

MEL Pilot Filter – 60 cm Diameter Model

Performance Evaluation MFS Technology, MEL Technical Bulletin No. 3

The 60 cm diameter pilot filter was developed by Manz Engineering Ltd. to allow for on-site performance evaluation of Manz Filter System (MFS™) technology. Details of the MFS™ technology may be found in www.manzwaterinfo.ca. The 60 cm diameter pilot filter is similar in all respects to large scale MEL filters.

Photographs of the pilot filter are shown below. At the center of Photo No. 1 is the standpipe which is connected to the underdrain, filtered water outlet and backwash inlet with flow meter. The backwash water removal system is on the left side of the filter. The raw water inlet is on the right side of the filter. Photo No. 2 shows the thicknesses of the various layers of media in this particular filter application. Photo No. 3 shows the interior of the filter: the float controlled inlet system, the underdrain and backwash water removal system. The height of the filter is approximately 120 cm. The inside diameter of the filter is 60 cm. Flow meters provide accurate measurement of flow into the filter and backwash flow. Flow into the filter is controlled by a mechanical float valve. Filter may be operated unattended as required for pilot test.



Photo No. 1



Photo No. 2



Photo No. 3

Media may vary with respect type, thickness and position in bed. The most common media used is for filtering surface water for removal of suspended particles (turbidity reduction) and pathogens; and, for filtering groundwater for removal of iron, manganese and arsenic (and turbidity and pathogens). Media used in these applications conforms to AWWA guidelines for slow sand filtration. GAC and much larger media that might be considered for a roughing filter may also be evaluated.

The maximum depth of filtering media (not including media that is part of underdrain system) is 45cm. This is sufficient to demonstrate the efficacy of slow sand filtration technology in most applications in known regulatory environments. The more compact 30 cm diameter pilot filter may be adequate for most applications (See MEL Technical Bulletin No. 1.).

Performance observed at the pilot scale can be expected to be identical to the large scale filters with same vertical design.

Bench scale testing is used to determine scope of pilot testing activities.

Manz Engineering Ltd., 2703 Cannon Rd NW, Calgary, AB, Canada, T2L 1C5, www.manzwaterinfo.ca, davidmanz@shaw.ca, (403 889 4562).

October 4, 2015