

Clack MTM[®] is used for reducing iron, manganese and hydrogen sulfide from water supplies.

MTM[®]



Clack MTM[®] is a granular manganese dioxide filtering media used for reducing iron, manganese and hydrogen sulfide from water. Its active surface coating oxidizes and precipitates soluble iron and manganese. Hydrogen sulfide is oxidized to a sulfur. The precipitates are filtered out in the granular bed and removed by backwashing.

MTM consists of a light weight granular core with a coating of manganese dioxide. The coating provides an example of contact filtration where the media itself provides the oxidizing potential. This allows for a much broader range of operation than many other iron removal medias. A pH level as low as 6.2 can be treated. Dissolved oxygen is not essential. The media's light weight reduces backwash water requirements.

When the oxidizing power of MTM is reduced, the bed has to be regenerated with a weak solution of potassium permanganate (KMnO_4), thus restoring its oxidizing capacity. A regenerating solution of 1½ to 2 ounces (dry weight) of potassium permanganate per cubic foot is sufficient for normal regeneration. Upon start-up a new bed should be backwashed and caution taken to insure that the lightweight media is not backwashed to drain. A new bed should be regenerated the evening of installation. **Operating the filter after its oxidizing capacity is exhausted will reduce its service life and may cause staining.**

MTM requires either intermittent or continuous regeneration to maintain its oxidizing capacity. A solution of potassium permanganate (or chlorine then potassium permanganate) can be pre-fed to maintain capacity. In the latter case, the manganese dioxide coating acts as a catalyst to enhance the oxidation reaction and as a buffer to reduce any excess potassium permanganate concentration and prevent it from entering the service lines.

ADVANTAGES

- Broad operating range for iron reduction
- Lower pressure loss through the bed with high flock holding capacity
- Effective hydrogen sulfide, iron and manganese reduction.
- Light weight requires lower backwash rates and reduces pumping requirements
- Chlorine can be beneficial in extending filter run times
- Low attrition loss for long bed life
- Lower shipping cost

PHYSICAL PROPERTIES

- Color: Dark brown
- Bulk Density: 39 lbs./cu. ft.
- Specific Gravity: 2.0 gm/cc
- Effective Size: 0.43 mm
- Uniformity Coefficient: 2.0
- Mesh Size: 14 x 40

CONDITIONS FOR OPERATION

- Water pH range: 6.2-8.5
- Maximum water temp: 100°F/38°C
- Bed depth: 24-36 in.
- Freeboard: 50% of bed depth (min.)
- Service flow rate: 3-5 gpm/sq. ft., 8-10 gpm/sq. ft. intermittent flow possible
- Backwash flow rate: 8-10 gpm per sq. ft.
- Backwash expansion rate: 20-40% of bed depth (min.)
- Regenerant dosage: 1½-2 oz of KMnO_4 by weight per cu. ft.

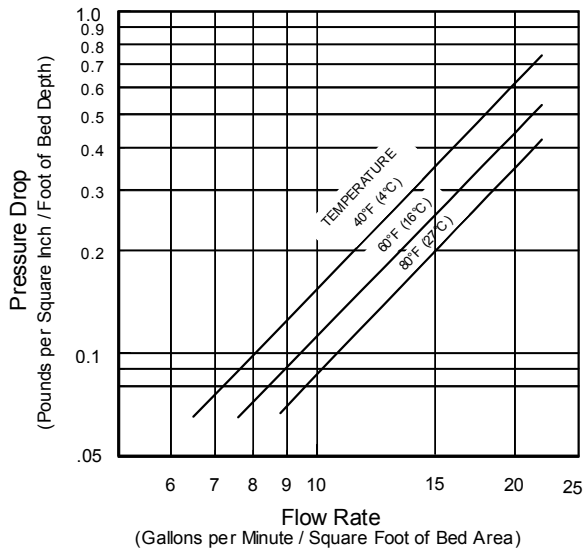
INFLUENT LIMITATIONS

- Oil: None
- Polyphosphates: None

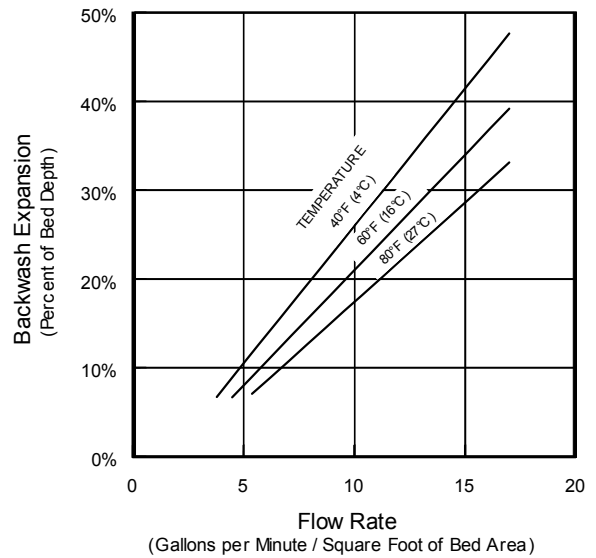
CAPACITY PER CU. FT.

- Iron (Fe^{+2}) alone
600 grains (10,000 ppm)
- Manganese (Mn^{+2}) alone
300 grains (5,000 ppm)
- Hydrogen Sulfide (H_2S) alone
175 grains (3,000 ppm)

Service Flow Pressure Drop



Backwash Bed Expansion



Certified to ANSI/NSF Standard 61



Classified by
Underwriters Laboratories Inc.®
in Accordance with
Standard ANSI/NSF 61

ORDER INFORMATION

Part No.	Description	Cu. Ft./Bag	Wt./Cu. Ft.*	Bags/Pallet	Weight/Pallet	Pallet Dimensions
A8012	MTM®	1	39 lbs.	40	1610 lbs.	48" x 42" x 40"

*Weight per cubic foot is approximate.

Clack Corporation

4462 Duraform Lane
Windsor, Wisconsin 53598-9716 USA

Phone (608) 846-3010

Fax (608) 846-2586

Sales Fax (800) 755-3010

www.clackcorp.com

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