

## Filter Block and Media Installation Recommendations

12/23/14

Excerpt from USFG 43 14

<https://www.wbdg.org/ccb/DOD/UFGS/UFGS%2043%2031%2014.pdf>

### 1. Placing Filter Block

Filter underdrain blocks shall be laid in a dry mortar bed. The mortar shall contain one part cement conforming to ASTM C150/C150M, Type II, and 4 parts sand conforming to ASTM C144, except a 1:3 cement-sand mortar bed for the first course of blocks where cover blocks are used. After the blocks are laid and before the stone is placed, the dry mortar bed shall be dampened by sprinkling. Filter blocks shall be installed providing an uninterrupted flow through the drainage channels in the blocks to the effluent channel. Blocks shall be laid in true alignment, with cross joints staggered in longitudinal rows at right angles to the center drains. The rows of blocks shall start at the edge of the drainage channel and end at a sufficient distance from the filter wall to provide an air passage around the inside periphery of the filter. Air ducts comprised of either blocks or stacks shall be provided for venting air to the atmosphere as shown on the drawings. A plan layout of filter block units shall be provided by the manufacturer.

### 2. Placing Filter Media

Stone or slag media delivered to the filter site shall be stored on wood planks or other approved clean hard surface areas. Stone and slag shall not be dumped directly into the filter. The media shall be rescreened or forked at the filter site to remove all fines before placement in the filter. Material shall be placed by hand to a depth of 300 mm 12 inches above the filter blocks and all material shall be placed without damaging or displacing the underdrains. The remainder of the material may be placed by means of belt conveyors, wheelbarrows, or other approved equipment. The media shall be placed in layers not exceeding 450 mm 18 inches in depth. Filter media shall be placed as near as practicable in final position to avoid excessive rehandling; special care shall be taken to avoid breakage or segregation of different size particles. Dumping the filter media directly from trucks into the filter, dropping the filter media from heights exceeding 1 m 3 feet or throwing the media into the filter will not be permitted. If it is determined that an excessive amount of fractured stone or dust is passing into the underdrains, the Contractor may be required to remove and rescreen the filter media at a location outside the filter walls. There shall be no walkways or runways over the filter except for the purpose of installing materials or equipment for the filter. Storing materials, such as cement or sand, or placing heavy construction equipment within the filter walls will not be permitted. Concrete, sand, dirt, or other materials deleterious to the filter shall not be passed over the filter by any means. No material shall be dropped from a height greater than 1 m 3 feet. Trucks, tractors, or other heavy equipment shall not be driven over the filter during or after construction.