

STATE OF MISSOURI

PERMIT BOOK



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **052010-008**

Project Number: 2010-04-005

Parent Company: TAMKO Building Products, Inc.

Parent Company Address: P.O. Box 1404, Joplin, MO 64801

Installation Name: TAMKO Building Products, Inc.

Installation Number: 097-0094

Installation Address: 3001 Newman Road, Joplin, MO 64801

Location Information: Jasper County, S31, T28, R32

Application for Authority to Construct was made for:

The use of petroleum resin and polyphosphoric acid in the asphalt blowing operations.

This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

MAY 12 2010

EFFECTIVE DATE



DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Departments' Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

TAMKO Building Products, Inc.
Jasper County, S31, T28, R32

1. Control Device Requirement-Thermal Oxidizer
 - A. TAMKO Building Products, Inc. shall control emissions from the asphalt blow stills (EP BS-AB1-A, EP BS-AB1-B, EP BS-AB2-A and EP BS-AB2-B) using a thermal oxidizer as specified in the permit application.
 - B. The thermal oxidizer shall be operated and maintained in accordance with the manufacturer's specifications.
 - C. The thermal oxidizer shall be equipped with a continuous recorder that monitors, displays and records the temperature in the combustion chamber with an accuracy of $\pm 10^{\circ}$ Celsius.
 - D. TAMKO Building Products, Inc. shall maintain an operating and maintenance log for the thermal oxidizer which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
2. Record Keeping and Reporting Requirements
 - A. TAMKO Building Products, Inc. shall maintain all records required by this permit for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include Material Safety Data Sheets (MSDS) for all materials used
 - B. TAMKO Building Products, Inc. shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2010-04-005
Installation ID Number: 097-0094
Permit Number:

TAMKO Building Products, Inc.
3001 Newman Road
Joplin, MO 64801

Complete: April 1, 2010

Parent Company:
TAMKO Building Products, Inc.
P.O. Box 1404
Joplin, MO 64801

Jasper County, S31, T28, R32

REVIEW SUMMARY

- TAMKO Building Products, Inc. has applied for authority to use petroleum resin and polyphosphoric acid in the asphalt blowing operations.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. HAPs of concern from this process are polycyclic organic matter (POM).
- 40 CFR 60 Subpart UU, "Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture" applies to the installation.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) found in 40 CFR 61 apply to this installation. 40 CFR 63 Subpart AAAAAAA, "National Emission Standards for Hazardous Air Pollutants for Area Sources: Asphalt Processing and Asphalt Roofing Manufacturing," applies to the installation.
- A thermal oxidizer is being used to control emissions from the asphalt blowing operation.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels.
- This installation is located in Jasper County, an attainment area for all criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.
- Ambient air quality modeling was performed to determine the ambient impact of

POM.

- Emissions testing is not required for the equipment.
- A Part 70 Operating Permit application is required for this installation within 1 year of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

TAMKO Building Products, Inc. manufactures roofing products and includes such processes and products as felt mat, glass mat, asphalt coatings and saturants. The operations at the installation include four main manufacturing operations: refinery operations, fiberglass mat manufacturing operations, felt mill no. 1 operations and felt mill no. 2 operations. The equipment addressed in this permit is part of the refinery operations. Refinery operations are the preparation of asphalt flux. This preparation, called "Blowing", involves the oxidation of asphalt flux by bubbling air through liquid asphalt flux in blowing stills. Inorganic salts such as ferric chloride ($FeCl_3$) may be used as catalysts to achieve desired properties and to increase the rate of reaction in the blowing still. The asphalt flux is received at the railcar/truck unloading stations (EP 3-04 and 3-03). The flux is placed in storage tanks (EP 3-05, EP 3-06, and EP 3-07). The flux is then processed in the blowstills (EP BS-AB1-A, EP BS-AB1-B, EP BS-AB2-A, and EP BS-AB2-B).

When the blowing process is complete, the finished product is moved to storage tanks (EP3-08A, EP 3-09A, EP 3-30A, and EP 3-40A) or into tanker trucks. Finished product in the storage tanks is moved to the loading station and then is shipped off site. Emissions from this process are controlled by either the large direct fired thermal oxidizer (DFTO), (EP DFTO-101), or the small direct fired thermal oxidizer unit (EP 3-02, formerly known as East Preheater EP 3-02). The small direct fired thermal oxidizer may operate as an asphalt heater or to control process tank emissions at the same time the large direct fired thermal oxidizer is operating to control emissions.

The following construction permits have been issued to TAMKO Building Products, Inc. from the Air Pollution Control Program. TAMKO Building Products, Inc. has also received multiple "no permit required" letters from the Air Pollution Control Program. For more information on these determinations consult the operating permit OP2009-002.

Table 1: Permit History

Permit Number	Description
0393-012	Replace blow still tanks
0594-032	Modifications to the fiberglass mat line
0496-004	25.2 MMBtu/hr natural gas fired boiler
112000-012	RTO installation
062001-004	Replace thermal oxidizer

PROJECT DESCRIPTION

TAMKO Building Products, Inc. has applied for authority to use petroleum resin as an alternative material in their asphalt blow stills (EP BS-AB1-A, EP BS-AB1-B, EP BS-AB2-A and EP BS-AB2-B). The petroleum resin will replace up to 20% of the asphalt flux and has a higher VOC content than the asphalt flux currently used. TAMKO Building Products, Inc. will also use polyphosphoric acid (PPA) as an alternative catalyst. PPA is expected to reduce the blowing time by 30%, which will increase the process's capacity, but will not debottleneck other processes at the plant. The process is controlled by one of two thermal oxidizers (Small DFTO EP 3-02 and Large DFTO DFTO-1).

EMISSIONS/CONTROLS EVALUATION

The emission factors and control efficiencies used in this analysis were obtained from the Environmental Protection Agency (EPA) Factor Information Retrieval (FIRE) database version 6.25, source classification code (SCC) 3-05-001-01. FIRE identified four regulated pollutants from the asphalt blowing process: PM₁₀, volatile organic compounds (VOC), carbon monoxide (CO) and POM. For PM₁₀, FIRE supplied emission factors for both uncontrolled emissions and emissions controlled by an afterburner. For the other pollutants, only uncontrolled emission factors were available, so a 95% control efficiency was assumed for VOC and POM. All emission factors are represented in terms of pounds of pollutant per ton of asphalt produced, so to estimate the increase in VOC emissions from the petroleum resin, the emission factor was scaled based on the ratio of the new asphalt/petroleum resin mix's VOC content and the VOC content of asphalt. Since this project is a modification of an existing emission unit, the emissions increase from the project was calculated using a potential minus actual method. Potential emissions were calculated using 2.8 hour batch time and assuming the installation can process two 70 ton batches simultaneously. Baseline actual emissions were calculated using actual production data from 2005 and 2006, which was the 24-month period within 10 years of construction selected by the company. The emissions increase of all pollutants is below their respective de minimis level. The emissions increase of POM is greater than its screen modeling action level, so modeling was required. The following table provides an emissions summary for this project.

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory De Minimis Levels	Existing Potential Emissions	Baseline Actual Emissions (2005-2006)	Potential Emissions	Emissions Increase
PM ₁₀	15.0	Part 70	3.96	13.14	9.18
SO _x	40.0	Part 70	N/A	N/A	N/A
NO _x	40.0	Part 70	N/A	N/A	N/A
VOC	40.0	Part 70	4.81	30.37	25.56
CO	100.0	Part 70	17.80	59.12	41.32
POM	0.01*	Part 70	0.10	0.33	0.23
Total HAPs	25.0	Part 70	N/D	N/D	N/D

N/A = Not Applicable; N/D = Not Determined

*Screen Modeling Action Level

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels.

APPLICABLE REQUIREMENTS

TAMKO Building Products, Inc. shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required June 1 for the previous year's emissions.
- *Operating Permits*, 10 CSR 10-6.065
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-3.090

SPECIFIC REQUIREMENTS

- *New Source Performance Regulations*, 10 CSR 10-6.070 – *New Source Performance Standards (NSPS) for Asphalt Processing and Asphalt Roofing Manufacture*, 40 CFR Part 60, Subpart UU
- *National Emission Standards For Hazardous Air Pollutants For Source Categories*, 40 CFR 63 Subpart AAAAAAA, "National Emission Standards for Hazardous Air Pollutants for Area Sources: Asphalt Processing and Asphalt Roofing Manufacturing"

AMBIENT AIR QUALITY IMPACT ANALYSIS

Ambient air quality modeling was performed to determine the ambient impact of POM. The EPA SCREEN3 model was used to demonstrate compliance with the risk assessment level for POM, which is 0.16 µg/m³ on an annual average. The results of the model show compliance with the risk assessment level.

Table 3: Ambient Air Quality Impact Analysis Summary

Pollutant	Modeled Impact	RAL	Time Period
POM	0.0152 µg/m ³	0.16 µg/m ³	Annual

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

 Michael Mittermeyer
 Environmental Engineer

 Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated March 29, 2010, received April 1, 2010, designating TAMKO Building Products, Inc. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.