



# Standard Practice for Structuring Terminological Records Relating to Computerized Test Reporting and Materials Designation Formats<sup>1</sup>

This standard is issued under the fixed designation E 1314; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This practice provides a detailed and comprehensive structure for building terminological records for reporting test results or materials designations.

1.2 A practice for structuring terminological records will contribute toward the compatibility of computerization standards being developed and, when implemented by each group incorporating terms in their documents, will assist in clarifying the distinctions between terms, their relationships, areas of application, defining authority, etc.

1.3 In addition to its utility during the standards-building process, a machine-readable file of terms using this guide could also be used to build glossaries and thesauri, important adjuncts to any computerized materials information system. Such glossaries and thesauri might be made available as a user-callable assist in a *help* mode, or as a transparent assist in parsing a user query or accommodating the varying terminology used in databases of diverse origin.

1.4 It may be noted that a term definition record will be most useful when all associated characteristics are delineated. However, it is recognized that for certain types of records, not all characteristics have meaning, and that for certain uses, not all characteristics must be delineated.

1.5 Where the same term name is used in more than one document, it is hoped that all items in the term record, apart from the term number, can be made identical. Where this is not possible, multiple records may be allowed but distinction maintained by coupling the term number with the term name.

NOTE 1—To minimize possible ambiguities as well as reduce the proliferation of similar but not identical terms, groups building terminology databases using this guide may need to have a monitoring and policing authority.

1.6 Fig. 1 is an example of a completed term record.

## 2. Referenced Documents

### 2.1 ASTM Standards:

E 23 Test Methods for Notched Bar Impact Testing of Metallic Materials<sup>2</sup>

2.2 ISO Standards:<sup>3</sup>

I 48

R 442

## 3. Record Structure

3.1 The structure of the term definition record consists of a series of Record Descriptors organized within six logical blocks. A definition of each record descriptor is provided in the text table below. In the definitions given below, the underline, such as in A\_B, is a common naming method used in computer science to provide for compound names.

| Record Descriptor             | Definition                                                                                                                      |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Identity_Block                | Descriptors in this block establish the identification characteristics of the term.                                             |
| Record_Mod_Block              | The items in this block assist in recording and maintaining an audit on the creation and subsequent modification of the record. |
| Definition_Block              | The items in this block provide the definitions and associated word cross-references.                                           |
| Thesaurus_Block               | The items in this block provide the names of other terms which have relationships to the term.                                  |
| Unit_Block                    | The items in this block provide information regarding the units and the associated unit class allowed for values of the term.   |
| Possible_Allowed_Values_Block | The items in this block provide the possible values for the term as identified in the related document.                         |

## 4. Definition of Record Descriptors

4.1 The text table below provides a list of the individual record descriptors and their definition.

|       | Identity_Block                                           |
|-------|----------------------------------------------------------|
| *Term | This is the Term Name.                                   |
| *Type | The type of term; possible values include, among others: |

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 03.01.

<sup>3</sup> Available from American National Standards Institute, 11 W. 42nd St., 13th Floor, New York, NY 10036.

|                                   |                                                                                                                                                                                                                                                  |                                           |                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                   | Material,<br>Property,<br>Variable (for independent variables),<br>Reference Property (for parameters which can act<br>either as properties or independent variables),<br>Test Descriptor,<br>Statistical parameter, and<br>Material descriptor. |                                           |                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                   |                                                                                                                                                                                                                                                  | <b>Thesaurus_Block</b>                    |                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                   |                                                                                                                                                                                                                                                  | *Used_For                                 | This value is a synonym for the term.                                                                                                                                                                                                                                                                                                                                                                        |
|                                   |                                                                                                                                                                                                                                                  | *Broader_Term                             | This value is a broader term for the term.                                                                                                                                                                                                                                                                                                                                                                   |
|                                   |                                                                                                                                                                                                                                                  | Related_Term                              | This value is related to the term.                                                                                                                                                                                                                                                                                                                                                                           |
| Term_Number                       | A number(s) for the term which indicates in which<br>documents the term is used.                                                                                                                                                                 | Non_Synonymous_Term                       | This value appears similar to the term but is not<br>synonymous.                                                                                                                                                                                                                                                                                                                                             |
| Cross_Reference_Index_<br>Code    | A possible relationship to a broader system of ma-<br>terials metadata.                                                                                                                                                                          | Standard_Term                             | The agreed standard name for the term.                                                                                                                                                                                                                                                                                                                                                                       |
| Used_In<br>Pertinent_To_Material_ | References.<br>Some terms (particularly property names) have ap-<br>plication to only certain types or classes of materi-<br>als (for example, to Metals and Alloys as against<br>Plastics).                                                     | Broad_Application_Area                    | The possibly limited scope of applicability of the<br>term.                                                                                                                                                                                                                                                                                                                                                  |
| Class                             | Allowable Values include:<br>Metals,<br>Ceramics,<br>Polymers,<br>Composites, and<br>All.                                                                                                                                                        | <b>Unit_Block</b>                         |                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                   |                                                                                                                                                                                                                                                  | Unit_Class                                | The specific class of units which is allowed for val-<br>ues of the term. Where the allowed value is an al-<br>phanumeric character string or an alphanumeric<br>code, there are no standard units or valid units.                                                                                                                                                                                           |
|                                   |                                                                                                                                                                                                                                                  | Standard_Units                            | The agreed-upon standard units, usually SI.                                                                                                                                                                                                                                                                                                                                                                  |
|                                   |                                                                                                                                                                                                                                                  | Valid_Units                               | The names of acceptable units as indicated in the<br>document; these should be convertible to standard<br>units.                                                                                                                                                                                                                                                                                             |
| Modifier_Time                     | hh:mm:ss                                                                                                                                                                                                                                         |                                           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| Modifier_Date                     | yy/mm/dd                                                                                                                                                                                                                                         |                                           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| Modifier                          | Name (or abbreviation) of organization creating or<br>modifying the record.                                                                                                                                                                      |                                           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| Mod_Description                   | Type of change made to the record.                                                                                                                                                                                                               |                                           |                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                   | <b>Definition_Block</b>                                                                                                                                                                                                                          |                                           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| *Definition                       | A general or specific definition appropriate to the<br>use of the term in the document.                                                                                                                                                          |                                           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| *Defined_By                       | The defining authority.                                                                                                                                                                                                                          |                                           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| *Defining_Document                | Source of the definition.                                                                                                                                                                                                                        |                                           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| Other_Related_Document            | Related document(s) pertaining to the definition.                                                                                                                                                                                                |                                           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| Label                             | A shortened form of the term name for use within<br>graphical or tabular exhibits.                                                                                                                                                               |                                           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| Abbreviation                      | One or more abbreviations for the term.                                                                                                                                                                                                          |                                           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| Symbol                            | A standard symbol used to represent the term, for<br>example, E for modulus of elasticity.                                                                                                                                                       |                                           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| Mnemonic                          | An abbreviation of limited length suitable as an aide<br>memoir.                                                                                                                                                                                 |                                           |                                                                                                                                                                                                                                                                                                                                                                                                              |
| *RqD_Variable                     | A variable for which values must be specified in<br>order for this term to have meaning.                                                                                                                                                         |                                           |                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                   |                                                                                                                                                                                                                                                  | <b>Possible_Allowed_Values_Block</b>      |                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                   |                                                                                                                                                                                                                                                  | Data_Value_Type                           | A code indicating the type of data value; possible<br>values include:<br>string—for character strings,<br>code—for alphanumeric code,<br>N—for integer numbers,<br>d—for decimal numbers,<br>f—for fractions,<br>N-d—for integer or decimal numbers, and<br>N-d-f—for integer or decimal numbers or frac-<br>tions.                                                                                          |
|                                   |                                                                                                                                                                                                                                                  | Allowed_Values                            | For quantitative terms, a theoretically or<br>experimentally-based range for possible numeric<br>values; for certain terms there exists a set of quali-<br>tative allowed values expressed as standard words<br>or code numbers, for example, for the variable<br><i>form</i> , words such as: plate, bar, sheet, tube, etc.,<br>while for the variable <i>temper</i> values such as: F, O,<br>H12, T3, etc. |
|                                   |                                                                                                                                                                                                                                                  | Note—*Essential fields, where applicable. |                                                                                                                                                                                                                                                                                                                                                                                                              |

## 5. Keywords

5.1 computerized material property database; computerized test reporting; glossary; materials designation; materials designation format; materials information system; terminological record; thesaurus