



Standard Practices for Sampling Water-Formed Deposits¹

This standard is issued under the fixed designation D887; 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 practices cover the sampling of water-formed deposits for chemical, physical, biological, or radiological analysis. The practices cover both field and laboratory sampling. It also defines the various types of deposits. The following practices are included:

	Sections
Practice A—Sampling Water-Formed Deposits From Tubing of Steam Generators and Heat Exchangers	8 to 10
Practice B—Sampling Water-Formed Deposits From Steam Turbines	11 to 14

1.2 The general procedures of selection and removal of deposits given here can be applied to a variety of surfaces that are subject to water-formed deposits. However, the investigator must resort to his individual experience and judgment in applying these procedures to his specific problem.

1.3 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.4 *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.* See Section 7, 9.8, 9.8.4.6, and 9.14 for specific hazards statements.

2. Referenced Documents

2.1 ASTM Standards:²

- D512 Test Methods for Chloride Ion In Water
- D934 Practices for Identification of Crystalline Compounds in Water-Formed Deposits By X-Ray Diffraction
- D1129 Terminology Relating to Water

¹ These practices are under the jurisdiction of ASTM Committee D19 on Water and are the direct responsibility of Subcommittee D19.03 on Sampling Water and Water-Formed Deposits, Analysis of Water for Power Generation and Process Use, On-Line Water Analysis, and Surveillance of Water.

Current edition approved Jan. 1, 2013. Published February 2013. Originally approved in 1946. Last previous edition approved in 2008 as D887–08. DOI: 10.1520/D0887-13.

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.

- D1193 Specification for Reagent Water
- D1245 Practice for Examination of Water-Formed Deposits by Chemical Microscopy
- D1293 Test Methods for pH of Water
- D2331 Practices for Preparation and Preliminary Testing of Water-Formed Deposits
- D2332 Practice for Analysis of Water-Formed Deposits by Wavelength-Dispersive X-Ray Fluorescence
- D3483 Test Methods for Accumulated Deposition in a Steam Generator Tube
- D4412 Test Methods for Sulfate-Reducing Bacteria in Water and Water-Formed Deposits

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *biological deposits, n*—water-formed deposits of organisms or the products of their life processes.

3.1.1.1 Discussion- The biological deposits may be composed of microscopic organisms, as in slimes, or of macroscopic types such as barnacles or mussels. Slimes are usually composed of deposits of a gelatinous or filamentous nature.

3.1.2 *corrosion products, n*—a result of chemical or electrochemical reaction between a metal and its environment.

3.1.2.1 Discussion- A corrosion deposit resulting from the action of water, such as rust, usually consists of insoluble material deposited on or near the corroded area; corrosion products may, however, be deposited a considerable distance from the point at which the metal is undergoing attack.

3.1.3 *scale, n*—a deposit formed from solution directly in place upon a surface.

3.1.3.1 Discussion- Scale is a deposit that usually will retain its physical shape when mechanical means are used to remove it from the surface on which it is deposited. Scale, which may or may not adhere to the underlying surface, is usually crystalline and dense, frequently laminated, and occasionally columnar in structure.

3.1.4 *sludge, n* —a water-formed sedimentary deposit.

3.1.4.1 Discussion- The water-formed sedimentary deposits may include all suspended solids carried by the water and trace elements which were in solution in the water. Sludge usually does not cohere sufficiently to retain its physical shape when mechanical means are used to remove it from the surface on which it deposits, but it may be baked in place and be hard and adherent.