

SECONDARY ALUMINUM SWEAT FURNACES

Air General Permit Example Registration Worksheet

The Florida Department of Environmental Protection (“Department” or “FDEP”) has established an air general permit under paragraph 62-210.310(5)(k), Florida Administrative Code (“F.A.C.”), for secondary aluminum sweat furnaces. An air general permit is an authorization by rule to construct or operate a specific type of air pollutant emitting facility. Use of such authorization by any individual facility does not require action by the Department. The terms and conditions of the air general permit are set forth in the rule, rather than in a separately issued air construction or air operation permit.

If you are the owner or operator of an eligible facility comprising one or more secondary aluminum sweat furnaces, you may register to use the air general permit under paragraph 62-210.310(5)(k), F.A.C., by following the general procedures and conditions given under subsections 62-210.310(2) and 62-210.310(3), F.A.C.

To register, you may use the Department’s new online Air General Permit Electronic Registration Submittal system (<https://floridadep.gov/air/permitting-compliance/content/air-general-permits>), or complete this registration worksheet and submit it to the address below, along with the air general permit registration processing fee (\$100.00), payable to FDEP.

Regular USPS Mail Delivery

Department of Environmental Protection
Receipts
Post Office Box 3070
Tallahassee, Florida 32315-3070

OR

Overnight Delivery (FedEx, UPS, DHL, etc.)

Department of Environmental Protection
3800 Commonwealth Blvd.
Mail Station 77
Tallahassee, Florida 32399

If you properly register to use an air general permit, and are not denied use of the air general permit by the Department, you are authorized to construct and operate the facility in accordance with the general terms and conditions of Rule 62-210.310, F.A.C., and the specific terms and conditions of paragraph 62-210.310(5)(k), F.A.C. Your facility may vary, so be sure your registration describes the operations at your facility in sufficient detail to demonstrate the facility’s eligibility for use of the air general permit and to provide a basis for tracking any future equipment or process changes. Your registration should describe all air pollutant-emitting processes and equipment at the facility, and it should identify any air pollution control measures or equipment used.

The rules do not require any specific format for the registration. This worksheet, however, has been designed to assist owners and operators. Using it as a template for a general permit registration will help ensure that all necessary information is submitted.

Additional information can be found on the Department’s air general permit program website listed above or by calling the Small Business Environmental Assistance Program Hotline at 1-800-722-7457.

**SECONDARY ALUMINUM SWEAT FURNACES
AIR GENERAL PERMIT EXAMPLE REGISTRATION WORKSHEET**

Facility Identification Number - If known (seven digit number)

Registration Type

Check one:

INITIAL REGISTRATION - Notification of intent to:

- Construct and operate a proposed new facility.
- Operate an existing permitted facility not currently using an air general permit (e.g., a facility proposing to go from an air operation permit to an air general permit). If the facility currently holds one or more air operation permits, such permit(s) must be surrendered by the owner or operator upon the effective date of this air general permit. (See "Surrender of Existing Air Operation Permit(s)" below.)
- Operates an existing facility not currently permitted or using an air general permit.

RE-REGISTRATION (for facilities currently using an air general permit) - Notification of intent to:

- Continue operating the facility after expiration of the current term of air general permit use.
- Continue operating the facility after a change of ownership.
- Make an equipment change requiring re-registration pursuant to paragraph 62-210.310(2)(e), F.A.C.
- Any other change not considered an administrative correction under paragraph 62-210.310(2)(d), F.A.C.

Surrender of Existing Air Operation Permit(s) - For Initial Registrations Only, if Applicable

All existing air operation permits for this facility are hereby surrendered upon the effective date of this air general permit; specifically permit number(s):

General Facility Information

Facility Owner/Company Name (Name of corporation, agency, or individual owner who or which owns, leases, operates, controls, or supervises the facility.)

Site Name (Name, if any, of the facility site; e.g., Plant A, Metropolis Plant, etc. If more than one facility is owned, a complete registration must be submitted for each.)

Facility Location (Physical location of the facility, not necessarily the mailing address.)

Street Address: _____

City: _____

County: _____

Zip Code: _____

Facility Start-Up Date (Estimated start-up date of proposed **new** facility.) (N/A for existing facility.)

Facility Contact

<u>Name and Position Title</u> (Plant manager or person to be contacted regarding day-to-day operations at the facility.) Print Name and Title: _____		
<u>Facility Contact Telephone Numbers</u> Telephone: _____ Fax: _____ Cell phone: _____ E-mail: _____		
<u>Facility Contact Mailing Address</u> Organization/Firm: _____ Mailing Address: _____ City: _____ County: _____ Zip Code: _____		

Other Contact/Representative (to serve as additional Department contact)

<u>Name and Position Title</u> Print Name and Title: _____		
<u>Other Contact/Representative Telephone Numbers</u> Telephone: _____ Fax: _____ Cell phone: _____ E-mail: _____		
<u>Other Contact/Representative Mailing Address</u> Organization/Firm: _____ Mailing Address: _____ City: _____ County: _____ Zip Code: _____		

Facility Description and Comments

Number of secondary aluminum sweat furnace units on site: _____

List and briefly describe all other process operations at the site that may emit air pollutants (for example, scrap shredders, degreasers, paint shops, boilers, emergency generators, etc.). Add any comments about the facility that would be helpful to the Department in understanding the nature of your operation (for example, describe the products made, amount of materials used, air pollution control equipment employed, and hours of operation).

Helpful Definitions

“Add-on air pollution control device” - The equipment installed on a process vent that reduces the quantity of a pollutant that is emitted to the air.

“Afterburner” - An air pollution control device that uses controlled flame combustion to convert combustible materials to noncombustible gases; also known as an incinerator or a thermal oxidizer.

“Aluminum scrap” - The fragments of aluminum stock removed during manufacturing (*i.e.*, machining), manufactured aluminum articles or parts rejected or discarded and useful only as material for reprocessing, and waste and discarded material made of aluminum.

“Aluminum scrap shredder” - A unit that crushes, grinds, or breaks aluminum scrap into a more uniform size prior to processing or charging to a *scrap dryer/delacquering kiln/decoating kiln*, or furnace. A bale breaker is not an *aluminum scrap shredder*.

“Bag leak detection system” - An instrument that is capable of monitoring particulate matter loadings in the exhaust of a fabric filter (*i.e.*, baghouse) in order to detect bag failures. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, light scattering, light transmittance, or other effect to monitor relative particulate matter loadings.

“Chips” - Small, uniformly-sized, unpainted pieces of aluminum scrap, typically below 1 1/4 inches in any dimension, primarily generated by turning, milling, boring, and machining of aluminum parts.

“Clean charge” - Furnace charge materials, including molten aluminum; T-bar; sow; ingot; billet; pig; alloying elements; aluminum scrap known by the owner or operator to be entirely free of paints, coatings, and lubricants; uncoated/unpainted aluminum chips that have been thermally dried or treated by a centrifugal cleaner; aluminum scrap dried at 343 °C (650 °F) or higher; aluminum scrap delacquered/decoated at 482 °C (900 °F) or higher, and runaround scrap.

“Cover flux” - The salt added to the surface of molten aluminum in a *group 1* or *group 2 furnace*, without agitation of the molten aluminum, for the purpose of preventing oxidation.

“Customer returns” - Any aluminum product which is returned by a customer to the aluminum company that originally manufactured the product prior to resale of the product or further distribution in commerce, and which contains no paint or other solid coatings (*i.e.*, lacquers).

“D/F” - Dioxins and furans.

“Dioxins and furans” - Tetra-, penta-, hexa-, and octachlorinated dibenzo dioxins and furans.

“Dross” - The slags and skimmings from aluminum melting and refining operations consisting of fluxing agent(s), impurities, and/or oxidized and non-oxidized aluminum, from scrap aluminum charged into the furnace.

“Dross-only furnace” - A furnace, typically of rotary barrel design, dedicated to the reclamation of aluminum from dross formed during melting, holding, fluxing, or alloying operations carried out in other process units. Dross and salt flux are the sole feedstocks to this type of furnace.

“Emission unit” - A *group 1 furnace* or *in-line fluxer* at a *secondary aluminum production facility*.

“Fabric filter” - An add-on air pollution control device used to capture particulate matter by filtering gas streams through filter media; also known as a baghouse.

“Facility” - All of the emissions units which are located on one or more contiguous or adjacent properties, and which are under the control of the same person (or persons under common control).

“Feed/charge” - For a furnace or other process unit that operates in batch mode, the total weight of material (including molten aluminum, T-bar, sow, ingot, etc.) and alloying agents that enter the furnace during an operating cycle. For a furnace or other process unit that operates continuously, *feed/charge* means the weight of material (including molten aluminum, T-bar, sow, ingot, etc.) and alloying agents that enter the process unit within a specified time period (*e.g.*, a time period equal to the performance test period). The feed/charge for a dross only furnace includes the total weight of dross and solid flux.

“Fluxing” - Refining of molten aluminum to improve product quality, achieve product specifications, or reduce material loss, including the addition of solvents to remove impurities (solvent flux); and the injection of gases such as chlorine, or chlorine mixtures, to remove magnesium (demagging) or hydrogen bubbles (degassing). *Fluxing* may be performed in the furnace or outside the furnace by an *in-line fluxer*.

“Furnace hearth” - The combustion zone of a furnace in which the molten metal is contained.

“Group 1 furnace” - A furnace of any design that melts, holds, or processes aluminum that contains paint, lubricants, coatings, or other foreign materials with or without *reactive fluxing*, or processes *clean charge* with *reactive fluxing*.

“Group 2 furnace” - A furnace of any design that melts, holds, or processes only *clean charge* and that performs no *fluxing* or performs *fluxing* using only nonreactive, non-HAP-containing/non-HAP-generating gases or agents.

“HCl” - For the purposes 40 CFR, Subpart RRR, emissions of hydrogen chloride that serve as a surrogate measure of the total emissions of the HAPs hydrogen chloride, hydrogen fluoride and chlorine.

“In-line fluxer” - A device exterior to a furnace, located in a transfer line from a furnace, used to refine (flux) molten aluminum; also known as a flux box, degassing box, or demagging box.

“Internal scrap” - All aluminum scrap regardless of the level of contamination which originates from castings or extrusions produced by an aluminum die casting facility, aluminum foundry, or aluminum extrusion facility, and which remains at all times within the control of the company that produced the castings or extrusions.

“Lime” - Calcium oxide or other alkaline reagent.

“Lime-injection” - The continuous addition of lime upstream of a *fabric filter*.

“Melting/holding furnace” - A *group 1 furnace* that processes only *clean charge*, performs melting, holding, and fluxing functions, and does not transfer molten aluminum to or from another furnace except for purposes of alloy changes, off-specification product drains, or maintenance activities.

“Operating cycle”- For a batch process, the period beginning when the feed material is first charged to the operation and ending when all feed material charged to the operation has been processed. For a batch melting or holding furnace process, *operating cycle* means the period including the charging and melting of scrap aluminum and the fluxing, refining, alloying, and tapping of molten aluminum (the period from tap-to-tap).

“Owner” or “Operator” - Any person or entity who or which owns, leases, operates, controls or supervises an emissions unit or facility.

“PM” - For the purposes of 40 CFR, Subpart RRR, emissions of particulate matter that serve as a measure of total particulate emissions and as a surrogate for metal HAPs contained in the particulates, including but not limited to, antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, mercury, nickel, and selenium.

“Pollution prevention” – A source reduction as defined under the Pollution Prevention Act of 1990 (*e.g.*, equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training, or inventory control), and other practices that reduce or eliminate the creation of pollutants through increased efficiency in the use of raw materials, energy, water, or other resources, or protection of natural resources by conservation.

“Reactive fluxing” - The use of any gas, liquid, or solid flux (other than cover flux) that results in a HAP emission. Argon and nitrogen are not reactive and do not produce HAP.

“Reconstruction” - The replacement of components of an affected source or *emission unit* such that the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new affected source, and it is technologically and economically feasible for the reconstructed source to meet relevant standard(s) established in this subpart. Replacement of the refractory in a furnace is routine maintenance and is not a *reconstruction*. The repair and replacement of *in-line fluxer* components (*e.g.*, rotors/shafts, burner tubes, refractory, warped steel) is considered to be routine maintenance and is not considered a *reconstruction*. *In-line fluxers* are typically removed to a maintenance/repair area and are replaced with repaired units. The replacement of an existing *in-line fluxer* with a repaired unit is not considered a *reconstruction*.

“Residence time” - For an *afterburner*, the duration of time required for gases to pass through the *afterburner* combustion zone. *Residence time* is calculated by dividing the *afterburner* combustion zone volume in cubic feet by the volumetric flow rate of the gas stream in actual cubic feet per second.

“Rotary dross cooler” - A water-cooled rotary barrel device that accelerates cooling of dross.

“Runaround scrap” - Scrap materials generated on-site by aluminum casting, extruding, rolling, scalping, forging, forming/stamping, cutting, and trimming operations and that do not contain paint or solid coatings. Uncoated/unpainted aluminum chips generated by turning, boring, milling, and similar machining operations may be clean charge if they have been thermally dried or treated by a centrifugal cleaner, but are not considered to be *runaround scrap*.

“Scrap dryer/delacquering kiln/decoating kiln” - A unit used primarily to remove various organic contaminants such as oil, paint, lacquer, ink, plastic, and/or rubber from *aluminum scrap* (including used beverage containers) prior to melting.

“Secondary aluminum processing unit (SAPU)” - An existing SAPU means all existing *group 1 furnaces* and all existing *in-line fluxers* within a *secondary aluminum production facility*. Each existing *group 1 furnace* or existing *in-line fluxer* is considered an *emission unit* within a *secondary aluminum processing unit*. A new SAPU means any combination of individual *group 1 furnaces* and *in-line fluxers* within a *secondary aluminum processing facility* which either were constructed or reconstructed after February 11, 1999, or have been permanently redesignated as new emission units pursuant to §63.1505(k)(6). Each of the *group 1 furnaces* or *in-line fluxers* within a new SAPU is considered an *emission unit* within that *secondary aluminum processing unit*.

“Secondary aluminum production facility” - Any establishment using *clean charge*, *aluminum scrap*, or dross from aluminum production, as the raw material and performing one or more of the following processes: scrap shredding, scrap drying/delacquering/decoating, thermal chip drying, furnace operations (*i.e.*, melting, holding, sweating, refining, fluxing, or alloying), recovery of aluminum from dross, in-line fluxing, or dross cooling. A *secondary aluminum production facility* may be independent or part of a primary aluminum production facility. For purposes of this subpart, aluminum die casting facilities, aluminum foundries, and aluminum extrusion facilities are not considered to be secondary aluminum production facilities if the only materials they melt are *clean charge*, customer returns, or internal scrap, and if they do not operate sweat furnaces, thermal chip dryers, or scrap dryers/delacquering kilns/decoating kilns. The determination of whether a facility is a *secondary aluminum production facility* is only for purposes of this subpart and any regulatory requirements which are derived from the applicability of this subpart, and is separate from any determination which may be made under other environmental laws and regulations, including whether the same facility is a “secondary metal production facility” as that term is used in 42 U.S.C. §7479(1) and 40 CFR 52.21(b)(1)(i)(A) (“prevention of significant deterioration of air quality”).

“Sidewell”- An open well adjacent to the hearth of a furnace with connecting arches between the hearth and the open well through which molten aluminum is circulated between the hearth, where heat is applied by burners, and the open well, which is used for charging scrap and solid flux or salt to the furnace, injecting fluxing agents, and skimming dross.

“Sweat furnace” - A furnace used exclusively to reclaim aluminum from scrap that contains substantial quantities of iron by using heat to separate the low-melting point aluminum from the scrap while the higher melting-point iron remains in solid form.

TEQ means the international method of expressing toxicity equivalents for dioxins and furans as defined in “Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzop-Dioxins and -Dibenzofurans (CDDs and CDFs) and 1989 Update” (EPA-625/3-89-016), available from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, Virginia 22161, NTIS no. PB 90-145756.

“THC” - For the purposes of 40 CFR, Subpart RRR, total hydrocarbon emissions that also serve as a surrogate for the emissions of organic HAP compounds.

“Thermal chip dryer” -A device that uses heat to evaporate oil or oil/water mixtures from unpainted/uncoated aluminum chips. Pre-heating boxes or other dryers which are used solely to remove water from aluminum scrap are not considered to be thermal chip dryers for purposes of this subpart.

“Three-day, 24-hour rolling average” - The daily calculations of the average 24-hour emission rate (lbs/ton of feed/charge), over the 3 most recent consecutive 24-hour periods, for a *secondary aluminum processing unit*.

“Total reactive chlorine flux injection rate” - The sum of the total weight of chlorine in the gaseous or liquid reactive flux and the total weight of chlorine in the solid reactive chloride flux, divided by the total weight of feed/charge, as determined by the procedure in §63.1512(o).