

American National Standard

Adopted for Use by
the Federal Government



FIPS 26

See Notice on Inside
Front Cover

one-inch perforated paper tape for information interchange



american national standards institute, inc.
1430 broadway, new york, new york 10018

This standard was approved as a Federal Information Processing Standard by the Office of Management and Budget on April 2, 1973.

Details concerning the use of this standard within the Federal Government are contained in FIPS PUB 26, ONE-INCH PERFORATED PAPER TAPE FOR INFORMATION INTERCHANGE. For a complete list of the publications available in the FEDERAL INFORMATION PROCESSING STANDARDS Series, write to the Office of Technical Information and Publications, National Bureau of Standards, Washington, D.C. 20234.

ANSI Standard One-Inch Perforated Paper Tape for Information Interchange

American National Standard

This standard is one of more than 4000 approved as either a USA Standard or as an American Standard. It became an American National Standard in October 1969 when the Institute changed its name to American National Standards Institute, Inc.

ANSI, 1430 Broadway, New York, N.Y. 10018

Sponsor
Business Equipment Manufacturers Association

Approved March 28, 1967
United States of America Standards Institute

American National Standard

An American National Standard implies a consensus of those substantially concerned with its scope and provisions. An American National Standard is intended as a guide to aid the manufacturer, the consumer, and the general public. The existence of an American National Standard does not in any respect preclude anyone, whether he has approved the standard or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standard. American National Standards are subject to periodic review and users are cautioned to obtain the latest editions.

CAUTION NOTICE: This American National Standard may be revised or withdrawn at any time. The procedures of the American National Standards Institute require that action be taken to reaffirm, revise, or withdraw this standard no later than five years from the date of publication. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute.

Published by

American National Standards Institute, Inc
1430 Broadway, New York, New York 10018

No portion of this publication may be quoted or reproduced in any form without the written permission of the United States of America Standards Institute.

Copyright 1967 by the United States of America Standards Institute
Universal Decimal Classification 676.816.5

Printed in USA

Foreword

(This Foreword is not a part of the USA Standard for One-Inch Perforated Paper Tape for Information Interchange, X3.18-1967.)

This publication contains the physical dimensions and tolerances of one-inch perforated paper tape. It is one of a series of standards relating to information interchange among information processing systems, communication systems, and associated equipment and is intended to serve as a guide in the coordination of equipment design. It is planned that additional perforated tape standards will be proposed in the future.

The standard was developed by a group of highly qualified and experienced specialists in tape processing and communication.* Historical work in the field was reviewed and forms the basis for this standard.

Suggestions for improvement gained in the use of this standard will be welcome. They should be sent to the United States of America Standards Institute, Incorporated, 10 East 40th Street, New York, N. Y. 10016.

The USA Standards Committee on Computers and Information Processing, X3, which developed this standard, had the following personnel at the time of approval:

C. A. Phillips, *Chairman*

P. B. Goodstat, *Secretary*

Organization Represented

Administrative Management Society
Air Transport Association
American Bankers Association
American Gas Association and Edison Electric Institute (jointly)
American Newspaper Publishers Association
American Petroleum Institute
Association of American Railroads
Association for Computing Machinery
Business Equipment Manufacturers Association

Name of Representative

John A. Steer
F. C. White
G. W. Frey
J. A. Comerford
W. D. Rinehart
F. A. Gitzendanner
C. Byham
S. Gorn
W. H. Burkhardt
R. F. Clippinger
C. T. Deere
S. Erdreich
R. W. Green
J. A. Haddad
R. J. Mindlin
B. Pollard
G. E. Poorte
G. Puente
D. J. Reyen
E. Vidro
D. G. Price
J. M. Adams
J. K. Snell
W. M. Carlson
M. Burris
C. L. Hutchinson
R. W. Ferguson
G. W. Patterson
J. C. Nix
R. E. Utman
E. Boulanger
S. N. Alexander
M. Sluis
E. Langtry
W. B. Schultz
C. E. Ginder
E. Tomeski
G. L. Bowlby

Council of State Governments

Data Processing Management Association
Electronics Industries Association
Engineers Joint Council
General Services Administration
Industrial Communications Association
Institute of Electrical and Electronics Engineers

Insurance Accounting and Statistical Association
Joint Users Group
Life Office Management Association
National Bureau of Standards
National Machine Tool Builders Association
National Retail Merchants Association
Scientific Apparatus Makers Association
Sectional Committee on Standards for Office Machines, X4
Systems and Procedures Association
U.S. Department of Defense

*Operating under Project X3, Computers and Information Processing, The Business Equipment Manufacturers Association serves as Sponsor of the X3 project.

The USA Standard Subcommittee on Codes and Input-Output, X3.2, which developed and processed the standard were as follows:

L. L. Griffin, Chairman

J. F. Auwaerter	M. R. Jepson	J. K. Nelson
E. A. Avakian	D. A. Kerr	H. Speilman
T. R. Bousquet	R. Kudisch	C. A. Sykes
R. M. Brown	E. J. Lewis	H. Tholstrup
C. Crandall	J. L. Little	R. E. Utman
E. C. Dahlin	C. E. Mackenzie	E. F. Vidro, Jr.
R. J. Donohue	W. H. McKenzie	G. E. Williams
S. Erdreich	M. Mendelsohn	J. Windhorst
R. M. Ireland	G. L. Murphy	

The Task Group on Perforated Tape, X3.2.2, which developed the proposal had the following personnel:

J. F. Auwaerter, Chairman

T. R. Bousquet	G. Misthos
C. Crandall	R. E. Mullendore
E. C. Dahlin	J. K. Nelson
R. Dilling	H. Tholstrup
R. F. Ewald	F. W. Smith
R. M. Ireland	

USA Standard One-Inch Perforated Paper Tape for Information Interchange

1. Scope

1.1 This standard covers the physical dimensions of the paper tape and its perforations.

1.2 This standard is for perforated paper tape with fully-punched round holes.

2. Standard One-Inch Perforated Paper Tape

The tape layout is illustrated in Fig. 1.

2.1 The unpunched tape shall have an overall nominal width of 1.000 inch.

2.2 The unpunched paper tape shall have a nominal thickness of 0.004 inch.

2.3 The tape shall be used for recording up to eight levels of information across the tape.

2.4 The longitudinal center line of the feed holes shall be parallel with the reference edge of the tape and located 0.392 inch plus or minus 0.004 inch from the reference (3-track) edge.

2.5 The feed holes in the tape shall be fully punched and round with a diameter of 0.046 inch plus 0.002 minus 0.001 inch.

2.6 The code holes in the tape shall be fully punched and round with a diameter of 0.072 inch plus or minus 0.002 inch.

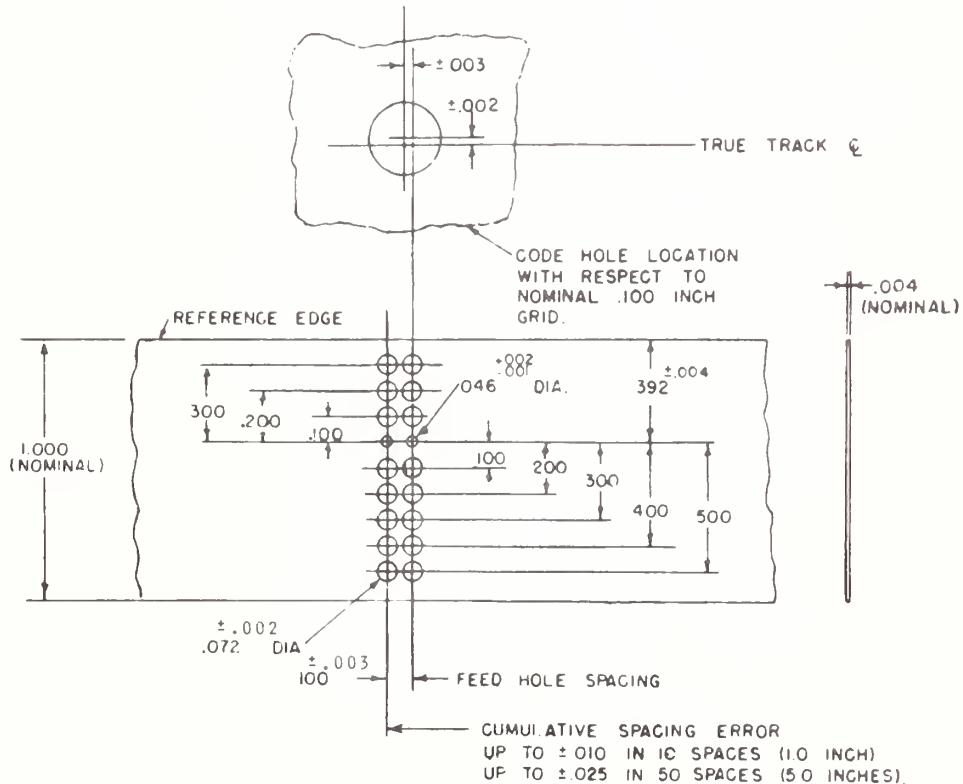


Fig. 1
Specified Tape Layout

2.7 All holes punched in the tape shall nominally center on the true intersection of longitudinal and perpendicular transverse center lines spaced 0.100 inch apart. Tolerances on locations of code holes in any one transverse row, relative to the center lines of the feed hole in that row, shall be plus or minus 0.002 inch in the transverse direction and plus or minus 0.003 inch in the longitudinal direction. Tolerance on the distance between centers of

adjacent feed holes shall be plus or minus 0.003 inch. Longitudinal error between centers of feed holes may accumulate up to plus or minus 0.010 inch, within any span of 10 spaces (1.0 inch), and up to plus or minus 0.025 inch, within any span of 50 spaces (5.0 inches).

2.8 The dimensions and tolerances given in 2.4 through 2.7 for the holes and their spacing are to be met at the time of punching.

Appendix

(This Appendix is not part of the USA Standard for One-Inch Perforated Paper Tape for Information Interchange, X3.18-1967.)

A1. Properties of Unpunched Paper Tape

The properties of unpunched paper tape will be the subject of a separate USA Standard. Tolerances on tape width and thickness will be covered in the properties standard.

A2. Environmental Considerations

Paper (as commonly produced and used for perforator tapes) is inherently subject to some change in dimension with changes in environmental factors, particularly humidity. Interchanging of perforated paper tape between equipments in dissimilar environments may disclose dimensional variance beyond the limits of this standard.

It is highly desirable, for physical inter-

change of punched tapes, that the paper tape should be punched in an environment near the standard of 50 percent ± 2 percent relative humidity (RH) and 73 ± 3.5 °F, say within the range of 40 percent to 60 percent RH. If, however, due to uncontrolled circumstance, the environmental conditions at the time of punching are above 60 percent RH or below 40 percent RH, respectively, it may prove necessary to make a special arrangement between the sender and the recipient, in order to ensure satisfactory reading.

A3. Tape Materials Other Than Paper

The physical dimensions specified in this standard with the exception of tape thickness (see 2.2) also apply where materials other than paper are used.

American National Standards on Computers and Information Processing

X3.1-1969 Synchronous Signaling Rates for Data Transmission

X3.2-1970 Print Specifications for Magnetic Ink Character Recognition

X3.3-1970 Bank Check Specifications for Magnetic Ink Character Recognition

X3.4-1968 Code for Information Interchange

X3.5-1970 Flowchart Symbols and Their Usage in Information Processing

X3.6-1965 Perforated Tape Code for Information Interchange

X3.9-1966 FORTRAN

X3.10-1966 Basic FORTRAN

X3.11-1969 Specifications for General Purpose Paper Cards for Information Processing

X3.12-1970 Vocabulary for Information Processing

X3.14-1973 Recorded Magnetic Tape for Information Interchange (200 CPI, NRZI)

X3.15-1966 Bit Sequencing of the American National Standard Code for Information Interchange in Serial-by-Bit Data Transmission

X3.16-1966 Character Structure and Character Parity Sense for Serial-by-Bit Data Communication in the American National Standard Code for Information Interchange

X3.17-1966 Character Set for Optical Character Recognition

X3.18-1967 One-Inch Perforated Paper Tape for Information Interchange

X3.19-1967 Eleven-Sixteenths Inch Perforated Paper Tape for Information Interchange

X3.20-1967 Take-Up Reels for One-Inch Perforated Tape for Information Interchange

X3.21-1967 Rectangular Holes in Twelve-Row Punched Cards

X3.22-1973 Recorded Magnetic Tape for Information Interchange (800 CPI, NRZI)

X3.23-1968 COBOL

X3.24-1968 Signal Quality at Interface Between Data Processing Terminal Equipment and Synchronous Data Communication Equipment for Serial Data Transmission

X3.25-1968 Character Structure and Character Parity Sense for Parallel-by-Bit Communication in the American National Standard Code for Information Interchange

X3.26-1970 Hollerith Punched Card Code

X3.27-1969 Magnetic Tape Labels for Information Interchange

X3.28-1971 Procedures for the Use of the Communication Control Characters of American National Standard Code for Information Interchange in Specified Data Communication Links

X3.29-1971 Specifications for Properties of Unpunched Oiled Paper Perforator Tape

X3.30-1971 Representation for Calendar Date and Ordinal Date for Information Interchange

X3.31-1973 Structure for the Identification of the Counties of the United States for Information Interchange

X3.34-1972 Interchange Rolls of Perforated Tape for Information Interchange

X3.38-1972 Identification of States of the United States (Including the District of Columbia) for Information Interchange

X3.39-1973 Recorded Magnetic Tape for Information Interchange (1600 CPI, PE)

X3.40-1973 Unrecorded Magnetic Tape for Information Interchange (9-Track 200 and 800 CPI, NRZI, and 1600 CPI, PE)

For a free and complete list of all American National Standards, write:

American National Standards Institute, Inc

1430 Broadway

New York, N.Y. 10018