



Iron and Manganese Removal Filter Media Comparison

Typical Design Criteria

Pureflow PM-200

- **Composition** Manganese dioxide ore
- **Specific Gravity** 3.5 to 4.0
- **Content by Weight** 75% to 80%
- **Surface Loading Rate** Up to 15 / 20 gpm / ft²
- **Effective Size** 0.30 to 0.35
- **Backwash Parameters** Flow Rate: 20 gpm / ft²
Duration: 4 minutes
Air Scour: Not required
- **Regeneration** Not Required
- **Media Bed Depth** PM-200: 30" | Anthracite Cap: 6"
- **Capacity** 900 to 1,200 grains / cu. ft.
- **Conditioning** Not Required
- **Media Life** Exceeds 35 years

Greensand Plus

- **Composition** Manganese dioxide coated silica sand
- **Specific Gravity** 2.4 to 2.6
- **Content by Weight** 3%
- **Surface Loading Rate** Up to 12 / ft²
- **Effective Size** 0.30 to 0.35
- **Backwash Parameters** Flow Rate: 12 gpm / ft²
Duration: 10 minutes
Air Scour: Recommended
- **Regeneration** May be required
- **Media Bed Depth** Greensand: 18" | Anthracite Cap: 18"
- **Capacity** 900 to 1,200 grains / cu. ft.
- **Conditioning** Required at start up
- **Media Life** Exceeds 10 years

- NOTES:
1. Manganese dioxide ore is a permanent media. Media replacement is only required to make-up for media lost to attrition.
 2. Manganese dioxide coated silica sand requires replacement if the manganese dioxide coating wears off the sand. This condition can occur if the raw water manganese level is low.
 3. Manganese dioxide ore does not require air scour when backwashed at 20 gpm / ft² for 4 minutes.
 4. Manganese dioxide coated silica sand requires air scour if the raw water iron and manganese levels are high.
 5. The capacity of manganese dioxide ore and Greensand Plus to remove iron and manganese are similar if the raw water iron / manganese levels are low.
 6. If the raw water manganese level is high, manganese dioxide ore will remove more manganese than manganese dioxide coated silica sand.

The above notes are based on field pilot studies conducted by Pureflow Filtration Div. and by an independent consulting engineer. Tests were conducted simultaneously with chlorine pretreatment and filter columns loaded with Pureflow PM-200 manganese dioxide ore and Greensand Plus.

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