

## CASE STUDY

# Sturdy vacuums help an MDF manufacturer stay compliant and productive

Uniboard ordered a custom portable vacuum system to simplify the process of cleaning for NFPA compliance



**The problem:** A manufacturer of medium-density fibreboard needed a quick, reliable and cost-effective solution to their concerns with combustible wood dust.

**The solution:** DuroVac provided an NFPA-compliant rental system while they waited for their custom industrial vacuum solution to be produced.

In 2020, the global furniture market grew by a staggering 10%, ending the year with a market size of \$475.4 billion. We all know and lived the shift that drove this trend: COVID-19 had us spending much, much more time at home, where we made the best of our environments with various home improvement projects.

### Learn More

For the furniture manufacturing industry, this evidently sparked a lot of demand — and a lot of hard work from companies like Uniboard.

### Visit Uniboard Website

A manufacturer of medium-density fibreboard (MDF), Uniboard provides much needed supplies to the furniture and construction industries from their facility in Mont-Laurier, QC.

As Uniboard works hard to meet all that demand, material creates a lot of dust in their facility. A bit of mess

is part of the job, but by mid-2020, theirs was beginning to pose a safety hazard.

The dust created from MDF production is a fine, light material that sits in a thin layer on surfaces around the plant. Uniboard workers typically used compressed air to clean, which blew a good portion of dust into the air, unknowingly creating an explosion hazard. Understanding the risk this poses, the management team began exploring options to safeguard their most valuable assets: their employees.

The mess got to the point where they were shutting down the plant every week or two, spending a full day cleaning everything. They had also taken to hiring contractors to help their own employees with the cleaning work. Wanting to avoid this costly and time-consuming interruption to their work, Uniboard started searching for an alternative.

It was clear they needed a more sustainable solution — one that would not only contain the dust problem, but also act as an engineering control in the event of a fire or

deflagration in the plant. That's when DuroVac rose to the occasion.

## DELIVERING A FAST, FLEXIBLE SOLUTION

Uniboard reached out to DuroVac for help in October of 2020. Understanding the urgency of the situation, the engineers at DuroVac provided the MDF manufacturers with a quick turnaround on a rental vacuum system while they worked on a more customized permanent solution. Both vacuums were compliant with NFPA 68 and 69.

"Service was the strength at DuroVac that I want to highlight," says Alexis Saint-Jean, Project Engineer at Uniboard. "Answers and displacement onsite were quick and efficient."

The rental only took three weeks to deliver. It was a PL-30X, part of DuroVac's signature PowerLift series of portable vacuums. Equipped with a sealed hopper underneath the system, the rental vacuum provided a highly reliable, versatile temporary solution to the workers at Uniboard.

"DuroVac mostly respected the timeline, except for some additional parts which took a bit more time," says Saint-Jean, referring to a supply chain-related delay that was communicated to the customer. "However, DuroVac was quite transparent on that matter."

DuroVac delivered the permanent system a few months later, providing a customized version of an EL-40X from the Elevator series of vacuums. Another portable system, it was configured to work both indoors and outdoors. The system's tough construction helps it resist Quebec's cold climates — winter temperatures are typically below freezing, but can drop as low as -30–40°C.

## UNDERSTANDING THE DUST PENTAGON

According to the NFPA, a fire requires fuel, oxygen and an ignition source. Combustible dust is a common fuel source in manufacturing scenarios, while ignition can come from any number of sources, whether it's a heated tool, static electricity, or friction from some equipment that needs maintenance.

[Visit NFPA Website](#)

The difference between a fire and an explosion is the addition of two conditions: confinement and dispersion. When dust sits in an even layer, only the top layer of molecules reacts with oxygen, but when it's dispersed into the air, there's an increased surface area for that reaction to happen. A cloud of dust that is confined to one space creates the potential for an explosion.

By replacing the compressed air method of cleaning, Uniboard's new EL-40X drastically reduced the fire and explosion hazards in the facility. It came equipped with a flameless vent, an inlet isolation and a rotary valve for NFPA compliance.

These NFPA compliance features prevent residual explosions by releasing positive air pressure from the vent, helping it to suppress any flames in the event of an ignition inside the unit.

## A HUGE PRODUCTIVITY BOOST

The operators were immediately impressed with the efficiency of the solutions provided. Seeing how easy the systems were to handle, employees got the hang of it quickly and took turns vacuuming up the wood dust in the area.

When a material flow issue came up some weeks later, DuroVac quickly responded by lowering the vacuum pressure and adding fluidizers to promote the flow of pressurized air within the system. The unit has since been working without incident.

"Employees [at DuroVac] were present, vigilant and professional," says Saint-Jean.

With their new solution in hand, Uniboard was able to stop hiring contractors and shutting down for full days of cleanup. Over time, their new, much more cost-effective cleaning system will surpass what they spent on the vacuum, resulting in significant savings in the long term.

"In general, DuroVac's expertise was well-mastered," says Saint-Jean, adding that he would "absolutely" recommend the vacuum manufacturer for other projects.

