

Pulse Filter

The NORAM Pulse Filter can be used in both Chlor-alkali plants and for Pulp & Paper mills as part of the PDP™ system. For brine filtration in chlor-alkali plants, three filtration steps can be reduced to one with a Pulse Filter because it uses the proven GORE® Filter Tube assembly

The problem

In Chlor-alkali plants, the brine utilized requires filtering before the electrolysis for caustic and chlorine production. Conventional brine treatment systems use clarifiers, sand filter, and precoat filters which have large footprints and requires flocculant addition and a precoating system.

The solution

NORAM is working together with W.L. Gore & Associates GmbH to offer the Pulse Filter technology which **removes the use of filter aids and/or flocculants**, see Figure 1. The filtration is based on surface filtration by the use of the membranes Gore® Filter Tube Assemblies and can handle **different types of salt sources and hardness ratios**.

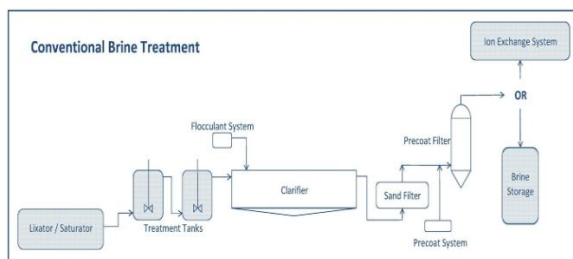


Figure 2 Full scale filter installation

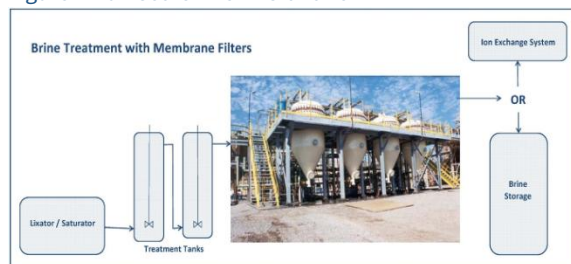


Figure 1 Conventional brine treatment vs NORAM Pulse Filters

How it works

The brine will pass the GORE® Filter Tube Assemblies from the outside going in. The filtrate is gathered in the top dome before going to downstream equipment.

The filter is cleaned with a short back-pulse where the liquid in the top dome will go through the filters in the reverse direction. The sludge is collected in the cone before it is removed.

The benefits

The Pulse Filter design **reduces the number of filtration steps** from three to one. **No standby filter** is required with the short and efficient back-pulse cleaning. Thereby, it presents a **reduction in footprint, capital and operational cost**.

The sludge can be collected at a **higher solids concentration**, presenting opportunities to use a filter press if further dewatering is required. There is also a **reduction in the amount of sludge** produced which **saves landfill costs or less contaminates** to the brine well.

The system is **fully automated** and there is no need for constant manual intervention by the operating staff. Figure 2 shows an example of an installation.



GORE® Filter Tube Assemblies

Figure 3 shows the GORE® Filter Tube Assembly which has over 100 installations all over the world. The membrane has a **long life** (typically >3 years) and is **easy to change**.

It is made of an EPDM hose with an ePTFE tube outside. Each assembly consists of nine tubes. The tube is **highly efficient** and seamless which makes it **more robust**.

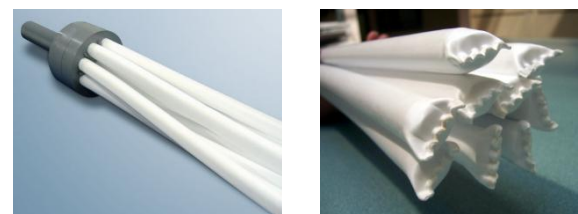


Figure 3 GORE® Filter Tube Assembly

