

**MATERIAL**

**CELLULAR CONFINEMENT MATRIX:** POLYESTER NON-WOVEN MATERIAL (FLEXIBLE SIDEWALLS), OR HIGH-DENSITY POLYETHYLENE (HDPE) (STIFF CELL WALL).

**TENDONS:** STEEL CABLE, OR BRIGHT, HIGH-TENACITY, INDUSTRIAL-CONTINUOUS-FILAMENT POLYESTER YARN WOVEN INTO ROUND BRAIDED CORD.

**ANCHORS:** WOODEN STAKES, OR 250 TO 500mm STEEL J-PINS. WOODEN TAKES USED ONLY ON MILD SLOPES (<10%) AS A TEMPORARY ANCHOR DURING THE PLACEMENT OF THE INFILL MATERIAL.

**INFILL:** TOPSOIL, EARTH, AGGREGATE OR CONCRETE. MAXIMUM AGGREGATE SIZE NO GREATER THAN 75% OF THE SIDEWALL DEPTH OF THE CCS MATRIX.

**INSTALLATION**

THE FOLLOWING SPECIFICATION APPLIES TO USE AS TEMPORARY EROSION CONTROL ONLY.

1. REFER TO APPROVED PLANS FOR LOCATION, EXTENT, AND APPLICATION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, EXTENT, OR METHOD OF APPLICATION CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.

2. CLEAR THE TREATMENT AREA OF ANY DEBRIS THAT MAY INTERFERE WITH PLACEMENT OF THE CELLULAR CONFINEMENT SYSTEM (CCS), OR PREVENT GOOD CONTACT BETWEEN THE CCS MATRIX AND THE SUBGRADE.

3. ENSURE THE SURFACE IS FREE OF DEEP TRACK MARKS OF OTHER FEATURES THAT MAY RESULT IN STORMWATER OR GROUNDWATER PASSING IN A CONCENTRATED UNDER THE CCS MATRIX.

4. WHERE NECESSARY, ESTABLISH UP-SLOPE DRAINAGE CONTROLS TO LIMIT RUN-ON WATER THAT MAY DISTURB THE MATRIX.

5. SHAPE AND COMPACT THE SUBGRADE SURFACES TO THE SHAPE AND ELEVATION SHOWN ON THE CONSTRUCTION DRAWINGS. WHEN DETERMINING THE ELEVATION OF THE SUBGRADE, ENSURE ALLOWANCE IS MADE FOR THE THICKNESS OF THE CCS MATRIX SUCH THAT THE TOP OF THE MATRIX WILL BE FLUSH WITH, OR SLIGHTLY LOWER, THAN THE ADJACENT TERRAIN.

6. WHERE NECESSARY, EXCAVATE THE SUBGRADE SUCH THAT WHEN PLACED, THE UPPER SURFACE OF THE CCS MATRIX WILL BE FLUSH WITH, OR SLIGHTLY BELOW, THE ADJACENT TERRAIN.

7. REMOVE ANY UNSTABLE SUBGRADE, REPLACE WITH SUITABLE MATERIAL AND COMPACT TO ACHIEVE A STABLE SURFACE.

8. IF THE MATERIAL IS TO BE PLACED ON A SLOPE STEEPER THAN 10%, THEN EXCAVATE AN ANCHORING TRENCH ALONG THE TOP OF THE TREATMENT AREA 200mm DEEP AND 500mm WIDE.

9. WHERE PRACTICAL, ROUGHEN ANY EXCESSIVELY SMOOTH, COMPACTED SUBGRADE TO IMPROVE THE EVENTUAL BONDING BETWEEN THE SUBGRADE AND APPLIED CCS MATRIX.

10. IF SPECIFIED, INSTALL THE REQUIRED GEOTEXTILE UNDERLAY ON THE PREPARED SURFACE, ENSURING THAT REQUIRED OVERLAPS ARE MAINTAINED AND THAT THE UPPER EDGE OF THE GEOTEXTILE IS ANCHORED (PINNED) WITHIN THE FORMED ANCHORING TRENCH.

11. SPREAD OUT (EXPAND) INDIVIDUAL PANELS UNIFORMLY ACROSS THE TREATMENT AREA AS SPECIFIED BY THE MANUFACTURER. EXPAND AND STRETCH THE PANELS DOWN THE SLOPE INSTEAD OF ACROSS THE SLOPE.

12. ALONG THE TOP EDGE OF THE MATRIX ANCHOR EVERY OTHER CELL INTO THE FORMED TRENCH USING STEEL J-PINS.

13. ON SLOPES STEEPER THAN 10%, ANCHOR EVERY OTHER CELL USING STEEL J-PINS AT 2m INTERVALS DOWN THE SLOPE.

14. ON SLOPES NOT STEEPER THAN 10%, ANCHOR THE INDIVIDUAL PANELS ALONG ALL FOUR SIDES TO PREVENT MOVEMENT WHILE PLACING INFILL.

15. INTERLEAF OR OVERLAP THE EDGES OF ADJACENT PANELS ACCORDING TO WHICH SIDEWALL PROFILE ABUTS. IN ALL CASES, ENSURE THAT THE UPPER SURFACES OF ADJOINING PANEL SECTIONS ARE FLUSH AT THE JOINT AND THAT ADJOINING CELLS ARE FULLY ANCHORED (STAPLED).

16. FILL AND COMPACT THE ANCHORING TRENCH.

17. FILL THE HONEYCOMB PANELS MECHANICALLY OR MANUALLY. ENSURE EARTH FILL AND SMALL AGGREGATE (<75mm) IS PLACED FROM A DROP HEIGHT NOT EXCEEDING 1m, AND LARGE AGGREGATE (>75mm) FROM A DROP HEIGHT NOT EXCEEDING 0.15m.

18. PLACE THE INFILL EVENLY AND SUCH THAT WHEN COMPACTED, THE FILL WILL BE LEVEL WITH THE UPPER SURFACE OF THE PANEL.

19. LIGHTLY TAMP OR ROLL TOPSOIL OR EARTH FILL, LEVEL AGGREGATE FILL WITH A PLATE TAMPER OR MECHANICAL (BACKHOE) BUCKET.

**ADDITIONAL SPECIFICATION FOR ATTACHMENT OF TENDONS FOR ANCHORAGE:**

1. FEED PRE-CUT LENGTHS OF TENDON MATERIAL THROUGH THE ALIGNED HOLES IN THE CELL WALLS OF THE MATRIX PRIOR TO EXPANDING INDIVIDUAL PANELS INTO POSITION.

2. TIE OFF THE ENDS OF THE TENDONS SO THAT THE KNOT CANNOT PASS THROUGH THE HOLE IN THE CELL WALLS. ENSURE THE KNOTS ARE TIED TO PROVIDE FULL TENDON STRENGTH AND WILL NOT SLIP WHEN TENSIONED.

3. ATTACH RESTRAINING CLIPS TO THE TENDONS AT REGULAR INTERVALS TO ACHIEVE THE NECESSARY LOAD TRANSFER.

4. ANCHOR THE TENDONS AND RESTRAINING CLIPS WITH STEEL U-SHAPED OR J-PINS AT 2m INTERVALS. AT EACH INTERNAL ANCHOR LOCATION, FORM A LOOP IN THE TENDON, INSERT THE ANCHOR, AND DRIVE INTO THE SUBGRADE.

Drawn: <b>GMW</b>	Date: <b>May-10</b>	<b>Cellular Confinement System - not placed in chutes/drains</b>	<b>CCS-02</b>
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