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Knowledge Is Power

Component Manufacturers Battle Airborne Particle Emission Regulations by Libby Walters

Growing your business involves a myriad of details. Take some time to consider particle emissions in your plant and how these issues might affect your company's future plans.

Planning to relocate or expand operations to accommodate your company's growth? Better check your airborne sawdust (the U.S. Environmental Protection Agency [EPA] calls it particulate matter or PM) emission rate. Federal and state air quality regulations have become increasingly stringent in recent years, requiring manufacturers to obtain permits for operating sawdust emitting machinery based on the type and amount of PM released annually. For component manufacturers, that may mean determining the amount of PM their component saws produce, and then determining, perhaps with the assistance of knowledgeable consultants, how to proceed.

WHAT IS PARTICULATE MATTER?

According to an EPA report (www.epa.gov), "Particulate matter is the general term used for a mixture of solid particles and liquid droplets found in the air. Some particles are large enough to be seen as dust or dirt. Others are so small they can be detected only with an electron microscope." The EPA defines two primary categories of PM, determined largely by particle size—this gets quite technical:

- PM2.5 describes the "fine" particles that are less than or equal to 2.5 microns (µm) in diameter.
- PM10 refers to all "course" particles less than or equal to 10 µm in diameter. To put this into perspective, a particle 10 µm in diameter is about one-seventh the diameter of a human hair.
- PM involves any particle over 10 µm in diameter, which includes sawdust from component saws. Since it is primarily non-ingestible, PM over 10 µm is not marked as a health concern by the EPA. Rather, its size causes concern from an opacity standpoint: it's capable of blocking the sun's rays in the atmosphere.
- "Primary" particles, such as dust from roads or elemental carbon (soot) from wood combustion, are emitted directly into the atmosphere. Dust output from component saws is considered primary particulate matter.
- "Secondary" particles are formed in the atmosphere from primary gaseous emissions. Examples include emissions from power plants, industrial facilities, automobiles and other types of combustion sources.

- Generally, coarse PM is composed largely of primary particles and fine PM contains many more secondary particles.

OUT-OF-STATE RELOCATION CAUSES CM'S PM DEBACLE

Not convinced that component manufacturers need concern themselves with airborne particle emissions regulations and permits? WTCA Technical and Legislative staff have recently heard from three member manufacturers (in Virginia, Colorado and California respectively) about experiences with local jurisdictions or fire departments enforcing airborne pollutant regulations and dust collection systems. Another component manufacturer, based in the southwest, was asked to expend more than $100,000 for equipment to handle excess PM detected by third party consultants to allow for an a capital investment into the company.

Rob Frogale and H.B. Simpson of Allied Systems Corporation, Virginia, ran into a PM obstacle when relocating their manufacturing operation from West Virginia in June. The company's new operations were to include a wood planing/door manufacturing facility and a completely separate truss shop. Allied's existing West Virginia operation did not have a state particulate emissions permit. "A [Virginia] state inspector visited the new door plant to investigate a separate issue," said plant manager H.B. Simpson. "He started asking questions about particle emissions for the new truss plant. We quickly learned that obtaining a permit in Virginia was mandatory; however, we found state officials to be very cooperative throughout the process."

Sean Shields, WTCA Legislative Liaison, worked with Allied to interpret state air quality control regulations. "Allied was considered a brand new source of air pollutants due to the fact they had never registered with the VA Department of Environmental Quality (VADEQ) before, plus the fact they were consolidating operations in from another state," said Shields. Because of their new source designation, Allied was subject to very stringent air quality control measures put in place in 2002 by the VA legislature. Simpson noted that some states are more progressive than others in their enforcement of air quality standards. "Had we opened a new building in West Virginia, I don't think we'd have had a problem," he said.

Further complicating the issue, neither Allied's permit writer (Bobby Lute of the VADEQ), nor Allied's saw manufacturer had data on how much airborne sawdust was created by their particular component saw. Without any emissions data from the saw manufacturer, Lute was required to use the data he did have, placing Allied in a PM category pertaining to furniture manufacturing, which has a significantly higher output of sawdust than cutting lumber for trusses. This category requires them to install a dust collection system before beginning operation. According to Simpson, "We have the option of installing a portable unit [in the truss plant] to reduce particulate emissions, but those are highly labor intensive."

FIRE DEPT. DISAPPROVES CM EXPANSION PLAN

In late April 2004, Foxworth Galbraith Lumber Company's expansion plan for its Colorado Springs manufacturing operation was disapproved by the Colorado Springs Fire Department (CSFD) Fire Prevention Division. The addition of a component saw in the remodeled facility prompted the engineer reviewing the plans to note, "if you are cutting lumber in this facility you may be

required to have a dust collection system." Foxworth temporarily removed the component saw from the plan, while beginning the appeal process. Researching the 1997 Uniform Fire Code (UFC), the Foxworth team (led by risk manager John Smith) argued that according to the UFC, the facility was not required to install a dust collection system. They enlisted the help of Stewart Environmental Consultants Inc. of Colorado Springs and Fort Collins, CO, to perform air sampling in and around a similar component saw at the facility. Their report indicated that the amount of sawdust generated by the saw did not warrant the installation of a dust collection system in the remodeled facility. To further influence their appeal, Foxworth submitted their MSDS on wood dust, Stewart's air sample report and a list of pre-emptive measures to prevent combustion including:

- no smoking in the facility,
- no open flame or ignition source around the saw,
- all component saw electrical components meet UL and NEC requirements for installation,
- all sawdust is removed by conveyor to a container located outside the facility, and
- all areas are swept following each work shift.

Foxworth's research, testing and overall diplomatic approach to fire department's concern proved successful when CSFD ruled that the collection system wasn't necessary.

FOR BEST RESULTS, BE PROACTIVE

As a matter of regular business practice, and especially in the event you are adding saws or moving your operation or establishing a new one, it is wise to research your state's emission regulations. If you determine a permit must be obtained, apply for it well before the target production date. Do not underestimate the costs that a delay in obtaining a permit might bring. "Any time you add square footage, the best thing to do is get with your state's Department of Environmental Quality and ask what you need to do to be in compliance, well ahead of schedule," Simpson warned.

For federal information and guidelines on particulate matter and airborne pollutants like sawdust, visit www.epa.gov. Contact your state department of environmental regulation for detailed information on permit requirements.

While cooperation with the local fire department or state environmental protection agency proved successful in both cases presented here, the trend toward air quality regulation on the national level could potentially create headaches for many component manufacturers across the country. One possible way to prevent this situation is to contact your saw supplier, and stress the importance of having access to data from proprietary sawdust emission testing. This data could be a valuable tool in obtaining the necessary permits or regulatory approval when seeking to relocate or expand your operations.

SBC HOME PAGE

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