

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT - RENEWAL

PERMITTEE

Federal Signal Corporation  
Attn: Thomas Longtin  
2645 Federal Signal Drive  
University Park, Illinois 60466-3195

Application No.: 83010047

I.D. No.: 197072AAC

Applicant's Designation: POWDERCOAT

Date Received: April 21, 2006

Subject: Manufacture of Signal Devices

Date Issued:

Expiration Date:

Location: 2645 Federal Signal Drive, University Park, Will County

This permit is hereby granted to the above-designated Permittee to OPERATE emission unit(s) and/or air pollution control equipment consisting of a vapor degreaser, two natural gas fired boilers, bake ovens, paint booths, powder coating booths with powder filters and reclaim systems, and a humiseal coating operation, pursuant to the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This federally enforceable state operating permit is issued:
    - i. This federally enforceable state operating permit (FESOP) is issued to limit the emissions of air pollutants from the source to less than major source thresholds (i.e., 100 tons/year for Volatile Organic Material (VOM), and 10 tons/year for a single hazardous air pollutant (HAP) and 25 tons/year of any combination of such HAPs). As a result, the source is excluded from the requirements to obtain a Clean Air Act Permit Program (CAAPP) permit. The maximum emissions of this source, as limited by the conditions of this permit are described in Attachment A.
    - ii. To limit the potential emissions of VOM from the source to less than 25 tons/year. As a result, the source is excluded from the requirement of 35 Ill. Adm. Code Part 205, Emission Reduction Market System. The maximum emissions of this source, as limited by the conditions of this permit, are described in Attachment A.
  - b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
  - c. This permit supersedes the current permit(s) issued for this location.
- 2a. Pursuant to 35 Ill. Adm. Code 212.123(a), no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to 35 Ill. Adm. Code 212.122.

- b. Pursuant to 35 Ill. Adm. Code 212.123(b), the emission of smoke or other particulate matter from any such emission unit may have an opacity greater than 30 percent but not greater than 60 percent for a period or periods aggregating 8 minutes in any 60 minute period provided that such opaque emissions permitted during any 60 minute period shall occur from only one such emission unit located within a 305 m (1000 foot) radius from the center point of any other such emission unit owned or operated by such person, and provided further that such opaque emissions permitted from each such emission unit shall be limited to 3 times in any 24 hour period.
- c. Pursuant to 35 Ill. Adm. Code 212.321(a), no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit which, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in 35 Ill. Adm. Code 212.321(c).
- 3. Pursuant to 35 Ill. Adm. Code 214.301, no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission source to excess 2000 ppm.
- 4a. Pursuant to 35 Ill. Adm. Code 218.183(a), no person shall operate an open top vapor degreaser unless:
  - i. The cover of the degreaser is closed when workloads are not being processed through the degreaser;
  - ii. Solvent carry out emissions are minimized by:
    - A. Racking parts to allow complete drainage;
    - B. Moving parts in and out of the degreaser at less than 3.3 m/min (11 ft/min);
    - C. Holding the parts in the vapor zone until condensation ceases;
    - D. Tipping out any pools of solvent on the cleaned parts before removal from the vapor zone; and
    - E. Allowing parts to dry within the degreaser until visually dry;
  - iii. Porous or absorbent materials, such as cloth, leather, wood or rope, are not degreased;
  - iv. Less than half of the degreaser's open top area is occupied with a workload;
  - v. The degreaser is not loaded to the point where the vapor level would drop more than 10 cm (4 in) when the workload is removed from the vapor zone;

- vi. Spraying is done below the vapor level only;
  - vii. Solvent leaks are repaired immediately;
  - viii. Waste solvent is stored in covered containers only and not disposed of in such a manner that more than 20% of the waste solvent (by weight) is allowed to evaporate into the atmosphere;
  - ix. Water is not visually detectable in solvent exiting from the water separator; and
  - x. Exhaust ventilation exceeding 20 cubic meters per minute per square meter (65 cubic feet per minute per square foot) of degreaser open area is not used, unless necessary to meet the requirements of the Occupational Safety and Health Act (29 U.S.C. Section 651 et seq.).
- b. Pursuant to 35 Ill. Adm. Code 218.183(b), no person shall operate an open top vapor degreaser unless:
- i. The degreaser is equipped with a cover designed to open and close easily without disturbing the vapor zone;
  - ii. The degreaser is equipped with the following switches:
    - A. One which shuts off the sump heat if the amount of condenser coolant is not sufficient to maintain the designed vapor level; and
    - B. One which shuts off the spray pump if the vapor level drops more than 10 cm (4 in) below the bottom condenser coil; and
    - C. One which shuts off the sump heat source when the vapor level exceeds the design level;
  - iii. A permanent conspicuous label summarizing the operating procedure is affixed to the degreaser;
  - iv. The degreaser is equipped with one of the following devices:
    - A. A freeboard height of 3/4 of the inside width of the degreaser tank or 91 cm (36 in), whichever is less; and if the degreaser opening is greater than 1 square meter (10.8 square feet), a powered or mechanically assisted cover; or
    - B. Any other equipment or system of equivalent emission control as approved by the Illinois EPA and further processed consistent with 35 Ill. Adm. Code 218.108. Such equipment or system may include a refrigerated chiller, an enclosed design or a carbon adsorption system.
- c. Pursuant to 35 Ill. Adm. Code 218.204(j), except as provided in 35 Ill. Adm. Code 218.205, 218.207, 218.208, 218.212, 218.215 and 218.216, no

owner or operator of a coating line shall apply at any time any coating in which the VOM content exceeds the following emission limitations for Miscellaneous Metal Parts and Products Coating. The following emission limitations are expressed in units of VOM per volume of coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied at each coating applicator, except where noted. Compounds which are specifically exempted from the definition of VOM should be treated as water for the purpose of calculating the "less water" part of the coating composition. Compliance with 35 Ill. Adm. Code 218 Subpart F must be demonstrated through the applicable coating analysis test methods and procedures specified in 35 Ill. Adm. Code 218.105(a) and the recordkeeping and reporting requirements specified in 35 Ill. Adm. Code 218.211(c) except where noted. (Note: The equation presented in 35 Ill. Adm. Code 218.206 shall be used to calculate emission limitations for determining compliance by add on controls, credits for transfer efficiency, emissions trades and cross line averaging.) The emission limitations are as follows:

		kg/l	lb/gal
i.	Extreme performance coating:		
	A. Air dried	0.42	(3.5)
	B. Baked	0.40	(3.3)
ii.	All other coatings:		
	A. Air Dried	0.40	(3.3)
	B. Baked	0.34	(2.8)

- d. Pursuant to 35 Ill. Adm. Code 218.301, no person shall cause or allow the discharge of more than 3.6 kg/hour (8 lbs/hour) of organic material into the atmosphere from any emission unit, except as provided in 35 Ill. Adm. Code 218.302, 218.303, or 218.304 and the following exception: If no odor nuisance exists the limitation of 35 Ill. Adm. Code 218 Subpart G shall only apply to photochemically reactive material.
5. This permit is issued based upon the vapor degreaser no longer being subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Halogenated Solvent Cleaning, 40 CFR 63 Subpart T because the vapor degreaser no longer uses any solvent containing methylene chloride (CAS No. 75-09-2), perchloroethylene (CAS No. 127-18-4), trichloroethylene (CAS No. 79-01-6), 1,1,1-trichloroethane (CAS No. 71-55-6), carbon tetrachloride (CAS No. 56-23-5) or chloroform (CAS No. 67-66-3), or any combination of these halogenated HAP solvents, in a total concentration greater than 5 percent by weight, as a cleaning and/or drying agent.
- 6a. Pursuant to 35 Ill. Adm. Code 218.209, no owner or operator of a coating line subject to the limitations of 35 Ill. Adm. Code 218.204 is required to meet the limitations of 35 Ill. Adm. Code 218 Subpart G (35 Ill. Adm. Code 218.301 or 218.302), after the date by which the coating line is required to meet 35 Ill. Adm. Code 218.204.

- b. This permit is issued based upon the source not being subject to the control requirements of 35 Ill. Adm. Code Part 218 Subpart PP (Miscellaneous Fabricated Product Manufacturing Processes) and 35 Ill. Adm. Code Part 218 Subpart TT (Other Emission Units). This is a result of the federally enforceable production and operating limitations, which restrict the potential to emit from affected emission units to less than 25 tons per year.
- 7a. In the event that the operation of this emission unit results in an odor nuisance, the Permittee shall take appropriate and necessary actions to minimize odors, including but not limited to, changes in raw material or installation of controls, in order to eliminate the odor nuisance.
- b. Any solvent containing methylene chloride (CAS No. 75-09-2), perchloroethylene (CAS No. 127-18-4), trichloroethylene (CAS No. 79-01-6), 1,1,1-trichloroethane (CAS No. 71-55-6), carbon tetrachloride (CAS No. 56-23-5) or chloroform (CAS No. 67-66-3), or any combination of these halogenated HAP solvents, in a total concentration greater than 5 percent by weight, shall not be used as a cleaning and/or drying agent in the vapor degreaser.
- c. The boilers and bake ovens shall only be operated with natural gas as the fuel. The use of any other fuel in the boilers and bake ovens requires that the Permittee first obtain a construction permit from the Illinois EPA and then perform stack testing to verify compliance with all applicable requirements.
- 8a. Emissions and operation of the vapor degreaser shall not exceed the following limits:

Solvent Usage		VOM Emissions	
<u>(Gallons/Month)</u>	<u>(Gallons/Year)</u>	<u>(Tons/Month)</u>	<u>(Tons/Year)</u>
129.7	1,557	0.8	9.5

These limits are based on maximum solvent and material balance.

- b. Emissions and operation of all non-exempt gas-fired units (combined) shall not exceed the following limits:

Natural Gas Consumption	
<u>(mmscf/Month)</u>	<u>(mmscf/Year)</u>
12	100

<u>Pollutant</u>	Emission Factor	Emissions	
	<u>(lbs/mmscf)</u>	<u>(Tons/Month)</u>	<u>(Tons/Year)</u>
CO	84.0	0.50	4.20
NO <sub>x</sub>	100.0	0.60	5.00
PM	7.6	0.05	0.38
SO <sub>2</sub>	0.6	0.01	0.03
VOM	5.5	0.03	0.28

These limits are based on maximum fuel usage and standard emissions factors (Tables 1.4-1 and 1.4-2, AP-42, Fifth Edition, Volume I, Supplement D, July 1998).

- c. Emissions and operation of the paint booths and humiseal coating operation shall not exceed the following limits:

VOM Usage		VOM Emissions	
<u>(Tons/Month)</u>	<u>(Tons/Year)</u>	<u>(Tons/Month)</u>	<u>(Tons/Year)</u>
0.3	2.8	0.3	2.8

These limits are based on the maximum VOM usage and emissions from the coating operations. The VOM and HAP emissions from the coating and painting shall be determined from the following equation:

$$E = \Sigma (M_i \times C_i)$$

Where:

E = VOM emissions (tons);

M<sub>i</sub> = VOM/HAP-containing material usage (tons); and

C<sub>i</sub> = VOM/HAP content of the raw material (fraction).

NOTE: The humiseal coating operation is subject to 35 Ill. Adm. Code 218.301 and exempt from 35 Ill. Adm. Code 218 Subpart F based on this operation not meeting the definition of coating.

- d. This permit is issued based on negligible emissions of PM from the powder coating booths. For this purpose, emissions shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/year.
- 9. The emissions of Hazardous Air Pollutants (HAPs) as listed in Section 112(b) of the Clean Air Act from the source shall not exceed 0.9 tons/month and 9.0 tons/year of any single HAP and 1.00 tons/month and 10.0 tons/year of any combination of such HAPs. As a result of this condition, this permit is issued based on the emissions of any HAP from this source not triggering the requirement to obtain a CAAPP permit from the Illinois EPA.
- 10. Compliance with the annual limits of this permit shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).
- 11a. Pursuant to 35 Ill. Adm. Code 201.282, every emission source or air pollution control equipment shall be subject to the following testing requirements for the purpose of determining the nature and quantities of specified air contaminant emissions and for the purpose of determining ground level and ambient air concentrations of such air contaminants:
  - i. Testing by Owner or Operator. The Illinois EPA may require the owner or operator of the emission source or air pollution control equipment to conduct such tests in accordance with procedures

adopted by the Illinois EPA, at such reasonable times as may be specified by the Illinois EPA and at the expense of the owner or operator of the emission source or air pollution control equipment. The Illinois EPA may adopt procedures detailing methods of testing and formats for reporting results of testing. Such procedures and revisions thereto, shall not become effective until filed with the Secretary of State, as required by the APA Act. All such tests shall be made by or under the direction of a person qualified by training and/or experience in the field of air pollution testing. The Illinois EPA shall have the right to observe all aspects of such tests.

- ii. Testing by the Illinois EPA. The Illinois EPA shall have the right to conduct such tests at any time at its own expense. Upon request of the Illinois EPA, the owner or operator of the emission source or air pollution control equipment shall provide, without charge to the Illinois EPA, necessary holes in stacks or ducts and other safe and proper testing facilities, including scaffolding, but excluding instruments and sensing devices, as may be necessary.
- b. Testing required by Conditions 12 and 13 shall be performed upon a written request from the Illinois EPA by a qualified independent testing service.
- 12. Pursuant to 35 Ill. Adm. Code 212.110(c), upon a written notification by the Illinois EPA, the owner or operator of a particulate matter emission unit subject to 35 Ill. Adm. Code Part 212 shall conduct the applicable testing for particulate matter emissions, opacity, or visible emissions at such person's own expense, to demonstrate compliance. Such test results shall be submitted to the Illinois EPA within thirty (30) days after conducting the test unless an alternative time for submittal is agreed to by the Illinois EPA.
- 13. Pursuant to 35 Ill. Adm. Code 218.211(a), the VOM content of each coating and the efficiency of each capture system and control device shall be determined by the applicable test methods and procedures specified in 35 Ill. Adm. Code 218.105 to establish the records required under 35 Ill. Adm. Code 218.211.
- 14. Pursuant to 40 CFR 63.10(b)(3), if an owner or operator determines that his or her stationary source that emits (or has the potential to emit, without considering controls) one or more hazardous air pollutants regulated by any standard established pursuant to section 112(d) or (f) of the Clean Air Act, and that stationary source is in the source category regulated by the relevant standard, but that source is not subject to the relevant standard (or other requirement established under 40 CFR Part 63) because of limitations on the source's potential to emit or an exclusion, the owner or operator must keep a record of the applicability determination on site at the source for a period of 5 years after the determination, or until the source changes its operations to become an affected source, whichever comes first. The record of the applicability determination must be signed by the person making the determination and include an analysis (or other information)

that demonstrates why the owner or operator believes the source is unaffected (e.g., because the source is an area source). The analysis (or other information) must be sufficiently detailed to allow the USEPA and/or Illinois EPA to make a finding about the source's applicability status with regard to the relevant standard or other requirement. If relevant, the analysis must be performed in accordance with requirements established in relevant subparts of 40 CFR Part 63 for this purpose for particular categories of stationary sources. If relevant, the analysis should be performed in accordance with USEPA guidance materials published to assist sources in making applicability determinations under Section 112 of the Clean Air Act, if any. The requirements to determine applicability of a standard under 40 CFR 63.1(b)(3) and to record the results of that determination under 40 CFR 63.10(b)(3) shall not by themselves create an obligation for the owner or operator to obtain a Title V permit.

- 15a. Pursuant to 35 Ill. Adm. Code 212.110(e), the owner or operator of an emission unit subject to 35 Ill. Adm. Code Part 212 shall retain records of all tests which are performed. These records shall be retained for at least three (3) years after the date a test is performed.
- b. Pursuant to 35 Ill. Adm. Code 218.211(c)(2), any owner or operator of a coating line subject to the 35 Ill. Adm. Code 218.204 and complying by means of 35 Ill. Adm. Code 218.204 shall collect and record all of the following information each day for each coating line and maintain the information at the source for a period of three years:
  - i. The name and identification number of each coating as applied on each coating line; and
  - ii. The weight of VOM per volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line.
- 16a. The Permittee shall maintain records of the following items so as to demonstrate compliance with the conditions of this permit:
  - i. For each coating and cleaning solvent used on an affected paint spray booth;
    - A. The name and identification number of each coating and cleaning solvent as applied on the affected paint spray booth;
    - B. The usage of each coating and cleaning solvent on each, in units of gallons/month and gallons/year.
    - C. The weight of VOM per volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM), or as applied on the affected paint spray booths, VOM content in terms of lb VOM per/lb of coating solids when applicable.

- D. The weight of HAPs per volume of each coating and cleaning solvent applied on the affected paint spray booths.
  - E. Cleaning solvents VOM contents.
  - F. Degreaser solvent usage, in units of gallons/month and gallons/year.
- ii. Natural gas usage (million scf/month) and million scf/year); and
  - iii. Monthly and annual emissions of CO, NO<sub>x</sub>, PM, SO<sub>2</sub>, VOM, each individual HAP and total HAPs from the source, with supporting calculations (ton/month and tons/year).
- b. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least five (5) years from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA or USEPA request for records during the course of a source inspection.
17. Pursuant to 35 Ill. Adm. Code 212.110(d), a person planning to conduct testing for particulate matter emissions to demonstrate compliance shall give written notice to the Illinois EPA of that intent. Such notification shall be given at least thirty (30) days prior to the initiation of the test unless a shorter period is agreed to by the Illinois EPA. Such notification shall state the specific test methods from 35 Ill. Adm. Code 212.110 that will be used.
- 18a. Pursuant to 35 Ill. Adm. Code 218.211(c)(3), any owner or operator of a coating line subject to the limitations of 35 Ill. Adm. Code 218.204 and complying by means of 35 Ill. Adm. Code 218.204 shall notify the Illinois EPA in the following instances:
- i. Any record showing violation of 35 Ill. Adm. Code 218.204 shall be reported by sending a copy of such record to the Illinois EPA within 30 days following the occurrence of the violation.
  - ii. At least 30 calendar days before changing the method of compliance from 35 Ill. Adm. Code 218.204 to 35 Ill. Adm. Code 218.205 or 35 Ill. Adm. Code 218.207, the owner or operator shall comply with all requirements of 35 Ill. Adm. Code 218.211(d)(1) or (e)(1), respectively. Upon changing the method of compliance from 35 Ill. Adm. Code 218.204 to 35 Ill. Adm. Code 218.205 or 35 Ill. Adm. Code 218.207, the owner or operator shall comply with all requirements of 35 Ill. Adm. Code 218.211(d) or (e), respectively.
- b. Pursuant to 35 Ill. Adm. Code 218.990, upon request by the Illinois EPA, the owner or operator of an emission unit which is exempt from the requirements of 35 Ill. Adm. Code 218 Subparts PP, QQ, RR, TT or 35 Ill. Adm. Code 218.208(b) shall submit records to the Illinois EPA

within 30 calendar days from the date of the request that document that the emission unit is exempt from those requirements.

19a. If there is an exceedance of or deviation from the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance or deviation. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or deviation and efforts to reduce emissions and future occurrences.

b. Two (2) copies of required reports and notifications shall be sent to:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
Compliance Section (#40)  
P.O. Box 19276  
Springfield, Illinois 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
9511 West Harrison  
Des Plaines, Illinois 60016

If you have any questions on this, please call David Hulskotter at 217/782-2113.

Edwin C. Bakowski, P.E.  
Manager, Permit Section  
Division of Air Pollution Control

Date Signed: \_\_\_\_\_

ECB:DWH:jws

cc: Illinois EPA, FOS Region 1  
Lotus Notes

Attachment A - Emission Summary

This attachment provides a summary of the maximum emissions from the this manufacturer of signal devices operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the annual operating scenario which results in maximum emissions from such a plant. The resulting maximum emissions are below the levels, (e.g., 100 tons per year of VOM, 10 tons per year for a single HAP, and 25 tons per year for any combination of such HAPs) at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less material is handled, and control measures are more effective than required in this permit.

<u>Emission Unit</u>	E M I S S I O N S (Tons/Year)					Single <u>HAP</u>	Total <u>HAPs</u>
	<u>CO</u>	<u>NO<sub>x</sub></u>	<u>PM</u>	<u>SO<sub>2</sub></u>	<u>VOM</u>		
Vapor Degreaser					9.50		
Paint Booths & Humiseal Coating Operation			0.44		2.80		
Gas-Fired Units	<u>4.20</u>	<u>5.00</u>	<u>0.38</u>	<u>0.03</u>	<u>0.28</u>		
Totals	<u>4.20</u>	<u>5.00</u>	<u>0.82</u>	<u>0.03</u>	<u>12.58</u>	<u>9.0</u>	<u>10.0</u>

DWH:jws