

# INTERNATIONAL STANDARD

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**10549**

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## Micrographics — A6 size aperture cards

*Micrographie — Cartes à fenêtre de format A6*

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Reference number  
ISO 10549:2000(E)

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## Contents

	Page
Foreword.....	iv
Introduction.....	v
1 Scope .....	1
2 Normative references .....	1
3 Terms and definitions .....	2
4 Physical characteristics of the cards .....	2
4.1 Grain (machine direction) .....	2
4.2 Dimensions of the card .....	2
4.3 Thickness .....	2
4.4 Edges of the card.....	2
4.5 Preferred corners.....	2
4.6 Dimensional checking.....	3
4.7 Defects .....	3
5 Characteristics of adhesive type aperture cards .....	3
5.1 Location of the adhesive tape .....	3
5.2 Build-up thickness.....	3
6 Characteristics of suspension (jacket) type aperture cards .....	3
6.1 Location of support sheets.....	3
6.2 Build-up thickness.....	3
7 Location of the aperture.....	4
8 Colour stripes.....	7
9 Duplicates.....	7
10 Storage.....	8
11 Paper requirements and test methods applicable to opaque or translucent cards .....	8
11.1 Conditioning and atmosphere for testing .....	8
11.2 Opaque cards .....	8
11.3 Translucent cards .....	8
11.4 Adhesion tests .....	9
11.5 Blocking test .....	10
Annex A (informative) Transparent film cards .....	11

## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 10549 was prepared by Technical Committee ISO/TC 171, *Document imaging applications*, Subcommittee SC 2, *Application issues*.

Annex A of this International Standard is for information only.

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## Introduction

A6 size aperture cards can be used under the same handling and storage conditions as microfiche or microfilm jackets. Having a single size for these various types of microforms facilitates their interfiling and their use with the same readers or automatic retrieval systems.

Three categories of card are covered by this International Standard:

- the opaque card, made out of paper identical to that of tabulating-size aperture cards;
- the translucent card, made out of paper which enables the information on the card and the microimage to be duplicated simultaneously;
- the transparent film card with "simulated" aperture, produced with a specific type of camera.

The possibility of duplicating tab-type aperture cards onto A6 size aperture cards is taken into consideration in the dimensioning.

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# Micrographics — A6 size aperture cards

## 1 Scope

This International Standard specifies the physical characteristics of A6 size aperture cards, used for the handling, storage and exchange of information on microfilm. It also defines the characteristics of the materials used for making these cards, as well as appropriate test methods.

This International Standard applies to opaque and translucent adhesive or suspension jacket aperture cards, of even and odd generation, containing a chip of 35 mm microfilm recorded in accordance with ISO 3272-1, ISO 3272-2 and ISO 6199.

In addition, certain characteristics of transparent film cards are given for information in annex A.

## 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 187:1990, *Paper, board and pulps — Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples.*

ISO 534:1988, *Paper and board — Determination of thickness and apparent bulk density or apparent sheet density.*

ISO 1681:1973, *Information processing — Unpunched paper cards — Specification.*

ISO 1974:1990, *Paper — Determination of tearing resistance (Elmendorf method).*

ISO 2144:1987, *Paper and board — Determination of ash.*

ISO 2471:1977, *Paper and board — Determination of opacity (paper backing) — Diffuse reflectance method.*

ISO 2758:1983, *Paper — Determination of bursting strength.*

ISO 3272-1:1983, *Microfilming of technical drawings and other drawing office documents — Part 1: Operating procedures.*

ISO 3272-2:1994, *Microfilming of technical drawings and other drawing office documents — Part 2: Quality criteria and control of 35 mm silver gelatin microfilms.*

ISO 5466:1996, *Photography — Processed safety photographic films — Storage practices.*

ISO 5629:1983, *Paper and board — Determination of bending stiffness — Resonance method.*

## ISO 10549:2000(E)

ISO 6196-1:1993, *Micrographics — Vocabulary — Part 1: General terms.*

ISO 6196-2:1993, *Micrographics — Vocabulary — Part 2: Image positions and methods of recording.*

ISO 6196-3:1997, *Micrographics — Vocabulary — Part 3: Film processing.*

ISO 6196-4:1998, *Micrographics — Vocabulary — Part 4: Materials and packaging.*

ISO 6196-5:1987, *Micrographics — Vocabulary — Part 5: Quality of images, legibility, inspection.*

ISO 6196-6:1992, *Micrographics — Vocabulary — Part 6: Equipment.*

ISO 6199:1991, *Micrographics — Microfilming of documents on 16 mm and 35 mm silver-gelatin type microfilm — Operating procedures.*

ISO 6342:1993, *Micrographics — Aperture cards — Method of measuring thickness of buildup area.*

ISO 6343:1981, *Micrographics — Unitized microfilm carrier (aperture card) — Determination of adhesion of protection sheet to aperture adhesive.*

ISO 6588:1981, *Paper, board and pulps — Determination of pH of aqueous extracts.*

ISO 9923:1994, *Micrographics — Transparent A6 microfiche — Image arrangements.*

ISO 10602:1993, *Photography — Processed silver-gelatin type black-and-white film — Specifications for stability.*

### 3 Terms and definitions

For the purposes of this International Standard, the terms and definitions given in ISO 6196 (all parts) apply.

### 4 Physical characteristics of the cards

#### 4.1 Grain (machine direction)

The grain of the paper shall be in the direction of the card length.

#### 4.2 Dimensions of the card

The external dimensions of the card shall be  $(105 \pm 0,50)$  mm  $\times$   $(148 \pm 0,25)$  mm.

#### 4.3 Thickness

The thickness of the opaque card shall be  $(0,178 \pm 0,01)$  mm to enable processing in automatic sorting machines. The thickness of the translucent card shall be  $(0,146 \pm 0,01)$  mm.

#### 4.4 Edges of the card

All edges shall be smooth and free from burrs. The top and bottom edges should be coated with a substance to add rigidity and seal the edges.

#### 4.5 Preferred corners

All corners shall be square (see 4.6.3).

## 4.6 Dimensional checking

### 4.6.1 Straightness

All points on the edges of the card shall fall between two straight parallel lines 0,08 mm apart.

### 4.6.2 Parallelism

The distance by which the linearized edges depart from true parallelism to each other shall not exceed 0,08 mm.

For the purpose of this measurement, the linearized edge is defined as the outer of the two closest, straight parallel lines that wholly contain all points of the edge of the card.

### 4.6.3 Squareness

The distance by which the linearized right-hand edge and the linearized left-hand edge depart from parallelism with a line perpendicular to the linearized top edge shall not exceed 0,12 mm in total.

Linearized edges are defined in 4.6.2.

Squareness shall be checked by using a flat plate with right-angle guides.

## 4.7 Defects

Cards shall be free from defects which may cause excessive wear or interfere with the normal operation of exposure and handling equipment.

Among these defects are holes, magnetic particles, electrically conductive particles, dust, fibres protruding from edges or surfaces of the card, abrasive materials, residual chemicals, lumps.

## 5 Characteristics of adhesive type aperture cards

### 5.1 Location of the adhesive tape

On odd-generation cards, the adhesive tape shall be on the face of the card with the microfilm emulsion towards the back; on even-generation cards, the adhesive tape shall be on the back of the card with the microfilm emulsion towards the front. The dimensions and location of the adhesive tape shall be as indicated in Figures 1 and 2.

### 5.2 Build-up thickness

The difference between the thickness of the card itself and the total thickness of the build-up area (card plus aperture adhesive or card plus aperture adhesive plus microfilm, as applicable) shall not exceed 0,005 mm.

## 6 Characteristics of suspension (jacket) type aperture cards

### 6.1 Location of support sheets

The dimensions and location of the support shall be as indicated in Figures 3 and 4.

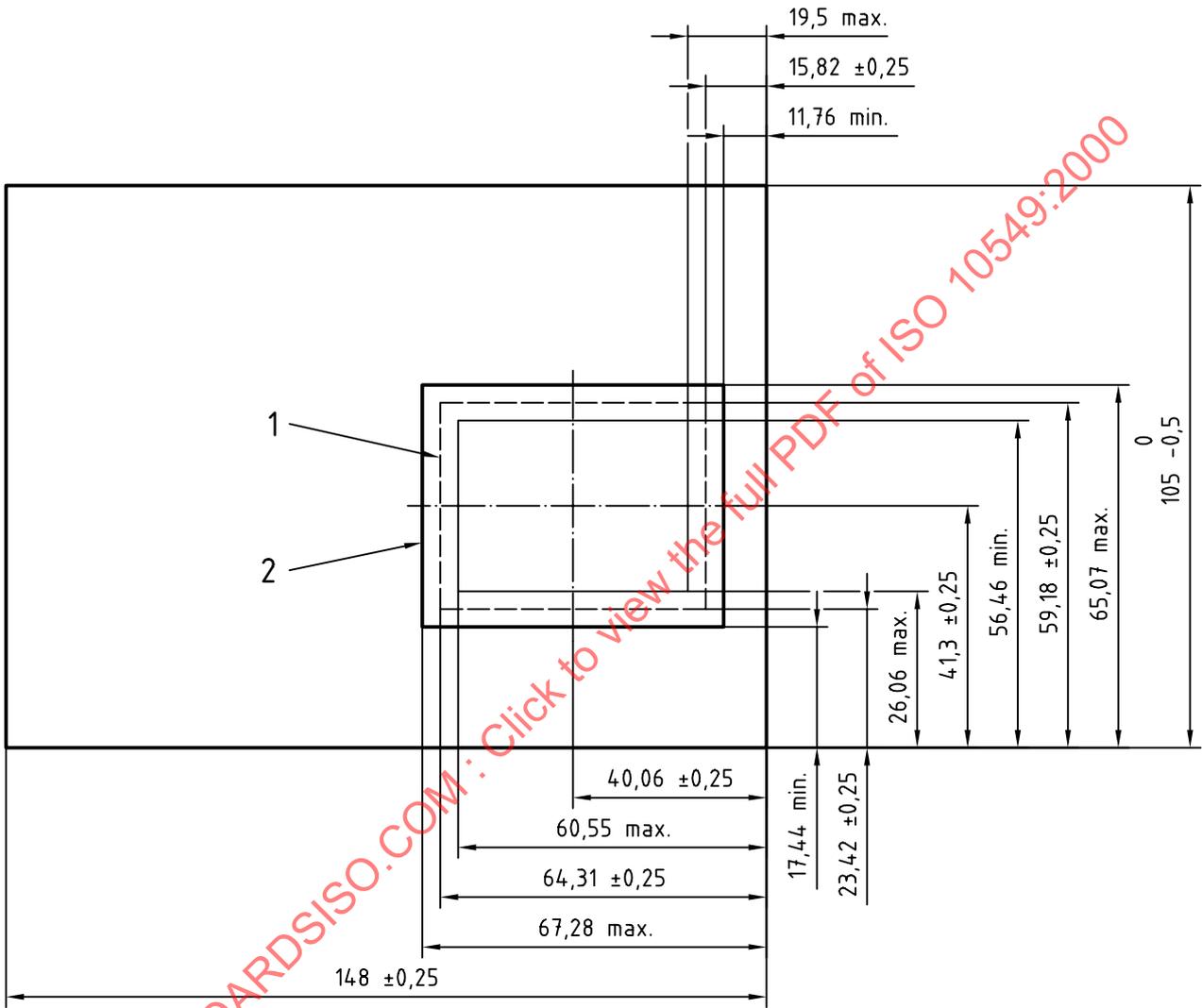
### 6.2 Build-up thickness

The difference between the thickness of the card itself and the total thickness of the build-up area shall not exceed 0,025 mm when measured in accordance with ISO 6342.

7 Location of the aperture

The dimensions and location of the microimage aperture shall be as shown in Figure 1 or Figure 2 for the adhesive type cards and Figure 3 or Figure 4 for the suspension (jacket) type cards.

Dimensions in millimetres

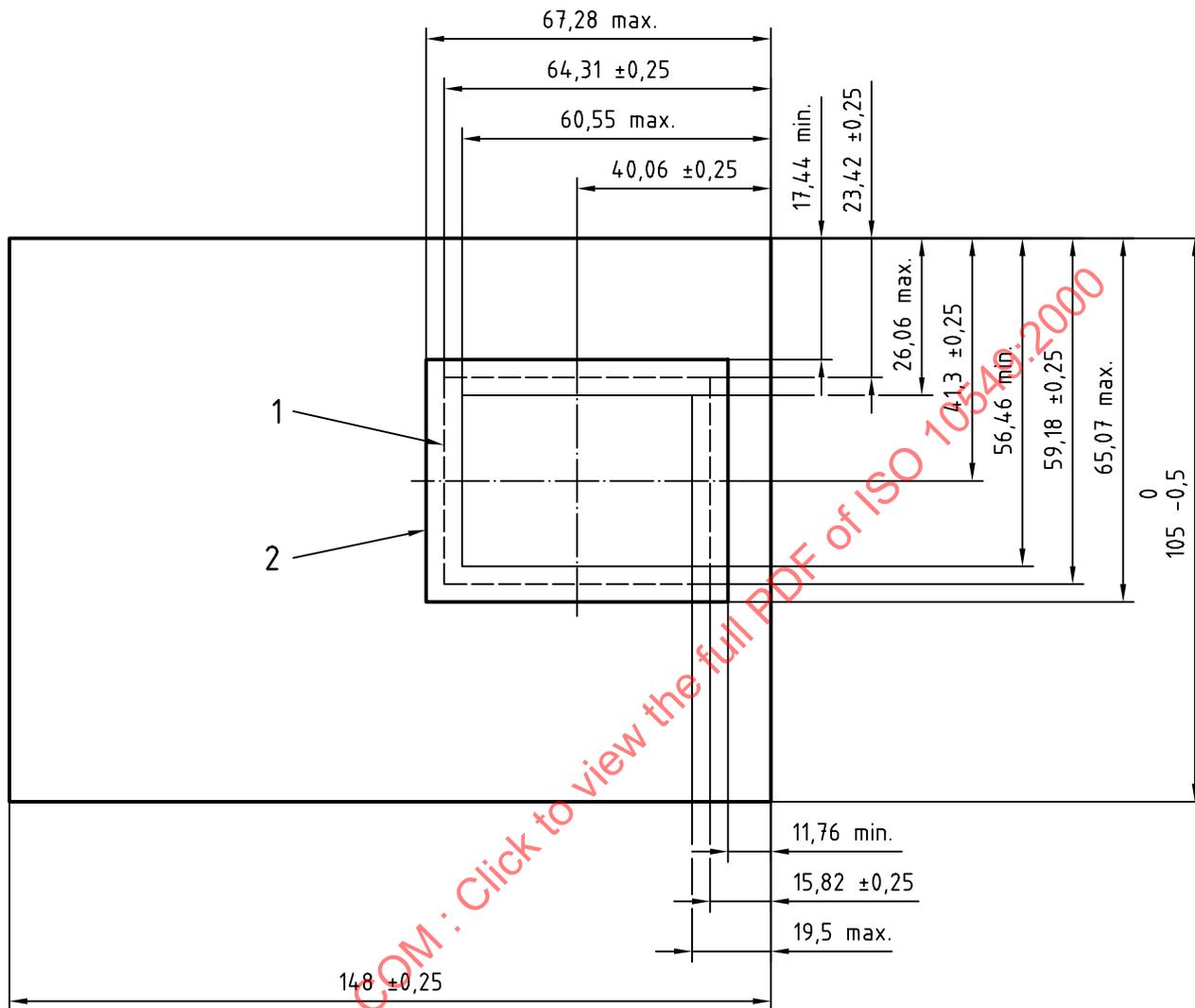


Key

- 1 Aperture location
- 2 Build-up thickness area

Figure 1 — Adhesive type — Lower position

Dimensions in millimetres

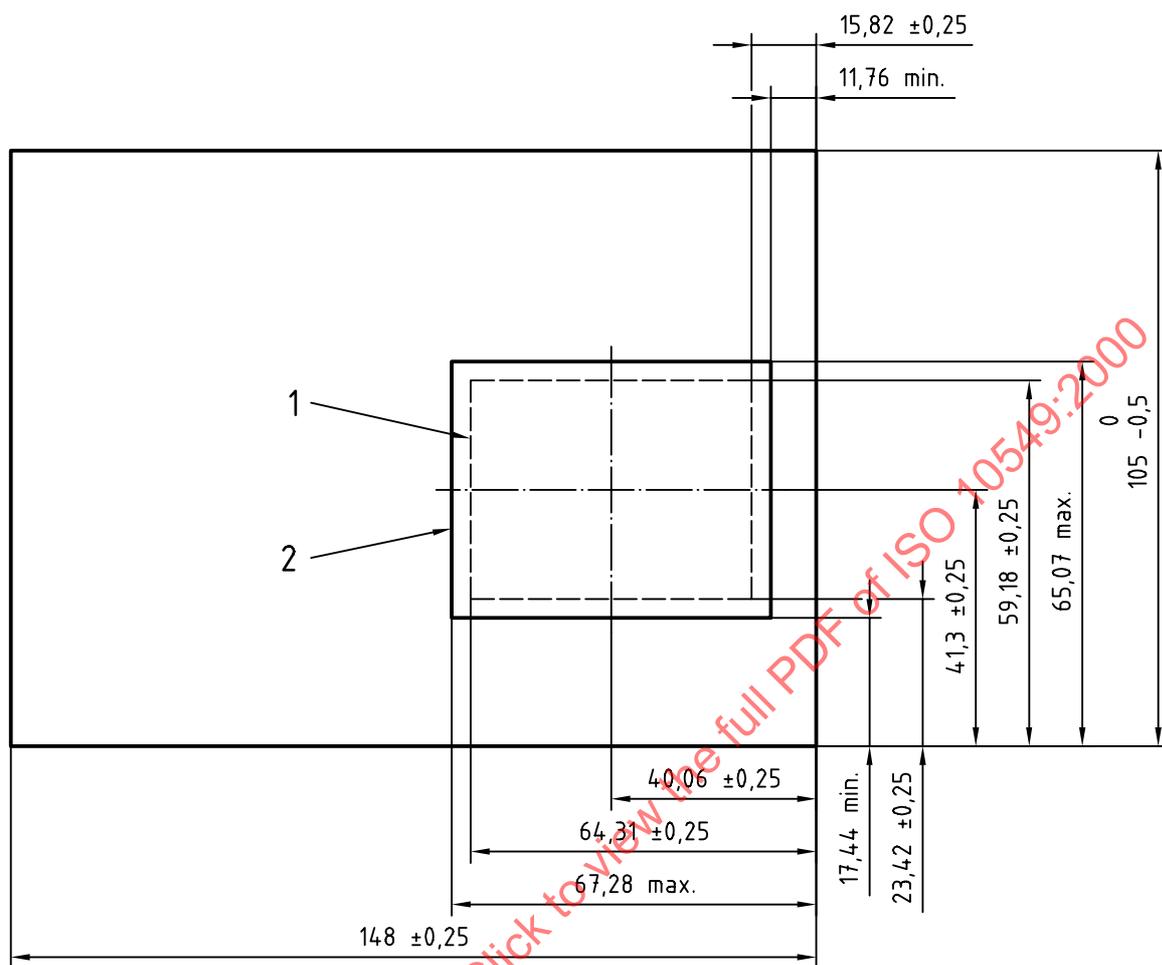


**Key**

- 1 Aperture location
- 2 Build-up thickness area

**Figure 2 — Adhesive type — Upper position**

Dimensions in millimetres

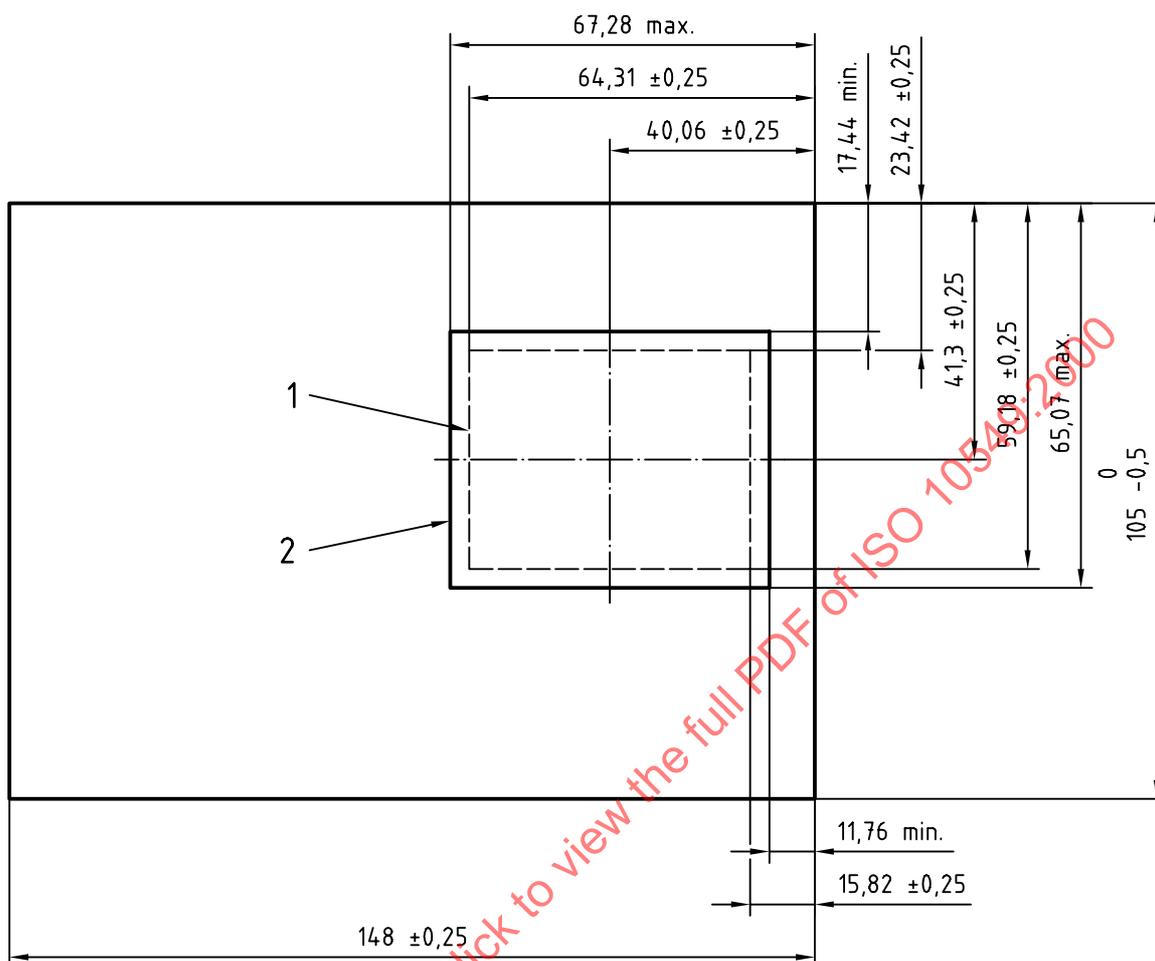


**Key**

- 1 Aperture location
- 2 Build-up thickness area

**Figure 3 — Suspension type (jacket) — Lower position**

Dimensions in millimetres

**Key**

- 1 Aperture location
- 2 Build-up thickness area

Figure 4 — Suspension type (jacket) — Upper position

**8 Colour stripes**

Colour stripes placed along the top edge of the card can be used for filing purposes. They shall not increase the thickness of the card by more than 0,01 mm.

The colour stripe, when used, shall be  $(1,2 \pm 0,4)$  mm wide along the top edge of the heading area in order to be completely removed by standard notch depth of  $1,6 \text{ mm}^{+0,4}_0$  mm when used.

**9 Duplicates**

The duplicates shall have the same dimensions as those of the microfiche specified in ISO 9923 when made from translucent card stock.

The thickness of the films used for producing second-generation copies shall be within the range of (0,14 to 0,20) mm to facilitate handling in automatic retrieval devices.

## 10 Storage

Opaque or translucent rawstock cards shall be stored and handled in accordance with ISO 1681.

Processed cards shall be stored in accordance with ISO 5466.

## 11 Paper requirements and test methods applicable to opaque or translucent cards

### 11.1 Conditioning and atmosphere for testing

Conditioning of the samples of aperture cards should not be undertaken during the first 48 h after card manufacture.

The card samples shall be loosely piled up for at least 6 h before testing. Samples shall be conditioned and tested at a temperature of  $(23 \pm 2)$  °C and at a relative humidity of  $(50 \pm 2)$  % (as required in ISO 187).

### 11.2 Opaque cards

Paper requirements and test methods applicable to opaque cards are specified in ISO 1681.

### 11.3 Translucent cards

#### 11.3.1 Furnish

The paper shall be 100 % chemical pulp; no mechanical fibre is allowed.

#### 11.3.2 Thickness

The thickness of the card, determined by the method specified in ISO 534, shall be  $(0,146 \pm 0,01)$  mm.

#### 11.3.3 Bursting strength (Mullen)

The bursting strength, determined by the method specified in ISO 2758, shall not be less than 340 kPa (50 psi).

#### 11.3.4 Internal tearing resistance

The internal tearing resistance, determined by the method specified in ISO 1974, shall not be less than 540 mN (+ 55 Elmendorf units).

#### 11.3.5 Stiffness

The stiffness, determined by the method specified in ISO 5629, shall be of less than 1,08 mN·m in the machine direction and 0,69 mN·m in the cross direction. Alternative methods using the Taber stiffness tester shall not be less than 11,0 Taber units in the machine direction and not less than 7,0 Taber units in the cross direction.

#### 11.3.6 Ash

The ash, determined by the method specified in ISO 2144, shall not exceed 2 %.