



Designation: G 107 – 95

Standard Guide for Formats for Collection and Compilation of Corrosion Data for Metals for Computerized Database Input¹

This standard is issued under the fixed designation G 107; 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 guide defines the data categories and specific data elements (fields) considered necessary to accommodate desired search strategies and reliable data comparisons in computerized corrosion databases. The data entries are designed to accommodate data relative to the basic forms of corrosion and to serve as guides for structuring multiple source database compilations capable of assessing compatibility of metals and alloys for a wide range of environments and exposure conditions.

2. Referenced Documents

2.1 ASTM Standards:

E 8 Test Methods for Tension Testing of Metallic Materials²

E 527 Practice for Numbering Metals and Alloys (UNS)³

E 1314 Practice for Structuring Terminological Records Relating to Computerized Test Reporting and Materials Designation Formats⁴

E 1338 Guide for the Identification of Metals and Alloys in Computerized Material Property Databases⁴

G 1 Practice for Preparing, Cleaning, and Evaluating Corrosion Test Specimens⁵

G 15 Terminology Relating to Corrosion and Corrosion Testing⁵

G 34 Test Method for Exfoliation Corrosion Susceptibility in 2XXX and 7XXX Series Aluminum Alloys (EXCO Test)⁵

G 46 Guide for Examination and Evaluation of Pitting Corrosion⁵

G 49 Practice for Preparation and Use of Direct Tension Stress-Corrosion Test Specimens⁵

G 78 Guide for Crevice Corrosion Testing of Iron-Base and Nickel-Base Stainless Alloys in Seawater and Other Chloride-Containing Aqueous Environments⁵

3. Terminology

3.1 *Definitions*—For definitions of terms applicable to this guide see Practice E 1314 and Terminology G 15.

4. Significance and Use

4.1 The guide is intended to facilitate the recording of corrosion test results and does not imply or endorse any particular database design or schema. It provides a useful reference to be consulted before initiating a corrosion test to be sure plans are made to record all relevant data.

4.2 Corrosion tests are usually performed following a prescribed test procedure that is often not a standard test method. Most corrosion tests involve concurrent exposure of multiple specimens of one or more materials (refer to 6.1.1).

4.3 This guide is designed to record data for individual specimens with groupings by separate tests (as contrasted to separate test methods) as described in 4.2 and 6.1.1. Consequently, some of the individual fields may apply to all of the specimens in a single test, while others must be repeated as often as necessary to record data for individual specimens.

4.4 The guidelines provided are designed for recording data for entry into computerized material performance databases. They may be useful for other applications where systematic recording of corrosion data is desired.

4.5 Reliable comparisons of corrosion data from multiple sources will be expedited if data are provided for as many of the listed fields as possible. Comparisons are possible where data are limited, but some degree of uncertainty will be present.

4.6 Certain specialized corrosion tests may require additional data elements to fully characterize the data recorded. This guide does not preclude these additions. Other ASTM guides for recording data from mechanical property tests may be helpful.

4.7 This guide does not cover the recording of data from electrochemical corrosion tests.

4.8 These material identification guidelines are compatible with Guidelines E 1338.

5. Categorization of Corrosion Data

5.1 This guide considers nine general categories for use in documenting corrosion data. Categories, with input examples, are as follows:

¹ This guide is under the jurisdiction of ASTM Committee G01 on Corrosion of Metals and is the direct responsibility of Subcommittee G01.05 on Laboratory Corrosion Tests.

Current edition approved Dec. 10, 1995. Published February 1996. Originally published as G 107 – 91. Last previous edition G 107 – 91.

² *Annual Book of ASTM Standards*, Vol 03.01.

³ *Annual Book of ASTM Standards*, Vol 01.01.

⁴ *Annual Book of ASTM Standards*, Vol 14.01.

⁵ *Annual Book of ASTM Standards*, Vol 03.02.