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**Micrographics — Aperture cards —  
Method of measuring thickness of buildup  
area**

*Micrographie — Cartes à fenêtre — Méthode de mesurage de la zone  
de surépaisseur*

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## Foreword

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ISO 6342 was prepared by Technical Committee ISO/TC 171, *Document imaging applications*, Subcommittee SC 2, *Application issues*.

This second edition cancels and replaces the first edition (ISO 6342:1993), which has been technically revised.

## Introduction

Aperture cards are widely used in many microfilm systems. As the various kinds differ in the thickness of the buildup area, a method of measuring the buildup thickness is necessary.

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# Micrographics — Aperture cards — Method of measuring thickness of buildup area

## 1 Scope

This International Standard specifies a method of measuring the thickness of the buildup area on aperture cards (camera and copy cards) for manufacturing and inspection purposes.

## 2 Normative references

The following referenced documents are indispensable for the application 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 534:1988, *Paper and board — Determination of thickness and apparent bulk density or apparent sheet density*

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

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

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 6196-1 and ISO 6196-4 apply.

## 4 Apparatus

**4.1 Dial micrometers**, of the dead-weight type, either motor- or manually operated. The motor-operated micrometer is preferred. The lowering speed shall be approximately 0,8 mm/s. The movable face or pressure foot shall be circular with a diameter of 16 mm  $\pm$  0,5 mm. The fixed face or anvil shall be of a size that allows the whole area of the pressure foot to be in contact with the anvil in the zero position. The pressure foot shall move on an axis perpendicular to the anvil. The pressure foot shall exert a steady pressure on the test sample of 50 kPa  $\pm$  5 kPa, based on the area of the pressure foot.

Values of micrometer characteristics are given in Table 1, in accordance with ISO 534:1988, Table 2.

**Table 1 — Micrometer values**

Micrometer characteristic	Maximum permitted value
Indication error	2,5 $\mu$ or 0,5 %
Error of parallelism between pressure faces	5 $\mu$ or 1 %
Repeatability of measurement (as a standard deviation)	2,5 $\mu$ or 0,5 %
NOTE 1 The maximum permitted value of a micrometer characteristic is the greater of the two values quoted for it in this table.	
NOTE 2 Where a tolerance is expressed in the form of a percentage, it is based upon the thickness of the test piece under test. Thus, it is possible for a given micrometer to comply with the requirements of this table for some materials, but not for others.	

## 5 Conditioning and testing atmosphere

All test samples shall be conditioned, loosely assembled, for at least 6 h before testing. Samples shall be conditioned and tested at a temperature of  $23\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$  and a relative humidity of  $(50 \pm 2)\%$ .

## 6 Measurement

### 6.1 General

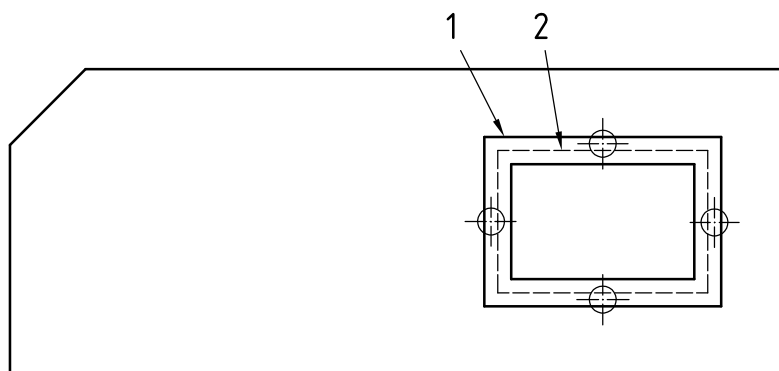
If a manually operated micrometer is used, the pressure foot shall either be lowered to within 0,007 5 mm of the surface of the test sample and then released, or be lowered onto the surface at a velocity less than 12 mm/s, but not less than 0,8 mm/s, specified for the motor-operated micrometer. The pressure foot shall maintain the dead-weight loading for at least 2 s. All measurements shall be made on the same card.

### 6.2 Card thickness

Make at least four measurements at separate places with the pressure foot at least 6,35 mm away from the edges of the card and the buildup area. The greatest of these measurements shall be taken as the thickness of the card.

### 6.3 Buildup-area thickness

Make at least four measurements, one on each side of the buildup-area rectangle, as illustrated in Figure 1.



#### Key

- 1 outside perimeter of buildup area
- 2 inside perimeter of buildup area

**Figure 1 — Pressure-foot position for measuring buildup-area thickness**

The pressure foot shall be centred across the width of the buildup area (see Annex A). The greatest of these measurements shall be taken as the thickness of the buildup area.

### 6.4 Buildup thickness

The buildup thickness of the aperture card shall be taken as the difference between the thickness of the buildup area, as measured in 6.3, and the thickness of the card of the same test sample, as measured in 6.2.

## Annex A (informative)

### Centring of the pressure foot

Because there are various types of unitised microfilm-carrier construction, centring of the pressure foot in accordance with 6.3 may require clarification.

Care should be exercised in placing the pressure foot on the approximate centre of the buildup area. See section A-A in Figure A.1.

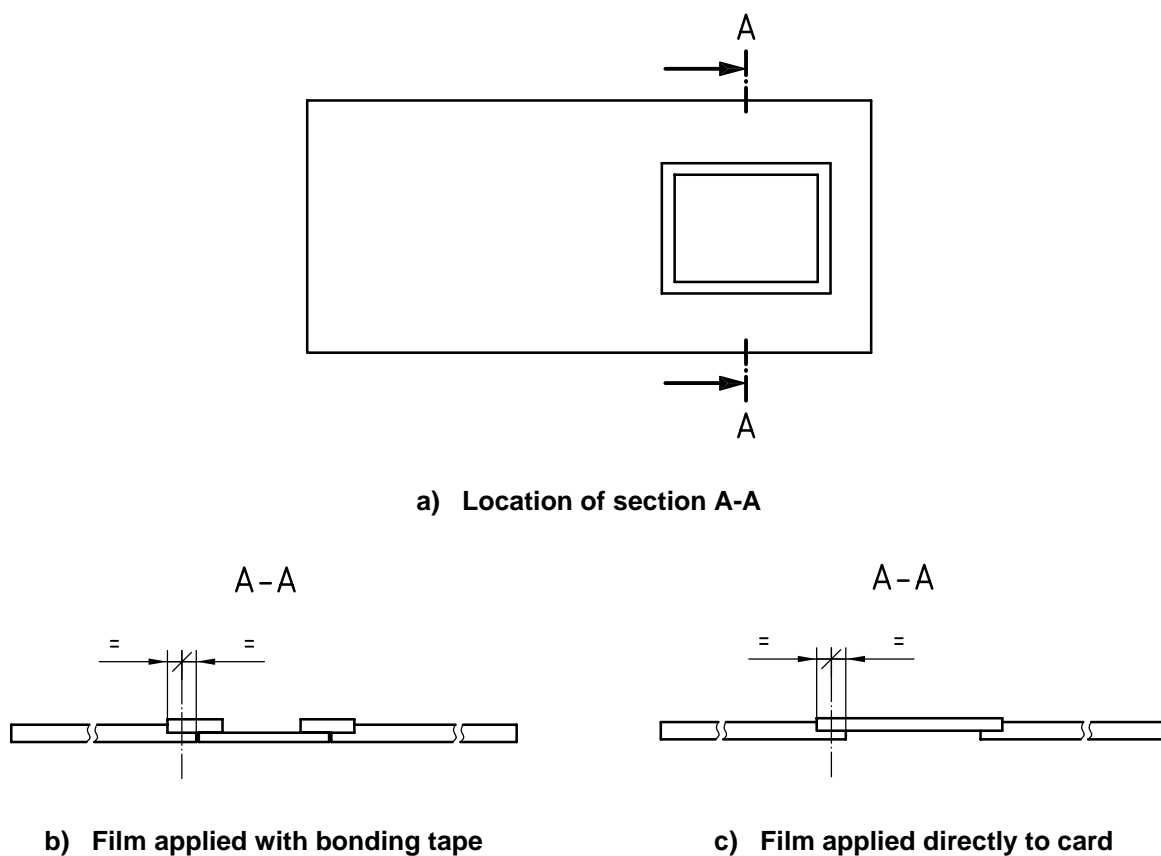


Figure A.1 — Centring of the pressure foot

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