

Metal Fabrication

Metal fabrication is the building of metal products by cutting, bending, assembling, and finish processes:

- *Cutting* is done by sawing, shearing, or chiseling; torching with handheld torches (such as oxy-fuel torches or plasma torches); and via computerized numerical control cutters using a laser, mill bits, torch, or water jet.
- *Bending* is done by hammering (manual or powered) or via press brakes and similar tools. Modern metal fabricators utilize press brakes to either coin or air-bend metal sheet into form.
- *Assembling* is done by welding, binding with adhesives, riveting, threaded fasteners, or even yet more bending in the form of a crimped seam. Structural steel and sheet metal are the usual starting materials for fabrication, along with the welding wire, flux, and fasteners that will join the cut pieces.
- Final finish production may also include grinding, sanding, sand-blasting, powder coating or painting.

Emissions of Concern

Processes like flux-cored arc welding and shielded metal arc welding produce smoke containing particles of various types of oxides. The size of the particles tends to influence the toxicity of the fumes, with smaller particles presenting a greater danger. Exposure to manganese welding fumes, for example, even at low levels (<0.2 mg/m³), may lead to neurological problems or to damage to the lungs, liver, kidneys, or central nervous system.

Emission Controls

Emission controls include management practices and equipment standards. Management practices include regular sweeping or vacuuming of areas around processes, and use of low fume welding techniques. Equipment standards include use of add-on control devices such as cartridge or fabric filters.



New Source Review (NSR) & Fees

YRCAA requires that a NSR permit application be submitted and approved prior to the construction, installation, establishment, replacement or modification of air contaminant sources, emissions units or air pollution control equipment in YRCAA jurisdiction. This includes equipment associated with stationary or portable devices or any part of such a device that emits or has the potential to emit any air contaminant, including Metal Fabrication operations. There is a NSR permit application fee, and an Order of Approval fee, based on the staff time to conduct the review and draft the Order of Approval.



COMPLIANCE ASSISTANCE PROGRAM

Annual Registration & Fees

Sources of air contaminants, including Metal Fabrication operations, must register annually with YRCAA and pay a fee. YRCAA's Board of Directors reviews fees annually. As a part of the registration program, businesses are required to complete and submit a registration form annually. The annual registration program enables YRCAA to classify sources and maintain an inventory of air contaminants. Information is also used to evaluate air pollution control strategies to attain and maintain National Ambient Air Quality Standards.

Inspections

Regular inspections of registered sources are conducted to verify compliance with air pollution regulations. When inspecting Metal Fabrication operation, the compliance team will:

- review records;
- determine if any changes have been made to processes, equipment, materials or fuels;
- observe operation and maintenance activities;
- determine if any violations of rules, permits or orders exist; and
- determine if any corrective actions are needed to avoid enforcement.

If you have already installed or modified a Metal Fabrication operation or any equipment or process associated with Metal Fabrication operation, or are planning to in the future, please contact YRCAA. Our staff is available to assist you with the permit and registration process.

YRCAA Rules

[YRCAA Regulation 1, Subsection 4.01](#)

State Rules

[WAC 173-400](#) – General Regulations for Air pollution Sources

[WAC 173-460](#) – Controls for New Sources of Toxic Air Pollutants

Federal Rules

EPA has rules for control of hazardous air pollutants (HAPs) called maximum achievable control technology (MACT) standards. To determine if your facility, equipment or operation is subject to a MACT standard see the following links:

<http://www.epa.gov/airtoxics/mactfnlalph.html>

<http://www.epa.gov/ttn/atw/area/compilation.html>