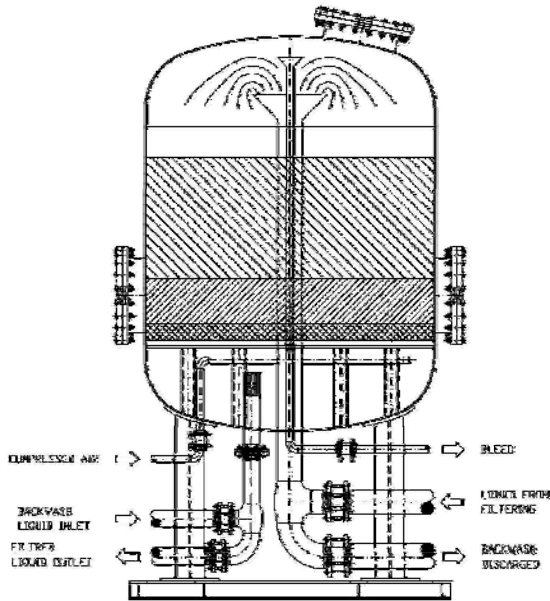


WATER AND MECHANICAL TECHNOLOGY S.R.L.



SAND FILTER

WMT SAND FILTER



WMT Sand Filter with bottom connections

The build-up of particulate solids causes an increase in the pressure lost across the bed. When the pressure loss or flow is unacceptable the bed is back washed to remove the accumulated particles. Normally this occurs when the pressure drop is around 0.5 bars.

The back wash fluid is pumped backwards through the bed until it is fluidized and has expanded by up to about 30% (the sand grains start to mix and as they rub together they drive off the particulate solids). The smaller particulate solids are washed away with the back wash fluid and captured usually in a settling tank. The fluid flow required to fluidize the bed is typically 3 to 10 m³/m²/hr for few minutes.

Small amounts of sand can be lost in the back washing process and the bed may need to be topped up periodically. The filter is a unit completely assembled unit with valves for the automatic management.

On installed filters the turbidity surveyed is between 2,8 to 4 FTU.

The standard filter model are from 2 to 6 m of diameter and from 50 to 450 m³/h of nominal flow; other model, smaller or bigger, with different dimension can be made on request.

W.M.T.'s deep-bed sand filter is downward flowing fluids type and can operate with a feed pressure of 2 to 5 bar (28 to 70 psi). The loss of pressure across a clean sand bed is very low. The particulate solids are mainly captured on the bed surface. The grains used are subdivided with different granulometry in three or four stratum. The grain range goes from 0.6 to 14 mm for specialist applications other sizes may be specified.

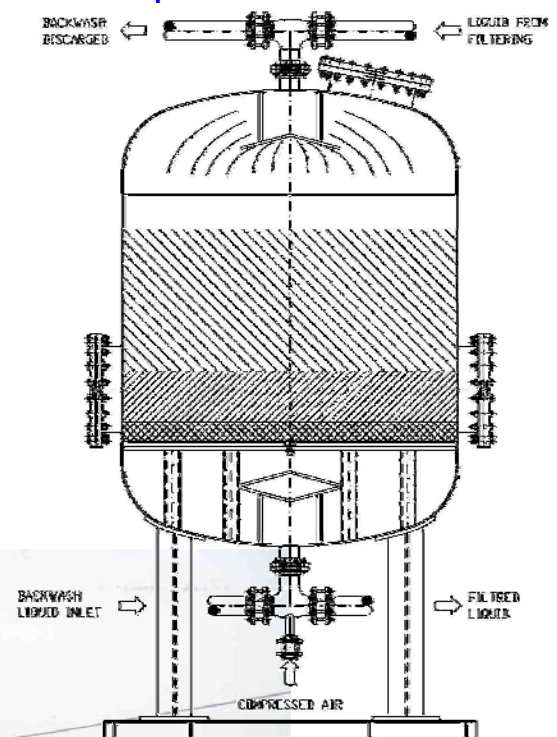
Normally siliceous sand from the following characteristics is employed:

- Acid solubility: less 1%.
- Specific gravity: 2,67 t/m³.
- Hardness: from 6 to 8 on scale MOH.
- Approval ANSI/NSF 61.
- Standard to WWA B100-01.

The depth of the sand bed goes from 1.8 to 2,4 m (6–8 ft). The flow rate goes from 9-20 m³/m²/hr (220-490 US gal/ft²/hr). regardless of the applications.

The special distributor design will ensure that the fluid is properly distributed across the bed and that there are no preferred fluid paths where the filter performance can be compromised.

WMT Sand Filter with top-bottom connections



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