

Erosion Blanket: Turf Reinforcement Mat (TRM)

(sq ft.)
CODE 831



(Source: USDA - Soil and Water Conservation District)

DEFINITION

Protective reinforced non-degradable materials formed into a mat. Some TRMs have degradable materials used in conjunction with non-degradable material to establish turf.

PURPOSE

The purposes of this practice are to reinforce vegetation against medium to high flow conditions, ice, wave action, and to protect soil surface from rain drop impact.

CONDITIONS WHERE PRACTICE APPLIES

Areas of concentrated flow and where natural vegetation alone will not sustain expected flow conditions or provide sufficient long term erosion protection.

Areas where shorelines are susceptible to ice and wave action.

CRITERIA

The TRM (Turf Reinforcement Mat) shall be selected based on shear stress, steepness of slope, and expected flow velocities.

The TRM shall be in firm contact with the soil. The TRM shall not be allowed to bridge over surface irregularities. It shall be anchored per the manufacturer's recommendation with the proper number and spacing of wire staples. The staples/pins shall be the proper width and length to meet the manufacturer's recommendations and per IUM Standard Drawing **IUM 531** and IUM material specification **805 Erosion Control Blanket**.

Soil filled TRMs shall have an appropriate erosion control blanket installed over the top of it to hold the soil in place.

In medium to high flow channels the TRMs shall be unrolled upstream to downstream, parallel to the direction of flow. The upstream edge of the TRM shall be toed into an anchor trench. All overlaps shall be a minimum of 4", stapled, folded and trenched per manufacturer at a minimum.

CONSIDERATIONS

TRMs will reinforce the vegetation from medium to high flow conditions. TRMs control erosion and promote seed establishment. TRMs will not break down over time although degradable materials may be included within the non-degradable matrix. TRM selection shall be made based on shear stress levels.

Staple check slots are recommended at 40' intervals using a double row of staples staggered 4" apart and 4" on center over the width of the channel. Degradable staples shall not be used in areas where turf establishment will not happen quickly.

TRMs may be installed after any of the applicable following practices have been completed: practice standards **TEMPORARY SEEDING 965** or **PERMANENT VEGETATION 880** as well as construction specifications **26 TOPSOILING, 6 SEEDING, SPRIGGING, and MULCHING (except mulching), 21 EXCAVATION.**

PLANS AND SPECIFICATIONS

Plans and specifications for installing TRMs shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. The plans shall include the following items at a minimum:

1. Location of TRM
2. Type of TRM
3. Location and cross section of anchor trenches
4. Staple patterns

5. Installation and maintenance schedules

6. Standard drawing IUM-531

OPERATION AND MAINTENANCE

When mowing, mower decks shall be raised until TRM has a chance to drop down or incorporate into the root structure.

Inspect all TRMs periodically during establishment. Repair or replace any areas that may be failing. If the TRM has failed due to high flow, more substantial TRMs may be needed.

REFERENCES

IDOT Standard Specifications for Road and Bridge Construction

North American Green technical standards

Erosion Control and Technology Council ECTC technical standards

Illinois Urban Manual July 2010

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