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Graphic technology — Plates for offset printing — Dimensions

Technologie graphique — Plaques pour impression offset — Dimensions

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Foreword

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This document was prepared by Technical Committee ISO/TC 130, *Graphic technology*.

This third edition cancels and replaces the second edition (ISO 12635:2008), which has been technically revised.

The main changes compared to the previous edition are as follows:

— Preferred plate sizes are introduced

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This International Standard stipulates dimensional properties of printing plates for offset printing. While not all present plate dimensions will conform to this International Standard, the specifications for dimensions serve as an effort to reduce the multitude of possible formats to a reasonable level that simplifies manufacture and communications between plate, platesetter and press manufacturers, and the printer.

In this revision, preferred plate sizes are introduced. These represent the most widely used plate sizes and should be selected where possible. It is recognised that for some printing work, other sizes will be required.

Graphic technology — Plates for offset printing — Dimensions

1 Scope

This International Standard specifies the width, length and thickness of metal lithographic printing plates (referred to hereafter as “plates”). For plates to be used in computer to plate (CtP) applications, flatness, edge straightness and burr requirements are also included. These requirements are applicable to unprocessed plates.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

3.1
cutting burr
ridge along the edge of a plate produced by cutting, especially with a blunt knife

3.2
plate width
W
dimension of a printing plate parallel to the cylinder axis (clamping edge)

3.3
plate thickness
s
caliper of a coated plate

3.4
edge waviness
degree to which a plate edge conforms to a measurement plane

3.5
plate edge straightness
maximum deviation of the plate edge parallel to the cylinder axis (clamping edge) from a straight line, drawn from the corners of the plate

3.6
preferred plate size
common plate sizes which should be used where possible

3.7
unprocessed plates
plates as received from the manufacturer

4 Requirements

4.1 Measurement conditions

Measurements shall be conducted when both measurement equipment and plates have reached a stabilized temperature of 21 °C ± 1 °C.

4.2 Plate dimensions

When selecting plate width and height, preferred plate sizes as specified in Annex D should be used.

Where these plate sizes cannot be used, plates for sheet-fed lithographic use may be of any length, *L*, or width, *W*, but shall be specified in increments of 5 mm where the last whole number digit is 0 or 5. Plates for web lithographic use may be of any length or width but shall have their width specified in increments of 5 mm where the last whole number digit is 0 or 5 and their length specified in increments of 2 mm where the last whole number digit is 0, 2, 4, 6 or 8. These requirements are summarized in Table 1.

Except where preferred plate sizes are being used, the tolerances for length and width shall be as shown in Table 1, the measurement conditions of 4.1 shall apply.

The preferred thicknesses and their tolerances shall be as shown in Table 2.

Table 1 — Plate widths, lengths and their tolerances

Dimensions in millimetres

Process	Width *W*	Width tolerance	Length *L*	Length tolerance
Sheet-fed offset	Last digit 0 or 5	*W* < 1 500: ± 1,0 *W* ≥ 1 500: ± 1,5	Last digit 0 or 5	*L* < 1 500: ± 1,0 *L* ≥ 1 500: ± 1,5
Web offset	Last digit 0 or 5	*W* < 1 500: ± 0,8 *W* ≥ 1 500: ± 1,5	Last digit 0, 2, 4, 6, or 8	*L* < 1 500: ± 0,8 *L* ≥ 1 500: ± 1,5

NOTE Except where otherwise specified by the plate manufacturer, plates for web offset printing have the machine direction parallel to the length.

Table 2 — Plate thickness

Dimensions in millimetres

Preferred thickness	Tolerance
0,100 0,120 0,145 0,190 0,230 [a] 0,270 [b] 0,280 [c]	± 0,010
0,375 0,480	± 0,015

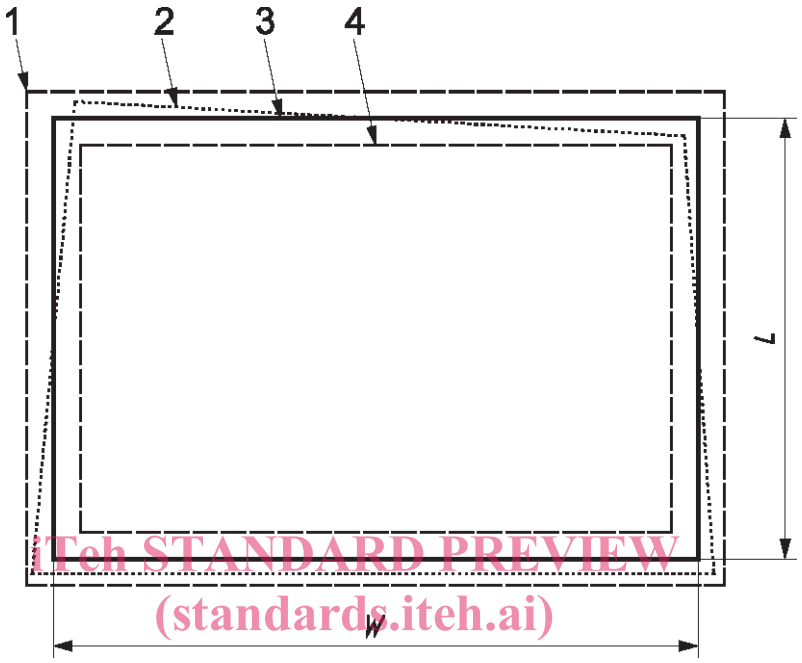
[a] Plates of this thickness are commonly referred to as “class 0,24 mm plates” in Japan.

[b] Plates of this thickness are commonly used in China.

[c] Plates of this thickness are commonly referred to as “class 0,3 mm plates”.

4.3 Rectangularity

The length and width tolerances shown in Table 1 are based on a perfectly rectangular plate. Figure 1 shows the nominal dimensions of a plate (solid line) together with rectangles corresponding to the maximum and minimum allowed size (dashed lines) based on the tolerances of Table 1. The actual contour of the plate including deviations from rectangularity shall cover the smaller rectangle at all points but shall not extend beyond the larger rectangle of Figure 1.



Key

1 outer tolerance contour, dashed
2 actual plate contour, dotted
3 nominal plate contour, solid
4 inner tolerance contour, dashed
L length
W width

Figure 1 — Plate contour with tolerance rectangles

4.4 Edge waviness for CtP plates

The plate is placed coated side up on a measurement table, e.g. a polished stone plate, whose upper surface conforms to a horizontal plane to within ± 0,5 mm. Plate edges with a length of less than 1 200 mm shall have a maximum wave height of 3,0 mm and should have a maximum wave height of 1,5 mm and plate edges with a length of more than 1 200 mm shall have a maximum wave height of 3,0 mm and should have a maximum wave height of 2,5 mm.

NOTE 1 Measurement procedures are given in Annex A.

NOTE 2 The edge waviness of non-CTP plates should also meet the requirements of 4.4.

4.5 Cutting burrs for CtP plates

Cutting burrs shall not protrude more than 45 µm and should not protrude more than 30 µm on each side. Burrs shall be measured on each side and edge of the plate.

NOTE 1 Measurement procedures are given in Annex B.