

NATIONAL AEROSPACE STANDARD

AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC., 1725 DE SALES STREET, N. W., WASHINGTON, D. C. 20036

FOREWORD

This Standard is intended to specify coding and format for use of digital magnetic tape input media to numerically controlled machines.

It should be noted that concern must be given to the care and handling of the magnetic tape described herein for maximum reliability of the equipment, particularly when used in a conventional manufacturing environment. To that end, a specific recommendation is made regarding the use of a tape handling cartridge. A cartridge should be employed which makes manual loading of the tape proper unnecessary and which further protects the tape from the environment for storage and subsequent use.

1.0 Scope

- 1.1 This standard is intended to serve as a guide in the coordination of system design, to standardize the character coding, to minimize the variety of program manuscripts required and the number of word and block format systems used, to promote uniformity of programming techniques, and to foster interchangeability of input tapes between numerically controlled machines of the same classification by type, process function, size, and accuracy.
- 1.2 This standard applies to digital magnetic tapes which store program data in alpha-numeric form as opposed to those tapes on which program data is stored in analog form.
- 1.3 Definitions of terms used in this standard are in accordance with EIA Automation Bulletin No. 3A, "Definitions for Numerically Controlled Machine Tools."
- 1.4 Revisions to these standards will be proposed as technical progress warrants or as future standards are adopted which conflict with these standards.

2.0 Physical Characteristics

- 2.1 **Material:** Tape to consist of a base material (Polyester Film - - Mylar or equivalent) coated on one side with a strong yet flexible layer of ferromagnetic material dispersed in a suitable binder.
- 2.2 **Physical Dimensions:**
 - 2.2.1 Tape Width - .498 $\pm$.002
 - 2.2.2 Tape Thickness - .0019" $\pm$.003

LIST OF CURRENT SHEETS

NO.	REV.	NO.	REV.
1	1	4	1
2	1	5	1
3	1	6	1

① INACTIVE FOR DESIGN AFTER 31 OCT. 1974.
NO SUPERSEDING STANDARD.

CUSTODIAN: MANUFACTURING COMMITTEE

PROCUREMENT
SPECIFICATION

TITLE

Interchangeable Digital Magnetic Tape Standards,
Variable Block, Word Address Format, Contouring
and Contouring/Positioning Equipment

CLASSIFICATION
SPECIFICATION

AVAS Documents
968
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- 2.2.3 Tape Material Thickness - .00145" nominal
- 2.2.4 Coating Thickness - .0006" maximum
- 2.2.5 Longitudinal Curvature - Less than 3/8" per 36" of tape; measurement to be made by allowing a roll of tape to freely roll out and assume its natural curvature on a flat surface.

3.0 Character Coding

- 3.1 Alpha-numeric characters as well as certain additional symbols and marks shall be recorded on the tape using one transverse row per character.
- 3.2 Methods of recording shall be in accordance with Figure 1.

4.0 Format

- 4.1 The information recorded shall be composed of blocks prepared in accordance with NAS 955, Paragraph 3.3, (Interchangeable Perforated Tape Variable Block Format for Contouring and Contouring/Positioning numerically controlled machine tools) except with the elimination of tab characters and with additional requirements as follows.
- 4.2 Each block may begin with the letter "n" and end with an "End of Block Code (EOB)." In addition, the first block of a program shall be preceded by an (EOB) code.
- 4.3 Immediately following the EOB character for each block of data (including the last block of a computer record) a logic 1 (one) shall be written in track 5 ("space" character). The next transverse row following is reserved for the block longitudinal check character when used. If longitudinal check is used, a logic 1 (one) shall be written in this row for each track (see exception, Paragraph 4.4) in which the longitudinal bit count for the preceding block is odd.
- 4.4 When no longitudinal bit count is kept for track 5, a logic 1 (one) in track 5 shall be written in the block longitudinal check row only if the transverse bit count in this row is even.

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NAS Documents

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