
2K-1 General Information for Proprietary Mechanical Systems

A. Introduction

A variety of manufactured structural control systems are available from commercial vendors designed to treat stormwater runoff and/or provide water quantity control. These systems include:

- Hydrodynamic systems such as gravity and vortex separators
- Filtration systems
- Catch basin media inserts
- Chemical treatment systems
- Package treatment plants
- Prefabricated detention structures

Many proprietary systems are useful on small sites and space-limited areas where there is not enough land or room for other structural control alternatives. Proprietary systems can often be used in pretreatment applications in a treatment train. An example would be special systems for capture and removal of oils and petroleum products from storm runoff at industrial sites and fueling areas such as truck plazas. However, proprietary systems are often more costly than other alternatives and may have high maintenance requirements. Perhaps the largest difficulty in using a proprietary system is the lack of adequate independent performance data. Below are general guidelines that should be followed before considering the use of a proprietary commercial system.

Note: It is the policy of this Manual not to recommend any specific commercial vendors for proprietary systems. However, this subsection is being included in order to provide communities with a rationale for approving the use of a proprietary system or practice in their jurisdictions.

B. Guidelines for using proprietary systems

In order for use as a limited application stormwater quality BMP, a proprietary system must have a demonstrated capability of meeting the stormwater management goals for which it is being intended. This means that the system must provide:

1. Independent third-party scientific verification of the ability of the proprietary system to meet water quality treatment objectives and/or to provide water quantity control (channel or flood protection).
2. Proven record of longevity in the field.
3. Proven ability to function in Iowa conditions (e.g., climate, rainfall patterns, soil types, etc.). For a propriety system to meet (1) above for water quality goals, the following monitoring criteria should be met for supporting studies:
 - At least 15 storm events must be sampled.
 - The study must be independent or independently verified (i.e., may not be conducted by the vendor or designer without third-party verification).
 - The study must be conducted in the field, as opposed to laboratory testing.

- Field monitoring must be conducted using standard protocols that require proportional sampling both upstream and downstream of the device.
- Concentrations reported in the study must be flow-weighted.
- The proprietary system or device must have been in place for at least one year at the time of monitoring. Although local data is preferred, data from other regions can be accepted as long as the design accounts for the local conditions.

Local jurisdictions may submit a proprietary system to further scrutiny based on the performance of similar practices. A poor performance record or high failure rate is valid justification for not allowing the use of a proprietary system or device. Consult your local review authority for more information in regards to the use of proprietary structural stormwater controls.