MATERIALS

ROCK INFILL: HARD, ANGULAR, DURABLE, WEATHER RESISTANT AND EVENLY GRADED WITH 50% BY WEIGHT LARGER THAN THE SPECIFIED NOMINAL ROCK SIZE. THE DIAMETER OF THE LARGEST ROCK SIZE SHOULD BE NO LARGER THAN 1.5 TIMES THE NOMINAL ROCK SIZE.

GEOTEXTILE FABRIC: HEAVY-DUTY, NEEDLE-PUNCHED, NON-WOVEN FILTER CLOTH, MINIMUM BIDIM A24 OR EQUIVALENT.

INSTALLATION

INSTALLATION PROCEDURES SHOULD BE PROVIDED BY THE MANUFACTURER OR DISTRIBUTOR OF THE PRODUCT. A TYPICAL INSTALLATION PROCEDURE IS DESCRIBED BELOW, BUT SHOULD BE CONFIRMED WITH THE PRODUCT MANUFACTURER OR DISTRIBUTOR.

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

2. MATTRESSES OF DIFFERENT THICKNESSES SHOULD BE STORED ON-SITE IN SEPARATE PILES AND CLEARLY LABELLED.

3. CLEAR THE PROPOSED CHANNEL AREA OF TREES, STUMPS, ROOTS, LOOSE ROCK, AND OTHER OBJECTIONABLE MATERIALS.

4. EXCAVATE THE TREATMENT AREA TO THE LINES AND GRADES AS SHOWN ON THE PLANS. OVER-CUT THE AREA TO A DEPTH EQUAL TO THE SPECIFIED MATTRESS THICKNESS SUCH THAT THE FINISHED SURFACE WILL BE AT THE ELEVATION OF THE SURROUNDING LAND.

5. PLACE FILTER FABRIC DIRECTLY ON THE PREPARED FOUNDATION. IF MORE THAN ONE SHEET OF FILTER CLOTH IS REQUIRED TO OVER THE AREA, OVERLAP THE EDGE OF EACH SHEET AT LEAST 300mm AND PLACE ANCHOR PINS AT MINIMUM 1m SPACING ALONG THE OVERLAP.

6. ENSURE THE FILTER CLOTH IS PROTECTED FROM PUNCHING OR TEARING DURING INSTALLATION OF THE MATTRESSES. REPAIR ANY DAMAGE BY REMOVING THE ROCK AND PLACING WITH ANOTHER PIECE OF FILTER CLOTH OVER THE DAMAGED AREA OVERLAPPING THE EXISTING FABRIC A MINIMUM OF 300mm.

7. FLATTEN OUT EACH MATTRESS ON A HARD, FLAT SURFACE, AND STAMP OUT ANY UNNECESSARY CREASES. EDGE CREASES WILL NEED TO BE STAMPED INTO THE BOTTOM OF THE 2ND AND 4TH INTERNAL DIAPHRAGMS.

8. ENSURE THAT EACH DIAPHRAGM IS VERTICAL AND THE CORRECT HEIGHT. FOLD THE SIDES AND ENDS OF THE MATTRESS TO MEET THE TOP OF THE DIAPHRAGMS. FOLD THE SIDE PANEL FLAPS TO LIE ADJACENT TO THE DIAPHRAGMS. TACK TEMPORARILY EITHER BY USING SHORT LENGTHS OF BINDING WIRE, OR ALTERNATIVELY BY TWISTING THE TOP DIAPHRAGM WIRE OVER THE FLAP SELVEDGE WIRE.

9. THE ENDS OF THE DIAPHRAGMS MUST NOW BE PERMANENTLY LACED TO THE SIDES OF THE MATTRESS. AT THE FOUR CORNERS, BEND THE PROJECTED LENGTHS OF THE END PANELS TO OVERLAP THE SIDES, AND LACE UP WITH BINDING WIRE.

10. WHEN THE MATTRESS IS PLACED OVER A GEOTEXTILE, CARE MUST BE TAKEN TO ENSURE THAT PROJECTING ENDS OF WIRE ARE BENT UPWARDS TO AVOID PUNCTURING OR TEARING THE CLOTH. GEOTEXTILE SHOULD BE PLACED ACCORDING TO SPECIFICATIONS.

11. CARRY THE WIRED-UP MATTRESS TO ITS FINAL POSITION, AND WIRE IT SECURELY TO THE ADJACENT MATTRESSES. MATTRESSES SHOULD BE PLACED AND WIRED TOGETHER EMPTY AS IT IS DIFFICULT TO WIRE MATTRESSES TOGETHER WHEN BOTH ARE FULL OF STONE.

12. ON SLOPES, THE MATTRESS SHOULD GENERALLY BE LAID WITH THE DIAPHRAGM ACROSS THE SLOPE RATHER THAN UP AND DOWN THE SLOPE. ON CHUTE AND STREAM BEDS, THE MATTRESS SHOULD GENERALLY BE LAID WITH THE DIAPHRAGM AT RIGHT ANGLES TO THE MAIN DIRECTION OF WATER FLOW.

13. ALL HAND WIRING MUST BE DONE AS A CONTINUOUS LACING OPERATION. BEGIN WIRING BY SECURING THE BINDING WIRE TO THE CORNER OF THE PANELS TO BE JOINED BY LOOPING IT THROUGH AND TWISTING IT TOGETHER. THEN LACE WITH SINGLE LOOPS AND DOUBLE LOOPS IN TURN AT 100mm INTERVALS. FINALLY POKE THE LOOSE END INSIDE THE MATTRESS. TIGHTNESS OF THE MESH AND WIRING IS ESSENTIAL AT ALL TIMES.

14. PLACE THE FILL MATERIAL, BY HAND OR MECHANICALLY, IN THE COMPARTMENTS, STARTING AT THE BOTTOM IF ON A SLOPE. THE FILL SHOULD BE A HARD, DURABLE STONE, IN SIZE BETWEEN 80mm AND 2/3 THE THICKNESS OF THE MATTRESS, BUT GENERALLY NO GREATER THAN 200mm.

15. FILLING CAN BE DONE UNIT BY UNIT, BUT SEVERAL UNITS SHOULD BE READY FOR FILLING AT ANY ONE TIME.

16. FOR UNITS WITH PVC COATED WIRE MESH, PARTICULAR CARE SHALL BE TAKEN TO ENSURE THAT SHARP EDGES OF QUARRY STONE ARE NOT PLACED AGAINST THE MESH IN ORDER TO AVOID CAUSING UNNECESSARY ABRASION.

17. SLIGHTLY OVERFILL EACH MATTRESS TO ALLOW FOR SETTLEMENT. TACK THE LID TO THE CORNERS OF THE MATTRESS, AND THEN SECURELY WIRE IT TO THE TOPS OF THE SIDES, ENDS AND DIAPHRAGMS, USING ALTERNATE SINGLE AND DOUBLE LOOPS AS SPECIFIED ABOVE.

18. WITH MORE THAN ONE MATTRESS FILLED, THE EDGES OF ADJACENT LIDS CAN BE WIRED DOWN IN THE SAME OPERATION, SAVING BOTH TIME AND BINDING WIRE.

19. WHEN THE MATTRESS IS LAID ON A SLOPE STEEPER THAN 1.5:1(H:V), IT SHOULD BE SECURED BY STAR PICKETS OR HARDWOOD PEGS DRIVEN INTO THE GROUND JUST INSIDE THE UPPER END PANEL AT 2m CENTRES OR AS NECESSARY.

20. ON SOFT OR SANDY SLOPES, PEGS CAN BE USED TO HOLD THE MATTRESS IN POSITION DURING FILLING.

21. MATTRESSES CAN BE SHORTENED WHERE NECESSARY, BY CUTTING ALONG THE FOLD AT THE TOP OF A DIAPHRAGM AND REMOVING THE BOTTOM SPIRAL CONNECTIONS.

22. ALWAYS CONSULT MANUFACTURER'S SPECIFICATIONS AND ASSEMBLY INSTRUCTIONS BEFORE MODIFYING THE SHAPE OF THE MATTRESS OR WIRING DEFORMED MATTRESS SHAPES.

23. IMMEDIATELY UPON COMPLETION OF THE CHANNEL, VEGETATE ALL DISTURBED AREAS OR OTHERWISE PROTECT THEM AGAINST SOIL EROSION.

24. WHERE SPECIFIED, FILL ALL VOIDS WITH SOIL AND VEGETATE IN ACCORDANCE WITH THE APPROVED PLAN.

MAINTENANCE

1. ROCK MATTRESS CHANNELS SHOULD BE INSPECTED PERIODICALLY AND AFTER SIGNIFICANT STORM EVENTS. REPAIR DAMAGED AREAS IMMEDIATELY.

2. CLOSELY INSPECT THE OUTER EDGES OF THE TREATED AREA. ENSURE WATER ENTRY INTO THE CHANNEL OR CHUTE IS NOT CAUSING EROSION ALONG THE EDGE OF THE MATTRESSES.

3. CHECK FOR PIPING FAILURE, SCOUR HOLES, OR BANK FAILURES.

Drawn:	Date:		
GMW	May-10	Rock Mattress Linings	RM-01