



Designation: D5674 – 22

Standard Guide for Operation of a Gaging Station¹

This standard is issued under the fixed designation D5674; 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 The guide covers procedures used commonly for the systematic collection of streamflow information. Continuous streamflow information is necessary for understanding the amount and variability of water for many uses, including water supply, waste dilution, irrigation, hydropower, and reservoir design.

1.2 The procedures described in this guide are used widely by those responsible for the collection of streamflow data, for example, the U.S. Geological Survey, Bureau of Reclamation, U.S. Army Corps of Engineers, U.S. Department of Agriculture, Water Survey Canada, and many state and provincial agencies. The procedures are generally from internal documents of the preceding agencies, which have become the defacto standards used in North America.

1.3 It is the responsibility of the user of the guide to determine the acceptability of a specific device or procedure to meet operational requirements. Compatibility between sensors, recorders, retrieval equipment, and operational systems is necessary, and data requirements and environmental operating conditions must be considered in equipment selection.

1.4 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.

1.5 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *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.*

¹ This guide is under the jurisdiction of ASTM Committee D19 on Water and is the direct responsibility of Subcommittee D19.07 on Sediments, Geomorphology, and Open-Channel Flow.

Current edition approved May 1, 2022. Published June 2022. Originally approved in 1995. Last previous edition approved in 2014 as D5674 – 95 (2014). DOI: 10.1520/D5674-22.

2. Referenced Documents

2.1 ASTM Standards:²

- D1129 Terminology Relating to Water
- D1941 Test Method for Open Channel Flow Measurement of Water with the Parshall Flume
- D3858 Test Method for Open-Channel Flow Measurement of Water by Velocity-Area Method
- D5129 Test Method for Open Channel Flow Measurement of Water Indirectly by Using Width Contractions
- D5130 Test Method for Open-Channel Flow Measurement of Water Indirectly by Slope-Area Method
- D5242 Test Method for Open-Channel Flow Measurement of Water with Thin-Plate Weirs
- D5243 Test Method for Open-Channel Flow Measurement of Water Indirectly at Culverts
- D5388 Test Method for Indirect Measurements of Discharge by Step-Backwater Method
- D5389 Test Method for Open-Channel Flow Measurement by Acoustic Velocity Meter Systems
- D5390 Test Method for Open-Channel Flow Measurement of Water with Palmer-Bowls Flumes
- D5413 Test Methods for Measurement of Water Levels in Open-Water Bodies
- D5541 Practice for Developing a Stage-Discharge Relation for Open Channel Flow

2.2 ISO Standards:³

- ISO 1100 Liquid Flow Measurement in Open Channels—Part I: Establishment and Operation of a Gauging Station
- ISO 6416 Measurement of Discharge by Ultrasonic (Acoustic) Method

3. Terminology

3.1 Definitions:

3.1.1 For definitions of terms used in this guide, refer to Terminology D1129.

3.2 Definitions of Terms Specific to This Standard:

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 *Measurement of Liquid Flow in Open Channels*, ISO Standards Handbook 16, 1983. Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.