Designation: ~~C147 – 86 (Reapproved 2010)~~ C147 – 86 (Reapproved 2015)

Standard Test Methods for Internal Pressure Strength of Glass Containers[1]

This standard is issued under the fixed designation C147; 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 These test methods cover the determination of the breaking strength of glass containers when subjected to internal pressure. These test methods are intended to determine the pressure strength of containers manufactured to contain products reasonably expected to develop a sustained pressure of 138 kPa (20 psi) or greater, after processing. Two test methods are covered as follows:

	Sections
Test Method A—Application of Uniform Internal Pressure for a Predetermined Period	5 – 7
Test Method B—Application of Internal Pressure Increasing at a Predetermined Constant Rate	8 – 10

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

C224 Practice for Sampling Glass Containers

2.2 *ASTM Adjuncts:*

Single-head hydraulic testing machine (8 blueprints)[3]

3. Sampling

3.1 Methods of sampling a minimum lot from a group of containers of a given type are given in Practice C224, for the various situations to which it may apply.

4. Precision and Bias

4.1 Statements regarding either precision or bias of the internal pressure test results are not possible because suitable internal pressure reference test materials are not available.

4.2 *Test Method A*—The pressure test precision is within one half the incremental step size used at failure. Pressure test bias is generally within ±1 % of full scale.

4.3 *Test Method B*—The pressure test precision is within ±1 psi (7 kPa). Pressure test bias is generally within ± % of full scale.

TEST METHOD A—APPLICATION OF UNIFORM INTERNAL PRESSURE FOR A PREDETERMINED PERIOD

5. Apparatus

5.1 The apparatus[3] shall embody the following principles:

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[1] These test methods are under the jurisdiction of ASTM Committee C14 on Glass and Glass Products and are the direct responsibility of Subcommittee C14.07 on Glass Containers.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] Single-head automatic sustained pressure testing machine developed by American Glass Research, Inc., Butler, PA, meets these requirements for durations greater than 15 s. Detailed working drawings of this machine are available from ASTM Headquarters. An increment pressure tester developed by the same laboratory is suitable for shorter durations. Available from ASTM International Headquarters. Order Adjunct No. ADJC0147.