Permit to Construct
Equipment Replacement
AUTOMATIC SPRAY EQUIPMENT
Minor Title V Permit Revision

Legal Owner or Operator: SANDBERG FURNITURE MFG CO INC.
5685 ALCOA AVE
LOS ANGELES, CA 90058

ID: 7450

Equipment Location: 5705 ALCOA AVE, LOS ANGELES, CA 90058

Application No. 538318
Title V Permit Revision

Application No. 538316
Equipment Description:
MODIFICATION OF COATING AND DRYING SYSTEM (F55229), CONSISTING OF:

1. ROLLER COATER, HYMMEN COMBICOATER, ELX.

2. ULTRAVIOLET SEALER CURE SECTION.

3. ROLLER COATER, HYMMEN DIRECT COATER, LX.

4. AUTOMATIC SPRAY BOOTH, MID-STATE INDUSTRIAL, MODEL MSI-13-8-12-T-CH, 14'-6" W. X 12'-0" L. X 12’-0" H., WITH THIRTY TWO 24” X 24” EXHAUST FILTERS AND ONE 5-HP EXHAUST FAN.

5. TOUCH-UP SPRAY BOOTHS, TWO, MID-STATE INDUSTRIAL, MODEL MSI-12-8-12-T-CH, EACH 8'-0"W. X 9'-0"L. X 8'-0” H., AND EACH WITH TWENTY-FOUR 20" X 20” EXHAUST FILTERS AND ONE 2 HP EXHAUST FAN.

6. TOUCH-UP SPRAY BOOTHS, TWO, MID-STATE INDUSTRIAL, MODEL MSI-12-8-12-T-CH, EACH 8'-0"W. X 9'-0"L. X 8'-0” H., AND EACH WITH TWENTY-FOUR 20" X 20” EXHAUST FILTERS AND ONE 2 HP EXHAUST FAN.

7. OVEN, MID-STATE INDUSTRIAL, MODEL MSI-887-LH, 9'-0” W. X 8'-0” L. X 7’-0" H., NATURAL GAS FIRED, 500,000 BTU PER HOUR.

8. ULTRAVIOLET CURE SECTION, MID-STATE INDUSTRIAL, MODEL MSI-1697UV, 9'-0" W. X 16’-0” L. X 7’-0" H., 1.8 K.W.

BY THE REMOVAL OF:

AUTOMATIC SPRAY BOOTH, MID-STATE INDUSTRIAL, MODEL MSI-13-8-12-T-CH, 14'-6" W. X 12'-0" L. X 12’-0" H., WITH THIRTY TWO 24” X 24” EXHAUST FILTERS AND ONE 5-HP EXHAUST FAN.

OVEN, MID-STATE INDUSTRIAL, MODEL MSI-887-LH, 9'-0” W. X 8'-0” L. X 7’-0" H., NATURAL GAS FIRED, 500,000 BTU PER HOUR.

AND THE ADDITION OF:

AUTOMATIC UV SPRAYING ENCLOSURE, CEFLA FINISHING, MODEL EASY2000 24095/4, 12'-2" W. X 7'-3" L. X 9'-2" H., TWO UPPER ANDREAS EXHAUST FILTERS (36" W. X 78" L. X 2.5" H. EACH), TWO LOWER POLYESTER EXHAUST FILTERS (40" W. X 78" L. X 0.4" H. EACH), SPRAY NOZZLES, WITH AIR CAP, BX116KVLP, PART NO. 132-650-550, AND ONE 25-HP EXHAUST FAN.

History

Sandberg manufactures wood furniture. The above application was submitted as Class I, for a Permit to construct, with the following proposals:

1. Replace an existing automatic spray enclosure (currently permitted as part of a UV coating line under PO No. F55229) with a functionally identical automatic spraying enclosure as described above.
2. Remove an existing natural-gas fired oven (part of the above UV coating line). The equipment is no longer in service with gas line disconnected.
3. Modify/update types and quantities of UV coating materials applied in this line.

In addition to the UV coating line, three additional manual spray booths are permitted at this facility with the following combined facility-wide limits:

1. Not to exceed 1666 pounds of a single Volatile Hazardous Air Pollutant (VHAP) in any calendar month.
2. Not to exceed 4166 pounds of a combination of VHAPs in any one calendar month.
3. Not to exceed 3333 pounds of VOC in any calendar month.

This project is expected to reduce criteria pollutant emissions overall. The removal of the natural-gas fired burner results in reduction of combustion related emissions. VOC-containing materials used in earlier project have now been replaced by acetone as cleaning materials. UV sealer and top coat being proposed contain low VOC.

Since its location is not within 1000 feet from any school, a public notification will not be needed for this project.

Based on a review of the District's compliance database, there are no complaints, Notice to Comply, or Notice of Violation issued against this facility in the last two years.

Process Description

First, wood parts are sealed with UV sealer 310453 in the first roller coater (#1) and then cured in the first UV cure section (#1). Next, they are finished with UV top coat 310454 in either the second roller coater (#3) or in the automatic spray enclosure (#4), and then cured inside the 2nd UV cure section (#5). Spraying provides better control of coating thickness and therefore top coats are mostly sprayed instead of rolled. Touch-up spray booths are currently not in use or very little use for spraying a few testing samples.

Emission Calculations

Removal of Natural-gas Combustion Oven (0.5 MMBTU/hr):

The attached Excel worksheet calculates emissions related to combustion of natural gas. The following is a summary of emission reductions resulting from the oven removal:

	MAX (lb/hr)	*AVE (lb/hr)*	*MAX (lb/dy)*	*30-DAY (lb/dy)*
SO_x (R1)	*0.000*	*0.000*	*-0.01*	*NA*
SO_x (R2)	*0.000*	*0.000*	*-0.01*	*-0.01*
NO_x (R1)	*-0.068*	*-0.034*	*-1.6343*	*NA*
NO_x (R2)	*-0.068*	*-0.034*	*-1.6343*	*-1.63*
CO (R1)	*-0.165*	*-0.083*	*-3.97*	*NA*
CO (R2)	*-0.021*	*-0.010*	*-0.50*	*-0.50*
PM, PM_{10} (R1=R2)	*-0.004*	*-0.002*	*-0.09*	*-0.09*
ROG(R1=R2)	*-0.004*	*-0.002*	*-0.09*	*-0.09*

Replacement of automatic spray enclosure:

The replacement is expected to result in emission reductions. The replaced automatic spray enclosure can reduce overspray materials better for its endless conveyor belt controlled by an electronic speed controller. The conveyor allows the overspray to be easily recovered, and it is equipped with an automatic cleaning and (electrical) drying system using acetone as a solvent.

Initially when the line was permitted in 1995, it was approved for the following total usages (per A/N 299976):

- 55 gallons/day of UV topcoat (VOC=0.21 lbs/gal) and
- 3 gallons/day of solvent (VOC =6.73 lbs/gal)

In 1997, the company added the roller coaters and was approved for the following additional usages (per A/N 323199):

- 8 gallons/day of UV topcoat (VOC = 0 lb/gal)
- 4 gallons/day of UV primer sealer (VOC = 0.0042 lb/gal)

Now, for this project, the company is proposing the following total usages for the entire line:

- 15 gallons/day of UV topcoat (VOC = 0 lb/gal)
- 1 gallon/day of primer sealer (VOC = 0.35 lb/gal)

However, no reduction will be calculated since the equipment is operated under existing facility-wide caps.

Toxic Evaluation

The proposed UV primer sealer 310453 an UV top coat 310454 do not contain any TACs listed in Rule 1401. The removal of the natural-gas combustion oven results in the following risk reductions:

Compound	*MICR Residential*	*MICR Commercial*
Acetaldehyde	*-9.10E-11*	*-3.58E-11*
Acrolein		
Ammonia		
Benzene (including benzene from gasoline)	*-1.69E-09*	*-6.65E-10*
Ethyl benzene	*-1.75E-10*	*-6.87E-11*
Formaldehyde	*-7.56E-10*	*-2.97E-10*
Hexane (n-)		
Napthalene	*-7.62E-11*	*-2.99E-11*
PolyCyclic Aromatic Hydrocarbon (PAHs)	*-2.46E-08*	*-4.74E-09*
Propylene		
Toluene (methyl benzene)		
Xylenes (isomers and mixtures)		
Total	***-2.74E-08***	***-5.84E-09***

Target Organs	*Acute*	*Chronic*
Alimentary system (liver) - AL		*-3.47E-08*
Bones and teeth - BN		
Cardiovascular system - CV		
Developmental - DEV	*-9.52E-07*	*-1.90E-06*
Endocrine system - END		*-3.47E-08*
Eye	*-2.38E-03*	*-3.70E-04*
Hematopoietic system - HEM	*-7.99E-07*	*-9.74E-07*
Immune system - IMM	*-2.88E-05*	
Kidney - KID		*-3.47E-08*
Nervous system - NS	*-1.53E-07*	*-2.16E-06*
Reproductive system - REP	*-9.52E-07*	
Respiratory system - RES	*-2.38E-03*	*-4.94E-04*
Skin		

Rule Evaluation

Rule 212(c)(1): This section requires a public notice for all new or modified permit units that may emit air contaminants located within 1,000 feet from the outer boundary of a school.

Since no school is located within 1,000 ft, a public notice will not be required.

Rule 212(c)(2): This section requires a public notice for all new or modified facilities that have on-site emission increases exceeding any of the daily maximums as specified by Rule 212(g).

	Maximum Daily Controlled Emissions					
	ROG	NO_x	PM_{10}	SO_2	CO	Pb
Total Increase (lb/dy)	0	0	0	0	0	0
MAX MDC Limit (lb/dy)	**30**	**40**	**30**	**60**	**220**	**3**
Compliance Status	Yes	Yes	Yes	Yes	Yes	yes

The above table summarizes the emission limits and increases. Since emission increases are less than the limits, a public notice will not be required.

Rule 212(c)(3): There will be no increases in TACs. Therefore, a public notice will not be required.

Rule 212(g): This section requires a public notice for all new or modified sources that have equipment emission increases exceeding any of the daily maximums as specified by Rule 212(g).

The following summarizes the limit and MDC:

	Maximum Daily Controlled (MDC) Emissions					
	ROG	NO_x	PM_{10}	SO_2	CO	Pb
Per project	0	0	0	0	0	0
MAX MDC Limit (lb/dy)	**30**	**40**	**30**	**60**	**220**	**3**
Compliance Status	Yes	Yes	Yes	Yes	Yes	yes

No public notice is required since the MDC is not more than the limits.

Rule 401: Visible emissions are not expected with the proper operation of the equipment.

Rule 402: Nuisance is not expected with the proper operation of the equipment.

Rule 481: The use of HVLP spray equipment will comply with this rule.

Rule 1136: The proposed UV topcoat and UV primer sealer contain zero and 0.35 lb/gal VOC respectively, in compliance with Rule 1136(c)(1)(A)(i).

The proposed automatic spray guns can be operated as HVLP with the following modifications:

1. Equipped with a special air cap, BX116KHVLP, Part 132-650-550.
2. Limiting maximum inlet pressure to less than 14.35 psi by a permanent pressure regulator.
3. Make available on site an HVLP test air cap for compliance verification.

The proposed conditions listed at the end of this evaluation will ensure the proper operation of these guns as HVLP, in compliance with Rule 1136(c)(2).

Rule 1171: Acetone is used as application equipment clean-up solvent, in compliance with Rule 1171(c)(1)(C).

Rule 1303(a): Since the proposed equipment replacement will not result in an emission increase, BACT requirements are not triggered.

Rule 1303(b)(1): Further air quality modeling analysis will not be needed since emission increases are not expected from this project.

Rule 1303(b)(2): Since the proposed equipment replacement will not result in an emission increase, external emission offsets will not be needed.

Rule 1401: No TAC emission increases are expected from this project. Compliance with this rule is expected

Reg XXX: The proposed project is considered as a Minor Title V Permit Revision pursuant to Rule 3000(b)(12) (A)(vi) since this project does not result in any increases in criteria pollutant emissions that are subject to Regulation XIII – New Source Review or a hazardous air pollutant (HAP).

Recommendation

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a “minor permit revision”, it is exempt from the public participation requirements under Rule 3006(b). A proposed permit incorporating this permit revision will be submitted to EPA for a 45-

day review pursuant to Rule 3003(j). If EPA does not have any objections within the review period, a revised Title V permit will be issued to this facility with the following proposed conditions:

Conditions:

1) OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
[RULE 204]

2) THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
[RULE 204]

3) THE SPRAY BOOTH SHALL NOT BE OPERATED UNLESS ALL EXHAUST AIR PASSES THROUGH A FILTER MEDIA AT LEAST 2 INCHES THICK.
[RULE 1303(a)(1)-BACT]

4) A GAUGE SHALL BE INSTALLED TO INDICATE IN INCHES OF WATER THE STATIC PRESSURE DIFFERENTIAL ACROSS THE EXHAUST FILTERS. IN OPERATION, THE PRESSURE DIFFERENTIAL SHALL NOT EXCEED 0.25 INCHES OF WATER.
[RULE 1303(a)(1)-BACT]

5) A PRESSURE REGULATOR SHALL BE PERMANENTLY INSTALLED AT THE INLET AIR SUPPLY LINE TO AUTOMATIC SPRAY NOZZLES USED INSIDE THE AUTOMATIC SPRAY ENCLOSURE TO LIMIT THE MAXIMUM INLET PRESSURE TO LESS THAN 14.35 PSI.
[RULE 1303(a)(1)-BACT, 1136]

6) AN HVLP TEST AIR CAP SHALL BE MADE AVAILABLE TO ANY DISTRICT REPRESENTATIVE UPON REQUEST.
[RULE 1303(a)(1)-BACT, 1136]

7) MATERIALS USED IN THIS EQUIPMENT SHALL NOT CONTAIN ANY TOXIC AIR CONTAMINANTS IDENTIFIED IN RULE 1401, TABLE I WITH AN EFFECTIVE DATE OF SEPTEMBER 10, 2010 OR EARLIER.
[RULE 1401]

Periodic Monitoring:

8) THE OPERATOR SHALL PERFORM A WEEKLY INSPECTION OF THE EQUIPMENT AND FILTER MEDIA FOR LEAKS, BROKEN OR TORN FILTER MEDIA AND IMPROPERLY INSTALLED FILTER MEDIA. THE OPERATOR SHALL KEEP RECORDS, IN A MANNER APPROVED BY THE DISTRICT, FOR THE FOLLOWING PARAMETER(S) OR ITEM(S):
A. THE NAME OF THE PERSON PERFORMING THE INSPECTION AND/OR MAINTENANCE OF THE FILTER MEDIA;
B. THE DATE, TIME AND RESULTS OF THE INSPECTION; AND
C. THE DATE, TIME AND DESCRIPTION OF ANY MAINTENANCE OR REPAIRS RESULTING FROM THE INSPECTION.
[RULE 3004(a)(4)]

9) THE OPERATOR SHALL DETERMINE AND RECORD THE PRESSURE DROP ACROSS THE FILTER ONCE

EVERY WEEK.
[RULE 3004(a)(4)]

Emissions And Requirements:

10) THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS
PM: RULE 481
VOC: RULE 109
VOC: RULE 1136, SEE APPENDIX B FOR EMISSION LIMITS
VOC: RULE 1171, SEE APPENDIX B FOR EMISSION LIMITS