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ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

**ISO RECOMMENDATION
R 1681**

INFORMATION PROCESSING

SPECIFICATIONS FOR UNPUNCHED PAPER CARDS

1st EDITION

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BRIEF HISTORY

The ISO Recommendation R 1681, *Information processing – Specifications for unpunched paper cards*, was drawn up by Technical Committee ISO/TC 97, *Computers and information processing*, the Secretariat of which is held by the American National Standards Institute (ANSI).

Work on this question led to the adoption of Draft ISO Recommendation No. 1681, which was circulated to all the ISO Member Bodies for enquiry in November 1968. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Australia	Israel	Sweden
Belgium	Italy	Switzerland
Brazil	Japan	Thailand
Canada	New Zealand	Turkey
Czechoslovakia	Peru	United Kingdom
France	Poland	U.A.R.
Germany	Romania	U.S.A.
Greece	Spain	

No Member Body opposed the approval of the Draft.

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided to accept it as an ISO RECOMMENDATION.

INFORMATION PROCESSING

SPECIFICATIONS FOR UNPUNCHED PAPER CARDS

1. SCOPE

This ISO Recommendation specifies the dimensions, material, and physical requirements for the general purpose unpunched paper cards to be used for information interchange between different punched card equipments.

2. DETAIL REQUIREMENTS

2.1 Grain

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

2.2 Defects

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

Among these defects are :

holes, magnetic particles, electrically conductive particles, dust, protruding fibres from edges or surfaces of the card, abrasive materials, residual chemicals, slime spots, other brittle areas and translucent spots which could cause reading errors in equipment.

2.3 Card dimensions

2.3.1 Nominal dimensions (see Fig. 1). The card shall be a nominal rectangle of 187.32 mm × 82.55 mm (7.375 in × 3.250 in).

2.3.2 Actual dimensions. All points on the edges of the card except as modified by clause 2.6 (Corners) shall fall between two concentric, similarly aligned, parallelograms which are dimensioned as follows :

Outer parallelogram :	Height	82.73 mm (3.257 in)
	Base length	187.45 mm (7.380 in)
Inner parallelogram :	Height	82.47 mm (3.247 in)
	Base length	187.20 mm (7.370 in)

Angles comprised between $90^\circ + 5'$ and $90^\circ - 5'$ (equivalent to 0.12 mm (0.0047 in) projection of short side onto long side).

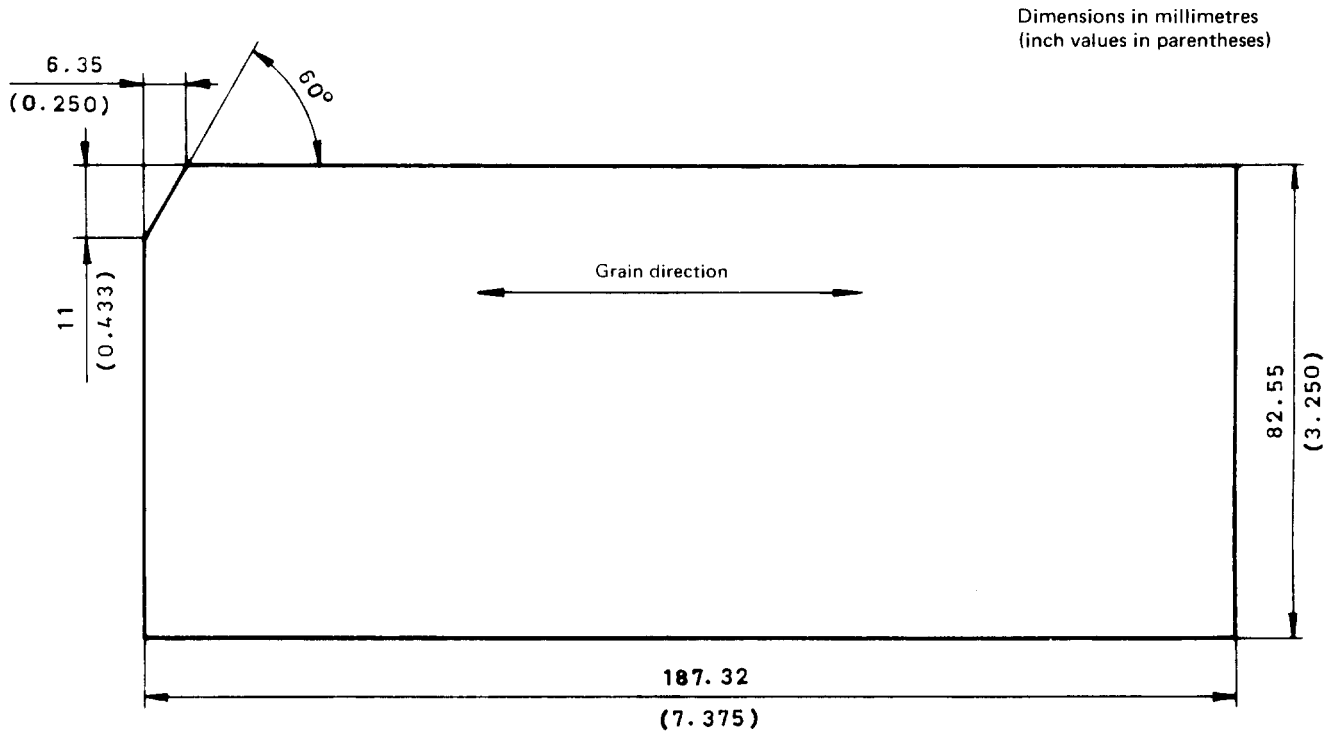


FIG. 1 – Nominal dimensions

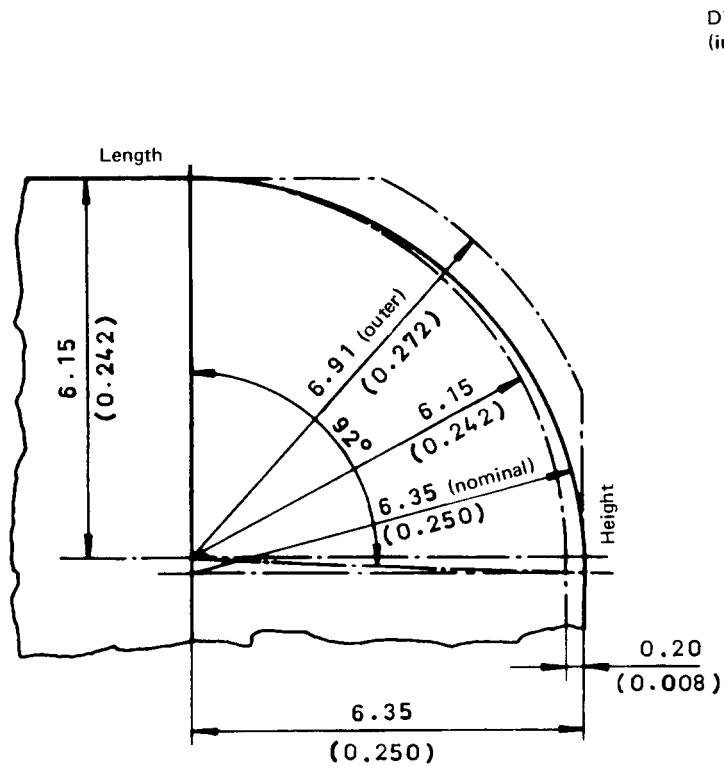


FIG. 2 – Rounded corners

2.4 Card edge

2.4.1 *Condition.* All edges shall be smooth and free from burrs.

2.4.2 *Straightness.* All points on the edge of a card shall fall between two straight parallel lines 0.08 mm (0.003 in) apart.

2.4.3 *Parallelism.* The distance by which the linearized edges depart from true parallelism to each other shall not exceed 0.08 mm (0.003 in).

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

2.4.4 *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 (0.0047 in) total.

Linearized edges are defined as in clause 2.4.3.

2.5 Measuring requirements

For the purpose of measuring a card and locating the edge of a card, a point on the edge of the card shall be the centre of a line 10 mm (0.375 in) in length on a flat, contacting, metal surface at least 10 mm (0.375 in) long which is being pressed against the edge of the card with a force of approximately 50 mN per millimetre of its length in contact with the card*.

NOTE. — The method of measuring physical dimensions is not specified in this ISO Recommendation. However, any measurement of physical dimensions shall be made by using the appropriate apparatus that can measure adequately the physical dimensions within the specified tolerances.

2.6 Corners

2.6.1 Diagonal corner cut

2.6.1.1 *DIMENSIONS.* The corner cut shall remove 6.35 ± 0.4 mm (0.250 ± 0.016 in) from the long edge and 11 ± 0.4 mm (0.433 ± 0.016 in) from the short edge of the card (at a reference angle of 60° to the long edge of the card). (See also Appendix Y).

2.6.1.2 LOCATION

2.6.1.2.1 *Preferred location.* The preferred location for the cut shall be at the upper left corner (see clause 2.4.4 and Fig. 1).

2.6.1.2.2 *Alternative location.* An alternative location for the cut shall be at the upper right corner.

2.6.2 Other corners

2.6.2.1 *PREFERRED CORNERS.* All corners, except the diagonally cut corner, shall be square (see clause 2.4.4 and Fig. 1).

2.6.2.2 *ALTERNATIVE CORNERS.* An alternative corner, for all corners except the diagonally cut corner, shall be rounded to a nominal radius of 6.35 mm (0.250 in). (See Fig. 2).

The edge of the rounded corner shall fall between two concentric arcs. The centre of the arcs is located 6.15 mm (0.242 in) from the long edge and 6.35 mm (0.250 in) from the short edge of the card.

The inner arc is 92° and has a radius of 6.15 mm (0.242 in); the outer arc has a radius of 6.91 mm (0.272 in) (see Fig. 2). The edge is also bounded by the line parallel to the top linearized edge and passing through the lower end of the 92° arc.

* In common practice, this value is equivalent to 5 gf/mm.