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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

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Foreword

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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).

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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.

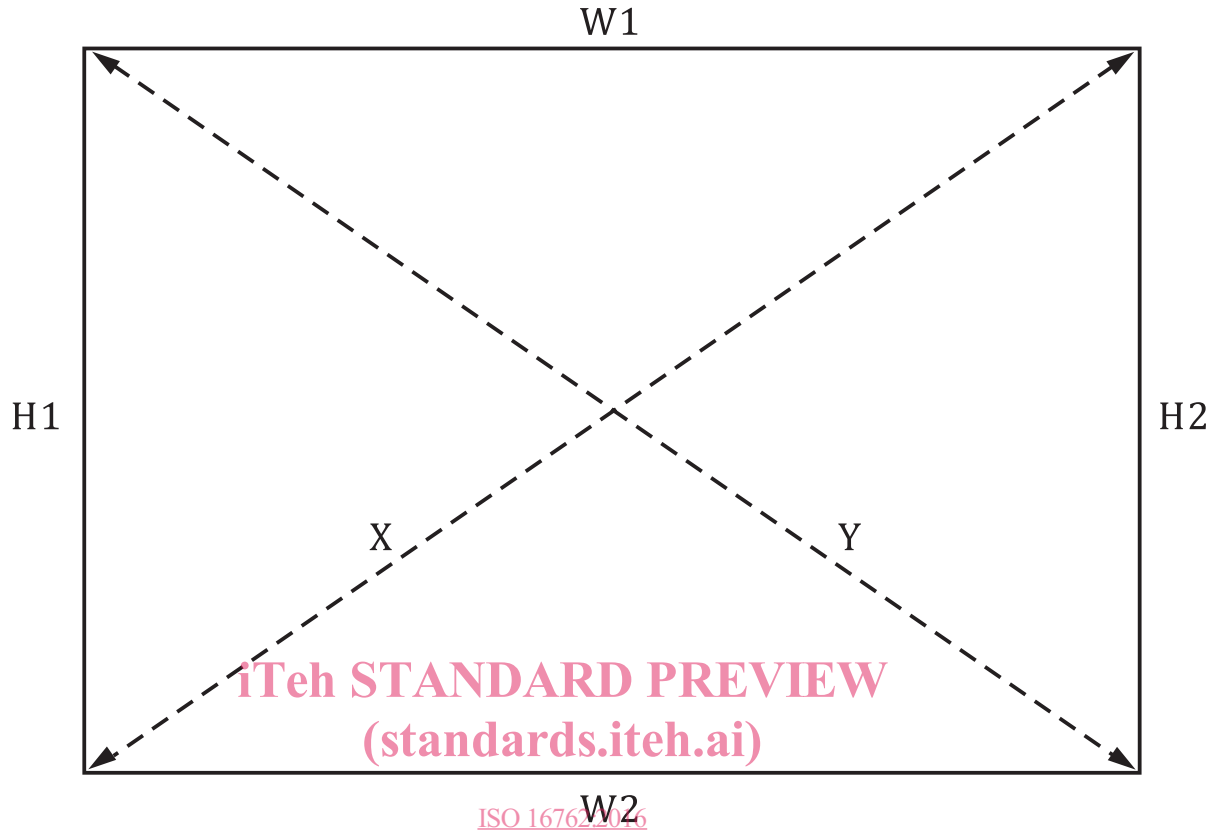

Figure 1 — Measurement of edges and diagonal lines for squareness

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.