

## ILLINOIS URBAN MANUAL PRACTICE STANDARD

### **Inlet Protection – Monofilament Fabric Barrier Fence** Code 860

#### **Definition**

A temporary monofilament fabric barrier placed around a drop inlet.

#### **Purpose**

The purpose of this practice is to help prevent sediment from entering storm drains during construction operations. This practice allows early use of the storm drainage system.

#### **Conditions Where Practice Applies**

Monofilament fabric barrier inlet protection may be used where storm drain inlets are to be made operational before permanent stabilization of the disturbed drainage area. This method of inlet protection is effective where the inlet drains a small, nearly level area with slopes generally less than 5% and where shallow sheet flows not exceeding 1 cfs are expected. The immediate land area around the inlet should be relatively flat (less than 1% slope) and located so that accumulated sediment can be easily removed.

#### **Criteria**

The maximum drainage area shall not exceed 1 acre per inlet.

This method should not be used in areas receiving concentrated flows, such as in street or highway medians.

This method should not be used on storm sewer inlets installed in the bottom of stormwater basins.

The maximum height of fabric above the crest of the drop inlet shall be 1.5 feet. It may be necessary to build a temporary stabilized berm, or install a manufactured ditch check, on the downslope side of the structure to prevent bypass flows.

For fabric barriers, use stakes of 2 x 2 inch nominal hardwood (preferred) or equivalent metal with a minimum length of 3 feet. Space the stakes a maximum of 3 feet apart, and securely drive them into the ground to a depth of approximately 18 inches.

Drive the stakes a minimum width of 12 inches away from the drop inlet. Any unprotected soil between the monofilament protection and the inlet must be stabilized.

To provide needed stability to the installation, make a frame around the stakes a maximum of 1.5 ft above the top of the drop inlet. This will serve as a stable crest for overflow during rainfall. Place the bottom 12 inches of the fabric in a trench and backfill the trench with 12 inches of compacted soil or six inches of crushed gravel.

Fasten fabric securely by staples or wire to the stakes and frames. Joints must be overlapped to the next stake.

The fabric shall meet the requirements as shown in Material Specification [GEOTEXTILE 592](#) **Table 1, Class 4.**

### **Considerations**

In developing areas, installation of streets and storm sewer networks usually occur before the construction of homes, businesses or other developments. During this and subsequent phases of construction, unprotected soil is susceptible to erosion. Storm sewers that are operational before their drainage areas are stabilized often carry large amounts of sediment to lakes, detention ponds, streams, or other natural or constructed drainageways. As a result, the water quality of the receiving body of water is detrimentally affected. In cases of extreme sediment loading, the storm sewer may clog completely or lose a major portion of its capacity. To avoid these problems, it is necessary to prevent sediment from entering the system at the inlets.

Storm drain inlet protection consists of several types of inlet filters and traps. Each type differs in application dependent upon site conditions and type of inlet. Not all designs are appropriate in all

cases. The user must carefully select a design suitable for the needs and site conditions.

Inlet protection devices are for drainage areas of one acre or less. Runoff from areas larger than one acre should be routed through a properly designed practice such as **IMPOUNDMENT STRUCTURE-ROUTED 842**, [TEMPORARY SEDIMENT TRAP 960](#), [TEMPORARY SEDIMENT BASIN 957](#).

The best way to prevent sediment from entering the storm sewer system is to stabilize the disturbed area of the site as quickly as possible, preventing erosion and stopping sediment at its source.

### **Plans and Specifications**

The plans and specifications for installing monofilament fabric barrier fence inlet protection, shall be in keeping with this standard and shall describe requirements for applying the practice to achieve its intended purpose. At a minimum include the following items:

1. Inlet location.
2. Type and size of support posts.
3. Fabric material requirements.
4. Detail around inlet structure.
5. Stabilization method for disturbed area between the practice and the inlet.

All plans shall include the installation, inspection, and maintenance schedules with the responsible party identified.

Standard Drawing **INLET PROTECTION – MONOFILAMENT FABRIC BARRIER FENCE IL-560** may be used as the plan sheet.

## **Operation and Maintenance**

Inspect the fabric barrier after each runoff event and make repairs as needed.

Sediment deposits should be removed after each runoff event to provide adequate storage volume. The sediment must be removed when the level of deposition reaches approximately one-half the height of the barrier. Be careful not to damage or undercut the fabric during sediment removal.

When the contributing drainage area has been adequately stabilized, remove all materials and any unstable sediment and dispose of them properly. Bring the disturbed area to the grade of the drop inlet, and smooth and compact the area. Appropriately permanently stabilize all bare areas around the inlet.