

Meeting the New EPA Air-Pollution Standards

Metal fabricators have only until Nov. 22 to file their Notification of Compliance Status reports with the Environmental Protection Agency

BY TRAVIS HAYNAM AND ED RAVERT



Fig. 1 — Capturing the fume at the source, as shown here, yields the best results and requires the least amount of energy.

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In July 2011, the U.S. Environmental Protection Agency (EPA) began enforcement on a subset of the National Emission Standards for Hazardous Air Pollutants, commonly referred to as MFHAP (Metal Fabrication Hazardous Air Pollutants).

The new regulation seeks to control emissions generated by metalworking processes including welding and abrasive blasting.

Other government and safety organizations, including the Occupational Safety and Health Administration (OSHA) and the National Institute for Occupational Safety and Health (NIOSH) have existing standards and permissible exposure limits (PELs) in place to control some of these hazardous contaminants, such as hexavalent chromium, to protect workers' health.

Focus Is on Reducing Outdoor Air Pollution

What makes this latest MFHAP regulation different is the focus lies not on the safety of the workers but on controlling the indoor pollutants before they can become outdoor emissions.

What this means for facility managers is that exhausting air or using natural ventilation as a means of controlling indoor air pollution may no longer be an acceptable practice. While the implications of these new regulations will be far reaching, it presents an opportunity for fabrication shops to review their indoor air-pollution control strategy and adopt a more productive, healthier, and more energy-efficient course for the future.

Are You Affected, Are You in Compliance?

Important considerations to help understand how this new MFHAP regulation could impact your company and ensure its compliance are:

1. Determine whether your company is

subject to the new regulation.

The standard applies to what the EPA defines as area source producers engaged primarily in the metalworking industry. Applicable North American Industry Classification System/Standard Industrial Classification codes are available within the standard, but if metalworking is a core function of your business, it is likely the standard applies to your company.

The next step is to determine whether the airborne contaminants are considered hazardous. The EPA defines hazardous as consisting of greater than 0.1% of cadmium, chromium, lead, or nickel, or greater than 1.0% of manganese. There are a few notable exemptions such as the U.S. Armed Forces, NASA, and the National Nuclear Security Administration.

2. Register and document your compliance with the EPA.

Companies that have MFHAP emissions are required to submit an Initial Notification Letter to both state and regional EPA offices. If your company is operating an existing affected process, the company must submit a *Notification of Compliance Status* no later than Nov. 22, 2011.

Manufacturers are also required to submit Annual Certification and Compliance Reports no later than Jan. 31 each year and maintain detailed records for five years of applicability determinations, testing results, control device specifications, etc.

Checklist for a Viable Air-Pollution Control System

3. Achieve compliance with the proper air-pollution control systems.

Compliance varies with each metalworking

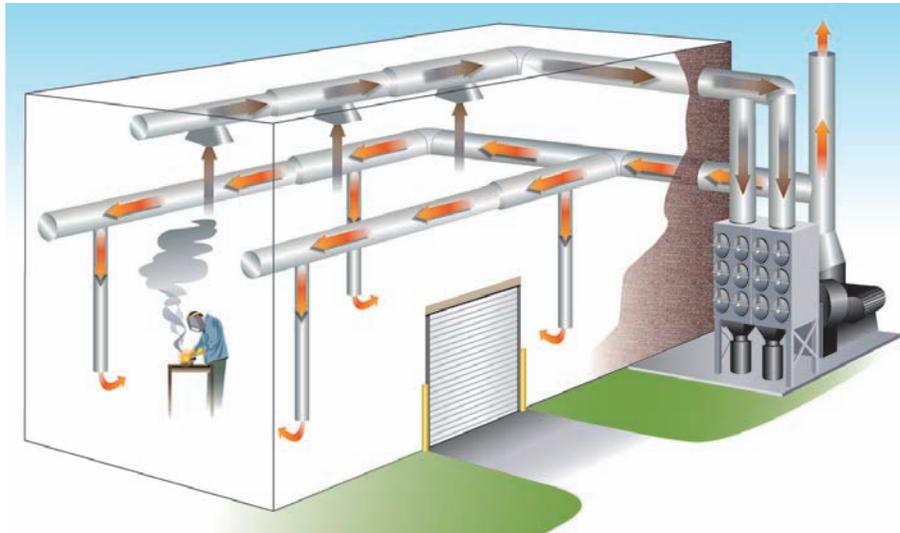


Fig. 2 — Diagram of an ambient air-extraction system recommended when source-capture is impractical. The energy of the returned air is channeled to create an air-circulation pattern that assists in pushing the fumes toward the extraction points.

process, but all require fabricators to minimize dust within in surrounding areas. The welding process requirements go further by requiring no visible emissions observed exiting the facility. Achieving this level of air quality will require a well-designed and engineered air-pollution control system. Air-pollution control systems can vary greatly, but it is important to keep the following in mind when selecting the solution that is best for your company:

- Make sure the system matches your fabrication process and will allow you to continue to operate efficiently. Include the operators in the discussion as it will be important to get their buy-in and ensure their understanding of the necessity to routinely and properly utilize the system.

- Capturing the fume or dust at the source will yield the best results and require the least amount of energy — Fig. 1. When source capture is not practical, other solutions such as ambient collection, including push-pull recirculation systems, can be effective — Fig. 2.

- Select the correct filter technology to provide the efficiency required to capture — not just relocate — the collected dust or fume. Cartridge filters with a nanofiber layer are widely accepted as an optimal solution given their high initial efficiency, superior dust release during cleaning cycles, extended filter life, and affordable replacement filter cost.

- Take into account other standards when developing your solution, such as OSHA exposure limits or National Fire Protection Association standards dealing with combustible or explosive dusts.

A well-designed system can achieve compliance across all of the applicable standards. For welding, ongoing monitoring of the emissions is required. It should be assessed first by EPA Method 22, which is a series of visual observations of indoor opacity over fixed time intervals. The frequency and duration of future testing systematically adjusts depending on the observed results. For heavy emitters, EPA Method 9, which requires special training and regular certification to conduct, may be necessary.

Complying Can Net Cost Savings and Other Benefits

4. Seize the opportunity to reduce your operational costs.

The latest EPA standard provides an opportunity to become a more environmentally friendly and sustainable fabricator while reducing the overall cost of operation at the same time. Better indoor air quality is linked to higher worker productivity, lower absenteeism, reduced health care costs, and improved product quality. Fabricators who currently exhaust conditioned air can achieve significant savings through filtering and recirculating the air within their factory. In fact, many energy companies are offering incentives for doing this very thing in an effort to aid industry in reducing energy consumption. All of these factors provide sufficient reasons and justification for improved indoor air quality. The EPA regulation is just a nudge to get the process started.

With a filing deadline of Nov. 22, 2011, for the *Notification of Compliance Status* report, there is no time to waste. Begin your evaluation now by determining whether you are a qualified supplier. Then, contact experienced air-pollution control specialists to determine the appropriate emission-collection solutions for your specific applications. They will evaluate your needs and recommend the solutions to ensure compliance with the applicable standards. A well-designed air-pollution control system is the best way to ensure your facility achieves EPA compliance, attains performance expectations, and realizes potential operational cost savings.

The complete texts of the MFHAP regulation as well as *EPA Visible Emissions Field Manual*, *EPA Methods 9 and 22*, and associated information, can be downloaded online. Just Google “MFHAP regulation” or “EPA Methods 9 and 22” for the various sites. ♦

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