



HERE TO HELP



Restarting Ultrafiltration Systems After An
Unexpected Shutdown

Specialists in Plant and Equipment for the
finishing Industry



RESTARTING ULTRAFILTRATION SYSTEMS AFTER UNEXPECTED SHUTDOWN:

Unexpected events may call for plants to be idled or closed down for many weeks. Regular Maintenance and monitoring of the ultrafiltration System and pre filtration may not be available during this period. Also, the only persons who may be looking at the equipment on a regular basis are plant security personnel.

Since the goal is to re-start the E-coat paint system once the plant is re-opened, what can or should be done before the plant is idled? This information will consider Best Practice for shut down and more importantly the best way to get the System back into operation as effectively as possible, while at the same time minimising risk.



BEST PRACTISE FOR SHUTTING DOWN YOUR ULTRAFILTRATION SYSTEM

Ideally you would want to put the Ultrafiltration system into bypass and box the membranes off from paint. This would be done as a precaution so if for whatever reason the pre filtration system were to fail the contaminated paint would not foul the membranes causing the expense and downtime to replace them.

To do this, the procedure would be to open the bypass valve fully and then slowly close of the inlet and outlet paint valves. This would then mean that the system is on by pass but the housings still fill with paint. If the membranes were left in this condition the paint in the membrane housing would go solid and the membranes would be un recoverable.

To prevent this, you would need to flush the membranes with pure water utilising the clean in place system.

Fill the CIP tank with pure water and slowly open the inlet, outlet and permeate circulation valves. Once this is done, start the CIP pump and flush the membranes for 1 hour. After 1 hour, stop the CIP pump, close the inlet, outlet and permeate circulation valves. This would then leave the System filled with pure water, preventing solidification within the membranes and housings.

BEST PRACTISE FOR RESTARTING YOUR ULTRAFILTRATION SYSTEM

If the system has not been put into bypass and limited monitoring and maintenance has been carried out, (if any at all) it would be best to put the system on bypass as the mentioned in the shutdown procedure.

Once the system has been put in to bypass it is then best to make sure that you have clean bag filters in your pre filtration system. We would also recommend that you drop down to a finer micron rating than the filtration you normally use and change them every 2-4 hours for the first day.

This would take any of the smaller particles out of the paint solution that may have settled out while the plant has been dormant.

Once this has been completed it is then the reverse of the shutdown procedure.

Fill the CIP tank with pure water and re open the CIP inlet, outlet and permeate valves, start the pump and circulate for 1 hour. Once the system is then again isolated with all the CIP valves closed it is then time to slowly return the system back on to paint.

Slowly open the paint inlet and outlet valves monitoring the permeate flow rate.

If any of the flow meters from the membranes become cloudy, it maybe that the membrane has become fouled and it now passing paint into the permeate line.

In this case you would need to isolate the individual housing from paint and then flush that membrane and housing using the CIP system and order a replacement membrane.

