



Product Specifications

BioAer®-S Aeration Floor Components

A. Air Distribution Baseplates

1. The baseplates shall consist of a slotted aeration deck and a support leg structure molded as a one-piece, integral unit. The integral aeration deck and support leg structure shall form an air distribution plenum under the bulk media.
2. The baseplates shall be manufactured of a polyethylene/polypropylene composite suitable for temperature limits to be experienced within the biofilter or compost reactor. The baseplates shall be capable of being accessed by and supporting material handling equipment with vertical wheel loads of up to 28,500 lbs/ft² (1,365 kN/m²) at 60°F (15.6°C) and 16,300 lbs/ft² (780 kN/m²) at 120°F (48.9°C) with a residual surface deflection not to exceed 0.12 inches (3.05 mm).
3. The baseplates shall be serviceable and maintainable in all weather conditions and in the temperature range of -20°F to 120°F (-28.9°C to 48.9°C) on the surface of the aeration baseplate. The baseplates shall be easily removed for cleaning. The baseplates shall be easily cleaned and replaced with the capacity to water-flush debris from the inner air passageway or plenum.
4. The static pressure drop across the plenum of the aeration baseplate floor system, underneath the bulk media, shall not exceed 1/8th inch (3.175 mm) W.C. under design flow conditions.
5. Aeration slots within the deck of the baseplate shall be no more than 0.25 inches (6.35 mm) wide to minimize infiltration of the biosubstrate or other biofilter media into the plenum layer and shall be uniformly distributed so that no part of the bulk material at the aeration floor surface is greater than 3 inches (~76 mm) from an aeration slot.
6. To minimize wedging of biosubstrate material, the aeration slots shall have a top-to-bottom taper such that the slot width on the top surface (on which the biosubstrate material is placed) is less than the slot width exposed to the air distribution plenum.
7. The baseplates shall be constructed and installed in a manner that allows the expansion and contraction of each individual baseplate to occur without creating a gross expansion or contraction of the entire aeration floor over the temperature range to which the floor would be exposed either while in use or during periods of exposure to the environment.
8. The baseplate shall be corrosion resistant under the low pH (< 1.0) conditions typical to biofilters.
9. The integral structural deck and air plenum structure, or Baseplate, shall be the BioAer® Baseplate manufactured by BacTee Systems, Inc. of Grand Forks, ND.



B. Air Distribution Trench Cover

1. The trench cover shall be made of a plastic composite to prevent corrosion and shall be supplied by the same manufacturer as the aeration baseplate aeration floor system thereby creating an integral aeration floor.
2. The trench covers shall be nominally 1 meter (39.37") long and designed to span air-conveyance trenches measuring up to 30 inches (762 mm) in width with a minimum resting overlap dimension of 4 inches (101.6 mm) on each side of the trench for support. The purpose of the trench cover is to span a slotted air-conveyance pipe or open-top trench and cause the air to flow through the air plenum of the integral baseplate aeration floor system.
3. The static pressure drop across the integral trench cover and baseplate floor system shall not exceed 1/8th inch (3.175 mm) W.C..
4. The trench covers shall be suitable for temperature limits normally experienced within the biofilter bay.
5. The trench covers shall be capable of being accessed by and supporting material handling equipment with wheel loads of up to 8,000 lbs/ft² (383 kN/m²) at 70°F (21°C). The residual surface deflection at this loading shall be less than 0.06 inches (1.5 mm).
6. Static Load Limits spanning a trench of 30" (76.2 cm), load applied using a tractor with a 12" (30.48 cm) wide tire on the center of the trench cover are:
 - i. At 70°F (21°C) – 24,000 lbs (107 kN)
 - ii. At 120°F (21°C) – 19,000 lbs (84.5 kN)
 - iii. Tires on several large wheel loaders may be sufficiently large that the wheel will be supported by more than one trench cover when driving over or along the trench. In the event that you want assistance in this area, contact BacTee Systems for additional information and/or calculations.
7. The trench covers to be supplied shall be the BioAer® Composite Trench Cover as manufactured by BacTee Systems, Inc. of Grand Forks, ND.