INTERNATIONAL STANDARD

ISO 16762

First edition
2016-11-15

Graphic technology — Post-press — General requirements for transfer, handling and storage

Technologie graphique — Post-presse — Exigences générales pour le transfert. la manipulation et le stockage

Reference number
ISO 16762:2016(E)

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 130, *Graphic technology.*

Introduction

In order to manufacture printed products of good quality, prepress, print and post-press departments need to cooperate effectively. Different consecutive post-press operations need to be arranged accordingly. This document describes general operations to ensure quality of raw materials, intermediate and final products.

Included in this document are the common requirements for various post-press processes. Rather than repeating these requirements within each post-press standard, this document acts as a common reference for all aspects involving paper-based products. There are other standards that describe requirements that are specific to a particular process — such as book binding (ISO 16763). This document is not intended to be exclusive and the process-specific requirements shall also be followed in order to achieve complete quality control. This document can be used independently and can also be used in conjunction with other associated standards.

The areas that this document covers are

— process requirements:

  a) job information requirements,

  b) incoming goods inspection,

  c) intermediate product requirements, and

  d) processing requirements,

— operating and testing environments,

— inspection and measurement requirements, and

— packing, storage and transportation requirements.

The post-press processes to which this document is applicable include

— laminating and varnishing,

— cutting (both sheet and web),

— creasing and folding (both sheet and web),

— gathering and collating,

— binding,

— trimming,

— hot foil stamping,

— die cutting,

— gluing,

— inserting, and

— perforating.

Graphic technology — Post-press — General requirements for transfer, handling and storage

1 Scope

This document specifies the requirements for the handling, storage and transfer of printed products between printing and post-press. It also identifies information that may be necessary for successful completion of post-press operations (job ticket). In addition, the handling of materials used within the post-press operation is specified.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 186, *Paper and board — Sampling to determine average quality*

ISO 187, *Paper, board and pulps — Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples*

ISO 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot–by-lot inspection*

ISO 8995-1, *Lighting of work places — Part1: Indoor*

ISO 10012, *Measurement management systems — Requirements for measurement process and measuring equipment*

ISO 12647-2, *Graphic technology — Process control for the production of half-tone colour separations, proof and production prints — Part 2: Offset lithographic processes*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
acceptance quality limit
AQL
quality level that is the worst tolerable process average when a continuing series of lots is submitted for acceptance sampling

[SOURCE: ISO 2859-1:1999, 3.1.26]

3.2
bottling
angle-wise repositioning of pages to compensate for substrate thickness influences during multiple folding

3.3
carboning
transfer of ink from a printed to an unprinted area by pressure or micro-friction

3.4
collating marks
symbols printed on the folded edges of signatures as a means of indicating the correct collating or gathering sequence

3.5
folding marks
symbols printed on the margins of a page to guide the folding process

3.6
front to back register
accuracy of the printed components of each page relative to each other from the front and the back

3.7
gutter
space between two adjacent pages or blocks of pages that when folded will either be trimmed off or form the part of the page that connects to the spine

3.8
hickie
small mark that is caused by dust or debris on the printing blanket resulting in a breakup of the printed image

Note 1 to entry: The removal of such debris is achieved by blanket washing or "hickie picking" with a special tool.

3.9
imposition
positioning of pages on a press sheet in such a manner that, when the sheet is folded into a signature and cut, the pages will be in the correct sequence

3.10
intermediate products
unfinished printed products to be processed in subsequent process(es)

3.11
lead edge
edge that forms the reference point for all processes

Note 1 to entry: Also known as leading edge or *side lay* (3.17).

3.12
log
method of bundling printed signatures in such a way that they can be stored and loaded in large quantities onto a specific machine

3.13
materials in process
products or materials that have had processes applied to them but are still awaiting further additional processes to be applied — for example packing, varnishing

3.14
raw materials
materials that are to be used as part of the post-press operation — for example adhesives, wire and thread.

3.15
set off
unwanted transfer of ink from one printed sheet to another

3.16
shingling
horizontal and/or vertical repositioning of pages to compensate substrate thickness influences during multiple folding

Note 1 to entry: This is also called “creep compensation”.

3.17
side lay
mark that indicates the reference edge of a sheet that printing and finishing equipment uses to enable consistent registration of the product

3.18
smudging
mark with no particular shape that is caused by accidental transfer of ink or dirt

3.19
squareness tolerance
allowable difference in length between the two diagonals of a rectangle and between the lengths of opposite edges

3.20
version mark
mark or barcode printed on the spine or margin of a book signature or at the glue flap of a box to indicate different versions of books or boxes

3.21
waviness
effect of paper or other materials curving alternately in opposite directions to make a wave-shaped form

4 Requirements

4.1 Tolerances

If several successive processes are requesting target values with tolerances, the product tolerances are as large as the sum of the tolerances of the individual processes.

The minimum acceptance level for each intermediate product is 95 % of the sample.

4.2 Job information requirements (job ticket)

Individual requirements and limitations of post-press companies shall be communicated to the printer and/or the prepress services and/or the customer and/or the designer.

The minimum information required for post-press is

— job title,

— job reference,

— size,

— quantity,

— delivery date,

— production details,

— packing and delivery requirements,

— any other information deemed necessary to enable the operator to complete the processes, such as specific customer requirements, agreed specific quality, and environmental requirements,

— process-specific requirements, such as intended folding scheme, batching information and features that enable signature identification, and

— additional parameters agreed on by the parties involved that are necessary for product conformance.

This information should be physical or electronic but shall be easily available to all operators.

4.3 Incoming goods inspection

4.3.1 General

All incoming packing units shall be free of damage that affects the quality and/or the processability of the goods. Incoming intermediate products and raw materials may show visual defects and or defects affecting their subsequent processability. They shall therefore be inspected with respect to obvious defects. These include surface modifications (smudging, carboning, scratches, abrasion, set off, etc.), non-flatness (waviness, curling, etc.) and damage (wrinkles, holes, etc.). Prior to processing of such damaged intermediate products, the supplier or the customer shall be informed in order to decide on further steps. This communication shall be undertaken if obvious damage is detected during or after the post-press operation or if there are difficulties encountered with the actual operation. All communication shall be documented in the job information.

4.3.2 Presentation

Raw materials should be presented in a way to avoid unnecessary preparative operations. Materials intended for automated feeding shall all be of the same size and aligned squarely and parallel to each other on the leading edge. Specific requirements for automated feeding should be communicated prior to production.

4.3.3 Package identification

The presentation of raw materials should be clearly identified with the relevant specification and batch numbers on the package label. This should include the quantity or weight information where appropriate. Where products or raw materials have a specific shelf life, the date of manufacture and expiry of the shelf life shall be clearly marked on the packaging.

The wrapping shall be free from any significant damage.

4.3.4 Storage and handling

Materials that are used in post-press environments shall be appropriately stored to prevent damage and contamination. The materials shall be used within the period of specified shelf life.

4.3.5 Temperature and humidity adaption

Raw materials should be left in an environment of similar temperature and humidity to the rest of the production procedure until temperature equilibrium has been reached. Hygroscopic materials like paper shall be temperature equilibrated and climate stable wrappings should only be removed if the relative humidity of the environment is within ±10 % of that of the paper. Deviations from this requirement shall be communicated to the supplier and/or customer.

4.3.6 Size and squareness tolerance (sheets)

The materials that are presented in piles of sheets shall be square and of the correct size as marked on the packaging. If any problem reasonably related to dimensional deviations occurs or in case of doubt, the dimensions of a cut pile shall be determined by taking the measurement of a number of samples

according to ISO 186. The size and squareness of the sheet shall be determined by measuring the height (H1 and H2) and width (W1 and W2) lines for size and the diagonal lines (X and Y) as shown in Figure 1, where the squareness tolerance is the value of X – Y.

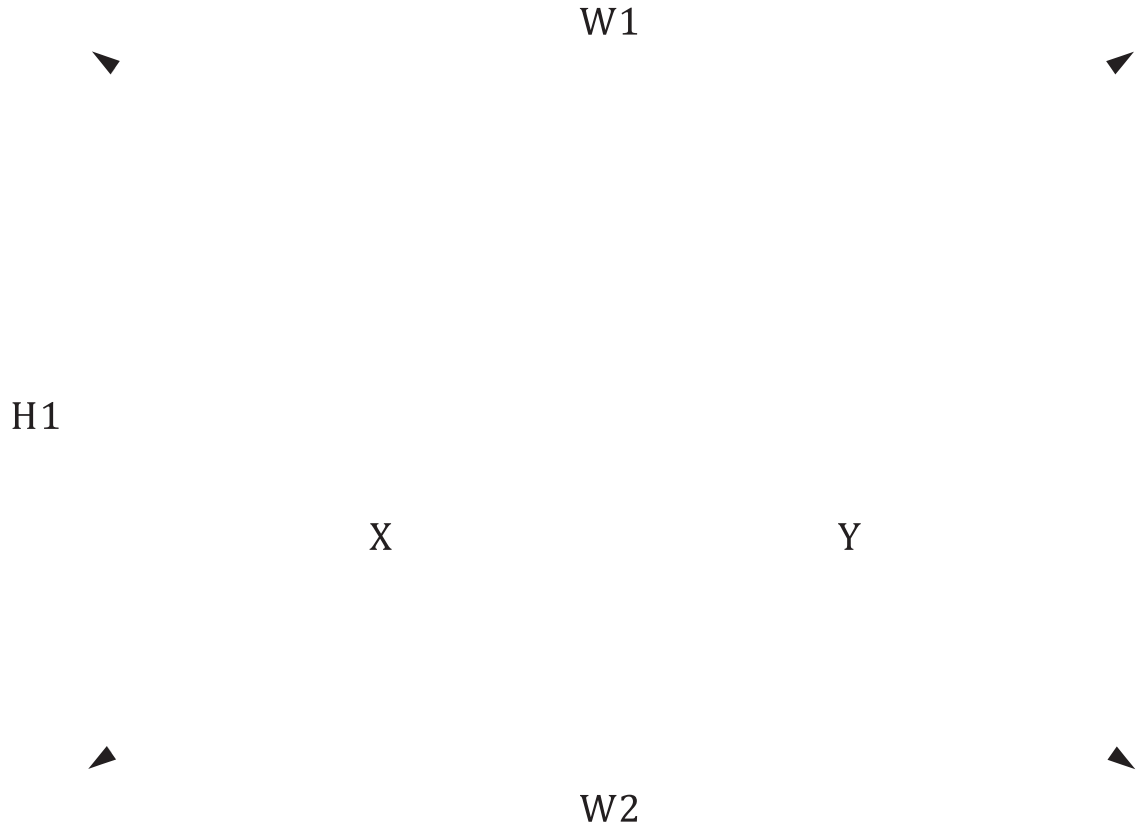

Figure 1 — Measurement of edges and diagonal lines for squareness

The size and squareness tolerance shall be in accordance with the requirements of the process and/or end-product quality.

4.4 Intermediate product requirements

4.4.1 Presentation

All materials used to produce intermediate products intended to be further processed by post-press operations shall conform to the process requirements of the post-press operations used and conform to the environmental requirements applicable. The ink on all printed matter shall be dried or cured sufficiently to prevent disruption to the product being processed, e.g. marking.

Where there is more than one job on the substrate (also variable information and/or versions), clear identification of the job details should be included on the printed piece. The location of this information should be such that, after job separation, this information is easily visible. When it is not possible to put the identification information on the printed product, the job information shall contain identifying information such as a thumbnail image or principal distinguishing characteristic.

4.4.2 Grain direction

The grain direction of the substrate should be parallel to the spine of a book.

The grain direction shall be marked on the job information if it is not parallel to the spine.

4.4.3 Size and squareness tolerance

4.4.3.1 Piles of sheets for folding

Sheets to be folded and other products, for example, sections, inserts and folded products, should be delivered in such a way as to minimize avoidable preparatory cutting procedures. It is recommended that sheets for folding should be test-folded to the folding schema to evaluate the imposition layout (pagination and printed marks) and obvious paper dimension differences. Based on this evaluation, any necessary steps (e.g. rejection or additional cutting) shall be initiated.

A first master edge (usually identifiable by the printed register mark) shall be defined, either parallel or perpendicular to the printed content, and a second master edge shall be defined; the angle between them shall be 90° ± 0, 2°.

If any problem reasonably related to dimensional deviations occurs or in case of doubt, the dimensions of a cut pile shall be determined by taking the measurement of a number of samples according to ISO 186. The squareness of the sheet shall be determined by measuring both the horizontal and vertical edges (W1, W2, H1, H2) and the diagonal lines (X, Y) as shown in Figure 1, where the squareness tolerance is given by the values of W1 – W2, H1 – H2 and X – Y. The squareness tolerances for different numbers of folds are given in Tables 1 and 2.

NOTE These figures are only to be applied in the absence of a figure agreed with the client.

Table 1 — Squareness tolerances (H1 – H2, W1 – W2, X – Y) for different numbers of folds when using paper 175 gsm and below

End format	1 to 2 folds mm	3 to 5 folds mm	6 or more folds mm
A3 and above	±2,0	±1,5	±1,0
All sizes between A3 and A5	±1,5	±1,5	±1,0
Below A5	±1,0	±1,0	±0,5

Table 2 — Squareness tolerances (H1 – H2, W1 – W2, X – Y) for different numbers of folds when using board above 175 gsm

End format	1 to 2 folds mm	3 to 5 folds mm
A4 and above	±2,0	±1,5
Below A4	±1,5	±1,0

A measuring device with the appropriate precision shall be used for measurement.

4.4.4 Marks

4.4.4.1 General

All of the necessary marks, including version marks, colour control bars, folding marks, collating marks, trim marks, bleeding area and alignment marks, shall be clearly printed and visible on the printed sheets.

NOTE Arrangement of typical control elements and print finishing information of a printed sheet are shown in Annex A.

4.4.4.2 Trim and folding marks

When required, trim and folding marks shall be clearly visible and at least 2 mm in length. Where trim and folding marks are not required, the lead edge, product size and all necessary trimming and folding details shall be documented in the job information.

4.4.4.3 Bleed

Where an image or printed element continues beyond a trimmed edge, this element should continue for at least 3 mm beyond the trim edge to allow for tolerances of the trimming device.

4.4.4.4 Cutter guides

Cutter guides shall not be printed. Where an image or printed element continues beyond a die-cut, this element should extend 3 mm beyond the position of the intended cutter position.

Where perforation is required, the style and position of the perforation should be included in the job information and, where possible, a mark should also be printed and placed outside the live area in a similar way to trim marks.

Precise cutter and perforation positioning information should be supplied in the form of a diagram in the job information.

4.4.5 Registration

4.4.5.1 Page registration and page positioning

All pages in the final product shall be parallel to the horizontal and vertical paper edges.

The positioning of pages on the paper (imposition) shall be correct with the appropriate page in the correct position with the required gutters and allowances between the individual pages. Where necessary, the imposition of pages on sheets for folding shall be repositioned to make allowance for shingling and bottling.

4.4.5.2 Colour-to-colour registration

The individual colours should be in appropriate registration for the size and use of the product or as is agreed by the parties. The register should be consistent across the entire printed area and all subsequent components.

Where there is no prior agreement, the maximum deviation between the image centres of any two printed colours shall not be larger than 0,10 mm, as specified in ISO 12647-2.

4.4.5.3 Front-to-back register

The printed images on the two sides of the sheet shall be in register with each other. The relationship between the two printed images should be consistent and they should not move relative to each other throughout the entire print run. Table 3 shows the limits for the acceptable shifts in front-to-back register between the image centres on the two sides.

Table 3 — Limits to acceptable shifts in front-to-back register (unless specified differently)

End format	Acceptable shift mm
Under A5	<0,5
A5 to A3	<1,0
Above A3	<1,5

4.4.5.4 Side-lay positional consistency

The position of the printed image relative to the side edge of the paper shall be consistent to enable the print finisher to establish an edge reference for intermediate processes. Where the edge reference changes through intermediate processes, this information should be highlighted in the job information.

4.4.5.5 Distortion and shrinkage

The intermediate product shall be free from significant distortion or shrinkage of the substrate or the printed image. If significant distortion is likely, necessary compensation for this shall be incorporated into the design of the printed elements. Table 4 shows the limits to acceptable distortion and shrinkage.

Table 4 — Recommended acceptable shrinkage and distortion (unless specified differently)

End format	Acceptable shift mm
Under A5	<0,5
A5 to A3	<1,0
Above A3	<2,0

4.4.6 Layout

Consideration of the layout should be carried out in order to accommodate all intermediate processes. Live matter and important elements should not be within 3 mm of folds, cuts or distorting elements. The design should compensate for any potential disturbance of the product due to the post-press processes, for example, duplicating image elements in the spine of a perfect bound product when an image crosses a spread.

Other design elements, such as fine lines and type that crosses a fold, crease or spine, which will result in misalignment of the image elements, should also be avoided.

Where possible, gutters should be kept unprinted and unvarnished so that finishing equipment can grip the substrate without risk of marking or slipping. This is especially important when high-gloss varnishes and inks are used or when glue that may interact with the ink is used in the binding process. Areas where adhesives will be applied should be kept free from ink and varnish.

4.5 Processing requirements

4.5.1 Temperature and humidity adaptation

Components or intermediate products shall be stored in an environment of similar temperature and humidity to the rest of the production procedure until temperature equilibrium is reached. Where appropriate, they should be covered and protected from damage or contamination.

Hygroscopic materials such as paper shall be temperature equilibrated and climate-stable wrappings should only be removed if the relative humidity of the environment is within ±10 % of that of the paper.

NOTE The ideal temperature in binderies and warehouses is 23° C. The ideal humidity in factories that are processing paper products and warehouses is 50 % rh (in line with ISO 187) unless specified in customer-specific requirements. See Clause 5.

4.5.2 Processing information

The processing information, as part of or in addition to the job information, shall include all relevant information, such as location, processing method, specification, quantity, packing requirements and any customer-specific requirements.

4.5.3 Identification on the product

The identification on the stack, reel or product should include the name of the product, job number, quantity (including actual status of over and under production), version, production time, processing device and all other relevant information.

The location of all components should be documented in the job information.

Any defective products shall be clearly identified and, where practical, stacked or stored separately. When there is make-ready waste within the presented materials (for instance, within a reel or stack), there should be clear identification of where the waste or make-ready components end and the good components start.

It is advisable that a process of reconciliation for damaged or out-of-sequence products should be applied when variable data is printed.

4.5.4 Envelope or foil enclosing

When products are enclosed within envelopes or foil, the thickness of the foil or paper and the subsequent functionality should be considered. Protection of the product and ease of opening are important considerations. Enclosed products often require additional processes, and therefore weight, surface condition and ability to print on or attach a label should also be considered.

4.5.5 Static electricity

Management of static electricity is needed when handling sheets that rub together. Anti-static systems and static reduction equipment should be employed when static electricity is likely. Environmental considerations have a significant effect on some substrates and the correct relative humidity is important when using substrates that are prone to static charge build up. See Clause 5.

4.5.6 Allowances

Each process has an element of waste for quality sampling, for making ready and running waste for cleaning, stopping and starting and changing substrate.

Each process should have an agreed allowance so that the correct amount of substrate can be allocated for each subsequent process. Each process should ensure that it uses only the agreed allocation and, if additional waste is created, that there are sufficient good copies of the product for the additional processes to have the correct waste allowance.

NOTE Example of allowance:

Process 1: Make-ready waste 30 copies, running waste 20 copies.

Process 2: Make-ready waste 100 copies, running waste 30 copies.

Process 3: Make-ready waste 10 copies, running waste 10 copies.

Total waste allowance: Make-ready 140 copies, running waste 60 copies.

If process 1 generates 80 waste copies, this prevents further processes from having the correct waste allowances.

Some agreements enable the production of over or under delivery, but generally the quantity ordered shall be the quantity delivered.

4.5.7 Quality control

Inspection, measurements and sampling should be done in all the stages throughout the whole production process to ensure the product quality. Parties should agree on quality control methods to be used. Sampling should be performed according to ISO 186 if the available number of specimens is

restricted and according to ISO 2859-1 if the number of specimens needs to be larger; see Annex B. There shall be prior agreement between parties on the schema of sampling.

5 Operating and testing environments

5.1 Temperature and humidity

5.1.1 General

There are four main defined environmental conditions:

— laboratory test conditions;

— customer-specified conditions;

— general controlled workshop/factory conditions;

— ambient conditions.

5.1.2 Device

A calibrated hygrothermograph shall be used for measurement.

5.1.3 Laboratory test environment

When product is tested for critical quality control purposes, the environment for such testing shall be in conformance with ISO 187. This is a temperature of (23±1) °C and a relative humidity of (50±2) % rh.

5.1.4 Customer-specified environment

Parties may agree on a specific environment for testing in order that the product is at its optimum in the environment required by the customer. The temperature and humidity and the tolerances shall be specified and documented in the job information so that the operators of the post-press equipment are aware of the requirement during manufacture.

5.1.5 General controlled workshop/factory condition

Where some control of the production environment is required to avoid excessive temperature or humidity for post-press processes, the temperature shall be (23±5) °C and the relative humidity (50±20) % rh.

5.1.6 Ambient condition

Components or intermediate products shall be stored in an environment of a similar temperature and humidity to the rest of the production procedure until temperature equilibrium is reached. Where appropriate, products should be covered and protected from damage or contamination.

Hygroscopic materials such as paper shall be temperature equilibrated and climate-stable wrappings should only be removed if the relative humidity of the environment is within ±10 % of that of the paper.

NOTE The ideal temperature in binderies and warehouses is 23 °C. The ideal humidity in factories that are processing paper products and warehouses is 50 % rh (in line with ISO 187) unless specified in customer-specific requirements. See Clause 5.

5.2 Air disruption

There should be no winds or droughts that may be significant enough to disrupt handling of lightweight products. This disruption could affect materials handling systems. Examples of air disruption are roller shutter doors opening and closing, compressors, fans, air lines leaking and blowing onto the product.

5.3 Illumination

The illumination of the production site should fulfil the requirements of processing in commercial environments and, where appropriate, should conform to ISO 8995-1.

5.4 Cleanness

The production site should be kept clean and tidy. In order to avoid contamination, waste from previous jobs shall be removed from the equipment and floor prior to processing any job. Equipment that is sensitive to dust and debris shall be cleaned on a regular basis.

6 Inspection and measurement requirements

6.1 Check and inspection frequency

6.1.1 Items to be checked

The appearance of a product, the grain direction, the size (height, width and depth), the squareness, the identifiers and the imposition should be checked by visual or physical methods. The name of a product, the quantities, the version, the processing device and the supplementary details should be recorded and verified.

6.1.2 Inspection frequency

The frequency of inspection should be based on the speed of the process and the quantities required or by prior agreement with the customer. Regular inspection throughout the job is necessary and, where required, acceptance sampling should be recorded. It is recommended that, where there are no customer-agreed inspection frequencies defined, inspection should be in line with either ISO 186 or ISO 2859-1.

6.2 Measurement

6.2.1 General

The materials, components and products, as well as the environment, should be measured with standardized measurement apparatus (such as a hygrothermograph, pull tester, etc.), which should be able to be calibrated and shall be calibrated according to the manufacturer's guideline and specifications. Verification of calibration status should be made prior to a test being performed. Where applicable, the equipment shall conform to ISO 10012. This should be documented within a quality management system, such as ISO 9001.

6.2.2 Temperature and humidity

When a product is tested for critical quality control purposes, the environment for such testing shall be in conformance with ISO 187. This specifies a temperature of (23±1) °C and a relative humidity of (50±2) % rh.

6.2.3 Records

All the manufacturing data and activities related to the quality should be recorded clearly during the manufacturing process and stored in a pre-defined area.

NOTE This can be a physical area or an area on a computer disk.

7 Packing, storage and transportation requirements

7.1 Packing

7.1.1 Packing of intermediate products

7.1.1.1 Basic requirement

When intermediate products are stacked, bundled, logged or reeled, the proper protection should be used according to the performance of the different products. It is advisable to use cling wrap or a similar product, where practical, to protect the stability of the product and guard against damage caused by collapse or slippage.

Intermediate products shall be free from damage or contamination from other products.

Hygroscopic materials and products shall be packed in such a way that humidity interchange with the environment is impossible (climate-proof packing).

7.1.1.2 Stacks

A stack shall be in good order and without any skew. Stacks that may be easily set off or smeared should have a “blocked’ partition at a height that prevents marking or set off.

When goods are stacked, they should not overlap the edge of the pallet and should be no more than 1 m in height, except when the substrate is of a thickness over 1 mm or by prior agreement.

7.1.1.3 Bundles

Bundled products should be presented tidily and arranged squarely on the pallet without causing additional damage to the product. Where products are compensated, the frequency of rotation should be calculated on the basis of the spine thickness. Where static is used to hold the bundles together, strapping or wrapping should be carried out before the static effect dissipates.

If paper straps are used, the appropriate band thickness and paper thickness should be used to prevent product distortion or tearing. Any partial bundles should be made secure and stored in such a way as to avoid damage.

7.1.1.4 Logs

Logs should not be strapped with excessive pressure and end boards, where used, should not be significantly damaged. The log shall be straight and undistorted. They shall be loaded on the pallet squarely with board or similar packing in between each layer and in such a manner that they can be unloaded easily.

Partial logs shall only be placed on the top of the pallet.

7.1.1.5 Reels and rolls

Rolls should be stored on their end so that their shape is not distorted. Standing rolls on their edge is acceptable only if they are stored for short periods, for example, when awaiting loading onto the

machine. The core of the rolls should be sufficiently robust to cope with the required amount of handling and pressure.

7.1.2 Packing of final products

7.1.2.1 Identification

Packages shall carry sufficient identification for transportation and delivery to the correct destination with identification of the sender unless requested otherwise.

7.1.2.2 Packing

Packing should be done according to the requirements, with specialized packing materials and packing modes where appropriate. Every package should carry a corresponding identifier.

The packing materials should be strong, with abrasion resistance and good compressive strength. The specification of packing materials should meet the demand of the product and take into consideration the transportation environment. Gasket paper and angle board should be used when necessary. When packages are strapped with tape, the tension of the strap should be correct and not loose or over-tightened.

7.2 Storage

Materials, intermediate products and final products should be stored and marked in a controlled factory/workshop environment (see 5.1). The storage should be well protected against moisture, sun, oil, insects and corrosion. Stacks should only be of a height that avoids excessive pressure.

7.3 Transportation

Materials, intermediate products and final products should be handled with appropriate care during transportation. Care should be taken to avoid damage with transporting equipment such as a pallet truck. The products should be well protected against rain, excessive temperatures, moisture, sun and corrosion.

Where transportation has introduced damage or disturbance, the products shall be sorted and the damaged products separated from the undamaged products. If the removal of damaged products results in the quantity being below the required number, the products may be rejected.

Where transportation may expose the products to extremes of temperature or humidity, the products should either be tested to ensure their ability to endure such environments or protected from these environments with climate-controlled transport.

Annex A
(informative)

Arrangement of control elements and printing finishing information

A.1 General

A printed sheet should bear markings that are clear and easily identified to guide the post-press operation. Figures A.1 and A.2 show examples of book binding and packing sheets with typical control elements and marks.

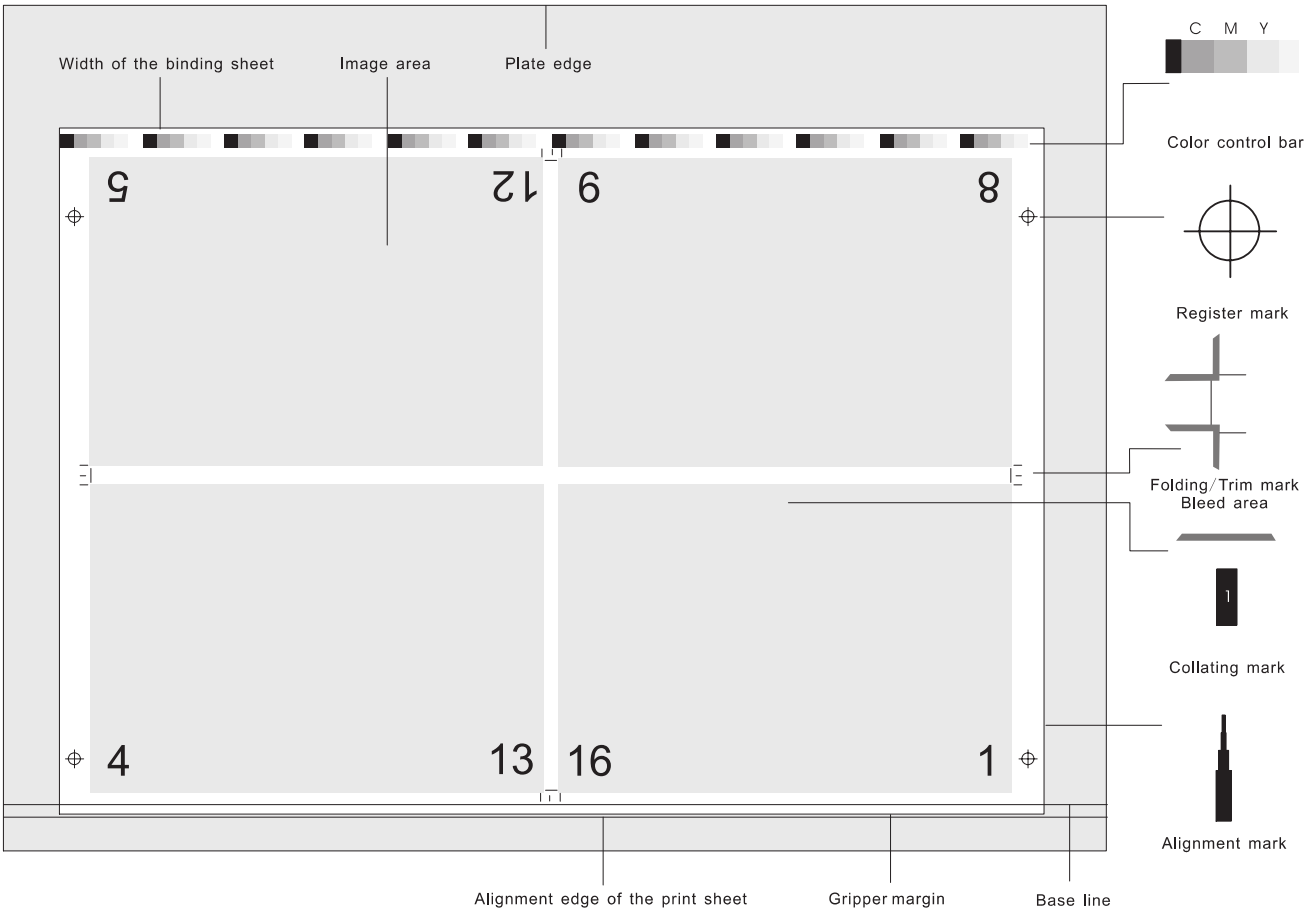

Figure A.1 — Sample of a book-binding sheet with markings

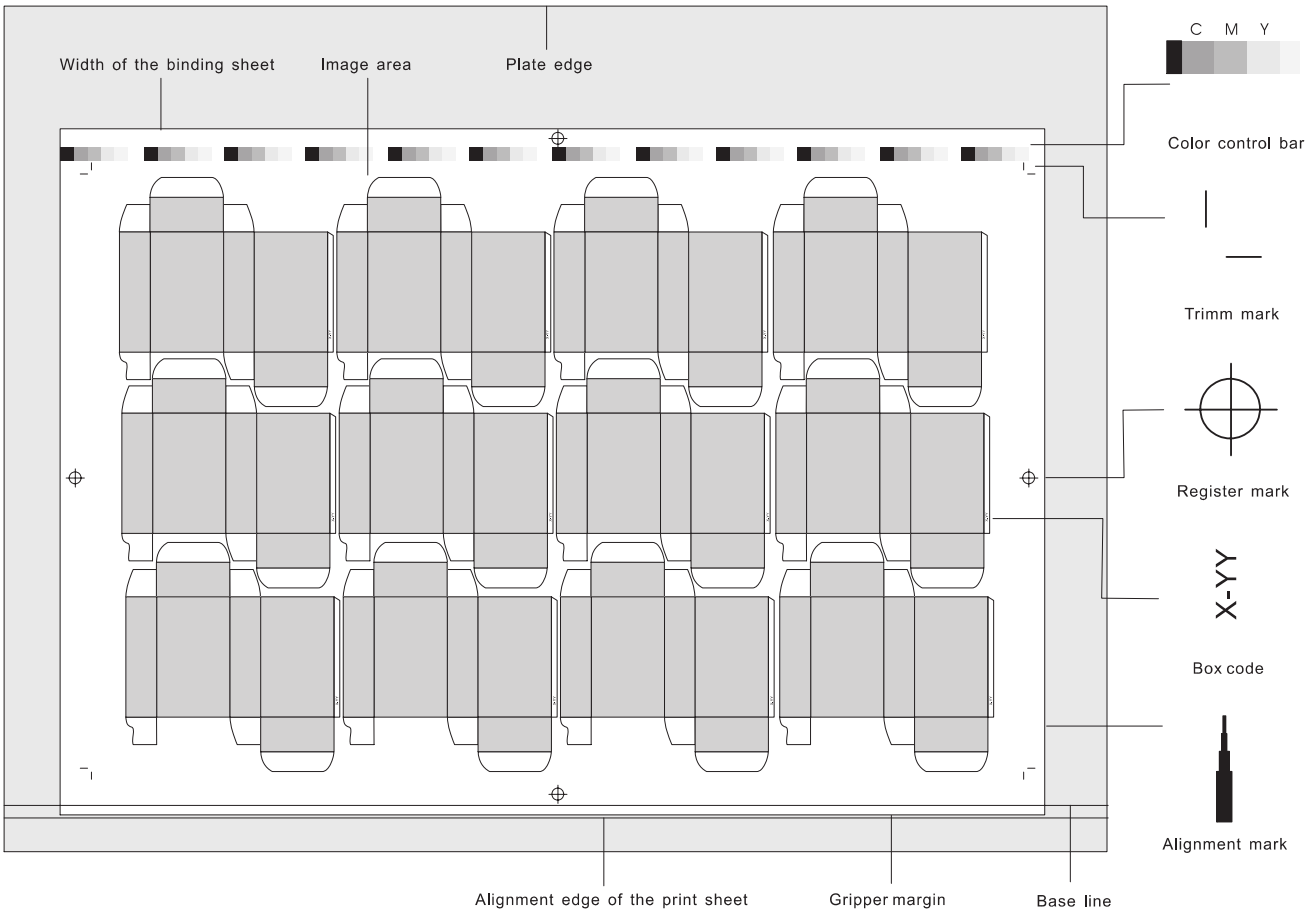

Figure A.2 — Sample of a packing sheet with markings

Annex B
(informative)

Sampling inspection

Table B.1 — Sampling plan "normal evaluation" according to ISO 2859-1

Number of copies	Number of samples	Permitted number of samples with quality attribute "bad durability"
0 to 500	2 to 50	1
501 to 1 200	80	2
1 201 to 3 200	125	3
3 201 to 10 000	200	4
10 001 to 35 000	315	7
35 001 to 150 000	500	10
150 001 to 500 000	800	14
above 500 000	1 200	21

Table B.2 — Sampling of packing units according to ISO 186

Number of packing units (n) per lot	Number of samples (packing units)	Sampling method
1 to 5	all	—
6 to 399	[a]	random
400 and above	20	random

[a] When determining the number of packing units for sampling, any leftover of less than 20 packing units shall remain unconsidered.

Table B.3 — Sampling of sheets according to ISO 186

Number of sheets per lot	Minimum number of samples per lot
≤1 000	10
1 001 to 5 000	15
>5 000	20

Table B.4 — Sampling of products according to ISO 186

Number of products per lot	Minimum number of products per lot
≤1 000	10
1 001 to 5 000	15
>5 000	20

Bibliography

[1] ISO 9001, *Quality management systems — Requirements*

[2] ISO 16763, *Graphic technology — Post-press — Requirement for bound products*

[3] Italia associazione tecnici arti grafiche, March 19, 2007, *TAGA.DOC.10, Bookbinding— Standards in book binding*

[4] ADVISORY COMMISSION ON TEXTBOOK SPECIFICATIONS, Palm Coast, Florida, August 15, 2006, *Manufacturing Standards and Specifications for textbooks*

[5] Viscom Schweizerischer Verband für visuelle Kommunikation, VISCOM, Ausgabe Juni 2008, *Richtlinien Verarbeitungsdifferenzen und Toleranzwerte in der Druckweiterverarbeitung*

[6] KIPPHAN H. Handbook of print media. Springer, 2001

ICS 37.100.01

Price based on 17 pages