

SECTION 629
ROLLED EROSION CONTROL PRODUCTS AND
CELLULAR CONFINEMENT SYSTEMS

629.01 **DESCRIPTION** - This work consists of constructing temporary and permanent installations to control erosion and enhance vegetation establishment and survivability on slopes and channels.

This work includes installing rolled erosion control products (RECP) and cellular confinement systems.

RECP are designated according to Subsections 713.17, 713.18, and the following:

- a. Mulch control netting - A planar woven natural fiber or extruded geosynthetic mesh used as a temporary degradable RECP to anchor loose fiber mulches.
- b. Open weave textile - A temporary degradable RECP composed of processed natural or polymer yarns woven into a matrix, used to provide erosion control and facilitate vegetation establishment.
- c. Erosion control blanket - A temporary degradable RECP composed of processed natural or polymer fibers mechanically, structurally or chemically bound together to form a continuous matrix to provide erosion control and facilitate vegetation establishment.
- d. Turf reinforcement mat - A long term non-degradable RECP composed of UV stabilized, non-degradable, synthetic fibers, filaments, nettings, or wire mesh processed into three-dimensional reinforcement matrices designed for permanent and critical hydraulic applications where design discharges exert velocities and shear stresses that exceed the limits of mature, natural vegetation.
- e. Turf reinforcement mats provide sufficient thickness, strength and void space to permit soil filling and retention and the development of vegetation within the matrix.

Cellular confinement system cell depths are designated according to Table 713-2.

629.02 **MATERIAL** - Conform to the following Sections and Subsections:

Cellular confinement systems	713.07
Permanent RECP	713.18
Temporary RECP	713.17
Topsoil	624
Turf establishment	625

Construction Requirements

629.03 **GENERAL** - Make the soil surface stable, firm, and free of rocks and other obstructions. Install RECP and cellular confinement systems according to the Manufacturer's recommendations and to the following minimum guidelines. Apply turf establishment according to Section 625.

In areas to be mowed soon after installation, use ultra-short term temporary RECP consisting of rapidly degrading nettings with a service life of 3 months or less.

629.04 **MULCH CONTROL NETTING (RECP, Types 1.A, 2.A, and 3.A)** - Apply mulch according to Subsection 625.08(a). Immediately after mulching, install mulch control netting according to Subsection 629.05.

629.05 **EROSION CONTROL BLANKET, OPEN WEAVE TEXTILE, AND TURF REINFORCEMENT MAT (RECP, Types 1.B, 1.C, 1.D, 2.B, 2.C, 2.D, 3.B, 4, 5.A, 5.B, and 5.C)** - Unless soil in-filling is required, complete turf establishment work before installing RECP.

If soil in-filling is required, first install RECP. Then apply seed and lightly brush or rake 1/4 to 3/4 inch of topsoil into the voids in the RECP filling the full product thickness.

Use staples that are at least 6 inches long to secure the RECP. Longer staples may be necessary in sandy, loose, or wet soils.

Unroll the RECP parallel to the primary direction of flow and place it in direct contact with soil surface. Do not stretch or allow RECP to bridge over surface inconsistencies.

Overlap edges of adjacent RECP by 2 to 4 inches. Use a sufficient number of staples to prevent seam separation. Overlap roll ends of joining RECP 2 to 6 inches in the direction of flow.

a. Slope Installations - At the top of slope, anchor the RECP by one of the following methods:

(1) Staples. Install the RECP 36 inches over the shoulder of the slope onto flat final grade. Secure with a single row of staples on 12-inch centers.

(2) Anchor trench – Construct a 6-inch x 6-inch trench. Extend the upslope terminal end of the RECP 36 inches past the trench. Use staples on 12-inch centers to fasten the RECP into the trench. Backfill the trench and compact the soil. Secure the end with a single row of staples on 12-inch center and cover the end with soil. Apply turf establishment.

(3) Check slot – Install two rows of staples 4 inches apart on 4-inch centers across the top edge of the RECP. Drive all staple heads flush with soil surface.

b. Channel Installations – At the beginning of the channel, construct a full width

anchor trench. Construct additional anchor trenches or check slots at intervals along the channel reach and at the channel end according to the manufacturer's installation guidelines.

Securely fasten all RECP to the soil by installing staples at a minimum rate of 2.0 per square yard. Significantly higher anchor rates may be necessary in sandy, loose, or wet soils and in severe applications.

Repair all damaged areas immediately by restoring soil to finished grade, reapplying turf establishment, and replacing the RECP.

629.06

CELLULAR CONFINEMENT SYSTEMS – Excavate to the depth of the cellular confinement system and smooth and compact the slope. Install the top of the system flush or lower than the adjacent slope. Expand the geocell down the slope. Connect adjacent geocell sections with hog rings or staples in every other cell.

Anchor the system with wooden stakes across the top of every other cell, Repeat the anchoring pattern in every tenth row and in the bottom row. Drive stakes to a minimum embedment of 1 foot below the base of the cellular confinement layer.

Backfill the system with top soil. Hand-compact the top soil within each cell and apply turf establishment.

END OF SECTION 629