

Proposed changes to the erosion mat technical standards (1052 and 1053) are primarily to update formatting rather than content. The current versions of these technical standards reference and list the WisDOT Product Acceptability List (PAL) classes and types for approved erosion mat products. The updated versions only reference the WisDOT PAL to eliminate the redundancy. Other minor changes include adding a minimum staple length to be consistent with WisDOT specifications and a warning regarding the use of erosion matting with plastic netting in wildlife areas.

The Department is soliciting comments from the public on this draft guidance. Once the 21-day notice period is complete, all comments will be considered by the Department. After considering all public comments, revisions may be made to the guidance document and final guidance will be made available to internal and external stakeholders. Comments related to this draft guidance document should be sent to: DNRTechnicalStandards@Wisconsin.gov. **Please indicate in the subject line which technical standard the comments pertain to.**

1 **Wisconsin Department of Natural Resources**
2 **Conservation Practice Standard**
3 **Non-Channel Erosion Mat**
4 **1052**

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6
7 **DEFINITION**

8
9 A protective soil cover made of straw, wood, coconut fiber or other suitable plant residue, or
10 plastic fibers formed into a mat, usually with a plastic or biodegradable mesh on one or both
11 sides. Erosion mats are rolled products available in many varieties and combinations of material
12 and with varying life spans.

13
14 **PURPOSE**

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16 The purpose of this practice is to protect the soil surface from the erosive effect of rainfall and
17 prevent *sheet and rill erosion*¹ during the establishment of grass or other vegetation, and to
18 reduce soil moisture loss due to evaporation. This practice applies to both *Erosion Control*
19 *Revegetative Mats (ECRM)* and *Turf-Reinforcement Mats (TRM)*.

20
21 **CONDITIONS WHERE PRACTICE APPLIES**

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23 This standard applies to erosion mat selection for use on erodible slopes.

24
25 This standard is not for channel erosion. For channel applications, reference WDNR
26 Conservation Practice Standard (1053) Channel Erosion Mat.

27
28 Be aware of applicable federal, state, and local laws, rules, regulations, or permit requirements
29 governing the use and placement of erosion mat. This standard does not contain the text of
30 federal, state, or local laws.

31
32 **CRITERIA**

33
34 **Products**

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36 Use erosion mat products identified on the Wisconsin Department of Transportation (WisDOT)
37 Erosion Control Product Acceptability List (PAL).

38
39 **Selection**

40
41 Use WisDOT PAL classes and types to select and specify erosion mat.

42
43 Select the appropriate erosion mat based on site specific slope and slope length conditions in
44 accordance with the WisDOT Facilities Development Manual (FDM) Slope Erosion Control
45 Matrix.

46
47 Select erosion mat that will last long enough for turf grass or other vegetation to become densely
48 established.

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

50 Use Class I Urban Type A, Class I Urban Type B, or Class II Type C in or near waterways or
51 other sensitive areas where mats with plastic netting and other types of mat may trap small
52 animals, snakes or frogs.

53

54 **Installation**

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56 Install and anchor erosion mat in accordance with manufacturer's instructions.

57 At the time of installation, document the manufacturer and mat type by retention of material labels
58 and manufacturer's installation instructions. Retain this documentation until the site has been
59 stabilized.

60 Use WisDOT approved erosion mat anchoring devices.

61 Use staples that are at least 6 inches long.

62 Install erosion mat with firm and intimate contact with the soil.

63 Install ECRMs after topsoiling and seeding are complete.

64 Install TRMs in conjunction with topsoiling operations, followed by ECRM installation.

65 Do not install Class I or Class II, Type B after September 1st of a given year.

66 **CONSIDERATIONS**

67

68 Use Class I Urban mats in locations where shortly mowed turf grasses are to be established.

69

70 ECRMs without topsoiling and seeding can be used for temporary soil stabilization during the
71 non-growing season or for periods of inactivity.

72

73 Slope interruption products that are designed, installed and maintained in accordance with DNR
74 Interim Manufactured Perimeter Control and Slope Interruption Products Technical Standard
75 1071 can be used to reduce slope length.

76

77 Some erosion mat products can have detrimental effects on local wildlife. Plastic netting without
78 independent movement of strands can easily entrap small animals moving through the area,
79 leading to dehydration, desiccation, and eventually mortality. Netting that contains biodegradable
80 thread with the "leno" or "gauze" weave (contains strands that can move independently) appear to
81 have the least impact on wildlife.

82

83 **PLANS AND SPECIFICATIONS**

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85 Prepare plans and specifications in accordance with the criteria of this standard and describe the
86 requirements for applying the practice to achieve its intended use.

87

88 **OPERATION AND MAINTENANCE**

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90 Inspect erosion mat at least weekly and within 24 hours after every precipitation event that
91 produces 0.5 inches of rain or more during a 24-hour period.

92

93 If there are signs of rilling under the mat, install more staples or more frequent anchoring
94 trenches. If rilling becomes severe enough to prevent establishment of vegetation, remove the
95 section of mat where the damage has occurred. Fill the eroded area with topsoil, compact,

96 reseed and replace the section of mat, trenching and overlapping ends per manufacturer's
97 recommendations. Additional staking is recommended near where rilling was filled.
98
99 If the reinforcing plastic netting has separated from the mat, remove the plastic and if necessary
100 replace the mat.
101
102 Complete maintenance as soon as possible with consideration to site conditions.
103

104 REFERENCES

105
106 WisDOT "Erosion Control Product Acceptability List" is available online at:

107
108 <http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrcs/tools/pal/default.aspx>
109

110 DEFINITIONS

111
112 *Sheet and Rill Erosion* (II): Sheet and rill erosion is the removal of soil by the action of rainfall and
113 shallow overland runoff. It is the first stage in water erosion. As flow becomes more concentrated
114 rills occur. As soil detachment continues or flow increases, rills will become wider and deeper
115 forming gullies.
116

117 *Erosion Control Revegetative Mats (ECRM)* (II): A blanket like covering laid on top of a prepared
118 seed bed to protect the soil and seed from the erosive forces of nature.
119

120 *Turf-Reinforcement Mats (TRM)* (II): Helps to permanently stabilize the soil by acting as
121 reinforcement for the roots of the vegetation. This open weaved, synthetic mat is installed on top
122 of soil and filled with topsoil and seeded. As the vegetation grows, the roots intertwine into the
123 mat and reinforces the turf.
124