Applying organization

- 4 months must have passed since Offset Process Control Certification was obtained.

Application procedure



Re-certification

- If a certification holder fails to pass the biennial renewal audit, the certification will be revoked.
- After Color Matching Accuracy Certification is obtained, the renewal audit for Offset Process Control Certification will no longer be required in principle and integrated into the renewal audit for Color Matching Accuracy Certification. Regardless of the renewal deadline for Offset Process Control Certification, the renewal audit for Color Matching Accuracy Certification will be conducted every 2 years from the date on which it is obtained.
- If the renewal audit of Color Matching Accuracy Certification is failed, the renewal audit for Offset Process Control Certification will be conducted separately in accordance with its certification standard.

Proofing Process Management Certification

Certifies an ability to output highly reliable printing proofs stably.

Outline

Major items examined in Proofing Process Management Certification are as follows.

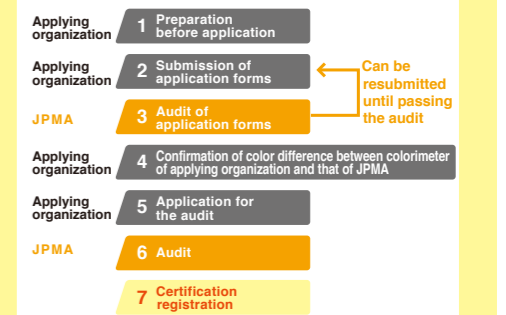
Item	Color measurement and confirmation positions*1	Criteria*2	Exemption*3	Basis of judgment
Solid tones of chromatic primary patches	Solid tones of C, M, Y, and K of ISO12642-2 (1617 patches)	$\Delta E \leq 6$ $\Delta H \leq 4$		Measured value by JPMA
Large area uniformity	9 locations each on 3 types of charts of JC_TEST_FORM 4_Ver1 (3 types of gray)	$\Delta E \leq 2$ For the L* values for all 9 points, $SDL^* \leq 0.5$ For the a* values for all 9 points, $SDa^* \leq 0.5$ For the b* values for all 9 points, $SDb^* \leq 0.5$	●	Measured value by JPMA
Discoloration	6 CMYGB patches of the Japan Color control strip (54 patches)	After storage in a dark place for 7 days, for all patches, $\Delta E \leq 1.5$	●	Values submitted by the applicant
Light fastness	6 CMYGB patches of the Japan Color control strip (54 patches)	For all patches, after 24-hour exposure to a natural white fluorescent lamp for color evaluation, $\Delta E \leq 2$	●	Measured value by JPMA
Tolerance between the standard value and the measured value	All 54 patches	Maximum $\Delta E \leq 6$ Average $\Delta E \leq 3$		Measured value by JPMA
Outer gamut patches	226 patches of ISO12642-2	Average $\Delta H \leq 1.5$		Measured value by JPMA
All 1617 patches	All 1617 patches of ISO12642-2	Average $\Delta E \leq 4$ Average $\Delta E \leq 3$ 95% $\Delta E \leq 6$		Measured value by JPMA
Substrate white	Substrate white (CMYK:0,0,0,0) of ISO12642-2	$\Delta E \leq 3$		Measured value by JPMA
Consecutive output	54 patches (10 samples) of ISO12642-2 and 22 patches of 19 tones	For the average color difference on each of 10 printed samples between the average value and the measured value for each of 54 patches, $\Delta E \leq 1.5$	●	Measured value by JPMA
Stability of the system	Solid tones of C,M,Y,R,G,B tones and 40% C,M,Y tones in ISO12642-2	For all patches, in comparison with samples printed 24 hours before, $\Delta E \leq 1.5$	●	Measured value by JPMA
Tone value reproduction limits	Substrate white, 3% tones, 98% tones, and solid tones of C, M, Y, and K, of 22 patches in 19 tones	L* value for C, M, and K substrate white > 3% tone, 98% tone > solid tone b* value for Y substrate white < 3% tone, C* value for Y 98% tone < solid tone		Measured value by JPMA
Reproduction of the minimum dots on a solid tone	5% dots on a yellow solid tone	Whether the distinction between the yellow solid tone and the tones of circles can be confirmed		Confirmed by JPMA
Tone jump	All C, M, Y, and K gradation circles	Whether no significant discontinuity in gradation is found		Confirmed by JPMA
Image register and fonts	Central positions on each line in the three color registration test patterns on the upper left, the center, and the lower right of the test form sheet	Whether no color registration is displaced (by one line)	●	Confirmed by JPMA
Margin Information	C, M, and K positive, non-serif, western font of 2point size C, M, and K negative(reverse), non-serif, western font of 8point size 2 point reverse line in C, M, and K A human-readable commentary line printed on a margin	Whether they are distinguishable Whether prescribed conditions are indicated	●	Confirmed by JPMA

Application procedure

Applying organization

- Where multiple systems of the same proofing model are possessed, if certification is obtained for one representative proofing system selected, certification is equally granted to other systems by just reporting them, provided that other systems are managed in the same manner as the one for which certification is obtained.

Application procedure



Re-certification

- The validity period for Proofing Process Management Certification is 2 years. If a certification holder fails to pass the biennial renewal audit, the certification will be revoked.

*1: Found in JC_TEST_FORM 3_Ver2 unless otherwise specified.
*2: Comparison with certification reference L*a*b* values unless otherwise specified.
*3: Indicates items exempted from audit if an application for this certification is made for a system for which Proofing System Certification has been obtained.