

PERMIT BOOK

STATE OF MISSOURI



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: **092014-004** Project Number: 2014-04-061
Installation Number: 097-0094

Parent Company: TAMKO Building Products, Inc.

Parent Company Address: 220 West 4th Street, Joplin, MO 64802

Installation Name: TAMKO Building Products, Inc.

Installation Address: 3001 Newman Road, Joplin, MO 64801

Location Information: Jasper County, S31, T28N, R32W

Application for Authority to Construct was made for:

The replacement of an 8.73 MMBtu/hr direct-fired thermal oxidizer with a 25 MMBtu/hr direct-fired thermal oxidizer. 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.

SEP - 8 2014

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 Department's Air Pollution Control Program of the anticipated date of start up of these air contaminant sources. 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 these air contaminant sources.

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 sources(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, T28N, R32W

1. Control Device Requirement – Direct-Fired Thermal Oxidizers (DFTO-101 and DFTO-102)
 - A. TAMKO Building Products, Inc. shall control emissions from the equipment in Table 1 using either Direct-Fired Thermal Oxidizer DFTO-101 or Direct-Fired Thermal Oxidizer DFTO-102, while the equipment is in operation, as specified in the permit application.

Table 1: Equipment Controlled by the DFTOs

Emission Unit No.	Description
BS-AB2-B	Blowstill #34
BS-AB2-A	Blowstill #35
BS-AB1-B	Blowstill #36
BS-AB1-A	Blowstill #37
3-08A	Storage Tank #1
3-09A	Storage Tank #2
3-30A	Storage Tank #3
3-40A	Storage Tank #4
3-05	Storage Tank #7
3-06	Storage Tank #8
3-07	Storage Tank #9
Loading	Loading Station

- B. The direct-fired thermal oxidizers (DFTO-101 and DFTO-102) shall be operated and maintained in accordance with the manufacturer's specifications.
- C. The average operating temperature in the combustion chamber of the DFTO shall be set by the performance test required in 40 CFR 63, Subpart AAAAAA, *National Emission Standards for Hazardous Air Pollutants for Area Sources: Asphalt Processing and Asphalt Roofing Manufacturing*, of the MACT. TAMKO Building Products, Inc. shall

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SPECIAL CONDITIONS:

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

continuously monitor and record the combustion chamber temperature of the thermal oxidizers (DFTO-101 and DFTO-102) while the oxidizers are in operation to ensure that the minimum average temperature is at or above the temperature set in the performance test. The average temperature shall be based on a three (3) hour averaging period, in accordance with MACT Subpart AAAAAAA.

- 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. HAPs Emission Limitations
 - A. TAMKO Building Products, Inc. shall emit less than 10.0 tons of Hydrogen Chloride (HCl) in any consecutive 12-month period from the entire installation. Equipment at the installation that emits HCl include blowstills 34, 35, 36, and 37 (BS-AB2-B, BS-AB2-A, BS-AB1-B, and BS-AB1-A). These equipment are controlled by DFTO-101 and DFTO-102.

 - B. Attachment A, or equivalent forms, such as electronic forms, shall be used to demonstrate compliance with Special Condition 2.A. The equivalent forms shall use the same values and calculation methods as in Attachment A.

- 3. Record Keeping and Reporting Requirements
 - A. TAMKO Building Products, Inc. shall maintain all records required by this permit for not less than five years and shall make them available to Missouri Department of Natural Resources personnel upon request.

 - 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 the records required in Special Condition 2.B. shows an exceedance of the HCl limit in Special Condition 2.A.

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

Project Number: 2014-04-061
Installation ID Number: 097-0094
Permit Number:

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

Complete: April 22, 2014

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

Jasper County, S31, T28N, R32W

REVIEW SUMMARY

- TAMKO Building Products, Inc. has applied for authority to replace its 8.37 MMBtu/hr DFTO (DFTO-102) with a larger DFTO rated at 25 MMBtu/hr.
- HAP emissions are expected from the proposed equipment. HAPs of concern from this process are from combustion and are not expected to be greater than their respective SMAL.
- 40 CFR 60, Subpart UU, *Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture*, of the NSPS applies to the equipment controlled by both of the DFTOs (DFTO-101 and DFTO-102).
- 40 CFR 63, Subpart AAAAAAA, *National Emission Standards for Hazardous Air Pollutants for Area Sources: Asphalt Processing and Asphalt Roofing Manufacturing*, of the MACT applies to the equipment controlled by both of the DFTOs (DFTO-101 and DFTO-102).
- None of the NESHAPs apply to this installation.
- 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 not performed since potential emissions of the application are below the de minimis levels and the SMAL.
- Emissions testing is not required for the equipment as a condition of this permit.
- An amendment to the facility's Part 70 Operating Permit Application is required within one (1) year of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

TAMKO Building Products, Inc. manufactures roofing products and include such processes such as felt mat, glass mat, asphalt coatings, and saturates. The installation is composed of three main operations: Refinery, fiberglass mat manufacturing, and felt mill no. 1. Another felt mill (no. 2) was removed from operations.

The facility is considered a major source for operating permits and a Part 70 Operating Permit was issued to the facility in 2009 (OP2009-002). A Part 70 Operating Permit renewal application (Project 2013-07-067) was submitted to the Air Pollution Control Program in July, 2013. The following New Source Review permits have been issued to TAMKO Building Products, Inc. from the Air Pollution Control Program.

Table 2: Permit History

Permit Number	Description
0393-012	Replacing 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	Replacing thermal oxidizer
052010-008	Refinery process change
102010-007	Installation of two new 25.2 MMBtu/hr natural gas-fired boilers, which will replace three existing boilers, and the replacement of three tank heater burners
052010-008A	Amending Permit 052010-008 to account for recent stack test
072012-012	Installation of chopper and blower system for the fiberglass mat trim
092013-009	Removal of software restriction to increase maximum design rate of the honeycomb dryer

In Permit No. 112000-012, the facility was labeled a major source under construction permits. However, in Permit No. 102010-007, the status of the facility was changed to being a minor source, but no installation-wide PTE calculations were performed. In the Part 70 operating permit application submitted by the facility in July, 2013, the facility included an emissions calculation for the entire facility which showed that emissions of all pollutants to be below the construction permit major source level of 250 tons per year. However, the Air Pollution Control Program cannot currently verify the emission rates submitted by the company.

In the Part 70 Operating Permit submittal, the emission factors for the honeycomb dryer

and its RTO (EP2-9A) came either from the Ennis clean air stack test performed in 2003, or from the NPN stack test performed in 2009. The Operating Permit Unit of the Air Pollution Control Program rejected the Ennis test during its review of the facility's operating permit application in 2008, while the NPN stack test was not tested at the honeycomb dryer's current MHDR. During the NPN test, which was conducted in 2009, the MHDR of the honeycomb dryer was 3.8 tph. However, in 2013, the facility was allowed, through Permit No. 092013-009, to increase the MHDR of the honeycomb dryer to 4.8 tph. Furthermore, in February, 2014, the installation performed stack tests on the honeycomb dryer using the new MHDR but did not include emissions from the RTO (EP2-9A). Therefore, there is currently no reliable emission factor to use in calculating PTE emissions from the honeycomb dryer. However, whether the installation is a minor source does not affect the current project. Therefore, no further effort is made to verify the installation-wide PTE for this project. Instead, the installation-wide PTE will be confirmed during the operating permit review currently being processed (Project 2013-07-067).

PROJECT DESCRIPTION

TAMKO Building Products, Inc. proposes to replace an existing DFTO rated at 8.37 MMBtu/hr (DFTO-102) with a larger DFTO rated at 25 MMBtu/hr. The existing DFTO (DFTO-102) will be taken out of service and removed from the site. The DFTO replacement is not expected to debottleneck any other equipment at the site. Emissions from the equipment will be ducted to either the new DFTO (also labeled DFTO-102) or another existing DFTO (DFTO-101). Therefore, DFTO-101 is also included in Special Condition No. 1 of this permit.

EMISSIONS/CONTROLS EVALUATION

The replacement of the DFTO (DFTO-102) is not expected to increase the emissions from the equipment that the DFTO controls, which includes blowstills no. 34 through 37, storage tanks no. 1, 2, 3, 4, 7, 8 and 9, and the loading station. Although the new oxidizer operates at a lower temperature than the existing oxidizer, the residence time of the new oxidizer is at least twice that of the existing oxidizer. Therefore, the destruction efficiency of the new thermal oxidizer is expected to be no lower than the existing oxidizer.

The only increase in emissions expected are from the extra capacity of the DFTO (DFTO-102). The DFTO will be natural-gas fired and emissions from the DFTO, with the exception of NO_x, are estimated using emission factors from EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 1.4, *Natural Gas Combustion*, (7/1998). NO_x emissions were calculated using the manufacturer's data, which is higher than emissions calculated using the emission factor from AP-42, Section 1.4. TAMKO Building Products, Inc. did supply manufacturer's data for CO emissions. However, the CO emission factor from the manufacturer is lower than the CO emission factor from AP-42, Section 1.4, so the emission factor from AP-42, Section 1.4 was used instead to be conservative.

The following table provides an emissions summary for this project. Existing actual emissions were taken from the installation's 2013 EIQ. Potential emissions of the application represent the potential of the DFTO (DFTO-102), assuming continuous operation (8760 hours per year). In operating permit OP2009-002, the installation accepted a limit of 10 tons per year of HCl and 10 tons per year of formaldehyde in order to remain a minor source for HAP. The 10 tpy HCl limit is restated in this permit. The 10 tpy formaldehyde limit is no longer needed because Permit No. 092013-009 limits the formaldehyde emissions from the honeycomb dryer to less than 2 tons per year and taking into account other sources of formaldehyde at the installation, the potential emission of formaldehyde will be less than 10 tpy.

Table 3: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	¹ Existing Potential Emissions	Existing Actual Emissions (2014 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	N/D	N/D	0.82	N/A
PM ₁₀	15.0	N/D	19.00	0.82	N/A
PM _{2.5}	10.0	N/D	18.79	0.82	N/A
SO _x	40.0	N/D	41.56	6.44	N/A
NO _x	40.0	N/D	33.53	13.14	N/A
VOC	40.0	N/D	14.22	0.59	N/A
CO	100.0	N/D	74.00	9.01	N/A
GHG (CO ₂ e)	⁵ 100,000	N/D	N/D	12,958.91	N/A
GHG (mass)	⁵ 100.0 / 250.0	N/D	N/D	12,882.84	N/A
HCl	10.0	² <10.0	N/D	N/A	<10.0
Formaldehyde	10.0	² <10.0	N/D	0.01	³ 2.43
Combined HAP	25.0	⁴ 16.35	1.95	0.20	N/A

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

Note 1: Existing potential emissions for criteria pollutant were not determined because there is currently no reliable data on the emission factors for the honeycomb dryer and its RTO (EP2-9A).

Note 2: Limit in Operating Permit OP2009-002.

Note 3: New installation conditioned potential emissions of formaldehyde include the 2 tpy limit of formaldehyde in Permit No. 092013-009 for the honeycomb dryer and 0.43 tpy from other sources at the installation.

Note 4: Existing potential emissions of combined HAP accounts for the 10 tpy limit of HCl in this construction permit and the 2 tpy limit of formaldehyde in Permit No. 092013-009

Note 5: On June 23, 2014, the U.S. Supreme Court determined, in *Utility Air Regulatory Group v. Environmental Protection Agency* (No. 12-1146), that GHG can no longer be treated as an air pollutant for the purpose of determining whether a source is a major source required to obtain a PSD permit.

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
- *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 10-6.165

SPECIFIC REQUIREMENTS

- *New Source Performance Regulations*, 10 CSR 10-6.070
 - *Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture*, 40 CFR Part 60, Subpart UU
- *MACT Regulations*, 10 CSR 10-6.075
 - *National Emission Standards for Area Sources: Asphalt Processing and Asphalt Roofing Manufacturing*, 40 CFR Part 63, Subpart AAAAAA
- *Restriction of Emission of Sulfur Compounds*, 10 CSR 10-6.260

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.

Chia-Wei Young
New Source Review Unit

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated April 22, 2014, received April 28, 2014, 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.

APPENDIX A

Abbreviations and Acronyms

%percent	m/s meters per second
°Fdegrees Fahrenheit	Mgal 1,000 gallons
acfmactual cubic feet per minute	MW megawatt
BACT Best Available Control Technology	MHDR maximum hourly design rate
BMPs Best Management Practices	MMBtu Million British thermal units
Btu British thermal unit	MMCF million cubic feet
CAM Compliance Assurance Monitoring	MSDS Material Safety Data Sheet
CAS Chemical Abstracts Service	NAAQS ... National Ambient Air Quality Standards
CEMS Continuous Emission Monitor System	NESHAPs National Emissions Standards for Hazardous Air Pollutants
CFR Code of Federal Regulations	NO_x nitrogen oxides
COcarbon monoxide	NSPS New Source Performance Standards
CO₂carbon dioxide	NSR New Source Review
CO_{2e}carbon dioxide equivalent	PM particulate matter
COMS Continuous Opacity Monitoring System	PM_{2.5} particulate matter less than 2.5 microns in aerodynamic diameter
CSR Code of State Regulations	PM₁₀ particulate matter less than 10 microns in aerodynamic diameter
dscfdry standard cubic feet	ppm parts per million
EQ Emission Inventory Questionnaire	PSD Prevention of Significant Deterioration
EP Emission Point	PTE potential to emit
EPA Environmental Protection Agency	RACT Reasonable Available Control Technology
EU Emission Unit	RAL Risk Assessment Level
fpsfeet per second	SCC Source Classification Code
ft feet	scfm standard cubic feet per minute
GACT Generally Available Control Technology	SIC Standard Industrial Classification
GHG Greenhouse Gas	SIP State Implementation Plan
gpm gallons per minute	SMAL Screening Model Action Levels
gr grains	SO_x sulfur oxides
GWP Global Warming Potential	SO₂ sulfur dioxide
HAP Hazardous Air Pollutant	tph tons per hour
hr hour	tpy tons per year
hp horsepower	VMT vehicle miles traveled
lb pound	VOC Volatile Organic Compound
lbs/hr pounds per hour	
MACT Maximum Achievable Control Technology	
µg/m³micrograms per cubic meter	

Mr. Daniel Hollingshead
General Manager
TAMKO Building Products, Inc.
3001 Newman Road
Joplin, MO 64801

RE: New Source Review Permit - Project Number: 2014-04-061

Dear Mr. Hollingshead:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions, if any, on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your amended operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact Chia-Wei Young, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:cyl

Enclosures

c: Southwest Regional Office
PAMS File: 2014-04-061

Permit Number:

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