

Intermittent Regeneration Process

Soluble iron and manganese are removed by contact oxidation directly on the GreensandPlus grains. Hydrogen sulfide utilizes the oxidizing capacity of GreensandPlus with the resultant precipitates removed by filtration.

At the end of a service cycle, determined by the number of gallons treated, the unit is backwashed and then regenerated down flow (in a manner similar to regenerating a softener with salt brine) with a chlorine solution. This will restore the oxidative capacity of GreensandPlus.

It is recommended that regeneration be initiated prior to complete exhaustion of the GreensandPlus. This is important to extend the service life.

Recommended Operating Guidelines Intermittently Regeneration (IR)

Raw Water pH:	6.2-8.8 Raw water with low pH must not be pre-corrected above 7.0 pH
Minimum Bed Depth:	30" (0.762 m) single media or 15" – 18" (0.38 – 0.45 m) each for dual media beds
Service Flow Rate:	5-12 gpm/sq. ft. (12-29 m/h)
Pressure Drop:	10-18 psi (70-125 Pa)
Backwash Rate:	12 gpm/sq. ft. @ 55°F (30 m/h @ 13°C)
Backwash Duration:	10 minutes (or until water is clear)
Regenerant Dosage 6.5% Bleach:	0.5 gal./cu. ft. diluted in approx. 6.5 gal. of water over 30-40 minutes
Regenerant Dosage 12% Bleach:	0.2 gal./cu. ft. diluted in approx. 6.5 gal. of water injected over 30-40 minutes

Physical Characteristics

Black nodular granules of manganese dioxide
- coated natural silica sand

Apparent Density:	88 lbs. / cu. ft. net (1410 kg/m ³ net)
Shipping Weight:	89 lb. / cu. ft. gross (1426 kg/m ³ net)
Screen Grading:	18 x 60 mesh
Effective Size:	0.30-0.35 mm
Uniformity Coefficient:	Less than 1.60
Specific Gravity:	Approx. 2.4
Packaging:	1/2 cu. ft. bags, 44.1 lbs. ea., shipping weight: 45 lbs. ea., 55 bags/skid 25 cu. ft. bulk sacks, 2,205 lbs. ea., shipping weight: 2,250 lbs. ea., 1 sack/skid

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for import to the EU.

Disclaimer: The information and recommendations in this publication are true and reliable to the best of our knowledge. These recommendations are offered in good faith but without warranty or liability for consequential damage as conditions and method of use of our products are varied and beyond our control. We suggest the user determine the suitability and performance of our products before they are adopted on a commercial scale.

Continuous Regeneration Process

In some installations, better performance may be achieved by oxidizing soluble iron, manganese, hydrogen sulfide and arsenic prior to GreensandPlus filter. This is accomplished by the continual pre-feed of a solution of chlorine, with a "free" chlorine residual of 0.3 – 0.5 mg/L in the filter effluent.

The oxidized precipitates are then filtered out in the GreensandPlus bed with subsequent removal during backwashing. The GreensandPlus allows the chemical reactions to go rapidly to completion and reduces iron and manganese to the required levels.

Recommended Operating Guidelines Continuous Regeneration (CR)

Raw Water pH:	6.2-8.8 Raw water with low pH must not be pre-corrected above 7.0 pH
Minimum Bed Depth:	20"-24" (0.5-0.6 m) GreensandPlus and 15" (0.38 m) of Anthracite
Service Flow Rate:	5-12 gpm/sq. ft. (12-29 m/h) of media surface area
Pressure Drop:	10-18 psi (70 – 125 K Pa)
Backwash Rate:	12 gpm/sq. ft. at 55°F (30 m/hr at 13°C)
Backwash Duration:	10 minutes (or until water is clear)

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