

Silt Curtain (1070)

Wisconsin Department of Natural Resources
Technical Standard

I. Definition

A temporary permeable fabric installed in a waterway or waterbody to minimize sediment transport. A silt curtain does not extend to the bottom of the channel and is placed parallel or perpendicular to the direction of flow.

II. Purposes

The purpose of this practice is to provide sediment containment while construction activities are occurring in or directly adjacent to a waterway or waterbody.

III. Conditions Where Practice Applies

This practice applies where construction activities intrude or are directly adjacent to a waterway or waterbody. This includes but is not limited to bridge construction, rip rap placement, utility work, streambank restoration, boat launches and dredging.

Silt curtain is intended for calm water conditions where it will not be subjected to wind, wave, or current. Silt curtains are appropriate to settle out coarse and granular soils where water depth at the time of construction is greater than or equal to 4 feet. For applications in finer sediment or moving water see WDNR Technical Standard 1069 Turbidity Barrier.

IV. Federal, State, and Local Laws

Users of this standard shall be aware of applicable federal, state, and local laws, rules, regulations, or permit requirements governing the use and placement of silt curtains. This standard does not contain the text of federal, state, or local laws.

V. Criteria

This section establishes the minimum standards for design, installation and performance requirements.

A. Installation – Details of construction not listed in the text shall conform to the pertinent requirements of Figure 1.

1. The silt curtain shall be installed before construction activities are initiated in or adjacent to the waterway or waterbody. Install the silt curtain as close to the construction as practical. The curtain shall remain in place and be maintained until the construction activity is completed and the disturbed area is *stabilized*¹.
2. The ends of the silt curtain shall be securely anchored and keyed into the shoreline to fully enclose the area where sediment may enter the water.
3. A 2-foot gap shall exist between the weighted lower end of the curtain and the bottom of the waterway or waterbody.
4. Bottom anchors shall be used to hold the silt curtain in the same position relative to the bottom the waterway or waterbody without interfering with the function of the curtain. Anchors shall either be driven into the bottom of the waterway or waterbody or be weighted and attached to the curtain floatation device via an anchor line. Manufacturer's recommendations shall be followed for the number and spacing of anchors.
5. Danger buoys shall be used as directed by the Coast Guard or DNR permit when working in navigable waters.

B. Material:

1. Reusable components of the silt curtain system shall be clean and free of potential exotic species. Fabric cannot be reused.
2. The silt curtain shall be constructed from heavy woven filter fabric to allow water to pass through the barrier yet retain sediment.

¹ Words in the standard that are shown in italics are described in X. Definitions. The words are italicized the first time they are used in the text.

All fabric seams shall be heat sealed or sewn. Silt curtain fabric shall conform to the specifications in Table 1.

Table 1

Requirement	Value
Thickness	15 mils (0.38 mm)
Min. grab tensile strength (ASTM D 4632)	120 lb (550 N)
Min. equivalent opening	No. 170 sieve (90 µm)

3. Floatation devices shall be flexible, buoyant units contained in an individual floatation sleeve or collar attached to the curtain. Use expanded polystyrene logs or equivalent having a 49 square inch minimum end area. Do not use polystyrene beads or chips. Buoyancy provided by the floatation device shall be sufficient to support the weight of the curtain and maintain a freeboard of at least 3 inches above the water surface level.
4. Top load lines shall consist of 5/16 inch steel cable.
5. Bottom load lines shall consist of a minimum ¼-inch steel chain incorporated into the bottom hem of the curtain. Larger chain sizes may be used where additional weight to serve as ballast to hold the curtain in a vertical position is required.

VI. Considerations

- A. Sediment that has settled out by the silt curtain should only be removed as directed by the regulatory authority because re-suspension of sediment will likely occur during the removal process. Use of polymers may help prevent resuspension of sediment. See WDNR Technical Standard 1051 Sediment Control Water Application of Polymers for further guidance.
- B. Silt curtains are meant to manage sediment in the waterbody. The best way to prevent sediment from entering the waterbody is through the implementation of effective upland erosion control, stopping sediment transport at its source.

VII. Plans and Specifications

Plans and specifications for installing a silt curtain shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose:

- A. Location of silt curtain.
- B. Material specification conforming to standard.
- C. All plans, standard detail drawings, or specifications shall include schedule for installation, inspection, and maintenance. The responsible party shall be identified.

VIII. Operation and Maintenance

- A. Silt curtains shall be inspected daily and repaired if necessary.
- B. Regardless of upland stabilization conditions silt curtains shall not be removed until the water behind the curtain has equal or greater clarity than the waterway or waterbody. Soil particles shall be allowed to settle for a minimum of 24 hours prior to removal of the curtain.
- C. Care shall be taken when removing the silt curtain to minimize the release or re-suspension of accumulated sediment.
- D. To prevent the spread of exotic species silt curtains shall not be reused on other sites. Bouys and chains can be reused but shall be either disinfected with vinegar or cleaned with hot water greater than 104 deg. F then allowed to completely dry for a minimum period of five days. If there are any questions about the occurrence of zebra mussels, Eurasian water-milfoil, or other aquatic invasive species in a waterbody that you are working in or intend to work in contact your local DNR staff.

IX. References

Virginia Erosion and Sediment Control Handbook, Third Edition, 1992.

WisDOT Facilities Development Manual: Chapter 10, Section 10, Subject 43, Silt Screen.

X. Definitions

Stabilized (V.A.1): Means that all land disturbing construction activities at the construction site have been completed, and that a uniform perennial vegetative cover has been established with a density of at least 70% of the cover for the unpaved areas and areas not covered by permanent structures, or that employ equivalent stabilization measures.

NOT TO SCALE

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD AND THE APPLICABLE SPECIAL PROVISIONS

- ① 2' SHALL BE MAINTAINED DURING CONSTRUCTION PERIOD
- ② USE AS DIRECTED BY COAST GUARD OR WDMR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS

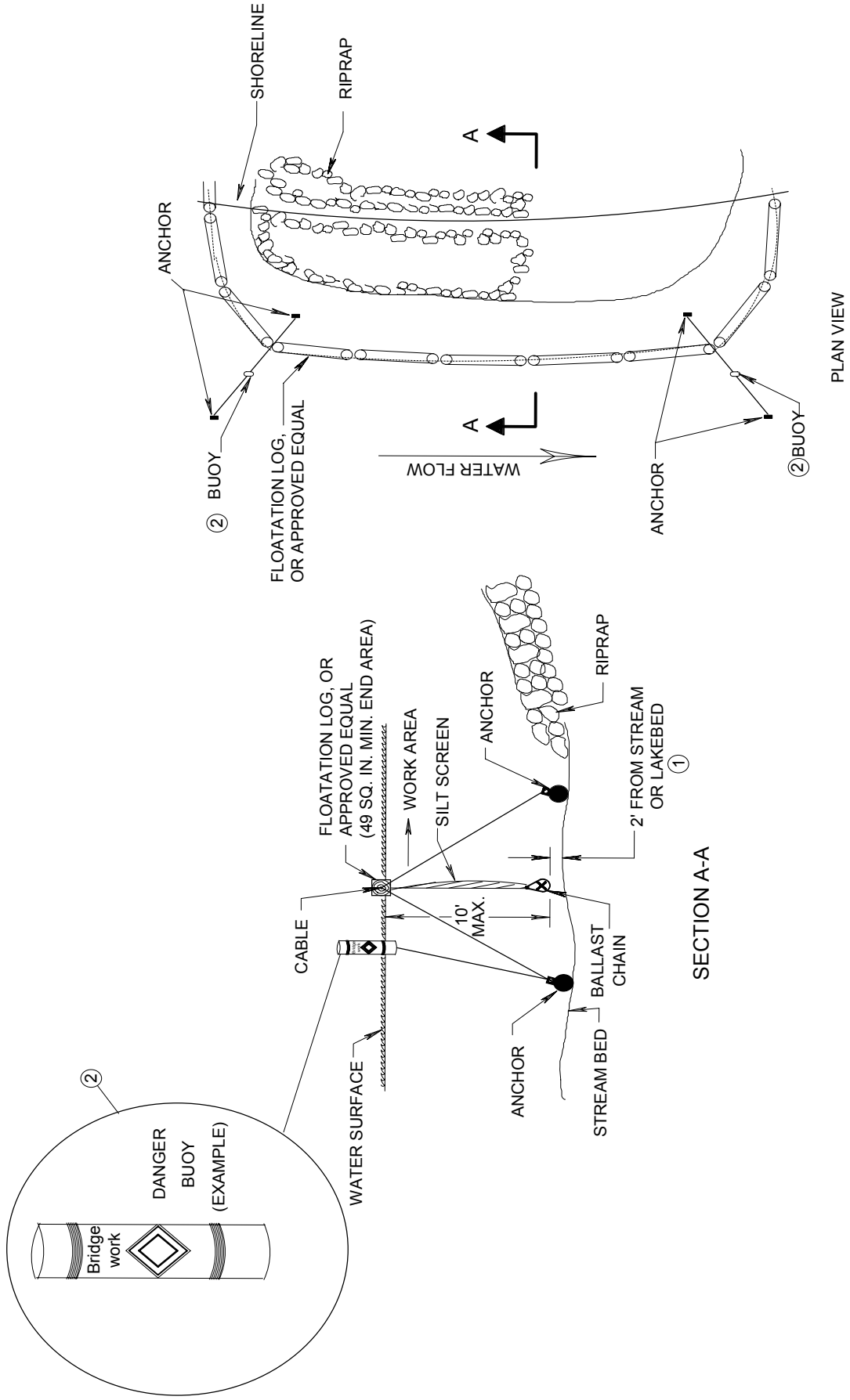


FIGURE 1. SILT CURTAIN PLACEMENT DETAIL