



TENAX T-BLOCK RETAINING WALL SYSTEM

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Fig 1. Schematics showing wall construction

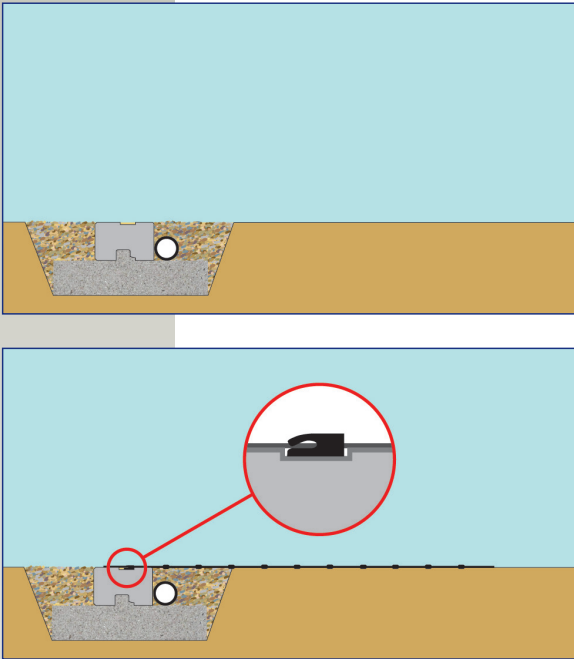
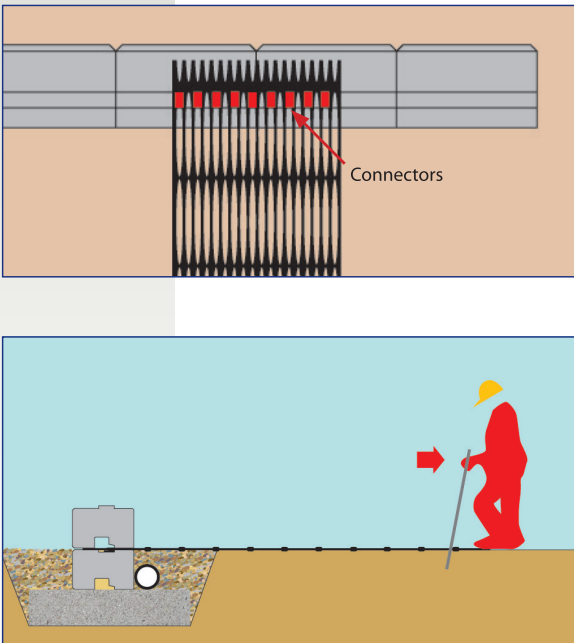


Fig 2. Placing of Geogrid at the face



- 1 Depending on the Engineer's requirements, prepare foundation of cast mass concrete levelling pad or compacted specified granular material footing.
- 2 Place first course of blocks along the desired building line to achieve straightness, or curves and angles as desired. Bed first course on mortar if the footing is uneven or stepped. It is important that this first course is on line and level.
- 3 Continue building the wall up to the level of the first reinforcement layer. Often the first course of blocks will be a grid course as there are benefits from placing geogrid here.
- 4 Sweep the top of the blocks clear of any debris.
- 5 Cut the required lengths of Tenax TT SAMP geogrid of the required strength according to the design. Clip the connectors into the geogrid at the end and trim to fit the blocks.

Place the geogrid on top of the blocks with the connectors over the receiving slot in the blocks below ensuring that the tails of the geogrid are 10-15mm behind the face of the block that is placed over (See Figure 2).



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Fig 3. Initial Geogrid tensioning

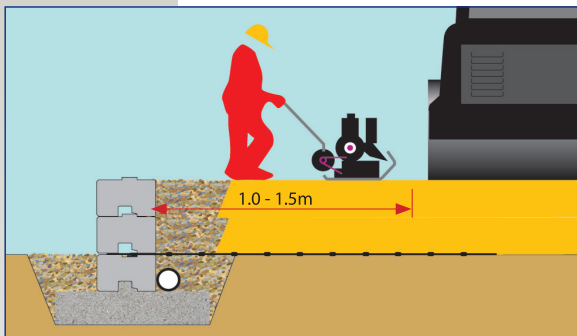
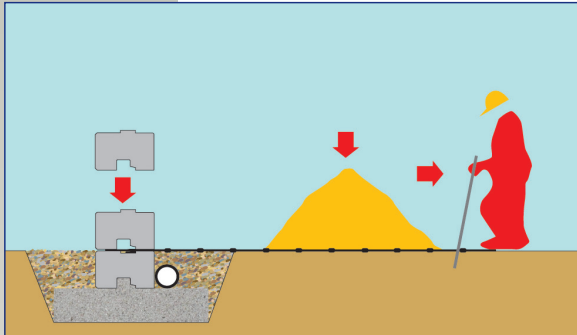
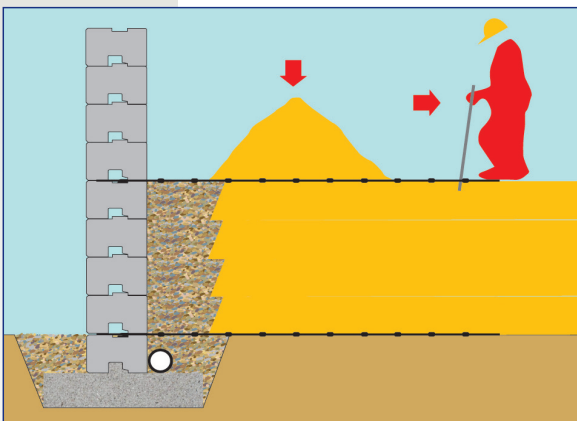


Fig 4. Placing first fill on Geogrid



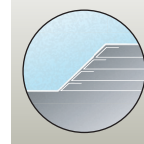
NOTE - The grid should not protrude beyond the face of the block (See Figure 2). Holding the grid in position, place the next row of blocks on top of the geogrid and connector to lock the grid in place. With only one course of blocks over the geogrid use a bar through the geogrid to pull the geogrid back so that the transverses bar of the grid is pulled back tight to the connector and the back of the slot and then pull the top blocks forward into their final position (See Figure 3).

Continue building the wall until the next grid level is reached (Hint Note 2). The working area can be kept clear for the placement of fill by throwing the free length of geogrid over the face of the wall. NEVER OVERLAP THE GEOGRID AT ITS EDGES ANYWHERE CLOSE TO THE BLOCKS.

The grid may be butted together or preferably a small gap left between them. Lay the geogrid flat on the compacted fill, free from rucks or wrinkles, then by levering back two bars through the free end of the grid into the fill, create tension in the grid as the first load of fill is placed on it close to the wall.

- 6 Within 1.0 - 1.5 m of the face of the wall, fill to the specification by placing and compacting in no more than 300mm layers using a plate compactor or a vibrating roller with a total mass less than 1000kg. A heavier, pedestrian or ride-on vibrating roller can then be used at least more than 1.5m from the wall face. Compaction must take place starting at the wall, working parallel to the wall and working towards the free end of the geogrid, over any convenient lengths of the wall. A gap of 200-300mm should be left between this fill and the back of the wall which will be filled with clean drainage stone after compaction of each layer of fill.
- 7 When fill has been placed and compacted up to the level of the next geogrid, the geogrid is then laid down flat on top of the fill and whilst being held taut, a front end loader bucket of fill is placed on top of the grid close to the wall to hold it into position, this is best done by gently tipping fill onto the geogrid from a clam shell type of bucket (See Figure 4). The fill is then spread evenly working backwards away from the wall and compacted above (never towards the wall).
- 8 The structure continues to be built as above, with wall advancing 4 courses ahead of the fill.

Note - Do not allow wheeled or tracked vehicles over the geogrid without adequate cover (>100mm).



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Fig 5. Sliding blocks in to position (no geogrid present)

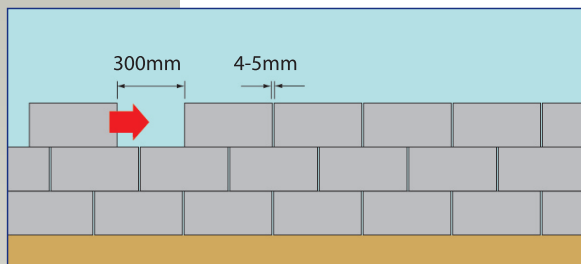


Fig 6 Placing blocks on Geogrid

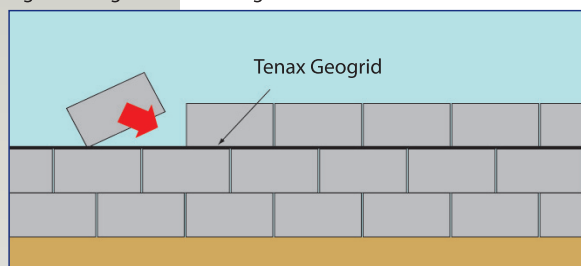


Fig 7 Batter correction

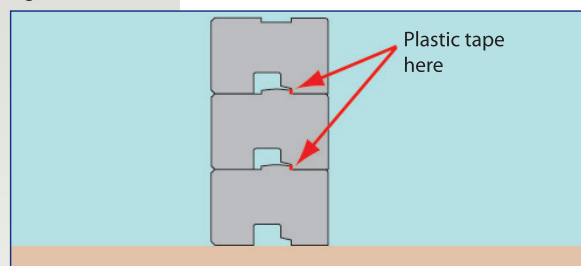
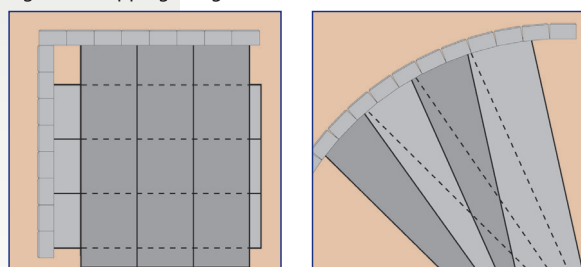


Fig 8. Overlapping Geogrid behind walls



Tenax Geogrid

Contact the Tenax Geosynthetics Division if more specific advice is required.

Hints & Further Advice

- 1 Always sweep off the last course of blocks, using a stiff hand brush, before placing the next course of blocks.
- 2 Always make sure each block placed is properly seated before laying any further blocks. This is best done by placing the block to be laid about two thirds of a block length away from its final position and sliding it into position (See Figure 5). This removes any small debris from the top of the block below and helps bed it down. A gap should be maintained between the blocks of 4-5mm as this allows for the perpendicular joints to be aligned if this is required and also allows the wall to flex if there is uneven or differential settlement of the soil upon which the wall is being built.
Note - Blocks placed onto the geogrid CANNOT be slid into position. Here, the blocks must be placed in their final position or close to their final position then by lifting the end of the block closest to the last block pulled sideways into its final position (See Figure 6).
- 3 By keeping the blocks 4 courses ahead of the fill, greater stability and cleanliness of the wall is achieved. These extra courses of blocks also act as a shutter, when the wall is constructed overhand at some height.
- 4 The copings and last course of blocks are fixed by applying 2 runs of butyl cord or polyurethane adhesive, 30mm from the front and rear edges. The blocks placed onto the adhesive must be pressed down and not slid into position.
- 5 Fill should be placed by construction equipment, such as excavator bucket or dozer with an open bucket, which causes the fill to cascade onto the grid. A 100mm thick cover of fill must be maintained between the geogrid and the tracks of any plant to avoid damage.
- 6 Do not build a battered wall more than four courses above the backfill level to avoid the wall falling backwards onto the fill.
- 7 Compaction of the drainage layer immediately behind the wall is NOT advised as this can result in disturbing the line of the wall.
- 8 Check the angle of the wall every 600mm and correct as necessary. A small allowance is made in the blocks for rotation of the wall during the compaction process. Further correction is possible using polypropylene plastic strapping tape between the back of the concrete rib on top of the blocks and the slot in the bottom of the block above (See Figure 7). However; do not correct the batter at geogrid levels.
- 9 Geogrids may be overlapped behind the wall at internal bends or corners without detriment (See Figure 8). However, if wished the geogrids may be staggered by one course to avoid overlapping on angled corners.

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