

## COOLING FANS PROTECTED FROM PAPER PROCESSING PULP FINES



*“Every time the cooling fan systems are down for cleaning maintenance, the company loses 62 miles of toilet paper production!”*

**RICHARD BETTS, MANAGING DIRECTOR** RAB Specialist Engineers



### BACKGROUND

Northwood Hygiene Products Limited is one of the few companies in the United Kingdom that is vertically integrated. They manage their business from raw material supply, tissue and towel manufacturing to end user product converting, storage and transportation. The start of this cycle begins with over 40,000 tons of recycled paper that ends up as toilet tissue, paper towels and professional wiping products.

### CHALLENGES

Following a call from the site engineering team at their Penygroes plant, and subsequently the engineering manager of their new Northwood factory in Telford, RAB Specialist Engineers was asked to provide filtration advice for motor cooling fans and electrical control panel coolers. A by-product of paper processing is large amounts of airborne paper fines or pulp fibers become discharged during manufacturing. These lightweight fiber fines float in the air, to be pulled into surrounding equipment air intakes. A better filtration solution was needed to:

- prevent contamination of the control panel cooling air intakes
- reduce the equipment downtime for equipment cleaning
- ensure that sufficient supply air reaches the cooling fans and critical system components.

The original filters, located inside the fan guard of the circular cooling fans became clogged very quickly. Each of the 2 fans required cleaning 2-3 times per week. Removal of each guard’s 6-8 screws, and washing the filters at a cleaning station before replacing them took approximately 40 minutes. During this time the production line had to be shut down at a loss of 2,500 meters of tissue production per min of operation.

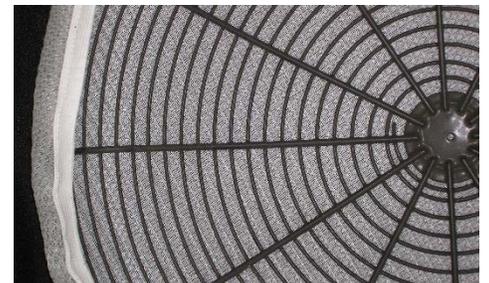
### RESULTS

Permatron’s PreVent® washable polypropylene bonnet or fan shroud “air net” is a simple solution custom sized and installed over the outside of the fan guard. Manufactured with an elastic border, the dirty filter is easily removed and replaced immediately with a clean spare bonnet filter. Washing the dirty filters are done at a more convenient time. **The changeover period now takes 1 minute for each fan, saving 38 minutes of costly manufacturing downtime.**

The equipment air intake for machine components and the electrical control panel, housed within an acoustic enclosure outside of the building, was also affected by the airborne paper fines. The PreVent® Model R2 rigid panel style filter, with magnetic stripping attached to the steel frame,

was custom sized and affixed to the outside of the steel enclosure air intake louvers. Easily removed using a permanent pull tab, this air filter can be washed and replaced in minutes or cleaned in place with a broom or shop vac. PreVent’s electrostatic media is UV protected for outdoor use, with minimal resistance to airflow.

**Northwood has invested an 8 figure sum into its state-of-the-art Telford plant**, with costly machines to automate a huge part of their operation and massively increase the speed and scale of the company’s output. A simple and effective product like PreVent air intake protection filters will help preserve their equipment, and make costly cleaning downtime a thing of the past.



PreVent filters are a simple solution, affixed to the outside of an air intake, for easy access and fast maintenance.