



## CONSERVATION OF RESOURCES

# Electrostatic Discharge In The Hydraulic Shoe Press Of A Paper Mill

### Technical Application Bulletin

#### PROJECT BACKGROUND

#### DISCOVER



#### DIAGNOSE

- Paper Mill with a Hydraulic Shoe Press (cooling circuit with 12,000 liter tank capacity).
- The customer was hearing banging noises coming from the filter area.
- Customer was experiencing a shortened filter life of 30 day.
- The goal this customer wanted to achieve was to extend the filter life, have fewer oil changes. and lessen unscheduled downtime.

- An oil sample was taken from the customer's Shoe Press using a Schroeder FCU 2110 (100 mL/min).
- The zinc concentration in this sample was very high, even though the oil was "zinc-free".
- Cleanliness level upstream was 13/12/12, downstream 12/10/7, so the filters were working accordingly.
- It wasn't until we looked at the actual filter element that we noticed a problem - burn spots.

#### INDUSTRIES

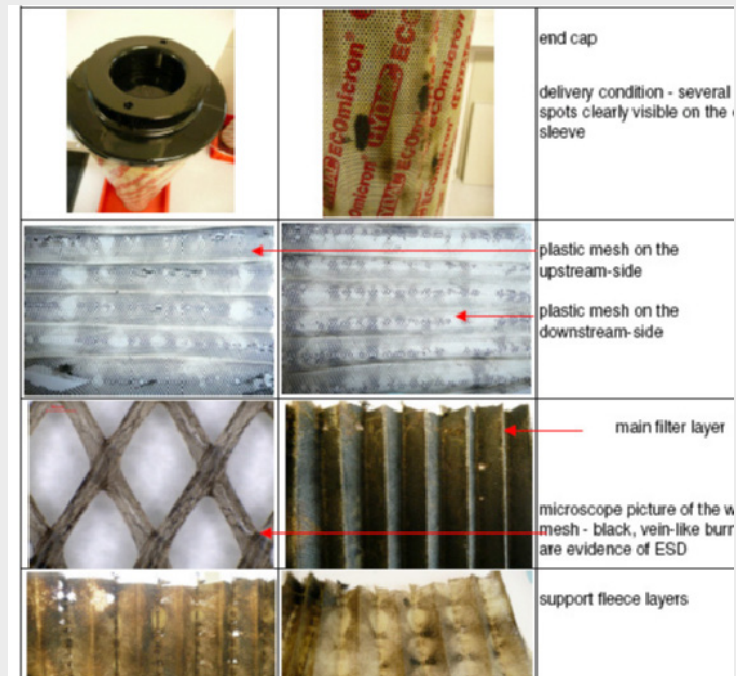


#### DESIGN

**What We Did:** Schroeder took this knowledge of static discharge burning the filter elements and recommended our line of ASP® AntiStat Pleat Elements.

#### AntiStatPleat Elements (ASP®):

1. Prevent spark discharge.
2. Eliminate damage to elements to extend fluid and component life.
3. Prevent fire.





**DELIVER**

- After switching the filter elements to Schroeder’s ASP® | Anti-Stat Pleat, the customer was no longer experiencing all of their problems due to the electrostatic discharge in the cooling circuit of the Shoe Press.
- Cost savings resulted from reduced production downtime (ex. as caused by damage to bearings or valves) are not included in the calculations. Just one unscheduled downtime lasting 24 hours would cost the customer roughly \$280,000.00.

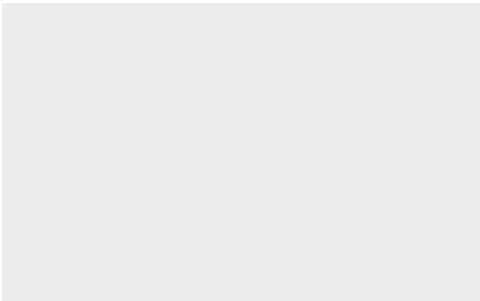
Hydraulic Shoe Press	Without ASP	With ASP	Savings
Filter Life	1 month	6 months	+5 months
Annual Filter Usage	48 pieces	8 pieces	- 40 pieces
Oil Service Life	2 years	5 years	+3 years
Annual Oil Usage	1,585 gal.	634 gal.	-951 gal.
Filter Costs	\$16,757.00	\$4,189.00	-\$12,568.00
Oil (new + disposed)	\$20,947.00	\$8,379.00	-\$12,208.00



**CUSTOMER BENEFITS**

- Eliminates damage to element
- Greatly reduces oil deterioration
- Decreases evidence of sludge and formation of oil sediment
- Extends system component life

**FURTHER APPLICATION AREAS**

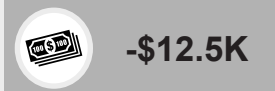


**ROI**

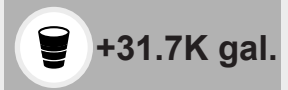
**Filter Life Expectancy**



**Filter Cost Savings**



**Annual Oil Usage**



**Underlying values:**

Filter Cost Savings = \$16,757.00 per year using competitor element - \$4,189.00 per year using ASP®. \$16,757 - \$4,189 = \$12,568 in savings per year

Oil Cost Savings = \$20,947.00 per year using competitor element - \$8,379.00 per year using ASP®. \$20,947 - \$8,379 = \$12,208 in oil savings per year

**PRODUCT SPECS**

**ASP® | Anti-Stat Pleat Elements**

**Collapse Rating:** 150 psid  
**Media:** ASP® - 3, 5, and 10 µm  
**Operating Temp.:** -20°F to 225°F  
**Flow Direction:** Outside In  
**Fluid Compatibility:** Hydraulic and Lubrication Oils