



Standard Practice for Collecting Benthic Macroinvertebrates with Holme (Scoop) Grab Sampler¹

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1. Scope

1.1 This practice covers the procedures for obtaining qualitative or quantitative bottom samples of macroinvertebrates inhabiting sand, gravel, mud, clay, and similar substrates.

1.2 This device is used primarily in marine waters and deep lakes.

1.3 For the advantages and limitations of grab sampling devices, see Guide D 4387.

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.* For specific hazards, see Section 5.

2. Referenced Document

2.1 *ASTM Standards:*

D 4387 Guide for Selecting Grab Sampling Devices for Collecting Benthic Macroinvertebrates²

3. Summary of Practice

3.1 The Holme (scoop) grab sampler has a semicylindrical scoop mounted on the bottom of a heavy frame, must be positioned properly on the bottom to take a scoop, and retain discrete samples of sediment through 180°.

3.2 The device penetrates to a depth of about 150 mm.

3.3 The sampler may be modified to include double scoops each of 0.05 m² or larger.

4. Significance and Use

4.1 The Holme (scoop) grab sampler is used to collect qualitative and quantitative samples from different aquatic habitats containing benthic macroinvertebrates living on or in various types of substrates.

4.2 The organisms in the sample are used to define macroinvertebrate community characteristics in water quality studies and ecological assessments.

5. Hazards

5.1 This sampler cannot be used under adverse wind and wave conditions.

6. Procedure

6.1 Slowly lower the sampler on a vertical plane with the scoop opening downward until it firmly contacts the substrate.

6.2 The trip mechanism is released on lifting; the scoop forcefully rotates 180° along its horizontal axis.

6.3 The sample is completely enclosed from below; a cover over the top prevents washout.

6.4 Operate the sampler from a boat with a powered winch and cable because of its bulk and weight.

6.5 Resetting of the scoop is somewhat awkward.

6.6 Once aboard the vessel, empty the sample into either a suitable container or a sieving device directly for processing.

6.7 Thoroughly wash or hose the device with water, so that all the sample is included in the sample processing before a replicate sample is taken.

¹ This practice is under the jurisdiction of ASTM Committee E47 on Biological Effects and Environmental Fate and is the direct responsibility of Subcommittee E47.03 on Terrestrial Assessment and Toxicology.

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² *Annual Book of ASTM Standards*, Vol 11.05.

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