

**MATERIALS**

SUPPORT POSTS/STAKES: 1500mm<sup>2</sup> (MIN) HARDWOOD, 2500mm<sup>2</sup> (MIN) SOFTWOOD, OR 1.5kg/m (MIN) STEEL STAR PICKETS SUITABLE FOR ATTACHING WIRE MESH. TIMBER STAKES ARE PREFERRED, ESPECIALLY IF OVERTOPPING FLOWS ARE EXPECTED TO CONTAIN DEBRIS.

WIRE MESH: WIRE OR STEEL MESH MINIMUM 14-GAUGE WITH A MAXIMUM MESH SPACING OF 200mm.

PRIMARY CORE ROCK: 15 TO 75mm ROUND OR CRUSHED (ANGULAR) ROCK.

AGGREGATE FILTER: 15 TO 25mm CLEAN AGGREGATE.

GEOTEXTILE FILTER FABRIC: HEAVY-DUTY NON-WOVEN, NEEDLE-PUNCHED FILTER FABRIC, MINIMUM 'BIDIM' A34 OR EQUIVALENT.

WOVEN FLOW CONTROL FABRIC: MINIMUM UNIT WEIGHT OF 140g/m<sup>2</sup>, WITH ULTRAVIOLET INHIBITORS AND STABILISERS TO PROVIDE A MINIMUM OF 6 MONTHS OF USEABLE CONSTRUCTION LIFE.

ARMOUR ROCK (SPLASH PAD): WELL GRADED, HARD, ANGULAR, EROSION RESISTANT ROCK, WITH MEAN SIZE NOT LESS THAN 225mm.

**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 CONSTRUCTION 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 SEDIMENT WEIR, THEN INSTALL APPROPRIATE DOWNSTREAM SEDIMENT CONTROL DEVICES AND/OR FLOW DIVERSION SYSTEMS PRIOR TO CONSTRUCTION OF THE DAM. 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. ENSURE CLEARING AND EXCAVATION OF ACCESS PATHS AND THE BANKS AND BED OF THE WATERCOURSE ARE LIMITED TO THE MINIMUM PRACTICABLE.

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

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

8. CLEAR THE FOUNDATION AREA OF THE SEDIMENT WEIR OF WOODY VEGETATION AND ORGANIC MATTER. DELAY CLEARING THE UP-SLOPE POND AREA UNTIL THE WEIR IS FORMED AND IS ABLE TO ACT AS A SUITABLE SEDIMENT TRAP.

9. TO ASSIST IN THE EVENTUAL REMOVAL OF ALL MATERIALS USED IN THE CONSTRUCTION OF A SEDIMENT WEIR, A PROTECTIVE LAYER OF GEOTEXTILE FILTER CLOTH (PREFERABLY IN THE FORM OF A SINGLE SHEET) SHALL BE PLACED OVER THE CHANNEL PRIOR TO INSTALLATION. IF MORE THAN ONE SHEET OF FABRIC IS REQUIRED, OVERLAP THE FABRIC BY AT LEAST 600mm.

10. WHERE PRACTICABLE, THE SEDIMENT WEIR SHOULD BE CONSTRUCTED IN A SLIGHT V-SHAPE (PLAN VIEW) POINTING UPSTREAM. THE CENTRE OF THE WEIR CREST SHOULD BE SLIGHTLY LOWER (TYPICALLY 200mm) THAN THE OUTER ABUTMENTS TO PROMOTE INITIAL OVERTOPPING NEAR THE CENTRE OF THE CHANNEL.

11. WHEN CONSTRUCTED IN A GULLY OR CHANNEL, THE SEDIMENT WEIR SHOULD BE WELL ANCHORED (STAKED) OR OTHERWISE KEYED INTO THE SIDES OF THE GULLY OR CHANNEL A MINIMUM OF 500mm UNLESS OTHERWISE DIRECTED.

12. INSTALL THE SUPPORT POSTS AT A MAXIMUM 600mm CENTRES, AND ATTACH THE WIRE MESH TO THE INSIDE OF THE POSTS. INSTALL THE PARALLEL WIRE MESH FENCES AT THE SPACING AND NUMBER SPECIFIED IN THE APPROVED PLANS.

13. PRIOR TO INSTALLING THE FILTER MEDIA, TRIM THE TIMBER STAKES TO A HEIGHT JUST ABOVE (100MM) THE CREST OF THE SEDIMENT WEIR TO REDUCE THE RISK OF FLOOD DEBRIS WRAPPING AROUND THE STAKES.

14. INSTALL THE INTERNAL FILTER MEDIUM BETWEEN THE PARALLEL FENCES. IF AGGREGATE IS USED, IT SHOULD BE PLACED IN MAXIMUM 400mm LIFTS. AFTER EACH 400mm LIFT, LACE DIAGONAL SUPPORT POSTS TOGETHER USING FENCING WIRE TO IMPROVE STABILITY OF THE WEIR. REPEAT THIS PROCESS UNTIL THE WEIR REACHES THE SPECIFIED HEIGHT.

15. CONSTRUCT THE ASSOCIATED EARTH ABUTMENT (IF ANY). ALL CUT AND FILL SLOPES SHOULD BE 2:1(H:V) OR FLATTER. THE DOWNSTREAM FACE OF EARTH ABUTMENTS SHOULD BE 3:1(H:V) OR FLATTER. EARTH ABUTMENTS SHOULD BE CONSTRUCTED OF WELL-COMPACTED, EROSION RESISTANT SOIL THAT IS FREE OF VEGETATION AND ROOTS. OVERFILL EARTH ABUTMENTS 150mm TO ALLOW FOR SETTLEMENT.

16. INSTALL THE SPECIFIED UPSTREAM FILTER MATERIAL TO THE UPSTREAM FACE OF THE SEDIMENT WEIR. IF FABRIC FILTER IS TO BE USED, CONSIDER ATTACHING SEVERAL LAYERS OF FILTER CLOTH, THUS ALLOWING EACH LAYER TO BE PROGRESSIVELY REMOVED AS THE FABRIC HAS BECOME BLOCKED WITH SEDIMENT. THE AGGREGATE FILTER SHOULD BE FORMED AGAINST THE SEDIMENT WEIR FRAME AT A SLOPE OF 2:1 (H:V) OR FLATTER.

17. CLEAR THE SETTLING POND AREA OF WOODY VEGETATION AND ORGANIC MATTER TO THE DIMENSIONS SPECIFIED WITHIN THE PLANS.

18. IF OVERTOPPING FLOOD FLOWS ARE POSSIBLE DURING OPERATION OF THE SEDIMENT WEIR, THEN CONSTRUCT AN APPROPRIATE SPLASH PAD DOWNSTREAM OF THE WEIR TO CONTROL SOIL EROSION.

19. ESTABLISH ALL NECESSARY UP-SLOPE DRAINAGE CONTROL MEASURES TO ENSURE THAT SEDIMENT-LADEN RUNOFF IS APPROPRIATELY DIRECTED INTO THE SEDIMENT TRAP.

20. TAKE ALL NECESSARY MEASURE TO MINIMISE THE SAFETY RISK CAUSED BY THE STRUCTURE.

**MAINTENANCE**

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

2. INSPECT ALL EMBANKMENTS FOR UNDERCUTTING OR UNDESIRABLE SEEPAGE FLOWS.

3. IDEALLY, SEDIMENT WEIRS SHOULD DISCHARGE (FROM FULL) OVER NO LESS THAN 8 HOURS. IF DRAINAGE IS TOO RAPID, THEN ADDITIONAL FILTER AGGREGATE MAY BE REQUIRED TO ACHIEVE OPTIMUM HYDRAULIC PERFORMANCE.

4. IF FLOW THROUGH THE STRUCTURE IS REDUCED TO AN UNACCEPTABLE LEVEL, THE UPSTREAM FILTER MEDIUM (AGGREGATE OR FILTER CLOTH) SHOULD BE REMOVED AND REPLACED.

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

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

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

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

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

**REMOVAL**

1. THE SEDIMENT WEIR 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 SEDIMENT WEIR, THEN INSTALL APPROPRIATE INSTREAM SEDIMENT CONTROL DEVICES AND/OR FLOW DIVERSION SYSTEMS PRIOR TO ITS REMOVAL. SUCH MEASURES SHOULD ONLY INSTALLED IF CONSIDERED APPROPRIATE FOR THE LOCAL CONDITIONS, AND ONLY IF THEIR INSTALLATION IS JUDGED TO PROVIDE A NET OVERALL ENVIRONMENTAL BENEFIT.

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

4. REMOVE ALL MATERIALS USED TO FORM THE WEIR INCLUDING THE GEOTEXTILE FILTER CLOTH AND DISPOSE OF IN A MANNER THAT WILL NOT CREATE AN EROSION OR POLLUTION HAZARD. RESTORE THE WATERCOURSE CHANNEL TO ITS ORIGINAL CROSS-SECTION, AND SMOOTH AND APPROPRIATELY STABILISE AND/OR RE-VEGETATE ALL DISTURBED AREAS.

Drawn:	Date:		
GMW	May-10	Sediment Weir (Instream)	SW-04