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FLUID BED DESIGN

The typical fluid bed is made up of four levels; tank, support grid, porous media, and plenum. The tank is welded 1/8" steel, reinforced externally if required by the tank's depth. Under the tank, a steel support grid is placed to protect the porous media and also serves to reinforce the rigidity of the overall structure. This grid fits tightly within the tank and may be welded in the base of the tank. A plate of porous plastic is then placed under the support grid. A piece of rubber u-channel is affixed to the porous plastic as a gasket to seal the tank. The porous plate itself is held between a 1/4" angle bracket welded externally to the base of the tank and a similar bracket attached to the top of the plenum. Bolts or clamps may be utilized to hold the pieces together. This provides ready access to the porous media for cleaning or replacement. The plenum is under the porous media, often with another support grid welded at the top. The plenum chamber must be no less than 10" deep. This cavity is filled with air through the inlet on one side, often from an air blower which is the best source for air pressure without the worries of oil or water in the line. If plant air is used, the air should be filtered to prevent oil or water from entering the plenum chamber, and a regulator should be used to control the air pressure to the chamber.

Recommended componets for construction:

Porous base/Fluidizing media: GenPore Reading, PA
www.genpore.com. 800-654-4391

Rubber seal or Gasketing: McMaster-Carr
www.mcmaster.com. 732-329-3200

Clamps: McMaster-Carr
www.mcmaster.com. 732-329-3200

Typical Fluid Bed Tank

