



Designation: A967/A967M – 17

Standard Specification for Chemical Passivation Treatments for Stainless Steel Parts¹

This standard is issued under the fixed designation A967/A967M; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope*

1.1 This specification covers several different types of chemical passivation treatments for stainless steel parts. It includes recommendations and precautions for descaling, cleaning, and passivation of stainless steel parts. It includes several alternative tests, with acceptance criteria, for confirmation of effectiveness of such treatments for stainless steel parts.

1.2 Practices for the mechanical and chemical treatments of stainless steel surfaces are discussed more thoroughly in Practice **A380/A380M**.

1.3 Several alternative chemical treatments are defined for passivation of stainless steel parts. **Appendix X1 and Appendix X2** give some nonmandatory information and provides some general guidelines regarding the selection of passivation treatments appropriate to particular grades of stainless steel. This specification makes no recommendations regarding the suitability of any grade, treatment, or acceptance criteria for any particular application or class of applications.

1.4 The tests in this specification are intended to confirm the effectiveness of passivation, particularly with regard to the removal of free iron and other exogenous matter. These tests include the following practices:

- 1.4.1 *Practice A*—Water Immersion Test,
- 1.4.2 *Practice B*—High Humidity Test,
- 1.4.3 *Practice C*—Salt Spray Test,
- 1.4.4 *Practice D*—Copper Sulfate Test,
- 1.4.5 *Practice E*—Potassium Ferricyanide-Nitric Acid Test, and
- 1.4.6 *Practice F*—Damp Cloth Test, and
- 1.4.7 *Practice G*—Boiling Water Immersion Test.

NOTE 1—Free iron denotes iron present on the surface of the parts, including but not limited to iron contamination, iron-tool marks, residual-iron salts from pickling solutions, iron dust, atmospheric exposure, iron deposits in welds, embedded iron, and iron oxide.

¹ This specification is under the jurisdiction of ASTM Committee **A01** on Steel, Stainless Steel and Related Alloys and is the direct responsibility of Subcommittee **A01.14** on Methods of Corrosion Testing.

Current edition approved July 1, 2017. Published July 2017. Originally approved in 1996. Last previous edition approved in 2013 as A967/A967M – 13. DOI: 10.1520/A0967-17.

1.5 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.6 *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.*

1.7 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

A380/A380M Practice for Cleaning, Descaling, and Passivation of Stainless Steel Parts, Equipment, and Systems
B117 Practice for Operating Salt Spray (Fog) Apparatus
B254 Practice for Preparation of and Electroplating on Stainless Steel
B600 Guide for Descaling and Cleaning Titanium and Titanium Alloy Surfaces
B912 Specification for Passivation of Stainless Steels Using Electropolishing

2.2 Federal Specification:³

QQ-P-35C Passivation Treatments for Corrosion-Resistant Steels⁴

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 Available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

⁴ In accordance with QQ-P-35C Notice 3, September 11, 1998, Specification QQ-P-35C is cancelled and Specification A967/A967M should be used in its place for DoD activities other than aerospace applications.

*A Summary of Changes section appears at the end of this standard