



Expanded Metal Grating

Forest Management Practices Fact Sheet Crossing Options Series #11

Introduction

Wetlands need protection during logging and other forest management activities. Heavy equipment crossing wetlands can damage their habitat, soils, and hydrology. Many types of temporary crossings can be built to protect wetlands.

Best Management Practices (BMPs) can prevent or minimize the impact of forestry activities on rivers, lakes, streams, groundwater, wetlands, and visual quality.

Operators can build temporary crossings made from *expanded metal grating*. Expanded metal grating is a commercial product made from regular (not flattened) nongalvanized steel. The grating is placed on top of nonwoven geotextile.

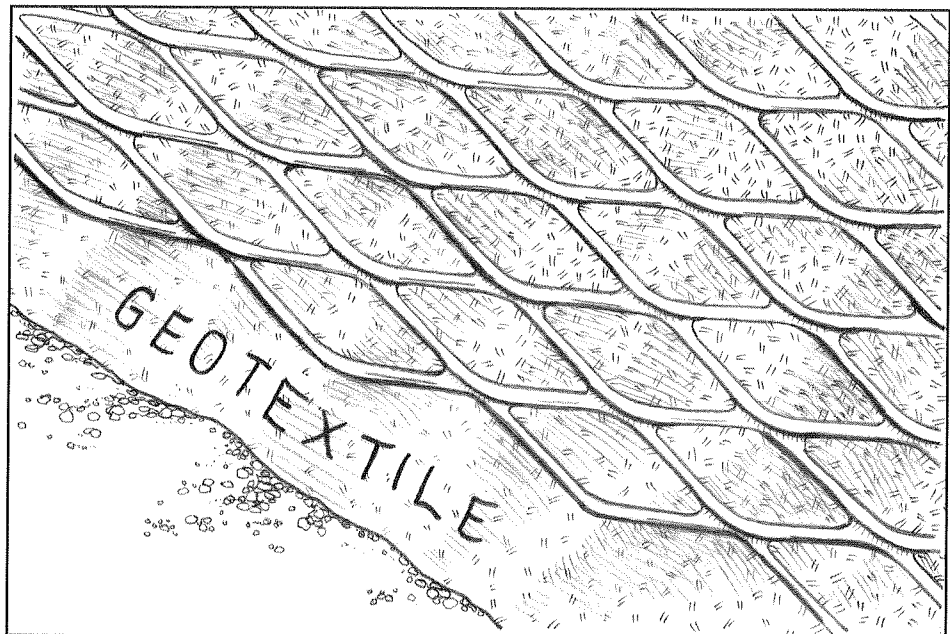
Where Used

Operators can use expanded metal grating crossings on shallow wetland or sandy soils. They also can be used on roads that don't have high spots (e.g., stumps or large rocks) where grades are less than 4 percent. Because skidding causes the grating to move, this option is best limited to hauling and forwarding.

Geotextile is a fabric mat that allows water to drain through it. It supports material placed on top of it and makes removal of that material easier.

Application

Expanded metal grating crossings are usually built in sections that are about 4 feet by 10 feet. Operators install crossings by hand-placing the grating sections in each wheel path.



Expanded metal grating on geotextile

When installing an expanded metal grating crossing:

- ▶ Size grating to meet expected loads, soil strength, and installation equipment. Use larger grating on very weak soils that have a low bearing strength (e.g., muck or peat). This spreads the weight over a larger area.
- ▶ Prepare the surface by smoothing out high spots and filling ruts. Do not disturb the root mat of any vegetation; it provides added support for the crossing. Cover the entire crossing area with nonwoven geotextile.
- ▶ Lay the grating in the wheel paths so that vehicles drive on the long part of the grating. Use quick links that are at least 3 inches by 3/8 inches or other heavy-duty links to join sections to the desired crossing length.

Advantages

Expanded metal grating is lightweight, durable, inexpensive, and provides some traction. Operators don't need special equipment to install the grating.

Disadvantages

Grating tends to bend to conform to any ruts that may develop. Equipment may be needed to remove grating if it becomes covered by soil.

Maintenance

Flip the grating occasionally to distribute wear. Remove and replace unusable bent sections.

Related Fact Sheets in This Series

Temporary Wetland Crossing Options (FS-7008); Wood Mats (FS-7009); Wood Panels and Pallets (FS-7010); PVC or HDPE Pipe Mats and Plastic Roads (FS-7012); Bridge Decks, Tire Mats, and Pole Rails (FS-7013); Corduroy Crossings (FS-7014); Low-Ground-Pressure Equipment (FS-7015); and Equipment With Central Tire Inflation (FS-7016).

Cooperators

University of Minnesota Extension Service, Minnesota Department of Natural Resources, Minnesota Logger Education Program, Michigan Department of Natural Resources, Michigan State University Extension, USDA Forest Service, and Wisconsin Department of Natural Resources.



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