Hester-Dendy Substrate Samplers

150-A Series

Reference: *"Standard Methods for the Examination of Water and Wastewater, 20th Edition"*

Introduction:

This inexpensive, compact and lightweight device has become a staple in the field. The Hester-Dendy Multiple Plate Sampler is the smallest and most adaptable of the recommended Artificial Substrate samplers available on the market. They may be suspended at several depths, float at the surface or attach to submerged objects such as boulders or stakes. Rubber tubing is used to allow for the swelling of the plates when they absorb water.

Both square and EPA round samplers are used for efficient substrate sampling for micro-invertebrate organisms found in the bottoms of rivers, streams, lakes, tidal flats etc. When left in place for two or more weeks, a Wildco® Hester-Dendy is often used instead of heavier, more expensive, basket or cage samplers.

Overview:

Artificial substrate samplers are standard devices that are placed in the water for a predetermined length of time. They serve as a home for colonies of macro-invertebrate communities which can then be taken back to the lab and counted. Unlike other forms of sampling, particularly bottom sampling, artificial substrate minimizes or eliminates many physical variables encountered elsewhere, such as: *depth, light penetration, temperature differences,* and *species substrate preferences.* For this reason, artificial substrate sampling is an excellent companion to other types of water sampling.

Like natural submerged substrates such as logs, pilings and rocks, artificial substrates are colonized primarily by: *immature aquatic insects, crustaceans, coelenterates, bryozoans*; and to a lesser extent by: *worms, gastropods,* and *mollusks.*

In lotic systems the organisms that colonize artificial substrates are primarily drift organisms, such as immature insects and eggs that are carried by water currents. For this reason, you must place the artificial substrate samplers in a way to mimic these conditions, so the numbers and kinds of organisms reflect the capacity to support aquatic life.

Specifications:

150-A50 EPA-approved, Round Hester-Dendy is constructed of: 0.3 cm thick tempered hardboard. Its 7.5 cm round plates and 2.5 cm round spacers have center drilled holes. The 14 plates are separated by 24 spacers on a 0.63 cm-diameter eyebolts. The top 9 plates are separated by a single spacer; plate 10 is separated by 2 spacers; plates 11 and 12 by 3 spacers; and plates 13 and 14 by 4 spacers. Approximately 14 cm long and 7.5 cm in diameter, the sampler has an exposed surface area of about 1300 cm^2. Weight is about 0.45 kg.
Note: *The round sampler fits into a 90 mm (3-1/2") threaded large mouth plastic jar for transportation and storage.*

150-A10 Square Hester-Dendy is constructed of 0.3 cm tempered hardboard cut into 7.6-cm square plates and 2.5 cm square spacers. Eight plates and 12 spacers are used for each sampler. The plates and spacers are placed on a 1/4" (0.64 cm) eyebolt so that there are 3 single spaces, 3 double spaces and one triple space between the plates. The total surface area (excluding eyebolt) is 939 cm^2 (0.9 m^2). It is recommended that 5 samplers be used and placed in streams tied to a concrete construction block as anchor. This prevent samplers from coming into contact with the natural substrates.

How To Use:

1. Position artificial substrates in the euphotic zone (0.3 m) for maximum abundance and diversity of macroinvertebrates.
2. Leave for a specified period. A period of 6 weeks is considered optimum for most waters.
3. Suspend from floats on a 3.2 mm steel cable for uniformity of depth
4. Use subsurface floats or place on the bottom if vandalism is a problem
5. Regardless of installation technique, use uniform procedures.

Operation Tips:

In shallow waters (less than 1.2 m deep), install the samplers so that they are located midway in the water column at low flow.

For instance, for samplers installed in July when the water depth is 1.2 m and the August average low flow is 0.6 m, install 0.3 m above the bottom.

Take care not to let samplers touch the bottom or they may become covered with silt which might increase the error in your samples.

In shallow streams with sheet rock bottoms, secure artificial substrates to 0.95-cm steel rods that are driven into the substrate or secure to rods that are mounted on low, flat, rectangular blocks.

Before removing samples from the water, you may need to double-wrap them in an oversized plastic bag that is tightly sealed to prevent possible loss of organisms. You may also use a large dip net with openings equivalent to a U.S. Standard No. 30 sieve when the sample is removed. *{**Note:** Wildlife Supply Company® is a manufacturer of a wide range of dip nets.}*

Maintenance:

In the field:

Disassemble the sampler and brush in a pan of water, or add preservative to the bag containing the intact sampler.

In the laboratory:

Disassemble and brush later before storing.

Do not reuse samplers exposed to oils and chemicals that may inhibit colonization.

The round sample fits in a large mouth plastic jar for transportation and storage.

For additional samplers, refer to the part numbers below and contact us for current pricing. We accept Mastercard, Visa, American Express, Institutional P.O's. Shipping/handling is extra. These are usually in stock for immediate deilivery.

Product #	Description
150-A10	Square Hester Dendy
150-A15	Square, Pack/10
150-A50	Round, EPA approved
150-A55	Round, Pack/10

P/N 031240

Warranty and Parts: We replace all defective or missing parts free of charge. Additional replacement parts may be ordered toll-free. We accept MasterCard, Visa, checks and School P.O.s. All products warranted to be free from defect for 90 days. Does not apply to accident, misuse or normal wear and tear. Intended for children 13 years of age and up. This item is not a toy. It may contain small parts that can be choking hazards. Adult supervision is required.