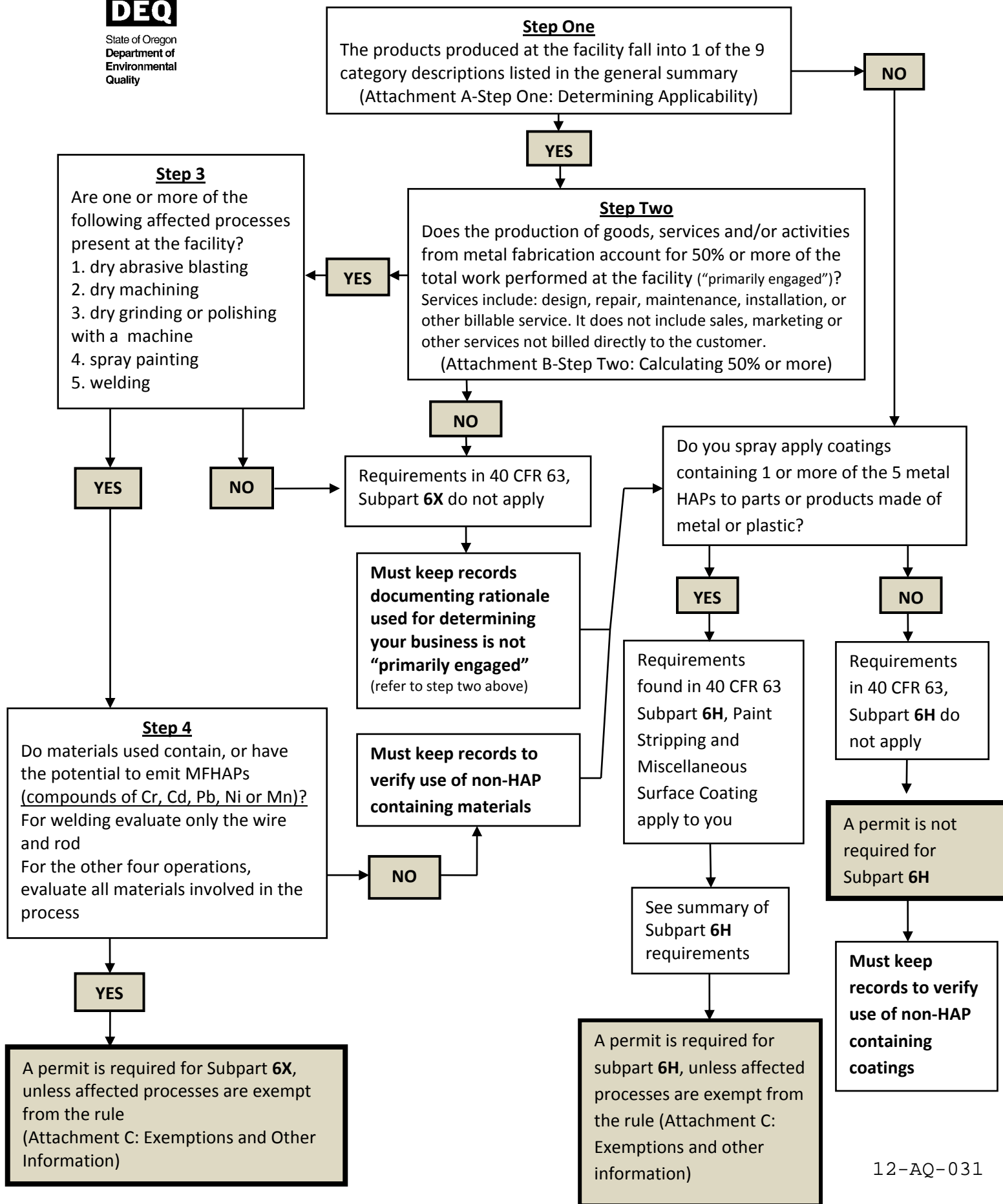




Nine Metal Fabrication and Finishing Source Categories
Rule and Permit Applicability
40 CFR part 63 Subpart XXXXXX (6X)



Guidance for Determining Applicability-Metal Fabrication (Subpart 6X)

Attachment A – Step One

The first step to determining applicability is to look at the products produced by the business. If the business produces any of the products described below they may be subject to 6X.

1. Electrical and Electronic Equipment Finishing Operations
2. Fabricated Metal Products
3. Fabricated Plate Work (boiler shops)
4. Fabricated Structural Metal Manufacturing
5. Heating Equipment (except electrical)
6. Industrial Machinery and Equipment Finishing Operations
7. Iron and Steel Forging
8. Primary Metal Products Manufacturing, and
9. Valves and Pipe Fittings

Most facilities will fall under number two or number eight.

Metal Fabrication and Finishing Operations

1. Electrical and Electronics Equipment Finishing Operations

Establishments primarily engaged in manufacturing motors, generators and electrical machinery, equipment and supplies, not elsewhere classified.

The **Electrical Machinery Equipment and Supplies** industry sector of this source category includes facilities primarily engaged in high energy particle acceleration systems and equipment, electronic simulators, appliance and extension cords, bells and chimes, insect traps, and other electrical equipment and supplies, not elsewhere classified.

The **Motors and Generators Manufacturing** industry sector of this source category includes those establishments primarily engaged in manufacturing electric motors (except engine starting motors) and power generators; motor generator sets; railway motors and control equipment; and motors, generators and control equipment for gasoline, electric, and oilelectric buses and trucks.

2. Fabricated Metal Products

Establishments primarily engaged in manufacturing fabricated metal products, such as fire or burglary resistive steel safes and vaults and similar fire or burglary resistive products; and collapsible tubes of thin flexible metal. Also included are establishments primarily engaged in manufacturing powder metallurgy products, metal boxes; metal ladders; metal household articles, such as ice cream freezers and ironing boards; and other fabricated metal products not elsewhere classified.

3. Fabricated Plate Work (boiler shops)

Establishments primarily engaged in manufacturing power and marine boilers, pressure and non-pressure tanks, processing and storage vessels, heat exchangers, weldments and similar products.

4. Fabricated Structural Metal Manufacturing

Establishments primarily engaged in fabricating iron and steel or other metal for structural purposes, such as bridges, buildings, and sections for ships, boats, and barges.

Guidance for Determining Applicability-Metal Fabrication (Subpart 6X)

Attachment A – Step One

5. Heating Equipment (non-electric)

Establishments primarily engaged in manufacturing heating equipment, except electric and warm air furnaces, including gas, oil, and stoker coal fired equipment for the automatic utilization of gaseous, liquid, and solid fuels.

Typical products produced in this source category include low pressure heating (steam or hot water) boilers, fireplace inserts, domestic (steam or hot water) furnaces, domestic gas burners, gas room heaters, gas infrared heating units, combination gas oil burners, oil or gas swimming pool heaters, heating apparatus (except electric or warm air), kerosene space heaters, gas fireplace logs, domestic and industrial oil burners, radiators, galvanized iron nonferrous metal range boilers, room heaters, coke and gas burning salamanders, liquid or gas solar energy collectors, solar heaters, space heaters, mechanical (domestic and industrial) stokers, wood and coal-burning stoves, domestic unit heaters and wall heaters.

6. Industrial Machinery and Equipment Finishing Operations

Establishments primarily engaged in construction machinery manufacturing; oil and gas field machinery manufacturing, and pumps and pumping equipment manufacturing.

The **Construction Machinery Manufacturing** industry sector of this source category includes establishments primarily engaged in manufacturing heavy machinery and equipment of types used primarily by the construction industries, such as bulldozers, concrete mixers, and cranes, except industrial plan overhead and truck-type cranes, dredging machinery, pavers and power shovels.

Also included are establishments primarily engaged in manufacturing forestry equipment and certain specialized equipment, not elsewhere classified. Equipment similar to that used by the construction industry, such as elevated platforms, ship cranes and capstans, aerial work platforms, and automobile wrecker hoists.

The **Oil and Gas Field Machinery Manufacturing** industry sector of this source category includes establishments primarily engaged in manufacturing machinery and equipment for use in oil and gas fields or for drilling water wells, including portable drilling rigs.

The **Pumps and Pumping Equipment Industry** sector of this source category includes establishments primarily engaged in manufacturing pumps and pumping equipment for general industrial, commercial or household use, except fluid power pumps and motors.

This category includes establishments primarily engaged in manufacturing domestic water and sump pumps.

7. Iron and Steel Forging

Establishments primarily engaged in the forging manufacturing process, where purchased iron and steel metal is pressed, pounded or squeezed under great pressure into high strength parts known as forgings. The process is usually performed hot by preheating the metal to a desired temperature before it is worked. The forging process is different from the casting and foundry processes, as metal used to make forged parts is never melted and poured.

8. Primary Metals Products Manufacturing

Establishments primarily engaged in manufacturing products such as fabricated wire products made from purchased wire (except springs). These facilities also manufacture steel balls, nonferrous metal brads and nails, nonferrous metal spikes, staples, and tacks, and other primary metal products not elsewhere classified.

Guidance for Determining Applicability-Metal Fabrication (Subpart 6X)

Attachment A – Step One

9. Valves and Pipe Fittings

Establishments primarily engaged in manufacturing metal valves and pipe fittings, flanges and unions with the exception of purchased pipes and other valves and pipe fittings not elsewhere classified.

If yes, proceed to Attachment B-Step Two

If no, proceed to Attachment C-Exemptions and other information

Guidance for Determining 50% or More Production for MF (Subpart 6X)

Attachment B – Step Two

The second step is to determine if the production of products and/or the activities associated with metal fabrication (minus sales and marketing) account for 50% or more of the total production and/or activities performed at the facility?

The NESHAP defines primary activity or primarily engaged as the manufacturing, fabricating or forging of one or more products listed in one of the nine metal fabrication and finishing source category descriptions in Table 1, “Description of Source Categories by this Subpart”, where this production represents at least 50 percent of the production at a facility, and where production quantities are established by the volume, linear foot, square foot, or other value suited to the specific industry. (The period used to determine this is the previous continuous 12 months of operation). Facilities must document and retain their rationale for the determination that their facility is not “primarily engaged” pursuant to 63.10(b)(3) of the General Provisions.

63.10(b)(3) states in part that the applicability determination must be sufficiently detailed to allow for a finding to be made, and that records of this determination be kept on site for 5 years. It does not explain how the determination can or should be done.

It is up to the source to make this determination and keep records. DEQ may audit the sources records to determine if an adequate and defensible determination has been made.

Below is one example of an acceptable method for calculating 50% or more production:

Evaluate the total number of employee hours spent doing the affected activity (or combination of activities) **vs** the number of hours worked per year (if they can provide weekly or monthly data you can calculate yearly).

Calculation1 - Use if employee “only” performs affected activity(s):

Employee total hours worked per week **x** the number of weeks worked per year = Total hours spent on that activity by that employee for the year.

Calculation 2 - Use if employee performs affected activity(s) and other non-metal fabrication *related or exempt activities:

Employee total hours worked [calculation 1] - hours worked doing non-affected activities = Total hours spent on affected activities.

*Non-metal fabrication related or exempt activities include:

- Design
- Installation
- Fabrication of non-metal parts (i.e., plastic)
- Wet processes (those using fluids or water for lubrication or cooling)
- Machining, grinding or polishing with hand held devices
- Bench top grinding and polishing
- Use of materials (such as welding rod and/or wire) without the five metal HAPs
- Activities that meet the definition of “tool or equipment repair operations,” “facility maintenance,” “quality control activities” or “research and laboratory facilities”

Guidance for Determining 50% or More Production for MF (Subpart 6X)

Attachment B – Step Two

- Affected processes performed as part of facility maintenance or to repair equipment used at the facility are exempt, and should not be used when determining 50% or more.

Calculation 3 - 50% or more calculation for the year, based on hours calculated for each employee:

Total number of hours on affected activities = The addition of all hours from [calculation 1] per employee per year + The addition of all hours from [calculation 2] per employee per year ÷ the total number of hours worked by all employees for the year.

Production can be a moving target (especially if and when the economy turns around and demand increases). Therefore, even though someone may determine that the rule is not applicable at the current time, does not mean that the facilities production will not change at a later date. The business is responsible for making a determination every year based on the last 12 months of operation and should be updating their rationale accordingly, especially if they are close to the 50% trigger.

Exemptions and Other Information Related to Metal Fabrication (Subpart 6X)

Attachment C

The following information covers exemptions from the metal fabrication rule and from permitting. In addition, the information covers the relationship between the spray coating requirement in the 6H rule and those in the 6X rule.

In a nutshell:

Remember that there are always two determinations that need to be made:

1) Does the rule apply to the facility?

- a. If no, the facility does not need a permit
- b. If yes, the facility must comply with the rule, but may not need a permit

2) Ok, so the rule applies, but does the source need a permit?

Some sources will be subject to the rule and will need to comply with the rule, but because of the activities they perform or their size they do not need a permit.

Example 1:

- The 6X rule applies but the facility does no shielded metal arc welding (SMAW) and
- The facility uses less than 100 lbs per year of welding wire or rod that contains any of the five metal HAPs

If both of these criteria are met, then a permit would not be required, even though the rule applies and they must comply with the requirements in the rule.

Example 2:

The rule applies, but the facility does not perform any of the activities that would require a permit such as; dry machining, dry grinding or dry polishing.

If a facility has these affected processes, then the rule applies but a permit is not required.

6X Rule Exemptions:

- Facilities that produce products that are not part of one of the nine affected categories
- Facilities where the production of products and/or the activities associated with metal fabrication (minus sales and marketing) account less than 50% of the total production and/or activities performed at the facility?
- Fabrication of other non-metal parts (i.e., plastic)
- Wet processes (those using fluids or water for lubrication or cooling)
- Machining, grinding or polishing with hand held devices
- Bench top grinding and polishing
- Use of materials (such as welding rod and/or wire) without the five metal HAPs

6X and 6H Rule Exemptions

- Spray application of coatings that do not contain any of the five target metal HAPs, **or** that contain any of the five target metals in the following amounts: For chromium, cadmium, lead or nickel, the quantity of metal must be 0.1 percent or less. For manganese the quantity of metal must be 1.0 percent or less.
 - For 6H CR+3 can be at 1% or less
- Surface coating application that fall under one or more of the following:
 - Powder coating
 - Hand held non-refillable aerosol containers
 - Non-atomizing technology including , but not limited to:
 - paint brushes
 - rollers

Exemptions and Other Information Related to Metal Fabrication (Subpart 6X)

Attachment C

- hand wiping
 - flow coating
 - dip coating
 - electrodeposition coating
 - web coating
 - coil coating
 - touch-up markers, and 'marking pens
- Activities that meet the definition of "tool or equipment repair operations," "facility maintenance," "quality control activities" or "research and laboratory facilities"
Affected processes performed as part of facility maintenance or to repair equipment used at the facility are exempt, and should not be used when determining 50% or more
- Operations performed on site at installations owned or operated by the United States Armed Forces, the National Aeronautics and Space Administration, or the National Nuclear Security Administration
- Operations that produce military munitions or equipment directly and exclusively used for the purposes of transporting military munitions

6X Permitting Exemptions.

A permit for 6X is not required if:

- The 6X rule does not apply
- The 6X rule applies, but the facility does not have any of the following affected processes:
 - dry abrasive blasting
 - surface coating
 - welding
- The 6X rule applies, but the materials being used do not contain any of the five target metal HAPs
- The 6X rule applies but the following criteria are met:
 - No shielded metal arc welding is performed
 - The use of welding wire or rod containing any of the five metal HAPs is less than 100 lbs per year
 - Records of the amount of wire and rod used must be kept on site as proof

How paint stripping and surface coating affects the metal fabrication rule:

The painting requirements found in 6X or the requirements of 6H (Paint Stripping and Surface Coating) may apply to metal fabricators who perform spray applied painting activities at their facility. This activity would fall under miscellaneous surface coating because of the spraying of coatings onto misc. parts and or products made of metal and/or plastic.

The 6X rule defines paint rather than coatings. The definition of paint in the 6X rule is:

A material applied to a substrate for decorative, protective, or functional purposes. Such materials include, but are not limited to, paints, coatings, sealants, liquid plastic coatings, caulks, inks, adhesives, and maskants. Decorative, protective, or functional materials that consist only of protective oils for metal, acids, bases, or any combination of these substances, or paper film or plastic film that may be pre-coated with an adhesive by the film manufacturer are not considered paints according to this rule.

Here is how painting activities factor into the 6X rule:

Exemptions and Other Information Related to Metal Fabrication (Subpart 6X)

Attachment C

The requirements for painting in the 6X rule may apply if a facility is applying paint that contains .1% or less of chromium, cadmium, lead or nickel and 1% or less of manganese.

Here are the scenarios that could be present at a facility:

- 6X applies and a facility spray applies coatings that contain one or more of the five metal HAPs, **or** MeCl is being used to strip coatings from **any** substrate:
 - A permit is required for 6X
 - Compliance with the rule requirements for painting in the 6X rule is required
 - These requirements would be found in the permit if applicable
 - The 6H rule does not apply
- 6X applies and a facility spray applies coatings that do not contain any of the five metal HAPs and no MeCl is in use
 - A permit for 6X may be required based on other activities performed
 - The requirements for painting in 6X do not apply
 - Records showing that the coatings applied do not contain any of the five metal HAPs must be kept on site as proof
 - The 6H rule does not apply

Here is how the 6H rule factors into the 6X rule:

The requirements for painting in the 6H rule may apply, even if the 6X rule does not apply.

Here are the scenarios that could be present at a facility:

- 6X does not apply **and** the facility does not spray apply any coatings or perform any stripping using MeCl
 - The facility does not need to comply with the requirements found in 6X or 6H
 - No permit is required for either 6X or 6H
- 6X does not apply but a facility **is** spray applying coatings that contain one or more of the five metal HAPs, **or** MeCl is being used to strip coatings from **any** substrate:
 - 6H applies
 - The facility must comply with the requirements of the 6H rule
 - A permit for 6H is required
 - If a facility is only using exempted activities then 6H does not apply
- 6X does not apply and the facility **does not** spray applying coatings that contain any of the five metal HAPs, **and** no MeCl is being used to strip coatings from **any** substrate:
 - 6H does not apply
 - Records showing that the coatings applied do not contain any of the five metal HAPs must be kept on site as proof
 - The facility does not need to comply with the requirements found in 6X or 6H
 - No permit is required for either 6X or 6H

6H Permitting Exemptions as They Apply to Miscellaneous Surface Coaters:

- The 6H rule does not apply and therefore a permit is not required
- The 6H rule applies but the facility uses less than 20 gallons of paint per year
 - Records of paint usage must be kept on site

Table 1: How the painting requirements of 6X and 6H differ

6X Requirements	6H Requirements
-----------------	-----------------

Exemptions and Other Information Related to Metal Fabrication (Subpart 6X)

Attachment C

Paint is defined(similar, but some pieces are missing)	Coating is defined (more elaborate)
Exempt paint cups must be less than 3 oz.	Exempt coating cups must be 3 oz or less
Cannot atomize gun cleaning solvent or paint residue unless solvent does not contain any HAPS	Cannot atomize solvent or paint residue regardless of content
Spray booths or spray rooms are required to have a full roof, at least two complete walls and one or two complete side curtains or other barrier material so that all four sides are covered	Spray booths and prep stations must have a full roof and at least three complete walls or complete side curtains
Any CR+3 in materials used must be .1% or less	Any CR+3 in materials used must be 1% or less