

MATERIALS

MODULAR UNITS: OPEN MESH STACKABLE CELLS (e.g. ATLANTIS MATRIX TANK MODULES OR MILK CRATES).

FILTER FABRIC: HEAVY-DUTY, NEEDLE-PUNCHED, NON-WOVEN FILTER CLOTH MINIMUM 'BIDIM' A44 OR EQUIVALENT.

AGGREGATE: 15 TO 25mm CLEAN GRAVEL OR AGGREGATE.

FOAM: MINIMUM 50mm THICK, SOFT FOAM.

INSTALLATION

1. PRIOR TO COMMENCING ANY WORKS, OBTAIN ALL NECESSARY APPROVALS AND PERMITS REQUIRED TO CONDUCT THE NECESSARY WORKS INCLUDING PERMITS FOR THE DISTURBANCE OF RIPARIAN AND AQUATIC VEGETATION, AND THE CONSTRUCTION OF ALL PERMANENT OR TEMPORARY INSTREAM BARRIERS AND INSTREAM SEDIMENT CONTROL MEASURES.

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

3. IF THERE IS FLOW WITHIN THE WATERCOURSE OR DRAINAGE CHANNEL AT THE TIME OF CONSTRUCTION OF THE MODULAR BARRIER, THEN INSTALL APPROPRIATE DOWNSTREAM SEDIMENT CONTROL DEVICES AND/OR FLOW DIVERSION SYSTEMS PRIOR TO CONSTRUCTION OF THE BARRIER. SUCH MEASURES SHOULD ONLY BE INSTALLED IF CONSIDERED APPROPRIATE FOR THE LOCAL CONDITIONS, AND ONLY IF THEIR INSTALLATION IS JUDGED TO PROVIDE A NET OVERALL ENVIRONMENTAL BENEFIT.

4. TO THE MAXIMUM DEGREE PRACTICAL, CONSTRUCTION ACTIVITIES AND EQUIPMENT SHALL NOT OPERATE WITHIN OPEN FLOWING WATERS.

5. WHERE PRACTICABLE, DIVERT ALL SURFACE WATER RUNOFF FROM THE ADJACENT CONSTRUCTION SITE INTO STABLE, UNDISTURBED, VEGETATED AREAS ADJOINING THE WATERCOURSE SO AS TO MINIMISE THE DIRECT DISCHARGE OF SEDIMENT-LADEN WATER INTO FLOWING CHANNEL WATERS.

6. ENSURE CLEARING AND EXCAVATION OF ACCESS PATHS AND THE BANKS AND BED OF THE WATERCOURSE ARE LIMITED TO THE MINIMUM PRACTICABLE.

7. IF FLOW DIVERSION SYSTEMS CANNOT BE INSTALLED, THEN CONDUCT BANK EXCAVATIONS BY PULLING THE SOIL AWAY FROM THE CHANNEL.

8. IF DISPERSIVE, HIGHLY UNSTABLE, OR HIGHLY EROSION SOILS ARE EXPOSED, THEN PRIORITY MUST BE GIVEN TO THE PROMPT STABILISATION OF ALL SUCH AREAS.

9. CLEAR THE FOUNDATION AREA OF THE MODULAR BARRIER OF WOODY VEGETATION AND ORGANIC MATTER. DELAY ANY CHANNEL DISTURBANCES UPSTREAM OF THE BARRIER UNTIL THE BARRIER IS ABLE TO ACT AS A SUITABLE SEDIMENT TRAP.

10. USING MINIMUM 2.4m WIDE FABRIC, LAY THE FABRIC ON THE GROUND WITH AT LEAST 200mm OF THE FABRIC PLACED UPSTREAM OF THE BARRIER.

11. IF MORE THAN ONE SHEET OF FABRIC IS USED, THEN OVERLAP THE FILTER FABRIC A MINIMUM OF 600mm AT ALL JOINTS.

12. PLACE THE MODULES END TO END OF THE FABRIC WITH THE UP-SLOPE EDGE ALIGNED WITH THE DOWN-SLOPE EDGE OF THE TRENCH.

13. FOLD THE REMAINDER OF THE FILTER CLOTH OVER THE MODULAR UNITS SUCH THAT THE END OF THE FABRIC EXTENDS AT LEAST 200mm UPSTREAM OF THE BARRIER.

14. SECURE STAKES IMMEDIATELY UPSTREAM AND DOWNSTREAM OF EACH MODULAR UNIT. THE UPSTREAM STAKE SHOULD BE USED TO BOTH SECURE THE MODULAR UNITS AND ANCHOR THE FABRIC.

15. USING EITHER A TIMBER CROSS MEMBER OR CRISSCROSSED WIRE, SECURE THE MODULAR UNITS TO THE STAKES SUCH THAT VERTICAL MOVEMENT IS PREVENTED.

16. USE A CONTINUOUS LAYER OF SAND OR AGGREGATE TO HOLD THE FABRIC FIRMLY ON THE CHANNEL BED.

17. USE GEOTEXTILE FABRIC AND/OR MINIMUM 200mm DIAMETER ROCK TO FORM A SPLASH

PAD THAT EXTENDS DOWNSTREAM FROM THE BARRIER A DISTANCE AT LEAST TWICE THE HEIGHT OF THE BARRIER.

ALTERNATIVE REQUIREMENTS FOR PLACEMENT WITHIN A CONCRETE CHANNEL:

1. PLACE A CONTINUOUS LAYER OF MINIMUM 50mm SOFT FOAM ACROSS THE CHANNEL AT THE PROPOSED LOCATION OF THE SEDIMENT BARRIER.

2. COVER THE FOAM WITH FILTER FABRIC BEFORE PLACING THE CENTRAL CORE OF TIGHTLY PACKED MODULES. SUFFICIENT LENGTH OF FABRIC SHOULD EXIST UPSTREAM OF THE BARRIER TO ALLOW THE FABRIC TO EVENTUALLY BE PLACED OVER THE MODULES TO FORM A CONTINUOUS SEDIMENT BARRIER. OVERLAP THE FILTER FABRIC A MINIMUM OF 600mm AT ALL JOINTS, WITH THE UPSTREAM STRIP LAID OVER THE DOWNSTREAM STRIP.

3. PLACE THE MODULES END TO END ACROSS THE CHANNEL, THEN FOLD THE FILTER CLOTH OVER THE MODULES.

4. PLACE A SOLID TIMBER BEAM ON TOP OF THE SEDIMENT BARRIER AND ANCHOR THE BEAM TO THE CHANNEL BED USING ROCK BOLTS AND HEAVY-DUTY WIRE TIES.

MAINTENANCE

1. INSPECT THE MODULAR BARRIER DAILY AND AFTER ANY CHANGES IN STREAM FLOW. MAKE REPAIRS AS NEEDED.

2. INSPECT THE BARRIER FOR UNDERCUTTING OR UNDESIRABLE SEEPAGE FLOWS.

3. IF FLOW THROUGH THE STRUCTURE IS REDUCED TO AN UNACCEPTABLE LEVEL, THE FILTER MEDIUM SHOULD BE REMOVED AND REPLACED.

4. IF A GREATER DEGREE OF WATER TREATMENT (FILTRATION) IS REQUIRED, EXTRA GEOTEXTILE FILTER FABRIC SHOULD BE PLACED OVER THE UPSTREAM FACE OF THE STRUCTURE.

5. CHECK THE STRUCTURE AND SURROUNDING CHANNEL BANKS FOR DAMAGE FROM OVERTOPPING FLOWS AND MAKE REPAIRS AS NECESSARY.

6. IMMEDIATELY REPLACE ANY ROCK DISPLACED FROM THE DOWNSTREAM SPLASH PAD.

7. REMOVE SEDIMENT AND RESTORE ORIGINAL SEDIMENT STORAGE VOLUME WHEN COLLECTED SEDIMENT EXCEEDS 10% OF THE SPECIFIED STORAGE VOLUME.

8. DISPOSE OF SEDIMENT AND DEBRIS IN A MANNER THAT WILL NOT CREATE AN EROSION OR POLLUTION HAZARD.

REMOVAL

1. THE MODULAR BARRIER SHOULD BE REMOVED AS SOON AS POSSIBLE AFTER THEY ARE NO LONGER NEEDED.

2. IF THERE IS FLOW WITHIN THE WATERCOURSE OR DRAINAGE CHANNEL AT THE TIME OF REMOVAL OF THE MODULAR BARRIER, THEN INSTALL APPROPRIATE INSTREAM SEDIMENT CONTROL DEVICES AND/OR FLOW DIVERSION SYSTEMS PRIOR TO ITS REMOVAL.

3. ALL SETTLED SEDIMENT UPSTREAM SHOULD BE REMOVED PRIOR TO REMOVAL OF THE MODULAR BARRIER. DISPOSE OF THE SEDIMENT IN A MANNER THAT WILL NOT CREATE AN EROSION OR POLLUTION HAZARD.

4. REMOVE ALL MATERIALS USED TO FORM THE MODULAR BARRIER INCLUDING THE GEOTEXTILE FILTER CLOTH AND RECYCLE OR DISPOSE OF IN A MANNER THAT WILL NOT CREATE AN EROSION OR POLLUTION HAZARD.

5. RESTORE THE WATERCOURSE CHANNEL TO ITS ORIGINAL CROSS-SECTION, AND SMOOTH AND APPROPRIATELY STABILISE AND/OR RE-VEGETATE ALL DISTURBED AREAS.

Drawn:	Date:		
GMW	Feb-10	Modular Barrier (Instream)	MSB-02