

Native Vegetated Mat (NVM) Installation Guidelines

Site Assessment and Suitability Requirements:

Match the Native Vegetated Mat species to the eco-region, hydrology, soil type and sunlight conditions present on site.

Select the appropriate core material for NVM.

- Degradable Core - A degradable “coir” core may be used for most installations including areas where burning will be required, low scour (hydraulic energy) exists or due to permitting restrictions.
- Non-Degradable Core (geosynthetic) - Use a “non woven needle-punched UV stabilized polypropylene fabric” core in areas that have high scour rates (high shear forces), wave energy (hydraulic piping), suppression of weed bank or other difficult conditions.

Choose the Envirolok System in areas where; unstable soil conditions exist and mechanically stabilized earth (MSE) is required, encapsulation of growing media is required and rip rap or green armor of soil surface is required.

Preparation:

Eliminate surface and subsurface compaction to allow rapid deep root development of natives. Eliminate all existing unwanted vegetation! Use a non selective non-persisting herbicide like glyphosate or repeated mechanical weed control cultivations or smothering techniques. Eliminate surface roughness (clods, small tree stumps, etc.) to prevent root pruning from air gaps. Amend soil with clean compost or other media and mix into surface to decrease transitional rooting time into existing soil.

Transportation:

Native Vegetated Mat must be kept cool and moist during transportation to avoid root hair pruning (dry back). A refrigerated air ride truck may be necessary for long hauls. A tarped truck or trailer can be sufficient for short hauls.

Installation:

Handle the Native Vegetated Mat with care to minimize root and vegetative damage. Keep the material moist and cool at all times at the install site. Install NVM within 48 hours of being loaded onto the truck.

Install NVM seams tightly to prevent edge dry back. Tuck the edges of NVM into the ground by cutting a lip into the soil with a spade. Lay Native Vegetated Mat so that the ends of the pieces do not line up with the adjoining row, but create a staggered pattern. If using a non-degradable core NVM in a hydraulic application, install the NVM in a shingle like layout to prevent a breach of the material layers. If the NVM is in or near the water the leading edge should be check slotted into the lake or stream bed. Stone may also be needed to secure the toe NVM and/or break up the hydraulic energy to help protect the vegetation.

Anchor the NVM with wood stakes, landscape staples, j-hooked rebar or earth anchors to prevent the NVM from moving, slipping down-slope or floating in a hydraulic application. The number and type of stakes will be site dependent.

Irrigation:

Water the Native Vegetated Mat as soon as possible after installation. If soil is excessively dry pre water site or water as NVM is laid. Wetting hot exposed soil will also reduce heat injury to perishable prairie root hairs. Initially soak soil the NVM to a nearly saturated condition. Water every day for the first 5 to 7 days. Plan for at least 1"+ per week. For 2 to 6 weeks after installation, water to a wet condition and let dry back making the roots grow deeper for moisture.

Maintenance:

Watering - High quality Native Vegetated Mat will require very little maintenance once rooted. In extreme conditions such as a drought, the NVM may have to be watered after the 6 week period. It may take 3 to 5 years to get prairie roots to their full rooting potential.

Weed Control - The thick nature of Native Vegetated Mat coupled with the soil-less, weed free growing media will help prevent much of the weed seed bank from growing through. Eliminating all pre-existing perennial vegetation prior to installation will further reduce long term maintenance needs. If wind borne weeds are introduced to the site, simply hand weed or selectively use glyphosate herbicide. Do not spray weedy plants as the drift could eliminate other plants creating holes in the desirable vegetation.

Burning - Burning can be introduced in year three only if the NVM contains the degradable core material. The non-degradable, geosynthetic core is petroleum based and can get hot enough to inadvertently kill the crown of the plants. If a fire is required with the non-degradable core, pre-wet the soil and let the “one hour fuels” dry back. Head fire and immediately extinguish. Native Vegetated Mat burns should only be conducted by trained professionals.