



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: **062014-011**

Project Number: 2013-07-003
Installation Number: 011-0030

Parent Company: TAMKO Building Products, Inc.

Parent Company Address: P.O. Box 1404, Joplin, MO 64802

Installation Name: TAMKO Building Products, Inc.

Installation Address: 601 West 17th Street and 223 South KK Highway, Lamar, MO 64759

Location Information: Barton County, S6, T31N, R30W

Application for Authority to Construct was made for:

The removal of a regenerative thermal oxidizer. This review was conducted in accordance with Section (6), 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.

JUL 01 2014

EFFECTIVE DATE

Wendy Vit for Kyra L. Moore
 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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Project No.	2013-07-003

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.
Barton County, S6, T31N, R30W

1. **Superseding Condition**
The conditions of this permit supersede all special conditions found in the previously issued construction permits no. 012007-001, 062009-009, and 042010-008.
2. **Emission Limits**
 - A. TAMKO Building Products, Inc. shall emit less than 10.0 tons of formaldehyde from the entire installation in any consecutive 12-month period.
 - B. TAMKO Building Products, Inc. shall emit less than 15.0 tons of PM₁₀ from the entire North Plant in any consecutive 12-month period. Equipment at the North Plant is listed in Attachment B.
 - C. Attachment A and B, or equivalent forms shall be used to demonstrate compliance with Special Conditions 2.A and 2.B.
 - 1) The equivalent forms shall include all information contained in Attachment A and B and shall use the same emission factor and calculation methods as outlined in Attachment A and B.
 - 2) TAMKO Building Products, Inc. can change the emission factors or the calculation methods or any other information that may affect the emissions calculations (i.e. due to new stack testing results, updates to EPA document AP-42, etc.), by submitting the information to the Air Pollution Control Program for approval.
 - 3) Attachments A and B of this permit replace Attachments B, C and D in Permit No. 042010-008 (Project No. 2009-08-043) (Note : Attachment A, which limits the formaldehyde emissions from Stack FMN, in Permit No. 042010-008 is no longer needed because equipment emitting through Stack FMN has been removed by the company).

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SPECIAL CONDITIONS:

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

3. **Shut Down or Removal of Existing Emission Units and Operations**
TAMKO Building Products, Inc. shall remove the equipment listed below or render them inoperable by removing their starters, motors or drive devices. These emission units and operations listed below may not be operated again without review by the Air Pollution Control Program.

Emission Unit ID	Emission Unit Description	Line No.
EU-S09a	Plastic Blending/Handling	2, 3, 4, 5, 6, 7, 8
EU-S09b	Sawdust Blending/Handling	2, 3, 4, 5, 6, 7, 8
EU-S10a	Plastic Compounding and Extruding	2, 3, 4, 5, 6, 7, 8
EU-S10b	Sawdust Compounding and Extruding	2, 3, 4, 5, 6, 7, 8
EU-S11	Grinding	2, 3, 4, 5, 6, 7, 8

4. **Operational Limits**
 - A. TAMKO Building Products, Inc. shall limit its daily compression line sawdust (containing formaldehyde-based binder residues) compounding/extrusion (EU-N10b) usage to no more than 60% of the total compression line product manufactured (EU-N10a, EU-10b, and EU-10c).
 - B. TAMKO Building Products, Inc. shall only process “virgin” fibers for the TAMrail production processes (EU-N21 and EU-N22) and the dryer (EU-N29). “Virgin,” for the purpose of this permit, indicates fibers that do not contain formaldehyde-based binder residues.
 - C. Attachment C, or equivalent forms, shall be used to maintain compliance with Special Condition 4.A.
5. **Operating Permit Requirements**
TAMKO Building Products, Inc. shall submit an application to modify its current Basic Operating Permit within 30 days after stack installation has commenced.
6. **Control Devices – Baghouses**
 - A. TAMKO Building Products, Inc. shall control emissions from the following equipment using baghouses as specified in the permit application.

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SPECIAL CONDITIONS:

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

North Plant	
Emission Point	Emission Unit Controlled
N01	Bag Dump and Drop Legs
N02	Grinding Conveyor Material Transfer
N03	Grinding
N04	Ground Material Transfer to Silo
N05	Plastic Transfer to Silo
N06	Sawdust Transfer to Silo
N09a, N09b, N09c	Blending and Material Handling – Plastic/Sawdust/Limestone
N10a, N10b, N10c	Compounding and Extruding – Plastic/Sawdust/Limestone
N11	Finishing and Grinding
N19	Limestone Transfer to Silo
N29	Rotary Dryer
South Plant	
Emission Point	Emission Unit Controlled
S01	Bag Dump and Drop Legs
S02	Grinding Conveyor Material Transfer
S03	Grinding
S04	Ground Material Transfer to Silo
S05	Plastic Transfer to Silo
S06	Sawdust Transfer to Silo
¹ S09a, ¹ S09b	Blending and Material Handling – Plastic/Sawdust
S18	Plastic Transfer to Silo – Shingle
S19	Limestone Transfer to Silo – Shingle
S20	Pellet Transfer to Silo – Shingle
S21	Grinding – Shingle
S22	Handling/Mixing/Extrusion – Shingle
S23	Pelletization/Injection Molding – Shingle

Note 1: Special Condition 3 of this permit requires that line 2 through 8 from plastic and Sawdust blending be removed. The S09a and S09b emission point mentioned in Special Condition 6 refers to equipment of other lines.

- B. The baghouses shall be operated and maintained in accordance with the installation's control device operating procedures. The baghouses shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that the Missouri Department of Natural Resources employees may easily

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SPECIAL CONDITIONS:

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

observe them. Replacement filters for the baghouses shall be kept on hand or order at all times. The bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance)

- C. TAMKO Building Products, Inc. shall monitor and record the operating pressure drop across the baghouses at least once every 24 hours while the equipment is in operation. The operating pressure drop shall be maintained within the design conditions specified by the installation's control device operating procedures.
 - D. TAMKO Building Products, Inc. shall maintain an operating and maintenance log for the baghouses 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 that have impact air emissions, with inspection schedule, repair actions, and replacements, etc.
7. Maintenance of Paved Haul Road(s)
- A. Maintenance and/or repair of haul road surface shall be conducted as necessary to ensure that the physical integrity of the pavement is adequate to achieve control of fugitive emissions from these areas while the plant is in operation.
 - B. The operator(s) shall periodically water, wash, and/or otherwise clean all of the paved portions of the haul road(s) as necessary to achieve control of fugitive emissions from these areas while the plant is in operation.
8. 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 immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include MSDS for all materials used.
 - B. TAMKO Building Products, Inc. shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after 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 (6) REVIEW

Project Number: 2013-07-003
Installation ID Number: 011-0030
Permit Number:

TAMKO Building Products, Inc.
601 West 17th Street and 223 South KK Highway
Lamar, MO 64759

Complete: June 28, 2013

Parent Company:
TAMKO Building Products, Inc.
P.O. Box 1404
Joplin, MO 64802

Barton County, S6, T31N, R30W

REVIEW SUMMARY

- TAMKO Building Products, Inc. has applied for authority to remove a regenerative thermal oxidizer (RTO) used to control emissions. The installation also proposes to build a new stack for the emission units affected by the RTO removal.
- The removal of the RTO would lead to increased PM_{2.5}, PM₁₀, PM, HAP and VOC emissions from equipment it used to control. The HAP of concern is formaldehyde.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of VOC are greater than the de minimis level.
- This installation is located in Barton 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 formaldehyde. Ambient air quality modeling was not performed on VOC because no model is currently available which can accurately predict ambient ozone concentrations caused by this installation's VOC emissions.

- Emissions testing is not required for the equipment.
- A Basic Operating Permit application is required for this installation within 30 days after stack construction has commenced.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

TAMKO Building Products, Inc. manufactures composite building materials at its installation in Lamar, Missouri. The facility mixes natural plant fibers, aggregates and plastics to produce composite building materials such as deck boards, shingles and fencing. The installation is composed of equipment at two separate locations, designated as the North and South plants. The installation is a minor source for construction permits and currently operates under a Basic Operating Permit.

The installation consists of a North plant and a South plant. The two plants were originally permitted separately because both plants were to be run by separate managements and neither facility was slated to provide assistance in the manufacturing of any product for the other facility. However, in 2006, the company voluntarily combined the two plants into one, through Permit No. 012007-001, to better utilize employees, raw materials, equipment, etc.

The following New Source Review permits have been issued to TAMKO Building Products, Inc. from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
022004-009	Installation of seven process lines and two injection molding machines
052004-008	Temporary permit to perform pilot study on existing extrusion line
062004-010	Installation of a sawdust dryer and modification of Permit 022004-009 to change formaldehyde emission factors.
062004-010A	Clarification on how many equipment are to be installed due to Permit 062004-010
092004-009	Installation of a composite lumber manufacturing operation.
082006-001	Installation of a burn-off oven (never installed)
012007-001	Combined two installations into one (IDs 011-0033 and 011-0030)
062009-009	Relocation of existing composite rail production area
042010-008	Installation of a storage silo, storage pile, a mechanical handling/transfer system, a pneumatic handling/transfer system, a hammermill with screen, two rotary dryers and a handling system.

PROJECT DESCRIPTION

TAMKO Building Products, Inc. proposes to remove the regenerative thermal oxidizer (RTO) used to control emissions from the dryer (EU-N29) and the compounding/extrusion process (EU-N10a, EU-N10b). The installation also will be constructing a new stack for the emissions from the affected equipment. The removal of the RTO would lead to an increase in formaldehyde emissions above the SMAL of 2 tpy. Therefore, modeling was performed on formaldehyde to ensure that its ambient impact does not exceed the RAL.

According to the original application submitted by the company, lines S2, S3, S4, S5, and S6 from the south plant have been removed from operations. After the original submittal, the installation also decided to remove lines S7 and S8 at the south plant from operations. Therefore, there will be no formaldehyde emissions from Stack B (which includes emissions from lines S2, S4 and S5) or Stack FMN (which includes emissions from lines S3, S6, S7 and S8).

The installation has been permitted to operate a total of three (3) dryers at its North Plant. However, the facility only installed one dryer (EU-N29). TAMKO Building Products, Inc. cannot install the other dryers without a new review by the Air Pollution Control Program.

EMISSIONS/CONTROLS EVALUATION

This project is expected to increase emissions of VOCs and formaldehyde, which is both a VOC and a HAP. The RTO should provide some control for particulates. Therefore, PM_{2.5}, PM₁₀ and PM emissions are also expected to increase. SO_x, NO_x, CO and GHG are emitted from the operation of the RTO but not from the controlled equipment. Eliminating the RTO would only cause decreases in the emissions of these pollutants.

The natural fiber used for the compression line compounding/extrusion (EU-N10b) equipment may contain formaldehyde-based binder residues while the dryer (EU-N29) and lumber extrusion lines only process "virgin" fibers, which does not contain binder residues. Formaldehyde emissions from the compounding/extrusion equipment (EU-N10b) were calculated using emission factors developed from stack tests performed in March, 2004. In the stack testing report, the equipment was listed as processing "virgin" fibers. However, subsequent communications with the company revealed that the word "virgin" was used differently in the 2004 stack test report. The 2004 stack test report was trying to differentiate between sawdust and reground composite material. The word "virgin," as it was used in the 2004 stack test report, indicates sawdust that is not reground composite material. It does not mean that the sawdust does not contain binder residues. In fact, the stack test was performed using binder-laden sawdust and therefore, the stack test results can be used to calculate formaldehyde emissions from the sawdust compounding/extrusion equipment (EU-N10b) in this project.

Formadehyde, PM and filterable PM₁₀ emissions from the dryer (EU-N29) were calculated using emission factor developed from an April, 2003 stack test. Condensable PM₁₀ emissions emitted by the combustion of the fuel for the dryer (EU-N29) were calculated using Environmental Protection Agency (EPA) document AP-42, "Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources," Chapter 1.4, "Natural Gas Combustion." It was assumed that all of the PM₁₀ are also PM_{2.5}. Emissions from plastics compounding/extrusion (EU-N10a) were calculated using data from the paper "Development of Emission Factors for Polyethylene Process," Journal of the Air and Waste Management Association, June, 1996.

The installation-wide potential emissions after this project were calculated to determine operating permit applicability. Equipment at the installation was first permitted in 2004. In 2006, when the company applied to combine the North and South plants into one single installation, the application listed MHDR that were different than the MHDR used when the equipment were first permitted. The new MHDR resulted from better knowledge of the equipment, but the new MHDR were never used. Instead, the Air Pollution Control Program used the higher MHDR for a conservative evaluation. In addition, many of the equipment have been removed since they were first permitted or they were never installed. Therefore, as part of this project, the installation provided updated equipment information and MHDR for the calculations. This is the reason that the MHDR used in the current calculations differ from those used in previous permits.

The emission factors and the control efficiencies used in the calculations are those approved by the Air Pollution Control Program in previous permits issued to the installation. The calculations show that the potential emissions of all criteria pollutants are below the operating permit major source level of 100 tpy. Therefore, the facility remains a Basic Source for operating permits. The installation was limited to 15 tons of PM₁₀ per year each for the North Plant and the South Plant in previous permits (012007-001, 062009-009 and 042010-008) issued by the Air Pollution Control Program. However, after recalculating the installation-wide emissions, it was determined that the PM₁₀ emissions from the South Plant are now less than 15.0 tons per year while the PM₁₀ emissions from the North Plant remain greater than 15.0 tons. Therefore, all special conditions in these permits are superseded, and a 15.0 tpy limit for the North Plant is restated in this permit. All other special conditions in these permits that still apply are transferred to this permit for simplicity.

The following table provides an emissions summary for this project. Existing actual emissions were taken from the installation's 2012 EIQ. With the exception of HAP, potential emissions of the application represent the potential of the equipment affected by the RTO removal, assuming continuous operation (8760 hours per year). Potential HAP emissions of the application are based on the 10 tpy installation-wide limit of formaldehyde, which the facility had to accept to avoid being a major source of HAP. The new installation-wide potential emissions are based on 8,760 hours of operation per year. For the new installation conditioned potential emissions, the PM, PM₁₀, and PM_{2.5} emissions include the 15.0 tpy limit for the North Plant and the 8.5 tpy potential emissions from the South Plant; the formaldehyde and combined HAP emissions are based on the 10 tpy installation-wide limit for formaldehyde; and for all other pollutants, emissions are based on 8,760 hours of operations.

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Actual Emissions (2012 EIQ)	Potential Emissions of the Application	New Installation Potential Emissions	New Installation Conditioned Potential Emissions
PM	25.0	N/D	2.5	28.6	<23.5
PM ₁₀	15.0	2.41	1.9	28.6	<23.5
PM _{2.5}	10.0	2.41	1.9	28.6	<23.5
SO _x	40.0	0.0019	N/A	1.4	1.4
NO _x	40.0	0.33	N/A	7.4	7.4
VOC	40.0	0.89	81.73	92.9	92.89
CO	100.0	1.26	N/A	7.0	7.0
GHG (CO ₂ e)	100,000	N/D	N/A	10,441.5	10,441.5
GHG (mass)	100.0 / 250.0	N/D	N/A	10,383.2	10,383.2
Combined HAPs	25.0	0.19	10.0	11.33	10.14
Formaldehyde	10.0	N/D	<10.0	11.19	<10.0

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

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of VOC are greater than the de minimis level, but below the major source level.

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

- *Restriction of Emission of Sulfur Compounds, 10 CSR 10-6.260*
 - Does not apply if the installation uses pipeline-grade natural gas as defined in 40 CFR 72.2 or liquefied petroleum gas as defined by the American Society for Testing and Materials (ASTM), or any combination of these fuels.
- *Restriction of Emission of Particulate Matter from industrial Processes, 10 CSR 10-6.400*

AMBIENT AIR QUALITY IMPACT ANALYSIS

Ambient Air Quality Impact Analysis (AAQIA) was performed on all of the equipment at the installation that emits formaldehyde and not just the equipment affected by the removal of the RTO. Equipment that are not affected by the RTO removal but are included in the modeling analysis are as follows:

Table 3: Additional Equipment Included in the AAQIA

Emission Unit ID	Emission Unit Description
EU-N06	Sawdust Transfer to Silo
EU-N21	Composite Rail Production Area
EU-N22	Sawdust/Plastic Extrusion
EU-N14	Building Heater A
EU-N14	Building Heater B

The following calculation methods were used.

- Formaldehyde emissions from the Sawdust Transfer to Silo (EU-N06) were calculated using data from a stack test performed in 2002.
- Formaldehyde emissions from the composite rail production area (EU-N21) and sawdust/plastics extrusion (EU-N22) were calculated using data from the paper "Development of Emission Factors for Polyethylene Process."
- Formaldehyde emissions from the building heaters (EU-N14) were calculated using emission factors from AP-42, Chapter 1.4, *Natural Gas Combustion, (7/98)*.

Modeling was performed assuming that a maximum of 60% of the compression line raw materials is binder-laden sawdust. Therefore, this permit contains a condition that limits the compounding and extruding of binder-laden sawdust, which has a higher emission rate, to a maximum of 60%.

The AAQIA shows that the installation will be in compliance with the RAL for formaldehyde (For the annual averaging period, the facility is allowed ten times the RAL for compliance). More information on modeling can be found in the memo "Ambient Air Quality Impact Analysis (AAQIA) for TAMKO Building Products, Incorporated (TAMKO)," March 26, 2014 from the modeling unit of the permit section.

Table 4: Formaldehyde AAQIA Results

Year	Modeled Impact	¹ RAL	Time Period
2005	5.84	9.8	24-hour
2005	0.68	0.8	Annual
2006	6.52	9.8	24-hour
2006	0.64	0.8	Annual
2007	6.63	9.8	24-hour
2007	0.60	0.8	Annual
2008	6.76	9.8	24-hour
2008	0.65	0.8	Annual
2009	7.92	9.8	24-hour
2009	0.78	0.8	Annual

Note 1: For annual averaging time, the number is 10 x RAL.

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (6), 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 June 24, 2013, received June 28, 2013, 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.
- "Development of Emission Factors for Polyethylene Process," Journal of the Air and Waste Management Association, June 1996.

Attachment B – North Plant PM₁₀ Compliance Worksheet

TAMKO Building Products, Inc.
 Barton County, S6, T31N, R30W
 Project Number: 2013-07-003
 Installation ID Number: 011-0030
 Permit Number: _____

This sheet covers the month of _____ in the year _____

Column A	Column B	Column B	Column C	¹ Column D
Emission Point ID	Emission Point Description	Monthly Throughput (With units)	² Emission Factor (with Unit)	PM ₁₀ Monthly Emissions (tons)
N01	Bag Dump, Drop Legs	Tons	0.036 lb/ton	
N02	Grinding Conveyor Material Transfer	Tons	0.00064 lb/ton	
N03	Grinding	Tons	0.02 lb/ton	
N04	Ground Material Transfer to Silo	Tons	0.00064 lb/ton	
N05	Plastic Transfer to Silo	Tons	0.00064 lb/ton	
N06	Sawdust Transfer to Silo	Tons	0.036 lb/ton	
N09a	Plastic Blending and Handling	Tons	0.00064 lb/ton	
N09b	Sawdust Blending and Handling	Tons	0.036 lb/ton	
N10a	Plastic Compounding/Extruding	Tons	0.00064 lb/ton	
N10b	Sawdust Compounding/Extruding	Tons	0.036 lb/ton	
N10c	Limestone Compounding/Extruding	Tons	0.00003 lb/ton	
N11	Finishing and Grinding	Tons	0.02 lb/ton	
N14	Natural Gas Heater	Mmscf	7.6 lb/mmscf	
N15	Natural Gas Space Heater	Mmscf	7.6 lb/mmscf	
N16	Kerosene Space Heater	Mgal	1.08 lb/Mgal	
N17	³ Haul Roads	VMT	0.580 lb/VMT	
N19	Limestone Transfer to Silo	Tons	0.00003 lb/ton	
N21	Compounding Line	Tons	1.28 lb/ton	
N22	Extrusion Line	Tons	0.92 lb/ton	
N25	Cooling Tower	1,000 gal	0.019 lb/1,000 gal	
N29	Rotary Dryer	Tons	0.12 lb/ton	
N29	Rotary Dryer Combustion	Mmscf	7.6 lb/mmscf	
⁴ Total PM ₁₀ Emissions This Month (tons) =				
⁵ Total PM ₁₀ Emissions for the Previous Eleven (11) Months (tons) =				
⁶ Total 12-month PM ₁₀ Emissions (tons) =				

Note 1: Calculated using [(Monthly Throughputs in tons, mmscf, or Mgal) x (Emission Factors in lb/ton, lb/Mgal, or lb/ton)] ÷ 2,000 lb/ton

Note 2: Emission factors from N01 to N11 and N19 are controlled emission factors. An efficiency of 90% was given for the use of dust collectors. Emission factor for N29 results from a stack test and includes the use of the dust collector.

Note 3: Haul road emission factors calculated using an equation from AP-42, Chapter 13.2.1, Paved Roads, EF (lb/VMT) = k(sL)^{0.91} x (W)^{1.02} x (1-P/4N) where k = particle size multiplier for PM₁₀ = 0.0022 lb/VMT; sL = road surface silt loading = 8.2 g/m²; W = weight of truck = 38.875 tons; P = number of rain days = 105 days; N = days in the averaging period = 365 days. The silt loading is taken from AP-42 while the weight of the truck is based on the maximum. The emission factor can be recalculated if better data are available (i.e. from testing, from site-specific data, etc.)

Note 4: Calculated by summing Column D for each emission point.

Note 5: Input the PM₁₀ emissions for the previous eleven (11) months (tons)

Note 6: Calculated by adding the Total PM₁₀ Emissions This Month (tons) and the Total PM₁₀ Emissions for the Previous Eleven (11) Months (tons).

A total less than **15.0 tpy** indicates compliance.

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
CO carbon monoxide	NSPS New Source Performance Standards
CO₂ carbon 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
dscf dry 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
fps feet 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. Randy Miller
General Manufacturing Manager
TAMKO Building Products, Inc.
601 West 17th Street and 223 South KK Highway
Lamar, MO 64759

RE: New Source Review Permit - Project Number: 2013-07-003

Dear Mr. Miller:

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: 2013-07-003

Permit Number: