ENGINEERING ANALYSIS

PROJECT DESCRIPTION

Tarkett Alabama, Inc. (Tarkett) operates a vinyl laminate flooring operation in Florence, Lauderdale County, Alabama. The facility is an existing miscellaneous rubber and fabrication facility operating under four (5) Synthetic Minor Operating Permits (SMOP), 706-0031-X001 (Mix & Mill Process, 3/10/2004), X003 (Cove Base Process, 3/10/2004), X004 (Silo Loading), X006 (Flooring Production Line with Mixers, Extruders and Calendars, 12/12/2018) and X007 (Reclamation Line, 03/12/2026). The facility is currently a synthetic minor source for particulate matter (PM_{10}) in regard to Title V and a minor source in regard to PSD. The facility has a facility-wide PM/PM_{10} emissions limit to not exceed 98.0 tpy and a facility wide limit of $1900x10^6$ ft^3 on the use of natural gas during any consecutive, rolling 12-month period.

On November 24, 2025, the Department requested a reconciliation of all emission sources at the Tarkett facility. In response to this request Tarkett noted that an additional source of VOC emissions was not currently represented in the emission sources and that this "additional emissions unit is part of a urethane curing process included in the original installation on the Covebase Line. It was originally believed that emissions from this curing process were enclosed and not vented to atmosphere. Tarkett discovered during the reconciliation process requested by the Department that this process is in fact vented to atmosphere". Since identifying this process did not actually increase emission from the facility and did not affect permit conditions the existing X003 SMOP was not modified.

It should be noted that in addition to the identification of the urethane coating unit emitting directly to the atmosphere, the estimated calculated emissions based on the most recent analysis (2018) of the coating material used at the facility and the volume of material utilized, has increased from approximately 7.5 TPY, in the original 2002 application for this process to 66.6 TPY.

On March 25, 2026, the Department received a permit application for a new press mold process line to manufacture tile and stair treads from prefabricated rolls of rubber feed stock, manufactured elsewhere from an off-site vendor. The new Tile and Stair Press Mold Line will consist of two (2) tile presses each containing five (5) tile press molds, and one stair tread press that contains three (3) press molds, a cutting and trimming section and a tile sanding process.

As such, SMOP X003 for the Covebase process, to include emissions from the urethane coating process will be reissued and a new SMOP (X008) for the Tile and Stair Press Mold Line will be issued as a result of this project. The facility currently has SMOP limits in place for PM emission and volume of natural gas combustion. Based on the amount of volatile organic compound (VOC) emissions estimated from the existing Covebase line and proposed increases in VOC and the hazardous air pollutant (HAP) emissions from the Tile and Stair Press Mold Line, the Department is proposing to include a facility wide 98 tons per year VOC emission limit, a 24.5 ton per year HAP emission limit and a 9.5 ton per year single HAP emission limit. These limits are proposed to ensure the facility maintains emissions below the Title V Major Source threshold limits of 100 tons per year for VOC emissions, 25 tons per year for total HAP emission and 10 tons per year for single HAP emissions.

In addition to the proposed SMOP limits, emission monitoring for these units will be included in the new SMOPs and updated emission monitoring and record keeping requirements for

existing SMOP limits established for particulate matter emissions from the Covebase Process. The updated monitoring will include monitoring and recordkeeping of throughput to the Covebase Process to ensure SMOP emission limits are maintained.

Emissions

Covebase Line

Uncontrolled emissions from the coating portion of the process include VOC emissions from the urethane coating of vinyl products. Tarkett's estimate of VOC emissions from this process are based on the assumption that all VOCs applied are emitted, that no dilutants (coating thinners or additives) are added to the coating and that no organic liquid solvents are used for wash or cleanup. The VOC emission factors utilized, as mentioned above, are based on the most recent analysis (2018) of the coating material used at the facility The VOC emissions from this source are estimated to be 66.6 TPY (15.21 lbs/hr). This is based on the reported application rate of 4.4 gal/hr, assuming operation for 8760 hrs per year.

Permit	Sources	Pollutant	Uncontrolled emissions (lb/hr)	Uncontrolled emissions (TPY)	Controlled Emissions (TPY)
X003	Mixing	PM	0.91	3.99	0.04
	Calendaring (2)		0.46	2.02	1.02
	Coating	VOC	15.21	66.6	66.6

Figure 1 –Covebase Line Emissions

Tile and Stair Tread Press Mold Line

Estimated emissions from this line are based on the following; throughput to the line, of 1250 tons per year; VOC and HAP emission were estimated based on AP-42, Section 4.12 for Compound #17, which Tarkett estimates to be the most similar material to the products produced; and PM emission from sanding were based on AP-42 Section 4.12 for the "grinding of belts". PM emissions, all assumed to be PM_{10}, will be controlled with a 99% efficient cartridge style dust collector.

Permit	Sources	Pollutant	Uncontrolled emissions (lb/hr)	Uncontrolled emissions (TPY)	Controlled Emissions (TPY)
X008	Cutting/Trimmimg	PM	0.06	0.28	0.0028
	Sanding		0.06	0.28	0.0028
	Press Molds	VOC	1.78	7.79	7.79
	Sanding		0.51	2.23	2.23
	Press Molds	HAPS	0.26	1.14	1.14
	Sanding		0.52	2.69	2.69

Figure 1 –Tile and Stair Tread Press Mold Line Emissions

Facility Wide Potential to Emit

The Potential to Emit is based on emission estimates from previous applications and AP-42 Section 4.12 for Manufacture of Rubber Products, throughput estimates provided by Tarkett,

and 8,760 hours of operation; in addition, operation at maximum SMOP limits were applied where appropriate including the $1900x10^6$ ft^3 natural gas usage limit. The facility-wide Potential to Emit is summarized below. AP 42 emission factors from Section 4.12 *Manufacture of Rubber Products* provides PM emission factors for rubber manufacturing process, these emission factors are estimated for PM_{total} (PM_{Total} = $PM_{filterable}$ + $PM_{Condensable}$). Tarkett has previously estimated PM_{10} from these sources from 22% to 35% mass fraction of PM_{Total}. In evaluating PM emissions at this facility, the vast majority of PM emissions are $PM_{filterable}$ from the transfer and mixing of raw materials and subsequent shredding and granulating of reject materials in the reclamation area. As such, a conservative estimate of PM_{10} emissions from the processes is PM_{10} = ½ $PM_{Filterable}$. Condensable PM emissions are generally associated with natural gas combustion and the extrusion processes. In the absence of PM_{10} specific emission factors for these processes, a conservative estimate PM_{10} to equal PM_{Total} was utilized.

Pollutant (TPY)	Mix & Mill X001	Cove Base X003	Silo Loading X004	NCL Flooring X006	Reclamation Line X007	Tile & Stair Tread Press Mold Line X008	Natural Gas (Facility wide)	Transfer of Materials	Total
PM	10.5	6.0	0.6	4.4	5.4	0.56	1.8	0.07	**29.4**
PM_{10}	5.3	3.0	0.3	0.38	2.7	0.56	7.2	0.03	**19.5**
VOC	-	66.6	-	7.5	-	10.02	5.2	-	**89.3**
SO_2	-	-	-	-	-	-	0.6	-	**0.6**
NO_x	-	-	-	-	-	-	95.0	-	**95.0**
CO	-	-	-	-	-	-	79.8	-	**79.8**
Total HAP	-	-	-	-	-	3.83	1.8	-	**5.6**

Figure 2 – Facility-Wide Potential to Emit (TPY)

Facility Wide Actual Emission

Based on emissions estimates (utilizing 99% efficient fabric filter baghouse) and (maximum of previous 5 year) throughput estimates provided by Tarkett, the facility-wide actual emissions are summarized below.

Pollutant (TPY)	Mix & Mill X001	Cove Base X003	Silo Loading X004	NCL Flooring X006	Reclamation Line X007	Tile & Stair Tread Press Mold Line X008	Natural Gas (Facility wide	Transfer of Materials	Total
PM	0.1	1.9	0.6	0.01	1.4	0.0057	0.02	0.07	**4.1**
PM_{10}	0.05	0.95	0.3	0.005	0.07	0.0057	0.09	0.03	**1.5**
VOC	-	66.6	-	0.31	-	10.02	0.06	-	**77.0**
SO_2	-	-	-	-	-		0.01	-	**0.01**
NO_x	-	-	-	-	-		1.1	-	**1.1**
CO	-	-	-	-	-		0.9	-	**0.9**
Total HAP	-	-	-	-	-	3.83	0.02	-	**3.85**

Figure 3 – Actual Facility-Wide Emissions (TPY)

REGULATIONS

STATE REGULATIONS

ADEM Admin. Code r. 335-3-4-.01(1)(a and b), "Visible Emissions"

Applicability

All Sources at the Tarkett facility will be subject to these requirements.

ADEM Admin. Code r. 335-3-4-.01(1)(a) states that no person shall emit particulate emissions to the atmosphere of an opacity of greater than twenty percent (20%) over a six (6) minute period.

ADEM Admin. Code r. 335-3-4-.01(1)(b) states that during one six-minute period in any sixty-minute period a person may discharge into the atmosphere from any source of emissions, particulate of an opacity not greater than that designated as forty percent (40%) opacity.

ADEM Admin. Code r. 335-3-4-.04, "Process Industries - General"

Applicability

ADEM Admin. Code r. 335-3-4-.04 applies to these units at this facility. This requirement has not changed as a result of this project.

ADEM Admin. Code r. 335-3-4-.04(1) states that no person shall cause or permit the emission of particulate matter in any one hour from any source in a Class I County in excess of the amount shown in Table 4-2 for the process weight per hour allocated to such source. For sources in Class I Counties, interpolation of the data in Table 4-2 for the process weight per hour values up to 60,000 lbs/hr shall be accomplished by use of Equation 1:

Equation 1: $E = 3.59 \times P^{0.62}$

Value	Description	Units
E	Emissions in pounds per hour	Pounds of PM per Hour
P	Process weight per hour in tons per hour, must be less than 30 tons per hour	Tons per Hour

Interpolation and extrapolation of the data for process weight per hour values equal to or in excess of 60,000 lbs/hr shall be accomplished by use of Equation 2:

Equation 2: $E = 17.31 \times P^{0.16}$

Value	Description	Units
E	Emissions in pounds per hour	Pounds of PM per Hour
P	Process weight per hour in tons per hour, must be greater than or equal to 30 tons per hour	Tons per Hour

Utilizing Equation 1, PM emissions from the Covebase Process, based on the throughput provided by Tarkett of 13,500 lbs/hr, shall not exceed 11.7 lbs/hr. PM emissions from the Tile and Stair Tread Press Mold line, based on the throughput provided by Tarkett of 285.4 lbs/hr, shall not exceed 1.1 lbs/hr. Compliance with these requirements shall be demonstrated by complying with the synthetic minor limitations.

ADEM Admin. Code r. 335-3-14-.04, "Prevention of Significant Deterioration (PSD) Permitting"

Applicability

Based on the emissions found in Figure 2, this facility would not exceed the 250 tons per year (TPY) major source threshold for regulated NSR pollutants for this type of facility. Therefore, no PSD review would be required.

ADEM Admin. Code r. 335-3-14-.06, "Determinations for Major Sources in Accordance with Clean Air Act Section 112(g)"

Applicability

Because Tarkett is not expected to exceed the major source threshold for HAP emissions of 10 tons per year (TPY) of any single HAP or 25 TPY of any combination of HAPs, a 112(g) case by case MACT review would not be necessary.

ADEM Admin. Code r. 335-3-15, "Synthetic Minor Operating Permits"

Applicability

Tarkett currently has facility-wide SMOP limits in place to avoid exceeding the Title V major source thresholds for PM_{10}, and for other regulated air pollutants by limiting natural gas usage. In addition, the following SMOP limits will be required as a result of this project.

SMOP Limits

The following existing Facility Wide SMOP limits are currently imposed at the Tarkett Facility:

- PM_{10}emissions from the facility shall not exceed 98.0 tons during any consecutive, rolling 12-month period. Based on the Potential Emission estimates in Figure 2, PM_{10} emissions will be maintained below the Major source threshold.
- The facility shall not burn more than $1900x10^6$ ft^3 of natural gas during any consecutive, rolling 12-month period.

The Following existing SMOP limits are currently imposed on emission from the Covebase Process.

- $PM_{filterable}$ & PM_{10} emissions from the calendar hood stack one shall not exceed 0.23 lbs/hr or 1.01 tons per year during and consecutive 12-month period.
- $PM_{filterable}$ & PM_{10} emissions from the calendar hood stack two shall not exceed 0.23 lbs/hr or 1.01 tons per year during and consecutive 12-month period.
- $PM_{filterable}$ & PM_{10} emissions from the mixer hood stack one shall not exceed 0.91 lbs/hr or 3.99 tons per year during and consecutive 12-month period.

The following SMOP limits for emissions are proposed as a result of this project:

- $PM_{filterable}$ & PM_{10} emissions from the baghouse stack associated with the sanding operations on the Tile and Stair Tread Press Mold line shall not exceed 0.06 lbs/hr or 0.28 tons per year.
- $PM_{filterable}$ & PM_{10} emissions from the stack associated with the cutting/Trimming operations on the Tile and Stair Tread Press Mold line shall not exceed 0.06 lbs/hr or 0.28 tons per year.
- Facility wide VOC emissions from all sources at the Tarkett facility shall not exceed 98.0 tons during any consecutive 12-month period.

- Facility wide combined HAP emission from all sources at the Tarkett facility shall not exceed 24.5 tons during any consecutive 12-month period.
- Facility wide single HAP emissions from all sources at the Tarkett facility shall not exceed 9.5 tons during any consecutive 12-month period.

Compliance Test Methods and Procedures

Compliance with the opacity, PM, VOC and HAP standards shall be determined using the following methods:

Opacity:

- Method 9 of Appendix A-4 to 40 CFR Part 60 (Method 9) [ADEM Admin. Code r. 335-3-4-.01(2)].
    - Method 9 must be conducted by an observer that is certified and familiar with Method 9 procedures.
    - Method 9 shall be conducted during daylight hours.
    - Method 9 observations should be documented using the "Visible Emission Observation Form" available in EPA's Visible Emissions Field Manual.
- Method 22 of Appendix A-7 to 40 CFR Part 60 (Method 22).
    - The observation must be done by an individual who is familiar with Method 22.
    - To determine compliance with the opacity standards, a violation is defined as visible emissions observed for a total of six (6) minutes in any 60-minute period.

PM

- Method 5 of Appendix A- 3 to 40 CFR Part 60 (Method 5)
    - Should PM emissions testing be required Method 5, shall be utilized to determine compliance with the filterable $PM_{filterable}$ emissions limits.
- Method 201A and Method 202 of Appendix M to 40 CFR Part 51, (Method 202 & 204)
    - Should PM_{10} testing be required Method 202 & 204, shall be utilized to determine compliance with the PM_{10} emissions limits.
- Method 18 of 40 CFR Part 60, Appendix A-6 or Method 25A of 40 CFR Part 60, Appendix A-7 (Method 18 or Method 25A)
    - Should VOC emissions testing be required Method 18 or Method 25A, shall be utilized to determine compliance with the VOC emissions limits.

Emission Monitoring

Opacity

Tarkett shall monitor facility sources to determine the presence or absence of visible emissions weekly. If visible emissions are observed, corrective action shall be initiated within 1 hour. If visible emissions are still present after corrective action has been conducted, a Method 9 observation must be conducted for a period of at least 12 minutes to confirm that the opacity standards are not exceeded.

PM

Tarkett shall monitor and record the daily throughput to the Covebase process and the Tile and Stair Tread Press Mold line.

Tarkett shall establish and monitor a normal pressure operating range across the cartridge filter (EP-Tread) and conduct weekly cartridge filter checks to determine the pressure differential. The weekly checks should be performed while the units are in operation.

VOC

Tarkett shall monitor and record the volume (gallons) of urethane coating applied in the Covebase Process.

Tarkett shall monitor and record the daily throughput to the Tile and Stair Tread Press Mold line.

Recordkeeping and Reporting

The results of any visible emissions checks and any required Method 9 or Method 22 observations shall be recorded and maintained.

The results of weekly cartridge filter (EP-Tread) pressure checks shall be recorded and maintained.

Records of deviations from the opacity standards in ADEM Admin. Code r. 335-3-4-.01(1)(a) and ADEM Admin. Code r. 335-3-4-.01(1)(b) should be maintained. The records must include the cause of the visible emissions, the corrective actions taken, records of any Method 9 observations, and the date, time, and duration of the deviation.

Monthly throughput to the Covebase Process and the Tile and Stair Tread Press Mold line, any deviations from normal throughput ranges shall be recorded, and any corrective actions taken should be maintained including the cause of any deviations, and the date, time, and duration of the deviation.

Monthly gallons of urethane coating material applied in the Covebase Process, any deviations from normal application ranges shall be recorded, and any corrective actions taken should be maintained including the cause of any deviations, and the date, time, and duration of the deviation.

ADEM Admin. Code r. 335-3-16, "Major Source Operating Permits"

Applicability

To become a major source under this regulation, the facility must have the potential to emit greater than 100 TPY of a regulated air pollutant (as defined in ADEM Admin. Code r. 335-3-16-.01(1)(w)), 10 TPY of a single HAP, or 25 TPY of a combination of HAPs. Tarkett currently has SMOP limits to prevent its PTE from exceeding the Title V major source thresholds. This project should not increase PM or HAP emissions beyond the Title V major source thresholds.

CLASS 1 AREA

The nearest Class I Area would be the Sipsey Wilderness Area at 60 km. However, this project is not expected to have an additional impact beyond the facility's current influence on this area.

FEDERAL REGULATIONS

40 CFR 60, Subpart A "General Provisions"

The provisions in 40 CFR Part 60, Subpart A are applicable to the owner or operator of any stationary source which contains an affected facility. Since these sources are not subject to the NSPS standards, this subpart does not apply.

40 CFR 60, Subpart FFF "Standards of Performance for Flexible Vinyl and Urethane Coating and Printing"

The provisions in 40 CFR Part 60, Subpart FFF are applicable to each rotogravure printing line used to print or coat flexible vinyl or urethane products. The Covebase Process at the Tarkett facility does not utilize a rotogravure printing station or process. As such this subpart does not apply to the Covebase Process at the Tarkett facility.

40 CFR 60, Subpart VVV "Standards of Performance for Polymeric Coating of Supporting Substrates Facilities"

The provisions in 40 CFR Part 60, Subpart VVV are applicable to each coating operation and any onsite coating mix preparation equipment used to prepare coatings for the polymeric coating of supporting substrates. Specifically, the polymeric coating of supporting substrates "means a web coating process that applies elastomers, polymers, or prepolymers to a supporting web other than paper, plastic film, metallic foil, or metal coil". Tarkett does apply prepolymers to a supporting substrate, however the supporting substrate is not a web supporting substrate as these terms are defined in § 60.741(a). As such this subpart does not apply to the Covebase Process at the Tarkett facility.

40 CFR 63, Subpart A "General Provisions"

The provisions in 40 CFR Part 63, Subpart A, are applicable to sources subject to any subpart. Since Tarkett is not subject to NESHAP standards, this subpart does not apply.

RECOMMENDATIONS

This analysis indicates that Tarkett should be able to meet the requirements of all federal and state rules and regulations, and the result of this project will not change the facility status. Therefore, based on the emissions from this project, I recommend that Tarkett be reissued Synthetic Monir Operating Permit X003 for the Covebase Process Line and be issued a Synthetic Monir Operating Permit X008 for the Tile and Stair Tread Press Mold line pending payment of fees and Public Notice requirements.

May 11, 2026

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Date