

INSTALLATION GUIDE – RENO MATTRESSES

<u>ITEM</u>	<u>RENO MATTRESSES</u>
DESIGN	All reno mattresses supplied by Sanpac Africa Ltd., are manufactured from double twisted hexagonal woven steel wire mesh 60 x 80 type and galvanized in accordance to EN 10244-2.
PACKING	All reno mattresses are supplied flat packed, with the end and diaphragm panels already fixed to the base panel, ready to be assembled and filled with stones at the project site. Necessary galvanized lacing wire is supplied for each gabion basket. For Galfan and polymer coated reno mattresses, Galfan and polymer coated lacing wire must be used. Fastening rings can also be used instead of lacing wire. These rings are either Galfan coated or stainless steel.
MATERIALS REQUIRED FOR INSTALLATION	<ul style="list-style-type: none"> - Reno mattresses. - Adequate lacing wire or ring fasteners. - 200 gsm needle punched geotextile. - Correct quality of rockfill material (between 75 – 150mm). - Tools for lacing and bracing operations and closing the lids. (<i>care should be taken to avoid damaging the wire coating</i>) - Drainage and composite drainage systems.
STORAGE	Storage of reno mattresses must always be in compliance to the manufacturer’s storage instructions and in accordance to site safety protocols.
MACHINERY REQUIREMENT	<p>RENO MATTRESSES</p> <ul style="list-style-type: none"> - On site, individual units can be moved manually. - Unloading from trucks can be done manually or using handling equipment. <p>BACKFILL</p> <ul style="list-style-type: none"> - Choice of equipment for backfill is left to the discretion of the contractor as it depends on conditions of access and volume of soil fill.
INSTALLATION METHODOLOGY	<p>FOUNDATION PREPARATION</p> <p>The foundation shall be level and graded to the elevations as shown on the project construction drawings. It shall be smooth and free from any irregularities, loose material and vegetation, and shall be compacted to the engineer’s specification, to ensure uniform bearing capacity and minimize differential settlement.</p> <p>Appropriate measures shall be taken for filtering and drainage of the foundation, as per project specification.</p> <p>A 200 gsm needle punched geotextile will be installed first behind or underneath the reno mattress structure to comply with the requirements for subsurface drainage applications.</p>

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<p>INSTALLATION METHODOLOGY</p>	<p>FOUNDATION PREPARATION (cont...)</p> <p>Mark out the start and end point of the wall and any external or internal angle changes or steps. Points required to be marked out must be at the front of the toe wall.</p> <p>ASSEMBLY Ensure the workers have adequate open space to open individual reno mattresses. Unfold the mattresses flat on the ground and press out Lift the front, back and end panels to form an open box. Fasten the panels together using the projecting heavier wire with the selvedge or edge wire of the intersecting panels and back panel. End flaps shall be folded or overlapped as appropriate. Fold the flaps of the side panels and fasten to the diaphragm.</p> <p>LACING Secure the lacing at the top corners of the panels to be joined and lace top down. For better productivity, fastening rings are recommended. Where ring fasteners are used, the rings shall be installed at the top and bottom connections of the end and centre diaphragms. Then fix the rings at maximum intervals of 200mm along all edges to ensure panels are held firmly together. Use of mechanical or pneumatic fastening tools is required.</p> <p>PLACING THE UNITS Pre-assembled mattresses shall be placed in position, empty and tied or fastened to adjacent mattresses, along all connecting edges, to form a single monolithic structure. On slopes, mattresses will be laid with the width of the mattress lying perpendicular to the slope. If banks and beds are to be covered, the mattresses on the bed shall be placed in the direction of the flow. Where mattresses are to be placed on steep slopes, the mattresses can be held in position / secured by anchoring systems (hardwood pegs, pipes, steel bars, etc) driven into the ground just below the upper end panel. In case of steeper slopes (inclination greater than 40° or more), stone filling and lid closing shall be done from the bottom moving up.</p>

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INSTALLATION METHODOLOGY	<p>FILLING, BRACING AND CLOSING</p> <p>Mattresses can be filled manually or mechanically. If one chooses to fill mechanically, the falling height of the fill material should not exceed 0.75m.</p> <p>To ensure minimizing voids and maximizing density of fill, especially in the corners, hand-manipulate the rocks inside the mattresses.</p> <p>Each compartment shall be filled by a minimum of two layers of rock to ensure uniform flexibility of the unit. Each compartment should be overfilled by 25mm to allow for settlement.</p> <p>Ensure that the diaphragm tops are accessible to fasten the lids.</p> <p>Securely attach the lids to the ends of the mattresses and then to the sides and diaphragms using alternate double and single loops or ring fasteners. Ensure lids are tightly laced along all edges, sides and diaphragms.</p> <p>In cases where a number of unit bases are to be covered at one time, rolls of mesh can be used in place of unit lids.</p> <p>Where small pipes have to be passed through mattresses, cut the steel wire mesh to the diameter of the pipe, bend inwards and tie using lacing wire. Fill the mattresses with stone up to the elevation of the pipe, place the pipe and cover with a protective membrane, if recommended by the pipe manufacturer and continue to fill with stone.</p> <p>Should compaction of fill material be required, such compaction shall be done as per Engineer's specification.</p>

DISCLAIMER – The instructions given herein are of a general nature and does not exempt the contractor from the obligations and the responsibilities for the definition and correct execution of all the specific operation required for the implementation of the project. In such respect, SANPAC AFRICA LTD., will not be liable for any inaccuracies or omissions in the execution results and will not bear the consequences of any connected liability.

