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SLURRY JOINTING SYSTEM

SLURRY – Using the same material soil as used to produce the AECT compressed soil block, one mixes water with the screened soil to obtain the consistency of a wet milk shake. The resultant slurry should run through your fingers easily when you take a handful. Soil is normally screened to 1/8 inch or 3/16 inch size before adding the water.

Ten (10) pounds of soil mixed with water will make approximately 1 ½ gallons of slurry.
1 gallon of slurry will bond 10 – 15 of the 10 X 14 X 3.6 – 4.0 inch pressed earthen blocks.
1 gallon of slurry will bond 15 – 20 of the 7 X 14 X 3.6 – 4.0 inch pressed earthen blocks.
2000 pounds (1 ton) of soil with less than 5% rock will bond approximately 2000 – 3000 blocks.

Average weight of soil is approximately 2400 pounds per cubic yard of soil. So, one tone of soil converted into slurry will mortar approximately 2400 – 3400 pressed earthen blocks.

LAYING BLOCKS – One pours the slurry (using a simple can or pitcher) on top of the previously laid block course and spreads the slurry over the entire block top face. Place the new block course directly on top of the slurry. Slurry should be placed in a thin layer and normally should be poured to result in a 1/8 inch thick slurry. Do not worry about head joint, as the blocks are laid a small amount of slurry is forced up between the block and the next coat of slurry poured on will run down between the previously laid blocks sealing up the head joint.

Advantages of Slurry Bonding System for Joining Earthen Blocks - One does not have to develop a thick mortar joint around each block. Slurry is only placed between the blocks forming a monolithic bonded wall. The blocks bond to each other rather than blocks bonding to the mortar. Each block is laid in the wall without leveling. A string line is used to produce a straight wall. This cuts construction time tremendously. The concrete and steel bond beam is poured directly onto the top of the top earthen block course. Then the bond beam is leveled. The resultant wall is stronger in shearing stress and less than 30% of the previous cost. Instead of 350 – 400 blocks per day being laid in the wall by a two person skilled mason team, the unskilled labor teams can lay 600 – 800 blocks per day in to the walls. Because the slurry system is bonding block to block and the blocks have already been compressed to over 1600 PSI, the constructor can lay the entire wall all in one afternoon or one day. The blocks are laid continuously from the footing all the way to the bond beam and the bond beam can be poured the same day. This saves 75% - 80% in construction time as compared to concrete block or fired brick construction. Because of the simple techniques required for laying the blocks, there is no need to use a skilled, expensive mason. The blocks can be laid and slurry jointed by less expensive, locally available, unskilled laborers that are taught how to prepare and pour the slurry and lay the block. The walls are stronger and much less expensive.



Slurry Strength Demonstration

Can you hang 70 pounds of lumber on one nail?

Using the slurry jointing system while building your compressed earth block structure can give you a monolithic wall that has the strength to withstand bullets and carry the load of the structure. The slurry is made from the same materials as the block and can give an added savings to the entire project by cutting out additional costs for mortar and the like.

The following is a demonstration that shows the strength of the slurry jointing system for those that are not sure if they should use the slurry or a thicker type mortar. First, we will describe the step by step instructions and then the next page shows a picture demonstration.

Step 1: Lay one compressed earth block on a level surface.

Step 2: Pour a small amount of slurry on the center of the block.

Step 3: Lay a second compressed earth block crosswise on top of the slurry.

Step 4: Drive a nail part of the way into the second block, only to be used as a type of handle to lift the blocks, and wait 4 minutes.

Step 5: Use a claw hammer to grip the nail and lift 70 pounds of blocks with one nail.



The slurry forms a “dirt weld” with the compressed earth blocks making a monolithic wall that is strong enough to hold the weight of a tractor.

Slurry Strength Demonstration



First Block



Slurry



Second Block



Drive in nail and wait 4 minutes



Lift 70 pounds of block with one nail