Success Story: Paint Manufacturer

Markets Served
Chemical: Paint Manufacturing

Eaton Filters Sparkling for Global Paint Supplier

Location:
Mumbai, India

Segment:
Paint Manufacturing

Problem:
Cleaning filtration equipment was labor intensive and hazardous to plant employees.

Solution:
Eaton filtration system

Results:
The quality of finished paints has improved while the company reduced process costs, and gained a safer and cleaner work enviroment.

Contact Information:
Eaton Corporation
Filtration Division
44 Apple Street
Tinton Falls, NJ 07724
USA
732-212-4700
www.eaton.com/filtration

Background

A large paint company in India manufactures a wide range of paints for decorative and industrial use.

Fully committed to continuous quality improvements in its business practices, the company routinely tracks those achievements with measurable procedures. Its plants are certified as environmentally safe.

Challenges

In the process of meeting both of those objectives, the company was recently forced to investigate a new way to filter impurities from soy-based resins used in the manufacturing of certain paints. Three different types of impurities compounded the problem.

First, the dominant intruder, consisted of oversized particles that occur naturally in resins. Second, foreign fiber matters, which are finer than resin particles, were also proving to be troublesome.

The third was the buildup of colloidal haze, which again occurs naturally, and can adversely affect the quality of the paint.

The existing setup was highly labor intensive requiring the manual dismantling of the equipment for cleaning. Exposure to hazardous gases and high temperatures were also present during cleaning. In addition, maintenance was becoming increasingly more difficult and costly, and plant officials believed that the aging system was occupying too much floor space. Its shabby appearance due to years of resin spillage was also disconcerting to workers and visitors alike.

Solution

Working with plant officials, Eaton filtration experts based in China and India installed an Eaton DCF-1600 mechanically cleaned filter to remedy the problems associated with the large particles and foreign fibers.

With two-thirds of the challenges met, an Eaton LOFDISC™ Module filter was additionally installed to remove the haze impurities and neatly close the loop on the system.

The DCF-Series filters are ideal for highly viscous, abrasive or sticky liquids – including paint. DCF filters perform a self-cleaning action by mechanically scraping collected debris from the filter screen with a spring loaded cleaning disc that travels down and up, wiping the media clean of concentrated solids in both strokes. Collected debris is automatically purged from the collection chamber at the bottom of the filter.

Based on a remarkably simple concept, the self-cleaning filter consists of a cylindrical stainless steel housing that contains a filter screen. Unfiltered liquids enter the inlet, solids are deposited on the interior surface of the filtration media, and filtered fluid exits the outlet.

EATON
Powering Business Worldwide

Eaton Corporation is a diversified power management company with 2010 sales of $13.7 billion. Celebrating its 100th anniversary in 2011, Eaton is a global technology leader in electrical components and systems for power quality, distribution and control; hydraulics components, systems and services for industrial and mobile equipment; aerospace fuel, hydraulics and pneumatic systems for commercial and military use; and truck and automotive drivetrain and powertrain systems for performance, fuel economy and safety. Eaton has approximately 73,000 employees and sells products to customers in more than 150 countries. www.eaton.com

Without halting production, this self-cleaning action provides the highest quality filtering under continuous demand.

The horizontal LOFDISC Module filter housings are equally effective, just as uncomplicated, yet better suited for filtering out tiny, fine particles like the colloidal impurities barely larger than a standard molecule.

Results

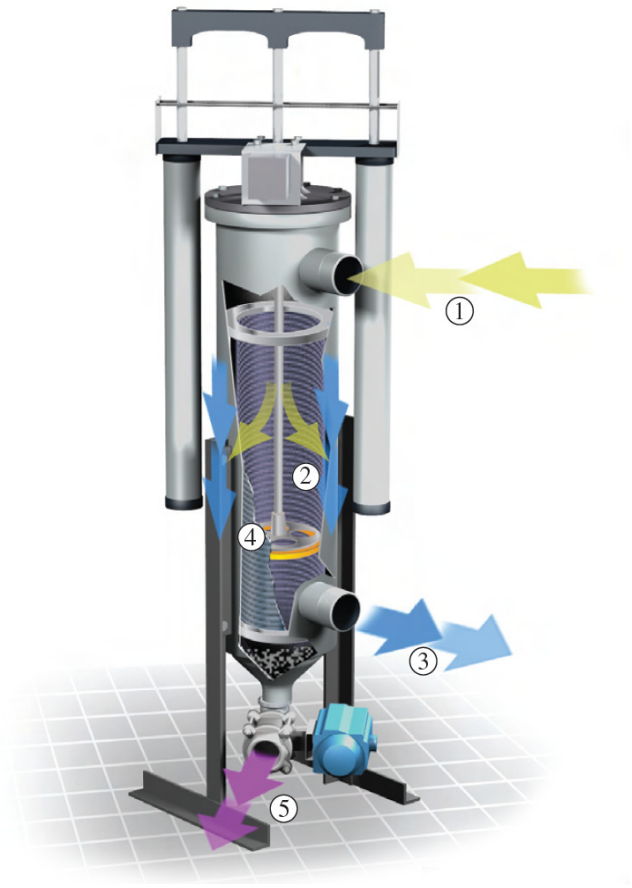
Officials at the paint company report that quality objectives have been met with the finished paint's sparkle and finish better than ever.

But best of all, the path to getting there is less costly, safer, and more environmentally friendly than what was experienced in the past.

Financial gains are mainly attributed to filtration time reductions and improved flow rates that roughly have gone from one batch (18 tons) to four batches a day. Significantly less resin loss and reduced labor, disposal, and maintenance costs are bringing about additional savings.

Meanwhile, the manual, hazardous cleaning of filters has been essentially eliminated.

As for the aesthetics – a prettier picture is certainly now being painted with the smaller footprint and cleaner operation of the new Eaton filtration system.



In Eaton's DCF mechanically cleaned filter unit, incoming fluids (1) are channeled from the interior cylinder through a wire screen (2) to the outer cylinder and out the discharge port (3). A cleaning disc (4) travels down and up inside the cylinder to periodically clear the filter screen. Particles are collected at the bottom of the housing where they can be discharged (5).

Eaton Corporation
Eaton Filtration
70 Wood Ave. South
Iselin, NJ 08830
USA
732-767-4200
www.eaton.com

Powering Business Worldwide