

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT STATIONARY SOURCE AND COMPLIANCE DIVISION <i>Large Coating, Printing and Chemical Operations Team</i> APPLICATION PROCESSING AND CALCULATIONS	PAGE	1 of 7
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	PROCESSED BY	SMP
	REVIEWED BY	
	DATE	05/11/11

**PERMIT TO CONSTRUCT EVALUATION
(OVEN)**

Applicant's Name	BRISTOL FIBERLITE INDUSTRIES, INC.
Company I.D.	111110
Mailing Address	401 E. GOETZ AVE., SANTA ANA, CA 92707.
Equipment Address	401 E. GOETZ AVE., SANTA ANA, CA 92707.

EQUIPMENT DESCRIPTION

Application No. : 519298 (Modification, Previous P/N F5299, A/N 324212)

OVEN, WITH A MAXON, MODEL M-PACKT, 900,000 BTU/HR NATURAL GAS FIRED LOW-NOX BURNER, IN A PERMANENT TOTAL ENCLOSURE TUNNEL AND ONE 1.5 H.P. COMBUSTION AIR BLOWER.

BACKGROUND

The above application was submitted for a permit to modify an existing oven. The oven originally was equipped with a burner, with 100 PPMV NOx emissions at 3% O₂. The applicant is proposing to modify the oven with a low NOx burner, with 30 PPMV NOx emissions at 3% O₂. The existing oven is equipped with a 1,000,000 BTU/HR burner. The above described low NOx burner will be 900,000 BTU/HR heat input. This will reduce NOx emissions under this project and will comply with the current BACT and the Rule 1147 requirements.

I have visited this facility on three occasions in the past to inspect the operation and to confirm the Permanent Total Enclosure (PTE) status of the equipment. The oven is located in the PTE. The applicant performed a source test on this equipment after the modification on September 11, 2007. A source testing protocol was submitted for the District approval by the applicant prior to the source testing. The test results were acceptable, per the District Source Testing Department and indicated compliance with the permit conditions. The VOC source test indicated 100% collection efficiency (PTE), 99.5% removal efficiency of adsorber and 99.5 % overall destruction efficiency of the afterburner (higher than the required removal efficiency of 90% and destruction efficiency of 95%).

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The facility was issued a notice of violation for this equipment, for operating a modified oven without a valid permit to operate. Hence they submitted the above described application and proposed to modify again to come in compliance with Rule 1147 requirements.

The applicant has not requested any VOC emission increases from this project. The spray booth and the spray stations were originally issued separate permits as shown below, however they were incorporated into one permit unit (air pollution control system). The oven under A/N 324212 (P/O F5299) that is also vented to the APC system remained a separate permit unit.

A/N	P/O	Equipment	VOC Emission Limit
324213	F5300	Spray Booth	66 lb/day
324215	F5302	Spray Station #3	66 lb/day
324216	F5303	Spray Station #1	66 lb/day
324220	F5305	Spray Station #2	66 lb/day

The district database indicated that the facility was issued one notice to comply and two notices of violation from the District compliance staff in the last two years. Notice to comply was issued to maintain maintenance records. The notices of violation were issued for not obtaining the permits to construct prior to modifying the oven and the adsorber. The company is now operating in compliance with these notices. There were no records of complaints for odor nuisance or visible emissions in the district database in the last two years.

This source is located within 1,000 feet from the outer boundary of a school. However, a public notice will not be required for this project because there are no emission increases from this modification project. The District Rules 1162 and 1171 apply to this facility. The company uses an air pollution control system to comply with the BACT requirements.

Bristol Fiberlite Industries is a Title V facility. A Title V renewal permit was issued to this facility on October 14, 2010. This proposed 2nd permit revision is considered as a “minor permit revision” to the renewed Title V permit, as described in Regulation XXX evaluation.

PROCESS DESCRIPTION

Bristol Fiberlite manufactures translucent skylights for buildings. In a mold different shapes of domes are formed by fiberglass resin application. In some special orders, molds are coated with gelcoat prior to resin application. All the coating application stations are located in a tunnel. A oven in the tunnel cures the parts before the parts leave the tunnel. The styrene emissions from the tunnel are directed to a VOC control system consists of a fixed-bed carbon adsorbed concentrator with a direct-fired thermal oxidizer and a waste heat boiler.

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EMISSION CALCULATIONS

The existing oven is equipped with a 1,000,000 BTU/HR burner. The modified oven will have a low NOx burner with 900,000 BTU/HR heat input. This will reduce the NOx emissions under this project. Also, the new oven will comply with the current BACT and the Rule 1147 requirements.

519298 Oven (Proposed) @

	maximum	normal		
hr/dy	24	11	max heat input	9.00E+05 (BTU/hr)
<u>dy/wk</u>	7	5	<u>gross heating value</u>	1050 (BTU/scf)
<u>wk/yr</u>	52	52		
<u>load</u>	100%	100%		

	Emission Factors	MAX (lb/hr)	AVE (lb/hr)	MAX (lb/dy)	30-DAY (lb/dy)	MAX (lb/yr)	MAX (ton/yr)
SO ₂ (R1)	0.6	0.001	0.001	0.012	NA	4	0.002
SO ₂ (R2)	0.6	0.001	0.001	0.012	0.012	4	0.002
NO ₂ (R1)	38.94	0.033	0.033	0.801	NA	292	0.146
NO ₂ (R2)	38.94	0.033	0.033	0.801	0.801	292	0.146
CO (R1)	39.5	0.034	0.034	0.813	NA	296	0.148
CO (R2)	39.5	0.034	0.034	0.813	0.813	296	0.148
TOC (R1=R2)	7	0.006	0.006	0.144	NA	52	0.026
N ₂ O (R1=R2)	2.2	0.002	0.002	0.045	0.045	16	0.008
PM, PM ₁₀ (R1=R2)	7.5	0.006	0.006	0.154	0.154	56	0.028
Hexane	0.0063	5.4E-06	5.4E-06	1.3E-04	NA	4.72E-2	2.36E-5
Ammonia	3.2	2.7E-03	2.7E-03	6.6E-02	NA	2.40E+1	1.20E-2
ethyl benzene	0.0095	8.1E-06	8.1E-06	2.0E-04	NA	7.11E-2	3.56E-5
acetaldehyde	0.0043	3.7E-06	3.7E-06	8.8E-05	NA	3.22E-2	1.61E-5
acrolein	0.0027	2.3E-06	2.3E-06	5.6E-05	NA	2.02E-2	1.01E-5
benzene	0.008	6.9E-06	6.9E-06	1.6E-04	NA	5.99E-2	3.00E-5
formaldehyde	0.017	1.5E-05	1.5E-05	3.5E-04	NA	1.27E-1	6.36E-5
naphthalene	0.0003	2.6E-07	2.6E-07	6.2E-06	NA	2.25E-3	1.12E-6
PAH's	0.0001	8.6E-08	8.6E-08	2.1E-06	NA	7.49E-4	3.74E-7
toluene	0.0366	3.1E-05	3.1E-05	7.5E-04	NA	2.74E-1	1.37E-4
xylene	0.0272	2.3E-05	2.3E-05	5.6E-04	NA	2.04E-1	1.02E-4

NO ₂ @ 3% excess O ₂ ----->>>	30.00	(ppmv)	SO ₂ @ 3% excess O ₂ ----->>>	0.33	(ppmv)
CO @ 3% excess O ₂ ----->>>	49.98	(ppmv)	PM @ 12% CO ₂ ----->>>	5.5E-09	(grain/ft ³)

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A/N 324212

Existing Oven

@

	maximum	normal		
hr/dy	24	8	max heat input	1.00E+06 (BTU/hr)
<u>dy/wk</u>	7	7	<u>gross heating value</u>	1050 (BTU/scf)
<u>wk/yr</u>	52	52		
<u>load</u>	100%	75%		

	Emission	MAX	AVE	MAX	30-DAY	MAX	MAX
	Factors	(lb/hr)	(lb/hr)	(lb/dy)	(lb/dy)	(lb/yr)	(ton/yr)
SO ₂ (R1)	0.6	0.001	0.000	0.014	NA	5	0.002
SO ₂ (R2)	0.6	0.001	0.000	0.014	0.014	5	0.002
NO ₂ (R1)	130	0.124	0.093	2.971	NA	1,082	0.541
NO ₂ (R2)	130	0.124	0.093	2.971	2.971	1,082	0.541
CO (R1)	39.5	0.038	0.028	0.903	NA	329	0.164
CO (R2)	39.5	0.038	0.028	0.903	0.903	329	0.164
TOC (R1=R2)	5.8	0.006	0.004	0.133	0.133	48	0.024
N ₂ O (R1=R2)	2.2	0.002	0.002	0.050	0.050	18	0.009
PM, PM ₁₀ (R1=R2)	7.5	0.007	0.005	0.171	0.171	62	0.031
Hexane	0.0063	6.0E-06	4.5E-06	1.4E-04	NA	5.24E-2	2.62E-5
Ammonia	3.2	3.0E-03	2.3E-03	7.3E-02	NA	2.66E+1	1.33E-2
ethyl benzene	0.0095	9.0E-06	6.8E-06	2.2E-04	NA	7.90E-2	3.95E-5
acetaldehyde	0.0043	4.1E-06	3.1E-06	9.8E-05	NA	3.58E-2	1.79E-5
acrolein	0.0027	2.6E-06	1.9E-06	6.2E-05	NA	2.25E-2	1.12E-5
benzene	0.008	7.6E-06	5.7E-06	1.8E-04	NA	6.66E-2	3.33E-5
formaldehyde	0.017	1.6E-05	1.2E-05	3.9E-04	NA	1.41E-1	7.07E-5
naphthalene	0.0003	2.9E-07	2.1E-07	6.9E-06	NA	2.50E-3	1.25E-6
PAH's	0.0001	9.5E-08	7.1E-08	2.3E-06	NA	8.32E-4	4.16E-7
toluene	0.0366	3.5E-05	2.6E-05	8.4E-04	NA	3.05E-1	1.52E-4
xylenes	0.0272	2.6E-05	1.9E-05	6.2E-04	NA	2.26E-1	1.13E-4
Propylene	0.731	7.0E-04	5.2E-04	1.7E-02	NA	6.08E+0	3.04E-3
NO ₂ @ 3% excess O ₂ ----->>>		100.16	(ppmv)	SO ₂ @ 3% excess O ₂ ----->>>		0.33	(ppmv)
CO @ 3% excess O ₂ ----->>>		49.98	(ppmv)	PM @ 12% CO ₂ ----->>>		5.5E-09	(grain/ft ³)

Ver. 1.3

A source test is requested to evaluate the NOx emission rate of the modified oven to show compliance with the Rule 1147 requirements.

There will be reduction in the toxic emissions under this project. Thus, this project is expected to comply with the Rule 1401 requirements.

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RULES/REGULATION COMPLIANCE

▣ **RULE 212, PUBLIC NOTIFICATION**

v **SECTION 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. This source is not located within 1,000 feet from the outer boundary of a school. Therefore, public notice is not required by this section.

v **SECTION 212(c)(2):**

This section requires a public notice for all new or modified facilities which have on-site emission increases exceeding any of the daily maximums as specified in subdivision (g). This is a modification with reduction in emissions. Therefore, public notice is not required by this section.

LB/DAY	CO	NOX	PM₁₀	ROG	Lead	SOX
MAX. LIMIT	220	40	30	30	3	60
INCREASES	0	0	0	0	0	0

v **SECTION 212(c)(3):**

No emission increase under this project. Therefore, this application will not be subject to this section.

v **SECTION 212(g):**

This section requires a public notice for all new or modified sources which undergo construction or modifications resulting in an emission increases exceeding any of the daily maximum specified in the table below. This is a modification with reduction in emissions. Therefore, public notice is not required by this section.

LB/DAY	CO	NOX	PM₁₀	ROG	Lead	SOX
MAX. LIMIT	220	40	30	30	3	60
INCREASES	0	0	0	0	0	0

▣ **RULES 401 & 402, VISIBLE EMISSIONS & NUISANCE**

This equipment is expected to comply with the rule requirements. The District database has no records of any visible emissions or nuisance complaints against this equipment.

▣ **RULES 404 & 405, PARTICULATE MATTER CONCENTRATION & WEIGHT**

Compliance with these provisions is expected with proper operation and maintenance of the equipment.

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▣ **RULE 1162, POLYESTER RESIN OPERATIONS**

v **SECTION (c)(1), MONOMER CONTENT OF RESINS AND GELCOATS**

The materials used at this will not change under this project. The facility uses an approved air pollution control system (APC) to comply with these requirements.

v **SECTION (c)(2), TRANSFER EFFICIENCY**

The facility uses an approved air pollution control system (APC) to comply with these requirements.

▣ **RULE 1171, SOLVENT CLEANING OPERATIONS**

The use of acetone, an exempt VOC compound, demonstrates compliance with these provisions.

REGULATION XIII

▣ **RULE 1303(a), BEST AVAILABLE CONTROL TECHNOLOGY (BACT)**

(a) VOC EMISSIONS

The installation and operation of air pollution control system with 100% collection, 90% adsorbed removal efficiency and 95% oxidizer destruction efficiency complies with the BACT requirements.

▣ **RULE 1303(b)(1), MODELING**

No detailed modeling analysis is required due to reduction in emissions under this project.

▣ **RULE 1303 (b)(2), EMISSION OFFSETS**

There is no emission increases under this project. Thus, no offsets are required.

▣ **RULE 1401, NEW SOURCE REVIEW OF CARCINOGENIC/TOXIC AIR CONTAMINANTS**

There are no emission increases under this project. Thus, this project is exempt from this rule requirement.

REGULATION XXX

The proposed project is considered as a “minor permit revision” to the current Title V permit for this facility since there is not an emission increase of pollutants subject to Reg. XIII or hazardous air pollutants. Rule 3000(b)(12) defines a “minor permit revision” as any Title V permit revision that does not result in any of the following:

- Emission increase of RECLAIM pollutants over the facility starting Allocation plus nontradeable Allocations, or a higher Allocation amount which has previously undergone a significant permit revision process,
- Emission increase in hazardous air pollutants (HAPs) or pollutants subject to Reg. XIII, or
- Installation of a new permit unit or the modification or reconstruction of an existing permit unit subject to a New Source Performance Standard (NSPS) per 40 CFR Part 60 or a National Emission Standard for HAPs per 40 CFR Part 61 or Part 63.

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Rule 3003(j) specifies that all proposed Title V permit revisions shall be submitted to EPA for review. This is the first permit revision requested by the facility. The cumulative emission increases resulting from this proposed permit revision are summarized as follows:

Revision	HAP	VOC	NOx	PM₁₀	SOx	CO
1 st Permit Revision, modification of adsorbed unit (A/N 454152)	0	0	0	0	0	0
2 nd Permit Revision, modification of the oven (A/N 519298)	0	0	0	0	0	0
Cumulative Total	0	0	0	0	0	0
Maximum Daily	30	30	40	30	60	220

CONCLUSIONS/RECOMMENDATIONS

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.