

2011

Summary of the Nine Metal Fabrication and Finishing Source Categories NESHAP



Ohio EPA
3/22/2011

Subpart XXXXXX: National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories

Introduction:

Rule Proposed: April 3, 2008

Rule Promulgated: July 23, 2008

Effective Date: July 23, 2008

This rule was developed to control emissions of hazardous air pollutants from nine metal fabrication and finishing categories located at area sources. These emission standards have been established in the form of management practices and equipment standards. These standards were issued based on the generally available control technology (GACT).

Section 112(k)(3)(B) of the Clean Air Act (CAA) requires U.S. EPA to identify 30 hazardous air pollutants (HAPs) which pose the greatest threat to public health in urban areas. This is implemented through the Urban Air Toxics Strategy. Through the Urban Air Toxics Strategy, U.S. EPA is required to list categories of area sources which would emit these 30 HAPs. The nine source categories regulated under this rule were selected based on the analyses required by the Urban Air Toxics Strategy. These final emission standards were established in response to a court-ordered deadline that required U.S. EPA to establish standards for 11 source categories listed in Sections 112(c)(3) and (k) of the CAA by June 15, 2008.

Compliance dates (§63.11514 and §63.11515):

Existing sources: **July 25, 2011**

New sources: **July 23, 2008**

An affected source is **existing** source if you commenced construction or reconstruction of the affected source before April 3, 2008.

An affected source is **new** source if you commenced construction or reconstruction of the affected source on or after April 3, 2008.

Applicability (§63.11514):

An affected facility must be primarily engaged in an activity to be applicable to this rule. Primarily engaged means the manufacturing, fabricating, or forging of one or more products where this production represents at least 50 percent of the production at the facility.

Production quantities are established by the volume, linear foot, square foot, or an alternative value established by the industry. The period used to determine production should be the previous continuous 12 months. Facilities must document and retain their rationale for the determination that their facility is not “primarily engaged.”

A metal fabrication and finishing HAP (MFHAP) means any compound containing:

- Cadmium: 0.1% by weight or greater
- Chromium: 0.1% by weight or greater
- Lead: 0.1% by weight or greater
- Nickel: 0.1% by weight or greater
- Manganese: 1.0% by weight or greater

This rule applies to new or existing affected metal fabrication and finishing area sources in one of the following nine subcategories that use or have the potential to emit MFHAP. Area sources listed in the nine subcategories that use or have the potential to emit MFHAP are subject to this rule.

Subcategory	NAICS code(s)	SIC code(s)
Electrical and Electronics Equipment Finishing Operations <ul style="list-style-type: none"> • Motor and Generator Manufacturers • All Other Misc. Electrical Equipment and Component Manufacturing 	335999, 335312	3621, 3699
Fabricated Metal Products <ul style="list-style-type: none"> • Powder Metallurgy Part Manufacturer • All Other Misc. Fabricated Metal Product Manufacturing 	332117, 332999	3499
Fabricated Plate Work (boiler shops) <ul style="list-style-type: none"> • Plate Work Manufacturing • Power Boiler and Heater Exchanger Manufacturing • Metal Tank Manufacturing 	332313, 332410, 332420	3443
Fabricated Structural Metal Manufacturing	332312	3441
Heating Equipments (except electric)	333414	3433

Industrial Machinery and Equipment Finishing Operations	333120, 333132, 333911	3531, 3533, 3561
<ul style="list-style-type: none"> • Construction Machinery Manufacturing • Oil and Gas Field Machinery and Equipment Manufacturing 		
Iron and Steel Forging	332111	3462
Primary Metals Products Manufacturing	332618	3399
Valves and Pipe Fittings	332919	3494

Sources not impacted by this rule (§63.11514):

1. Research or laboratories facilities
2. Tool or equipment repair operations, facility maintenance, or quality control activities
3. Operations performed at installations owned or operated by the Armed Forces, NASA, or the National Nuclear Security Administration
4. Operations that produce military ammunitions manufactured by or for the Armed Forces, or equipment directly and exclusively used for the purposes of transporting military ammunitions
5. Source categories that would be affected by this rule would not be subject to the miscellaneous coating requirements in 40 CFR 63 subpart HHHHHH

Quality control activities include activities intended to detect or correct defects in the final project by selecting a limited number of samples and comparing the samples against specific criteria. These activities do not include the production of a product for commercial profit, activities considered to be a normal part of operation, or any facility maintenance.

Processes affected by the rule (§63.11522):

There are five general production operations common to the nine metal fabrication and finishing source categories:

1. Dry abrasive blasting includes cleaning, polishing, conditioning, removing or preparing a surface by propelling a stream of abrasive material with compressed air against the surface. **Dry abrasive blasting does not include** hydro blasting, wet abrasive blasting, or other abrasive blasting operations which employ liquids to reduce emissions.
2. Machining includes dry metal turning, milling, drilling, boring, tapping, planing, broaching, sawing, cutting, shaving, shearing, threading, reaming, shaping, slotting, hobbing, and chamfering with machines.

Machining processes specifically excluded are hand-held devices and any process employing fluids for lubrication or cooling.

3. Dry grinding and dry polishing with machines includes grinding or polishing without the use of lubricating oils or fluids in fixed or stationary machines. **Dry grinding and dry polishing with machines does not include** hand grinding, hand polishing, and bench top dry grinding and dry polishing.
4. Spray painting means the application of paints using a hand-held device that creates an atomized mist of paint and deposits the paint on the substrate. **Spray painting does not include the following materials or activities:**
 - Paints applied from a hand-held device with a paint cup capacity less than 3.0 fluid ounces.
 - Powder coating or surface coating using hand-held, non-refillable aerosol containers, or non-atomizing technologies, including but not limited to, paint brushes, rollers, hand wiping, flow coating, dip coating, electrodeposition coating, web coating, coil coating, touch-up markers, or marking pens.
 - Paint operations that normally require the use of an airbrush or an extension on the spray gun to properly reach limited access spaces.
 - The application of paints that contain fillers that adversely affect atomization with HVLP spray guns.
 - The application of paints that normally have a dried film thickness of less than 0.0005 inches
5. Welding means a process which joins two metal parts at the joint and filling the space with the molten metal.

Emission control requirements (§63.11516):

These vary depending on the type of control implemented.

Processes and type of control	Standards and Management Practices
<p>Requirements for dry abrasive blasting performed in completely enclosed and unvented blast chambers.</p>	<ul style="list-style-type: none"> • These facilities need to comply with two management and pollution prevention practices: <ul style="list-style-type: none"> ➤ Minimize dust generated during emptying of the enclosure ➤ Operate all equipment used in the blasting operation according to the manufacturer's instructions
<p>Requirements for dry abrasive blasting performed in vented enclosures</p>	<ul style="list-style-type: none"> • Blasting must be performed with a control system that includes an enclosure as a capture device, and a cartridge, fabric, or HEPA filter as a control device to control PM matter emissions.

	<ul style="list-style-type: none"> • These facilities also need to comply with three management and pollution prevention practices: <ul style="list-style-type: none"> ➤ Minimize excess dust in the surrounding area to reduce MFHAP emissions ➤ Enclose abrasive material storage areas and holding bins, seal chutes and conveyors transporting abrasive materials ➤ Operate all equipment according to the manufacturer's instructions
<p>Requirements for dry abrasive blasting of objects greater than 8 feet on any dimension</p>	<ul style="list-style-type: none"> • These facilities need to comply with four management and pollution prevention practices: <ul style="list-style-type: none"> ➤ Switch from high PM-emitting blast media to low PM-emitting blast material whenever applicable. ➤ Do not re-use the blast media unless contaminants have been removed by filtration or screening so that the abrasive material conforms to its original size and make up. ➤ Enclose abrasive material storage areas and holding bins, seal chutes and conveyors transporting abrasive materials. ➤ Operate all equipment according to the manufacturer's instructions.
<p>Requirements for dry grinding and dry polishing with machines</p>	<ul style="list-style-type: none"> • These facilities need to comply with two management and pollution prevention practices: <ul style="list-style-type: none"> ➤ Take measures to reduce excess dust in the surrounding area to reduce PM emissions ➤ Operate all equipment used in dry grinding and dry polishing with machines according to the manufacturer's instructions.
<p>Requirements for machining</p>	<ul style="list-style-type: none"> • These facilities need to comply with two management and pollution prevention practices: <ul style="list-style-type: none"> ➤ Take measures to reduce excess dust in the surrounding area to reduce PM emissions

	<ul style="list-style-type: none"> ➤ Operate equipment used in machining operations according to the manufacturer's instructions
<p>Requirements for spray painting</p>	<ul style="list-style-type: none"> • These facilities need to comply with two equipment standards: <ul style="list-style-type: none"> ➤ Use spray booths or spray rooms equipped with PM filters ➤ Use low-emitting and pollution preventing spray gun technology. • These facilities also need to comply with two management and pollution prevention practices: <ul style="list-style-type: none"> ➤ Spray painter training ➤ Spray gun cleaning
<p>Requirements for spray painting of objects greater than 15 feet in any dimension not performed in spray booths</p>	<ul style="list-style-type: none"> • These facilities need to comply with one equipment standard: <ul style="list-style-type: none"> ➤ Use low-emitting and pollution preventing spray gun technology • These facilities need to comply with two management practices: <ul style="list-style-type: none"> ➤ Spray painter training ➤ Spray gun cleaning
<p>Requirements for welding</p>	<ul style="list-style-type: none"> • The following management practices should be utilized when practical: <ul style="list-style-type: none"> ➤ Use welding processes with reduced fume generation capabilities ➤ Use welding process variations which can reduce fume generation rates ➤ Use welding filler metals, shielding gases, carrier gases, or other process materials which are capable of reduced welding fume generation ➤ Optimize welding process variables to reduce the amount of welding fume generated ➤ Use a welding capture and control system and operate according the manufacturer's instructions

Continuous compliance (§63.11516):

Facilities maintain continuous compliance by following the management practices in the final rule and by maintaining the appropriate records to document compliance.

Visual emissions testing for dry abrasive blasting of objects greater than 8 feet in any dimension

- Use EPA Method 22 to perform visual determinations of fugitive emissions according to the graduated schedule

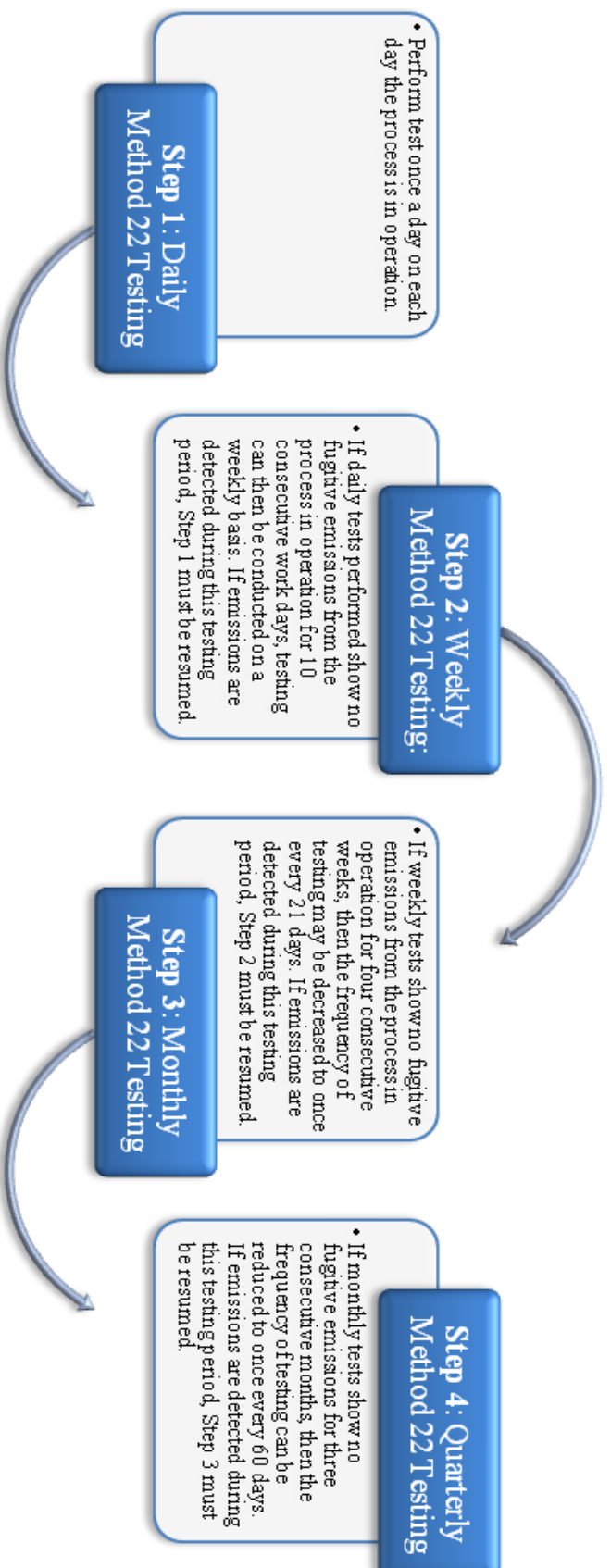
Tests for spray painting

- All personnel who spray apply surface paints with MFHAP must be trained in the proper application of surface paints
- All spray-applied paints with MFHAP must be applied with a HVLP spray gun, electrostatic application, airless spray gun, or equivalent.
- During mixing, storage, and transfer of paints, emissions of MFHAP must be minimized
- Paint and solvent lids should be closed when not in use
- For spray painting objects less than 15 feet in any dimension, spray booths or rooms must be fitted with a filter which achieves at least 98% control efficiency of the MFHAP in the paint.

Visual emissions testing for welding facilities that use 2,000 pounds or more per year of MFHAP containing welding rod. This testing has a 3-tier compliance structure.

- Tier 1*: Use Method 22 to perform visual determinations of fugitive emissions according to the graduated schedule
- Tier 2: If visual emissions are detected two times during any 12 month period, corrective action and documentation must take place immediately after the failed Method 22 test. U.S. EPA Method 9 testing must be implemented within 24 hours of the failed Method 22 test.
- Tier 3: Site-Specific Welding Emissions Management Plan is required if certain parameters of Tier 2 are not met. ***Note:** Tier 1 is required for all applicable facilities performing monitoring. Tiers 2 and 3 required only when an exceedence occurs in previous tier.

Figure 1. U.S. EPA Method 22 graduated schedule flow chart.



Monitoring (§63.11517):

U.S. EPA Method 22: <http://www.epa.gov/ttn/emc/promgate/m-22.pdf>

Visual determination of fugitive emissions must be performed according to U.S. EPA Method 22. The duration for each test must be at least 15 minutes. Visible emissions are considered to be present if they are detected for more than 6 minutes of the 15 minute period. Method 22 testing requirements follow the graduated schedule demonstrated above.

Notifications required:

1. *Initial notification:* For existing sources, this notification is due no later than July 25, 2011. For new sources, this is due 120 days after initial start-up.
2. *Notification of Compliance Status:* For existing sources, this notification is due by November 22, 2011. For new sources, this is due 120 days after initial start-up.

Reports required:

1. Annual certification and compliance reports.
2. For welding sources: You must report an exceedance of 20 percent opacity for welding affected sources. Also, a site-specific welding emissions management plan reporting is required.

Records required:

1. General compliance and applicability records.
2. Visual determination of fugitive emissions records.
3. Visual determination of emission opacity records.
4. Spray paint booth filter records.
5. For spray painting operations: HVLP/high transfer efficiency spray delivery system documentation records.
6. For spray painting operations: HVLP/high transfer efficiency spray delivery system employee training documentation records.
7. Welding operations: Site-specific welding emissions management plan and preparations associated with the visual determination of emissions opacity performed during the preparation of the site-specific welding emissions management plan.
8. Manufacturer's instructions