



Clack (A8006) Fine Birm for Iron, Manganese

Removal Filter Media CF

Birm is a black granular filter material used for removal of iron and/or manganese from water in pressure or gravity systems. It contains an active insoluble catalyst to precipitate iron and/or manganese. Because the presence of iron is most common, iron removal is the usual application for Birm. Under suitable conditions, the iron and dissolved oxygen in water react on contact with the Birm filter bed and, as a result, the iron is precipitated in the form of hydroxide. This is a flocculent material which is filtered out in the bed of Birm. Periodic backwashing flushes out the accumulated iron and the Birm is again ready to perform its function. Birm is not consumed in the iron removal operation.

Advantages

- No chemicals to purchase for maintenance. Regeneration not required.
- Iron removal efficiency is extremely high.
- Negligible labor cost. Only periodic backwashing required.
- Durable material with a long life.
- Wide temperature range application.

Conditions necessary for the use of Birm

Iron Removal

- No hydrogen sulphide present.
- Organic matter not to exceed 4-5 ppm as indicated by the oxygen consumed value.
- Oil must not be present.
- A dissolved oxygen content of at least 15% of the iron. (Example Iron = 10ppm. Dissolved Oxygen = 1.5 ppm or more).
- A pH of 6.5 or higher.

Note: The correction of waters having a pH of less than 6.5 can be accomplished by several methods. Aeration, the use of Corosex "F" (CLACK neutralizing method), or the addition of chemicals, such as soda are examples of common methods frequently used. A combination of the above methods is often used, depending on the amount of correction desired. The dissolved oxygen content of a water supply is raised by proper separation.

Manganese Removal

The removal of manganese from water by the catalytic action of Birm usually requires a higher pH than is required for iron removal. Such water should have a pH in the range of 8.0-9.0.

The dissolved oxygen content should be 15% or more of the total manganese and iron expressed in ppm.

Other conditions are the same as for iron removal.
For manganese removal, consult our laboratory.

General data

Birm is furnished in two grades: regular and fine. Regular Birm is generally recommended for industrial and municipal installations. Fine Birm is recommended for domestic application or in cases where the available backwash water is limited. Bed expansion of 35 to 50% in backwash is required for best results. 12 to 15 GPM per square foot are required for backwashing regular Birm. 8 to 10 CPM per square foot are required for fine Birm.

REGULAR BIRM ^ Order No. A8006. Unit weight: 47.50 lbs per cubic foot.

Effective size	0.615mm	Uniformity	Coefficient:	1.725				
Sieve No:	9	9.14	14.20	20.28	28.35	35.48	48.100	
Per cent:	0.5	30.3	34.7	26.5	6.8	0.4	-	
Per cent retained:	0.5	30.8	65.5	92.0	98.8	99.2		

FINE BIRM ^ Order No. A8007. Unit weight: 47.50 lbs per cubic foot.

Sieve No:	9	9.14	14.20	20.28	28.35	35.48	48.100	
Per cent:	0.5	0.7	2.3	12.5	35.0	32.5	11.5	
Per cent retained:	0.5	1.2	35	16.0	51.0	83.5	95.0	

Instructions for industrial and municipal installations

- Bed depth: 30 ^ 38 inches.
- Standard graded gravel supporting bed depth ^ 14 inches or more.
- Service flow rate: not to exceed 4 GPM per square foot.
- Freeboard space: 35 to 50% of bed depth.
- Backwash whenever the pressure loss through the bed increases by 2 to 3 pounds per square inch. Backwashing is usually complete within 20 to 30 minutes.

Instructions for domestic installations

- Bed depth: approximately 24 to 30 inches.
- Standard graded gravel-supporting bed ^ 8 inches or more.
- Service flow rate: not to exceed 5 GPM per square foot.
- Freeboard space: 35 to 50% of bed depth.
- Backwashing is recommended every 10 days to 2 weeks. In treatment of high iron content waters, backwashing more frequently is desirable. If 8 gallons per minute per

square foot of bed are not available for backwashing fine Birm, an air wash is recommended. This may be accomplished by drawing air through an injector into the water for backwashing.

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