

**OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION**

**MEMORANDUM**

**November 23, 2022**

**TO:** Lee Warden, P.E., Permits and Engineering Group Manager

**THROUGH:** Richard Kienlen, P.E., Engineering Manager, New Source Permits Section

**THROUGH:** Ryan Buntyn, P.E., New Source Permits Section

**FROM:** Iftekhar Hossain, P.E., New Source Permits Section

**SUBJECT:** Evaluation of Operating Permit Application **No. 2011-649-O (M-1)**  
Herbert Malarkey Roofing Company  
Oklahoma City Plant (Facility ID: 8304)  
(SIC Code 2952, NAIC Code 324122)  
3400 South Council Road, Oklahoma City, Oklahoma  
Section 17, Township 11N, Range 4W, Oklahoma County, Oklahoma.  
Latitude: 35.43119°N; Longitude: 97.65337°W  
Driving Directions: From the intersection of Interstate I-40 and Council  
Road in west Oklahoma City, go south on Council Road for 2.0 miles, then  
turn east into the facility.

**SECTION I. INTRODUCTION**

Herbert Malarkey Roofing Company (Malarkey) has requested a modified operating permit for their Oklahoma City Plant to incorporate the changes authorized in Permit No. 2011-649-C (M-1). The facility manufactures asphalt-based roofing products for roofing purposes. The facility is currently operating under Permit No. 2011-649-C (M-1), issued on February 19, 2018.

In modification (C (M-1)), Malarkey changed their name from “Malarkey Roofing Company” to “Herbert Malarkey Roofing Company” and added a second production line, “Production Line Two.” The production line permitted in Permit No. 2011-649-O is defined as “Production Line One.” Production Line Two consists of one (1) thermal fluid heater, one (1) asphalt shingle coating line, one (1) filler silo, one (1) cold filler receiver, material (e.g., sand, copper, granules, etc.) handling/storage system, one (1) Polymer Modified Asphalt (PMA) System, and various support operations.

In order to avoid confusion, Malarkey requested to change the basis of emission estimation from the “production rate of shingles” to the “usage rate of coating asphalt and flux/saturation asphalt” in this modification. Due to business demand, Malarkey also increased the usage rate of asphalts from 12.0 tons per hour (TPH) in Permit No. 2011-649-O to 13.0 TPH per production line in this modification. The modified usage rate of asphalts, 13.0 TPH per production line, is also applied to the coating

asphalt and flux/saturation asphalt storage tanks, which is equivalent to 113,880 TPY of total asphalt throughput per production line for all coating asphalt and flux/saturation asphalt storage tanks.

Production Line Two is subject to 40 CFR Part 63, NESHAP Subpart AAAAAAA. Subpart AAAAAAA regulates HAP (i.e., polycyclic aromatic hydrocarbons [PAHs]) emissions from asphalt roofing manufacturing facilities located at minor sources of HAPs. The facility remains a “synthetic minor” facility after the modification. The Air Quality Division (AQD) also used this opportunity to update applicable state rules and federal regulations related to the facility. On issuance, this permit will be a FESOP.

**SECTION II. EQUIPMENT**

The facility consists of the following equipment.

**Table 1. Production Line One**

<b>Emission Point Identification</b>	<b>Description</b>	<b>Capacity</b>
HEAT-1	Thermal Fluid Heater No. 1	12.6 MMBtu/hr
CL-1	Asphalt Coating Line No. 1	13.0 TPH
FS-1	Limestone Filler Silo No. 1	854 SCFM
FF-1	Cold Limestone Filler Filter Receiver No. 1	2,754 SCFM
WS-1	Wind Sealant Storage Tank	25,000 gal
LA-1	Laminate Adhesive Storage Tank	25,000 gal
S/F-1, S/F-2	Two (2) Saturant/Flux Asphalt Storage Tanks	30,000 gal/tanks
F-DELIV*	Material Delivery*	
F-CONV*	Material Drop to Hopper/Conveyor*	
F-APP*	Material Application to Mat*	
F-SCRN*	Shaker Screening for Material Recycle*	
PMA*	PMA System*	
FUG*	Building/Paint Fugitives*	

\* Facility-wide, including both Production Line One and Two.

**Table 2. Production Line Two**

<b>Emissions Point Identification</b>	<b>Description</b>	<b>Capacity</b>
HEAT-2	Thermal Fluid Heater No. 2	12.6 MMBtu/hr
CL-2	Asphalt Coating Line No. 2	13.0 TPH
FS-2	Limestone Filler Silo No. 2	854 SCFM
FF-2	Cold Limestone Filler Filter Receiver No. 2	2,754 SCFM
S/F-5, S/F-6	Two (2) Saturant/Flux Asphalt Storage Tanks	30,000 gal/tanks
F-DELIV**	Material Delivery**	
F-CONV**	Material Drop to Hopper/Conveyor**	
F-APP**	Material Application to Mat**	
F-SCRN**	Shaker Screening for Material Recycle**	
PMA**	PMA System**	

Emissions Point Identification	Description	Capacity
FUG**	Building/Paint Fugitives**	

\*\* Facility-wide, including both Production Lines One and Two.

Production Line Two was constructed next to Production Line One in Building A under the same roof. Building A occupies approximately four (4) acres of land.

**SECTION III. FACILITY/PROCESS DESCRIPTION**

The facility manufactures asphalt coated roofing products. The following description reflects the operation of the facility following the addition of the equipment.

Fiberglass mat is delivered to the facility to use as a base for the roofing products. Two (2) 12.6 MMBtu/hr Thermal Fluid Heaters (HEAT-1 and HEAT-2) are used to heat the asphalt and various processes at the facility. HEAT-1 and HEAT-2 are emission point identifications for equipment identification purposes. Line One refers to Production Line One and Line 2 refers to Production Line Two.

Filler material (e.g., limestone flour) is delivered to the facility and pneumatically transferred to filler storage tanks, FS-1 and FS-2. The filler materials are then pneumatically brought through one of two cold filler receivers (FF-1 and FF-2) depending on the process line’s needs. The filler is heated prior to mixing with the coating asphalt in an enclosed mixer. The emissions from each filler storage tank and filler heater are controlled with individual reclaim Bin Vents (filters which return captured emissions to the source). The Bin Vents are used for particulate matter (PM) control. FF-1 and FF-2 operate in a similar manner.

Asphalt is delivered to the facility and is pumped into one of six (6) heated asphalt storage tanks depending on the type of asphalt that is delivered:

- (1) Asphalt is delivered to four (4) 30,000-gallon storage tanks (EPN: S/F-1, S/F-2, S/F-5, S/F-6). Asphalt is pumped from these four tanks to the production lines or to the PMA systems to produce PMA, Wind Sealant (WS) and or Laminate Adhesive (LA) that are used on the production lines.
- (2) Asphalt used as a WS is delivered to one (1) 25,000-gallon storage tank (EPN: WS-1).
- (3) Asphalt used as a LA is delivered to one (1) 25,000-gallon storage tank (EPN: LA-1).

The PMA systems consist of mixing of polymers and asphalt, holding the well-mixed solutions to assure the polymers are well-dispersed in the asphalt, and storage of the prepared solution. The processes operate in closed systems and are located within a building. Depending on formulation, mixed asphalt can be pumped from the PMA systems to the coater on Line One or the coater on Line Two, and/or the tanks S/F-1, S/F-2, S/F-5, and S/F-6.

Sand, roofing granules (e.g., headlap and butt), and copper roofing granules (material) are delivered to the facility (F-DELIV) and dropped onto belt conveyors which feed into bucket elevators which transfer the material to storage silos. Emissions from material drops onto the truck unload conveyor

are considered fugitive emissions (F-CONV). Transfer points between conveyors to elevators, elevators to conveyors, and the bucket elevators shaft/body are connected to a collection system serviced by baghouses.

The sand bucket elevators and storage tanks emissions are managed by a dedicated reclaim Bin Vent filter system. The roofing granules and sand are conveyed via belt conveyors and bucket elevators to enclosed hopper systems and are applied to the product (F-APP) (surfacing section) for each production line. Excess material is captured, conveyed via a bucket elevator, and recycled through dual (in series) shaker screens (F-SCRN) to separate granules from sand. The emissions from these material handling systems are controlled by the baghouse systems.

### **Production Lines Overview**

In general terms, each production line consists of the following process sections:

- Fiberglass Mat Unwind Section
- Coating Section (coater)
- Surfacing Section
- Press and Cooling Section
- Paint Lines Applicator
- Laminator Section (pattern cut, WS, LA, cut to length)
- Inspection and Stacking Section
- Packaging and Palletizing Section

#### Production Line One

This production line creates laminate and 3-Tab shingles. Filler mixed asphalt is applied to the unrolled fiberglass mat at the coater (CL-1). The coated mat (the sheet) then has granules and sand applied (F-APP) in the surfacing section. The sheet proceeds through a press to ensure the granules and sand are adhered. The sheet then proceeds through loops to allow for the sheet to cool. The sheet is then marked with lines of paint to aid in installation (on a roof) prior to being cut and re-assembled (with WS and LA applied) into laminate shingles.

The paint is low in VOCs content and emissions are included in the facility fugitive emissions (FUG). The process line has smaller day-use tanks where WS and LA asphalt are stored prior to being applied to the sheet. Emissions from the coating process (CL-1), the day-use tanks, the WS, and LA application equipment are managed by fiber bed filters. Emissions from F-APP are controlled by baghouses. The assembled shingles are stacked, bundled, and placed on pallets.

#### Production Line Two

The design capacity of Production Line Two is slightly less than the design capacity of Production Line One. However, to be conservative, the design capacity of Line Two is assumed to be the same as that of Line One for purposes of emissions calculations.

This production line also creates laminated roofing shingles but does not produce the 3-Tab product. The process is similar to that of Line One, with the coater (CL-2), day-use tanks, and applicator equipment emissions being managed by fiber bed filters. The surfacing section (F-APP) and material transfer emissions are managed by baghouses. The paint is low in VOC content and emissions are included in the facility fugitive emissions (FUG).

**SECTION IV. AIR EMISSIONS**

The emissions calculations are based on 8,760 hours/year of operations, unless otherwise specified.

- The emissions from the thermal fluid heaters (HEAT-1 and HEAT-2) were calculated using the actual burner rating of 12.6 MMBtu/hr and AP-42 (7/98), Section 1.4, emission factors for commercial boilers. The criteria pollutant emissions are estimated based on 8,760 hours per year operation and 1,020 Btu/scf average heating value. Table 3 shows criteria pollutants emissions from either HEAT-1 or HEAT-2.

**Table 3. Criteria Pollutants Emissions from Heaters (HEAT-1 or HEAT-2)**

Criteria Pollutants	Emission Factors	Emission Rates	
	lb/MMSCF	lb/hr	TPY
NOx	100	1.24	5.41
VOCs	5.5	0.07	0.30
CO	84	1.04	4.54

- The CO, formaldehyde, and carbonyl sulfide (COS) emission factors from Asphalt Coating Lines One and Two (CL-1 and CL-2) are from the Asphalt Roofing Manufacturing Association as published in *Environmental Progress and Sustainable Energy*, Vol. 24, Issue 3, October 2005 (ARMA). The VOC emission factor for CL-1 and CL-2 are from Asphalt Roofing Manufacturing Association, Industry-Specific Emission Factors for The Asphalt Roofing Manufacturing Industry, January 2020. The potential polycyclic organic matter (POM) emission factors are based on AP-42 (1/95), Section 11.2, Table 11.2-2. The emission factor for PM emissions is based on an emissions test performed at the facility on 6/15/21. Air emissions are based on estimated asphalt usages, emission factors with a 100% safety factor to allow for variances in production materials, and controls via a fiber bed mist eliminator. Assume all PM are equivalent to PM<sub>10</sub> and all PM<sub>10</sub> are equivalent to PM<sub>2.5</sub>.
- In Permit No. 2011-649-O, the production rate of roofing shingles was used as a basis to calculate the air emissions. However, in 2011-649-C (M-1), Malarkey requested to use the usage rate of coating asphalt as the basis to calculate the air emissions. Table 4 shows air emissions from either CL-1 or CL-2.

**Table 4. Air Emissions from Coating Lines One or Two (CL-1 or CL-2)**

	Emission Factor	Uncontrolled			Controlled		
		Safety Factor	Emissions Rates		Efficiency	Emissions Rates	
Compound	(lb/ton)	(%)	(lb/hr)	(TPY)	(%)	(lb/hr)	(TPY)
<b>Criteria Pollutants</b>							
CO	0.005	100%	0.13	0.57	--	0.13	0.57
PM <sub>10</sub> /PM <sub>2.5</sub>	0.02	100%	0.52	2.25	99*	0.52	2.28
VOC	0.05	100%	1.35	5.92	--	1.35	5.92
<b>Hazardous Air Pollutants (HAPs)</b>							
Formaldehyde	9.10E-03	100%	0.24	1.04	--	0.24	1.04
COS	8.10E-03	100%	0.21	0.92	--	0.21	0.92
POM	6.49E-03	100%	0.17	0.74	--	0.17	0.74

Maximum Usage Rate = 13.0 TPH of coating asphalt and flux/saturation asphalt per production line.

\* To be conservative, emissions were calculated as being without control

- The PM<sub>10</sub> emissions from the filler storage silos (FS-1 and FS-2) are based on estimated exhaust flow rates and outlet loading in grain/standard cubic foot (gr/scf) based on data from Malarkey and the filter’s manufacturer. Assume all PM are equivalent to PM<sub>10</sub> and all PM<sub>10</sub> are equivalent to PM<sub>2.5</sub>. Table 5 shows PM<sub>10</sub>/PM<sub>2.5</sub> emissions from either FS-1 or FS-2 as below.

**Table 5. PM Emissions from Filler Silos (FS-1 or FS-2)**

Pollutant	Flow Rate	Outlet Loading	PM <sub>10</sub> /PM <sub>2.5</sub> Emissions	
	SCFM	gr/dscf	lb/hr	TPY
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	854	0.02	0.15	0.64

- The PM emissions from the filter on the cold filler receivers (FF-1 and FF-2) are based on estimated exhaust flow rated and outlet loading in gr/scf based on data from Malarkey and the filter’s manufacturer. Assume all PM are equivalent to PM<sub>10</sub> and all PM<sub>10</sub> are equivalent to PM<sub>2.5</sub>. Table 6 shows PM emissions from either FF-1 or FF-2.

**Table 6. PM Emissions from Cold Filler Receivers One or Two (FF-1 or FF-2)**

Compound	Flow Rate SCFM	Outlet Loading gr/dscf	PM <sub>10</sub> /PM <sub>2.5</sub> Emissions	
			lb/hr	TPY
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	2,754	0.02	0.47	2.07

- After modification, the asphalt storage tanks are listed in Table 7. Production Line One has one (1) WS asphalt storage tank (WS-1), one (1) LA asphalt storage tank (LA-1), and two (2) saturant/flux asphalt storage tanks (S/F-1 and S/F-2) and Production Line Two has two (2) saturant/flux asphalt storage tanks (S/F-5 and S/F-6).

**Table 7. Asphalt Storage Tanks**

ID#	Number of Tank	Contents	Capacity/Tank		Construction
			Gallons	Dimension	Date
S/F-1, S/F-2	1 each	Saturant/Flux Asphalt	30,000	12' Dia. & 38' H	2012
WS-1	1	Wind Sealant Asphalt	25,000	12' Dia. & 32' H	2012
LA-1	1	Laminate Adhesive Asphalt	25,000	12' Dia. & 32' H	2012
S/F-5, S/F-6	1 each	Saturant/Flux Asphalt	30,000	12' Dia. & 38' H	2018

- The emission factors for the coating and flux/saturation asphalt storage tanks are listed in Table 8.

**Table 8. Emission Factors from Coating & Flux/Saturation Asphalt Storage Tanks**

Pollutant	CO	VOC	H <sub>2</sub> CO	COS
lb/ton	0.024	0.022	2.10E-03	1.80E-03

- The CO, COS, and H<sub>2</sub>CO emission factors are taken from an Asphalt Roofing Manufacturing Association study, which was prepared by EME Solutions, Inc. on May 12, 2003. The VOC emission factor is derived from the article, “Estimates of Air Emissions from Asphalt Storage Tanks and Truck Loading,” published in *Environmental Progress*, Vol 11, No. 4 (Winter Issue), 1999, pp 250-259. The VOC emission factor for all Asphalt Storage tanks is from Asphalt Roofing Manufacturing Association, Industry-Specific Emission Factors For The Asphalt Roofing Manufacturing Industry, January 2020.
- Table 9 shows air emissions from WS asphalt storage tank, WS-1.

**Table 9. Air Emissions from Wind Sealant Asphalt Storage Tanks (WS-1)**

Compound	Emission Factor (lb/Ton)	Throughput (Ton/hr)	Emissions		Control Efficiency (%)	Controlled Emissions	
			(lb/hr)	(TPY)		(lb/hr)	(TPY)
<i>Criteria Pollutants</i>							
CO	0.024	0.46	0.01	0.05	--	0.01	0.05
VOC	0.069	0.46	0.03	0.14	--	0.03	0.14
<i>Hazardous Air Pollutants</i>							
Formaldehyde	2.10E-03	0.46	0.001	0.004	--	0.001	0.004
Carbonyl Sulfide	1.80E-03	0.46	0.001	0.004	--	0.001	0.004

- Table 10 shows air emissions from Laminate Adhesive asphalt storage tank, LA-1.

**Table 10. Air Emissions from Laminate Adhesive Asphalt Storage Tank (LA-1)**

Compound	Emission Factor (lb/Ton)	Throughput (Ton/hr)	Emissions		Control Efficiency (%)	Controlled Emissions	
			(lb/hr)	(TPY)		(lb/hr)	(TPY)
<i>Criteria Pollutants</i>							
CO	0.024	0.91	0.23	0.10	--	0.23	0.10
VOC	0.069	0.91	0.06	0.28	--	0.06	0.28
<i>Hazardous Air Pollutants</i>							

Formaldehyde	2.10E-03	0.91	0.002	0.01	--	0.002	0.01
Carbonyl Sulfide	1.80E-03	0.91	0.002	0.007	--	0.002	0.007

- Table 11 shows air emissions from saturant/flux asphalt storage tanks, S/F-1, S/F-2, S/F-5, and S/F-6. The 13.0 TPH asphalt throughput is defined for each production line.

**Table 11. Air Emission from Coating and Saturant/Flux Asphalt Tanks Per Production Line (S/F-1, S/F-2, S/F-5 and S/F-6)**

Compound	Emission Factor (lb/Ton)	Throughput Per Line of Production (Ton/hr)	Emissions Rates		Control Efficiency (%)	Controlled Emissions per Tank	
			(lb/hr)	(TPY)		(lb/hr)	(TPY)
<i>Criteria Pollutants</i>							
CO	0.024	13.00	0.62	2.73	--	0.62	2.73
VOC	0.022	13.00	0.57	2.51	--	0.57	2.51
<i>Hazardous Air Pollutants</i>							
Formaldehyde	2.10E-03	13.00	0.05	0.24	--	0.05	0.24
Carbonyl Sulfide	1.80E-03	13.00	0.05	0.20	--	0.05	0.20

- Table 12 shows the annual throughput of asphalt storage tanks in both production lines. For saturant/flux asphalt tanks, the throughput of a storage tank includes not only the asphalt transfers from the delivery trucks, but also asphalt transfers from other storage tanks in the same production line, in the other production line, and PMA Systems. The volume of the asphalt is calculated from the weight using the density of 19.7 pounds per gallon of asphalt. The throughput of saturant/flux asphalt is counted on the production lines.

**Table 12. Throughput of Asphalt Storage Tanks in Both Production Lines**

ID#	Number of Tank	Contents	Throughput Limit	
			Gallons/year	TPY
WS-1	1	Wind Sealant Asphalt	405,539	3994.56
LA-1	1	Laminate Adhesive Asphalt	811,078	7989.12
S/F-1, S/F-2, S/F-5 and S/F-6	1 each (total of 4)	Saturant/Flux/Asphalt	23,122,843	227,760

The following emissions are facility-wide emissions, such as, F-DELIV, F-CONV, F-APP, FUG, and F-SCRN. Before modification, each emission includes only emission from Production Line One and after modification, each emission includes emission from both Production Line One and Line Two.

- The PM emission factor for material delivery (F-DELIV) is based on AP-42 (11/06), Section 13.2.4 (Aggregate Handling and Storage Piles). Emission factor applies only to the dumping of material where it is bottom unloaded to a hopper and transported by bucket elevator to the inside of the building. This is a batch drop operation. Factor assumes 85% control since operation occurs within a partially enclosed hopper (3 sides are enclosed). PM emissions are based on material throughput, emission factors, and controls via a baghouse. The maximum



annual material usage rate is updated from the previous 330,000 TPY in Permit No. 2011-649-O to 1,314,000 TPY for the facility-wide operation. This is the worst-case scenario, which allows the emission estimation to be made at the maximum capacity of unloading rate, 150 TPH, for 8,760 hour/year operation.

**Table 13A. Emission Calculations Parameters for Material Delivery (F-DELIV)**

Equation and Parameters		Units	Comments
$E=k(0.0032)*((U/5)^{1.3}/(M/2)^{1.4})(1-CE/100)$		lb/ton	Formula: AP-42, Section 13.2.4
<i>where:</i>			
Material Moisture (M)	0.70	%	Estimate
Average Wind Speed (U)	12.40	mph	Average annual wind speed
Particle Size Multiplier (k)	0.74	unitless	AP-42, Section 13.2.4 (PM < 30 um)
Particle Size Multiplier (k)	0.35	unitless	AP-42, Section 13.2.4 (PM < 10 um)
Maximum Material Unloading Rate	150	tons/hour	Assumes continuous operation
Maximum Annual Material Usage Rate	1,314,000	tons/year	8,760 hour/year
Control Efficiency (CE)	85	%	Per TNRCC guidance document for rock crushing plants

**Table 13B. PM Emissions from Material Delivery (F-DELIV)**

Source	EPN	Pollutant	Uncontrolled	Controlled	Max. Emission Rate	
			E.F.	E.F.	lb/hr	TPY
			lb/ton	lb/ton		
Material Truck Bottom Unload	F-DELIV	PM/PM <sub>10</sub> / PM <sub>2.5</sub>	0.016	0.002	0.36	1.56

- The PM emission factors for material drop to hoppers/conveyors (F-CONV), material application to the mat (F-APP) and material processed in the shaker screen (F-SCRN) are based on AP-42 (11/06), Section 13.2.4 (Aggregate Handling and Storage Piles). Emission factor applies to the transfer of material inside the process building where it is dropped into hoppers /conveyors by a bucket elevator (material drop to hopper) and to the dropping of material onto the asphalt coated mat (material application to mat). Emission factor for material screening based on Table 6 from TCEQ Guidance Document on Rock Crushers. The factor from the material dropping to the hopper assumes a control factor of 85% since the hopper is partially enclosed (3 sides are enclosed). The control factor of 90% was applied since the material handling occurs inside a building. Potential PM emissions are based on material throughput, number of drops into conveyors/hoppers, emission factors, controls via a baghouse. The maximum annual material usage rate is updated from the previous 330,000 TPY in Permit No. 2011-649-O to 1,314,000 TPY for the facility-wide operation. This is the worst-case scenario, which allows the emission estimation to be made at the maximum capacity of unloading rate, 150 TPH, for 8,760 hour/year operation.

**Table 14A. Emission Calculations Parameters for Material Dropping**

Description	Rate	Units	Comment
$E=k(0.0032)*((U/5)^{1.3}/(M/2)^{1.4})(1-CE/100)$		lb/ton	Formula : AP-42, Section 13.2.4
<i>where:</i>			
Material Moisture (M)	0.70	%	Estimate

Description	Rate	Units	Comment
Average Wind Speed (U)	1.00	mph	Material handling occurs indoors
Particle Size Multiplier (k)	0.74	unitless	AP-42, Section 13.2.4 (PM < 30 um)
Particle Size Multiplier (k)	0.35	unitless	AP-42, Section 13.2.4 (PM < 10 um)
Maximum Process Rate	150	tons/hour	Assumes continuous operation
Maximum Annual Process Rate	1,314,000	tons/year	8,760 hour/year
Control Efficiency1	85	%	Per TNRCC guidance document for rock crushing plants
Control Efficiency2	90	%	Per TNRCC guidance document for rock crushing plants

**Table 14B. PM Emissions from Material Dropping**

Emission Source	EPN	Pollutant	Uncontrolled E.F.	Controlled E.F.	Frequ-ency*	Maximum Emissions	
			lb/Ton	lb/Ton		lb/hr	TPY
Material Drop to Hopper	F-CONV	PM <sub>10</sub> /PM <sub>2.5</sub>	0.0006	9.01E-06	31	0.04	0.18
Material Application to Mat	F-APP	PM <sub>10</sub> /PM <sub>2.5</sub>	0.0006	6.01E-05	2	0.018	0.08
Material Screening	F-SCRN	PM <sub>10</sub> /PM <sub>2.5</sub>	0.0150	2.25E-04	28	0.95	4.14

\*Number of occurrences in process

- The potential PM emissions from building fugitives (FUG) are based on the paint throughput, and a safety factor to accommodate fugitive emissions in addition to those from painting operations. The potential VOC emissions from building fugitives (FUG) are based on the paint throughput, paint VOC content, and a safety factor to accommodate fugitive emissions in addition to those from painting operations. VOC content of the paint is low (e.g., <1% by weight per the safety data sheet) and the paint is applied to the surface of shingles by rollers. The paint usage is 0.32 gallons per ton of coating asphalt based on 2016 records. The maximum potential to emit (PTE) paint usage is 106,520 gallons per year.

**Table 15A. VOC Emissions from Line Marking Paint and Facility Fugitives (FUG)**

Compound	Maximum Throughput	Maximum Throughput	Percentage from Source	Safety Factor	Emissions Rates	
	(gal/hr) <sup>1</sup>	(lb/hr) <sup>2</sup>	(%) <sup>3</sup>	(%) <sup>4</sup>	(lb/hr)	(TPY)
VOC	12.16	1.36	100%	20%	1.63	7.14

Notes:

1. Potential throughput of paint assumes a maximum of 12.16 gal/hr and 26 ton/hour of coating asphalt utilized.
2. Potential throughput of VOC (lbs/hr) = Density of 11.2 lbs/gal \* 12.16 gal/hr\*0.01 for the VOC in the paint.
3. Presumed 100% emissions of VOC from application to the atmosphere.
4. Safety factor included to accommodate miscellaneous fugitive emissions from the facility operations.

**Table 15B. PM Emissions from Line Marking Paint and Facility Fugitives (FUG)**

Compound	Maximum Throughput	Maximum Throughput	Percentage from Source	Safety Factor	Emissions Rates	
	(gal/hr) <sup>1</sup>	(lb/hr) <sup>2</sup>	(%) <sup>3</sup>	(%) <sup>4</sup>	(lb/hr)	(TPY)
PM/PM <sub>10</sub> /P M <sub>2.5</sub>	12.16	54.48	2%	20%	1.31	5.73



Emissions Source	EPN	Formaldehyde		Carbonyl Sulfide		POM		Total HAPs	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Coating Line One	CL-1	0.24	1.04	0.21	0.92	0.17	0.74	0.62	2.70
Coating Line Two 2	CL-2	0.24	1.04	0.21	0.92	0.17	0.74	0.62	2.70
Filler Silo No. 1	FS-1	--	--	--	--	--	--	--	--
Filler Silo No. 2	FS-2	--	--	--	--	--	--	--	--
Cold Filler Receiver No. 1	FF-1	--	--	--	--	--	--	--	--
Cold Filler Receiver No. 2	FF-2	--	--	--	--	--	--	--	--
WS Asphalt Storage Tank: (1) 25,000 gal	WS-1	0.001	0.004	0.001	0.004	--	--	0.002	0.01
LA Asphalt Storage Tank: (1) 25,000 gal	LA-1	0.002	0.01	0.002	0.007	--	--	0.004	0.02
Saturant/Flux Asphalt Storage Tanks (4)	S/F-1, S/F-2, S/F-5 and S/F-6	0.05	0.24	0.05	0.20	--	--	0.10	0.44
Material Delivery	F-DELIV	--	--	--	--	--	--	--	--
Material Drop to Hopper/Conveyor	F-CONV	--	--	--	--	--	--	--	--
Material Application to Mat	F-APP	--	--	--	--	--	--	--	--
Material Screening	F-SCRN	--	--	--	--	--	--	--	--
PMA Systems (2)	PMA	--	--	0.0000 3	0.0001	--	--	0.000 03	0.0001
Building/Paint Fugitives	FUG	--	--	--	--	--	--	--	--
<b>Total Facility Emissions</b>		<b>0.53</b>	<b>2.32</b>	<b>0.47</b>	<b>2.06</b>	<b>0.34</b>	<b>1.48</b>	<b>1.34</b>	<b>5.86</b>
<b>Total Facility Emissions in Permit No. 2011-649-O</b>		<b>0.48</b>	<b>2.09</b>	<b>0.42</b>	<b>1.86</b>	<b>0.32</b>	<b>1.40</b>	<b>1.22</b>	<b>5.35</b>
<b>Changes</b>		<b>0.05</b>	<b>0.23</b>	<b>0.05</b>	<b>0.20</b>	<b>0.02</b>	<b>0.07</b>	<b>0.12</b>	<b>0.51</b>

No individual HAP emission exceeds the major source threshold, 10 TPY, and the total facility-wide HAP emissions do not exceed the major source threshold, 25 TPY. Therefore, the facility remains a HAP minor facility after the modification.

**SECTION V. OKLAHOMA AIR POLLUTION CONTROL RULES**

OAC 252:100-1 (General Provisions) [Applicable]  
 Subchapter 1 includes definitions but there are no regulatory requirements.

OAC 252:100-2 (Incorporation by Reference) [Applicable]  
 This subchapter incorporates by reference applicable provisions of Title 40 of the Code of Federal Regulations. These requirements are addressed in the “Federal Regulations” section.

OAC 252:100-3 (Air Quality Standards and Increments) [Applicable]  
 Subchapter 3 enumerates the primary and secondary ambient air quality standards and the significant deterioration increments. At this time, all of Oklahoma is in “attainment” of these standards.

OAC 252:100-5 (Registration, Emissions Inventory and Annual Operating Fees) [Applicable]  
 Subchapter 5 requires sources of air contaminants to register with Air Quality, file emission

inventories annually, and pay annual operating fees based upon total annual emissions of regulated pollutants. Emission inventories have been submitted and fees paid for the past years.

OAC 252:100-7 (Permits for Minor Facilities) [Applicable]  
 Subchapter 7 sets forth the permit application fees and the basic substantive requirements of permits for minor facilities. Since criteria pollutant emissions are less than 100 TPY for each pollutant, and emissions of Hazardous Air Pollutants (HAP) do not exceed 10 TPY for any one HAP, or 25 TPY for any aggregate of HAP, the facility is defined as a minor source.

OAC 252:100-9 (Excess Emissions Reporting Requirements) [Applicable]  
 Except as provided in OAC 252:100-9-7(a)(1), the owner or operator of a source of excess emissions shall notify the Director as soon as possible but no later than 4:30 p.m. local time the following working day of the first occurrence of excess emissions in each excess emission event. No later than thirty (30) calendar days after the start of any excess emission event, the owner or operator of an air contaminant source from which excess emissions have occurred shall submit a report for each excess emission event describing the extent of the event and the actions taken by the owner or operator of the facility in response to this event. Request for mitigation, as described in OAC 252:100-9-8, shall be included in the excess emission event report. Additional reporting may be required in the case of ongoing emission events and in the case of excess emissions reporting required by 40 CFR Parts 60, 61, or 63.

OAC 252:100-13 (Open Burning) [Applicable]  
 Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in this subchapter.

OAC 252:100-19 (Particulate Matter) [Applicable]  
 This subchapter specifies a particulate matter (PM) emissions limitation of 0.6 lb/MMBtu from indirect fired fuel-burning units with a rated heat input of 10 MMBtu/hr or less. Fuel-burning equipment with a rated heat input between 10 to 100 MMBtu/hr is limited to between 0.599 and 0.349 lb/MMBtu, as defined in Appendix C. The fuel-burning equipment at this facility includes two natural gas fired heaters (HEAT-1 and HEAT-2) with burner ratings of 12.6 MMBtu/hr each, which are limited to 0.60 lb/MMBtu. AP-42 (7/98), Table 1.4.1 lists natural gas TPM emissions to be 7.6 lb/MMCF or about 0.0076 lb/MMBtu which is in compliance with this subchapter.

This subchapter also limits emissions of PM from directly fired fuel-burning units and industrial processes based on their process weight rates. For process rates up to 60,000 lb/hr (30 TPH), the emission rate in pounds per hour (E) is not to exceed the rate calculated using the process weight rate in tons per hour (P) and the formula in appendix G ( $E = 4.10 * P^{(0.67)}$ ). For process rates greater than 60,000 lb/hr (30 TPH), the emission rate in pounds per hour (E) is not to exceed the rate calculated using the process weight rate in tons per hour (P) and the formula in appendix G ( $E = 55 * P^{(0.11)} - 40$ ). Listed in the following table are the process weight rates, the estimated emissions, and the allowable emission limits.

Emission Points	Process Rate (TPH)	SC 19 Limit (lb/hr)	Estimated Emissions (lb/hr)
-----------------	--------------------	---------------------	-----------------------------

Line One and Two Asphalt Coating	26.00	65.9	0.002
Material Delivery	150	55.4	0.75
Material Drop to Hopper	3,750	96.0	0.07
Material Application to Mat	300	63.0	0.04
Material Screening	150	55.4	0.07

OAC 252:100-25 (Visible Emissions and Particulates) [Applicable]  
 No discharge of greater than 20% opacity is allowed except for short-term occurrences, which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case, shall the average of any six-minute period exceed 60% opacity. This limitation is met by burning pipeline-grade natural gas in fuel-burning equipment and by processing of saturator exhausts by a filter. The permit will require maintenance of air pollution controls to ensure compliance with this rule.

OAC 252:100-29 (Control of Fugitive Dust) [Applicable]  
 No person shall cause or permit the discharge of any visible fugitive dust emissions beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or interfere with the maintenance of air quality standards. Under normal operating conditions, this facility employs filters to limit emissions from handling granular materials. Therefore, it is not necessary to require specific precautions to be taken.

OAC 252:100-31 (Sulfur Oxides) [Applicable]  
Part 2 limits the ambient air concentration of hydrogen sulfide (H<sub>2</sub>S) emissions from any facility to 0.2 ppmv (24-hour average) at standard conditions, which is equivalent to 283 µg/m<sup>3</sup>. This facility does not perform blowing still operations at the site. The asphalt purchased is already oxidized by the supplier. Blowing stills, therefore, are not located at the facility. Any mixing that occurs at the facility is mechanical, therefore, does not generate COS, H<sub>2</sub>S, or other sulfur-containing compounds. Therefore, this Part 2 does not apply.  
Part 5 limits sulfur dioxide emissions from new fuel-burning equipment (constructed after July 1, 1972). For gaseous fuels the limit is 0.2 lb/MMBTU heat input averaged over 3 hours. For fuel gas having a gross calorific value of 1,000 BTU/SCF, this limit corresponds to fuel sulfur content of 1,203 ppmv. The facility uses pipeline-grade natural gas or field gas with a maximum sulfur content of 4 ppmv for all fuel-burning equipment, which is compliance with Subchapter 31.

OAC 252:100-33 (Nitrogen Oxides) [Not Applicable]  
 This subchapter limits new gas-fired fuel-burning equipment with rated heat input greater than or equal to 50 MMBTUH to emissions of 0.2 lb of NO<sub>x</sub> per MMBTU. The combustion devices at this facility are less than the threshold. Therefore, this subpart does not apply.

OAC 252:100-35 (Carbon Monoxide) [Not Applicable]  
 This facility has none of the affected sources: gray iron cupola, blast furnace, basic oxygen furnace, petroleum catalytic reforming unit, or petroleum catalytic cracking unit.

OAC 252:100-37 (Volatile Organic Compounds) [Applicable]

Part 3 requires storage tanks constructed after December 28, 1974, with a capacity of 400 gallons or more and storing a VOC with a vapor pressure greater than 1.5 psia to be equipped with a permanent submerged fill pipe or with an organic vapor recovery system. The hot asphalt, as stored and processed, has negligible vapor pressure. Thus, the asphalt storage tanks are not subject to this part.

Part 5 limits the VOC content of coatings used in coating lines and operations. The facility uses a low VOC paint that emits 39.12 pounds per 24-hour day, which is less than 100 pounds per 24-hour day. Therefore, the facility is not subject to this part.

Part 7 requires fuel-burning and refuse-burning equipment to be operated to minimize emissions of VOC. The equipment at this location is subject to this requirement.

OAC 252:100-42 (Toxic Air Contaminants (TAC)) [Applicable]  
This subchapter regulates toxic air contaminants (TAC) that are emitted into the ambient air in areas of concern (AOC). Any work practice, material substitution, or control equipment required by the Department prior to June 11, 2004, to control a TAC, shall be retained, unless a modification is approved by the Director. Since no AOC has been designated there are no specific requirements for this facility at this time.

OAC 252:100-43 (Testing, Monitoring, and Recordkeeping) [Applicable]  
This subchapter provides general requirements for testing, monitoring and recordkeeping and applies to any testing, monitoring or recordkeeping activity conducted at any stationary source. To determine compliance with emissions limitations or standards, the Air Quality Director may require the owner or operator of any source in the state of Oklahoma to install, maintain and operate monitoring equipment or to conduct tests, including stack tests, of the air contaminant source. All required testing must be conducted by methods approved by the Air Quality Director and under the direction of qualified personnel. A notice of intent to test and a testing protocol shall be submitted to Air Quality at least 30 days prior to any EPA Reference Method stack tests. Emissions and other data required to demonstrate compliance with any federal or state emission limit or standard, or any requirement set forth in a valid permit shall be recorded, maintained, and submitted as required by this subchapter, an applicable rule, or permit requirement. Data from any required testing or monitoring not conducted in accordance with the provisions of this subchapter shall be considered invalid. Nothing shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

## SECTION VI. FEDERAL REGULATIONS

PSD, 40 CFR Part 52 [Not Applicable]  
Final total emissions are less than the threshold of 250 TPY of any single regulated pollutant and the facility is not one of the 26 specific industries with a threshold of 100 TPY.

NSPS, 40 CFR Part 60 [Subparts Dc and UU Applicable]  
Subpart Dc (Small Industrial-Commercial-Institutional Steam Generating Units) affects boilers with a heat input of 10-100 MMBTUH and constructed, modified, or reconstructed after June 9, 1989. The 12.6 MMBTUH heaters (HEAT-1 and HEAT-2) were constructed after the effective date of this regulation. Therefore, both heaters (HEAT-1 and HEAT-2) are subject to this subpart.

Subpart Kb (Volatile Organic Liquid Storage Vessels) affects each storage vessel with capacity greater than or equal to 151 cubic meters (38,894 gallons) used to store volatile organic liquids. The vertical asphalt storage tanks have capacities less than 151 cubic meters.

Subpart UU (Asphalt Processing and Asphalt Roofing Manufacturing) affects each saturator and each mineral handling systems and storage facility at asphalt roofing plants that commenced construction, reconstruction, or modification after November 18, 1980. The facility was constructed in 2012 and is subject to the particulate matter emissions restrictions of this subpart.

NESHAP, 40 CFR Part 61

[Not Applicable]

There are no emissions of any of the pollutants subject to regulation under 40 CFR 61: mercury, asbestos, vinyl chloride, arsenic, benzene, radionuclides, beryllium, or coke oven emissions.

NESHAP, 40 CFR Part 63

[Subpart AAAAAAA Applicable]

Subpart JJJJJ, Industrial, Commercial, and Institutional Boilers Located at Area Sources. This subpart affects new and existing boilers located at area sources of HAP, except for gas-fired boilers. Gas fired boilers are defined as any boiler that burns gaseous fuel not combined with any solid fuels, liquid fuel only during periods of gas curtailment, gas supply emergencies, or periodic testing on liquid fuel. Periodic testing under this definition shall not exceed a combined total of 48 hours during any calendar year. *Boiler* means an enclosed device using controlled flame combustion in which water is heated to recover thermal energy in the form of steam or hot water. The heaters at this facility are gas fired and do not meet the definition of boiler and are not subject to this subpart.

Subpart LLLLL, Asphalt Processing and Asphalt Roofing Manufacturing. This subpart applies to affected emission points that are located at facilities which are major sources of HAPs. This facility is not a major source of HAPs. Therefore, this subpart is not currently applicable.

Subpart AAAAAA, HAP for Area Sources: Asphalt Processing and Asphalt Roofing Manufacturing. This subpart regulates HAP (PAH) emissions from asphalt roofing manufacturing facilities located at minor sources for HAPs. The facility is a minor source for HAP emissions and is subject to the emission limits for coater only production lines of either a limit of PAH emissions to 0.0002 pounds per ton (lb/ton) of asphalt roofing product manufactured or PM emissions to 0.06 lb/ton of asphalt roofing product manufactured. The applicant conducted the initial compliance test based on the latter option. All applicable requirements have been incorporated into the permit.

Chemical Accident Prevention Provisions, 40 CFR Part 68

[Not Applicable]

This facility does not store more than the applicable threshold of any of the regulated substances. Therefore, this facility is not subject to this standard. More information on this federal program is available at the web site: <https://www.epa.gov/rmp>.

Stratospheric Ozone Protection, 40 CFR Part 82

[Subpart A and F Applicable]

These standards require phase out of Class I & II substances, reductions of emissions of Class I & II substances to the lowest achievable level in all use sectors, and banning use of nonessential products containing ozone-depleting substances (Subparts A & C); control servicing of motor vehicle air conditioners (Subpart B); require Federal agencies to adopt procurement regulations which meet phase out requirements and which maximize the substitution of safe alternatives to Class I and Class II substances (Subpart D); require warning labels on products made with or containing Class I or II substances (Subpart E); maximize the use of recycling and recovery upon



disposal (Subpart F); require producers to identify substitutes for ozone-depleting compounds under the Significant New Alternatives Program (Subpart G); and reduce the emissions of halons (Subpart H).

Subpart A identifies ozone-depleting substances and divides them into two classes. Class I controlled substances are divided into seven groups; the chemicals typically used by the manufacturing industry include carbon tetrachloride (Class I, Group IV) and methyl chloroform (Class I, Group V). A complete phase-out of production of Class I substances is required by January 1, 2000 (January 1, 2002, for methyl chloroform). Class II chemicals, which are hydrochlorofluorocarbons (HCFCs), are generally seen as interim substitutes for Class I CFCs. Class II substances consist of 33 HCFCs. A complete phase-out of Class II substances, scheduled in phases starting by 2002, is required by January 1, 2030.

Subpart F requires that any persons servicing, maintaining, or repairing appliances except for motor vehicle air conditioners; persons disposing of appliances, including motor vehicle air conditioners; refrigerant reclaimers, appliance owners, and manufacturers of appliances and recycling and recovery equipment comply with the standards for recycling and emissions reduction.

This facility does not produce, consume, recycle, import, or export any controlled substances or controlled products as defined in this part, nor does this facility perform service on motor (fleet) vehicles that involves ozone-depleting substances. Therefore, as currently operated, this facility is not subject to these requirements. To the extent that the facility has air-conditioning units that apply, the permit requires compliance with Part 82.

## **SECTION VII. COMPLIANCE**

### **Tier Classification and Public Review**

This application has been determined to be **Tier I** based on the fact that this is a request for an operating permit for a synthetic minor facility that was issued a construction permit prior to September 15, 2021, and that will now become a FESOP.

The draft permit will undergo public notice on the DEQ's web site as required in OAC 252:4-7-13(g). The public, tribal governments, and the EPA will have 30 days to comment on the draft permit. Permits available for public review and comment are found at this location:

<https://www.deq.ok.gov/permits-for-public-review/>

The applicant has submitted an affidavit stating that they are not seeking a permit for land used or for any operation upon land owned by others without their knowledge. The affidavit certifies that the applicant owns the real property. Information on all permit actions is available for review for review by the public in the Air Quality section of the DEQ web page at <https://www.deq.ok.gov/>.

### **Inspection**

No inspection is required prior to issuance of an operating permit for facilities with projected emission levels of less than 50 TPY of NO<sub>x</sub> and CO.

**Fee Paid**

An individual minor operating permit fee of \$750 was received on September 22, 2021.

**SECTION VIII. SUMMARY**

The facility was constructed and is operating as described in the permit application. Ambient air quality standards are not threatened at this site. There are no active Air Quality compliance or enforcement issues that would prevent issuance of the permit. Issuance of the operating permit is recommended, contingent on public review.

**PERMIT TO OPERATE  
AIR POLLUTION CONTROL FACILITY  
SPECIFIC CONDITIONS**

**Herbert Malarkey Roofing Company  
Oklahoma City Plant**

**Permit No. 2011-649-O (M-1)**

The permittee is authorized to operate in conformity with the specifications submitted to and received by Air Quality on September 21, 2021. The Evaluation Memorandum dated November 23, 2022, explains the derivation of applicable permit requirements, and estimates of emissions; however, it does not contain limitations or permit requirements. Continued operations under this permit constitutes acceptance of, and consent to the conditions contained herein:

1. Points of emissions and emissions limitations:

Emissions Source	EPN	NOx		PM <sub>10</sub> /PM <sub>2.5</sub>		CO		VOC	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Thermal Fluid Heater No. 1	HEAT-1	1.24	5.41	--	--	1.04	4.54	0.07	0.30
Thermal Fluid Heater No. 2	HEAT-2	1.24	5.41	--	--	1.04	4.54	0.07	0.30
Coating Line No. 1	CL-1	--	--	0.00 01	0.006	0.13	0.57	1.35	5.92
Coating Line No. 2	CL-2	--	--	0.001	0.006	0.13	0.57	1.35	5.92
Filler Silo No. 1	FS-1	--	--	0.15	0.64	--	--	--	--
Filler Silo No. 2	FS-2	--	--	0.15	0.64	--	--	--	--
Cold Filler Receiver No. 1	FF-1	--	--	0.47	2.07	--	--	--	--
Cold Filler Receiver No. 2	FF-2	--	--	0.47	2.07	--	--	--	--
WS Asphalt Storage Tank: (1) 25,000 gal	WS-1	--	--	--	--	0.01	0.05	0.03	0.14
LA Asphalt Storage Tank: (1) 25,000 gal	LA-1	--	--	--	--	0.02	0.10	0.06	0.28
All Coating and Saturant/Flux Asphalt Storage Tanks	S/F-1, S/F-2, S/F-5 and S/F-6	--	--	--	--	0.62	2.73	0.57	2.51
Material Delivery	F-DELIV	--	--	0.36	1.56	--	--	--	--
Material Drop to Hopper/Conveyor	F-CONV	--	--	0.05	0.18	--	--	--	--
Material Application to Mat	F-APP	--	--	0.02	0.08	--	--	--	--
Material Screening	F-SCRN	--	--	0.95	4.14	--	--	--	--
Building/Paint Fugitives	FUG	--	--	1.30	5.71	--	--	1.63	7.14
PMA System	PMA	--	--	--	--	0.01	0.02	0.10	0.45

2. The facility shall use pipeline-grade or commercial grade natural gas or field gas with a maximum sulfur content of 4 ppmv for all fuel-burning equipment. Compliance can be shown by a current gas company bill, lab analysis, gas contract, tariff sheet, or other approved methods. Compliance shall be demonstrated at least once every calendar year.
3. The permittee shall be authorized to operate the facility continuously (24 hours per day, every day of the year). The usage rate (TPH) of coating asphalt and flux/saturation asphalt shall be calculated monthly and shall not exceed 13.0 TPH per production line, monthly average.

4. Usage of the sand, granules, and copper (material) shall not exceed 1,314,000 tons per 12-month period (12 month rolling total) for the facility-wide operation.
5. Emissions from the coating processes shall be controlled by filter fiber bed mist eliminator with control efficiency of 95% for PM<sub>10</sub>. NESHAP 7A requires the control device to be at least 95% efficient. No control efficiency is credited to VOC, formaldehyde, and polycyclic organic matter (POM).
6. The filler storage tank emissions and filler heaters shall be controlled with a baghouse with at least 95% control efficiency.
7. The transfer of material shall take place inside the process building where it is dropped into partially enclosed (3 sides are enclosed) hoppers/conveyors by a bucket elevator (material drop to hopper).
8. The dropping of material onto the asphalt coated mat (material application to mat) shall take place inside of a building.
9. Usage of paint applied to line marking shall not exceed 106,520 gallons per 12-month period (12-month rolling total) for the facility-wide operation.
10. Total facility-wide asphalt throughput shall not exceed:

ID#	Number of Tank	Contents	Throughput Limit	
			Gallons/year	TPY
WS-1	1	Wind sealant Asphalt	405,539	3,994.56
LA-1	1	Laminate Adhesive Asphalt	811,078	7,989.12
S/F-1, S/F-2, S/F-5 and S/F-6	4	Saturant/Flux/Asphalt	23,122,843	227,760

11. All air exhausts from the saturator operations shall be processed by fabric filters prior to discharge to the atmosphere. Other operations having control equipment necessary to meet emission limits shall not be operated without these controls in proper working order.
12. The differential pressure across the asphalt coaters high velocity air filters shall be operated between 0-14 inches of water, monitored at least once daily, and shall not exceed 14 inches of water.
13. The 12.6 MMBTUH thermal fluid heaters (HEAT-1 and HEAT-2) are subject to 40 CFR Part 60, Subpart Dc. The owner/operator shall comply with all applicable requirements of this subpart, for each affected facility including but not limited to:
  - (a) §60.40c Applicability and delegation of authority.
  - (b) §60.41c Definitions.
  - (c) §60.42c Standard for sulfur dioxide (SO<sub>2</sub>).
  - (d) §60.43c Standard for particulate matter (PM).
  - (e) §60.44c Compliance and performance test methods and procedures for sulfur dioxide.

- (f) §60.45c Compliance and performance test methods and procedures for particulate matter.
  - (g) §60.46c Emission monitoring for sulfur dioxide.
  - (h) §60.47c Emission monitoring for particulate matter.
  - (i) §60.48c Reporting and recordkeeping requirements.
14. The asphalt roofing manufacturing operations are subject to 40 CFR Part 60, Subpart UU. The owner/operator shall comply with all applicable requirements of this subpart, for each affected facility including but not limited to:
- (a) §60.470 Applicability and designation of affected facilities.
  - (b) §60.471 Definitions.
  - (c) §60.472 Standards for particulate matter.
  - (d) §60.473 Monitoring of operations.
  - (e) §60.474 Test methods and procedures.
15. The asphalt roofing manufacturing operations are subject to 40 CFR Part 63, Subpart AAAAAAA. The owner/operator shall comply with all applicable requirements of this subpart, for each affected facility including but not limited to:
- (a) §63.11559 Am I subject to this subpart?
  - (b) §63.11560 What are my compliance dates?
  - (c) §63.11561 What are my standards and management practices?
  - (d) §63.11562 What are my initial compliance requirements?
  - (e) §63.11563 What are my monitoring requirements?
  - (f) §63.11564 What are my notification, recordkeeping, and reporting requirements?
  - (g) §63.11565 What general provisions sections apply to this subpart?
  - (h) §63.11566 What definitions apply to this subpart?
  - (i) §63.11567 Who implements and enforces this subpart?
16. The permittee shall keep records of operation as listed below. These records shall be retained on location for a period of five years following dates of recording and shall be made available to regulatory personnel upon request.
- (a) Usage (or receiving) records for asphalt, line marking paint (monthly and 12-month rolling totals for each).
  - (b) Usage of the sand, granules, and copper (material) for the facility-wide operation (monthly and 12-month rolling totals).
  - (c) Hours of operation each day and monthly total.
  - (d) Pressure differential of filters across the filtration unit (daily).
  - (e) Material Safety Data Sheets for the line marking paint(s).
  - (f) Records required by 40 CFR Part 60, Subparts Dc and UU.
  - (g) Records required by 40 CFR Part 63, Subpart AAAAAAA.
17. This permit supersedes all previous Air Quality operating permits which are now cancelled.

**MINOR SOURCE PERMIT TO OPERATE / CONSTRUCT  
AIR POLLUTION CONTROL FACILITY  
STANDARD CONDITIONS  
(February 13, 2020)**

- A. The issuing Authority for the permit is the Air Quality Division (AQD) of the Oklahoma Department of Environmental Quality (DEQ) in accordance with and under the authority of the Oklahoma Clean Air Act. The permit does not relieve the holder of the obligation to comply with other applicable federal, state, or local statutes, regulations, rules, or ordinances. This specifically includes compliance with the rules of the other Divisions of DEQ: Land Protection Division and Water Quality Division.
- B. A duly issued construction permit or authorization to construct or modify will terminate and become null and void (unless extended as provided in OAC 252:100-7-15(g)) if the construction is not commenced within 18 months after the date the permit or authorization was issued, or if work is suspended for more than 18 months after it is commenced. [OAC 252:100-7-15(f)]
- C. The recipient of a construction permit shall apply for a permit to operate (or modified operating permit) within 180 days following the first day of operation. [OAC 252:100-7-18(a)]
- D. Unless specified otherwise, the term of an operating permit shall be unlimited.
- E. Notification to the Air Quality Division of DEQ of the sale or transfer of ownership of this facility is required and shall be made in writing by the transferor within 30 days after such date. A new permit is not required. [OAC 252:100-7-2(f)]
- F. The following limitations apply to the facility unless covered in the Specific Conditions:
1. No person shall cause or permit the discharge of emissions such that National Ambient Air Quality Standards (NAAQS) are exceeded on land outside the permitted facility. [OAC 252:100-3]
  2. All facilities that emit air contaminants are required to file an emission inventory and pay annual operating fees based on the inventory. Instructions are available on the Air Quality section of the DEQ web page. [www.deq.ok.gov](http://www.deq.ok.gov) [OAC 252:100-5]
  3. Deviations that result in emissions exceeding those allowed in this permit shall be reported consistent with the requirements of OAC 252:100-9, Excess Emission Reporting Requirements. [OAC 252:100-9]
  4. Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in the Open Burning subchapter. [OAC 252:100-13]
  5. No particulate emissions from new fuel-burning equipment with a rated heat input of 10 MMBTUH or less shall exceed 0.6 lbs/MMBTU. [OAC 252:100-19]
  6. No discharge of greater than 20% opacity is allowed except for short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity. [OAC 252:100-25]
  7. No visible fugitive dust emissions shall be discharged beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent

- properties, or cause air quality standards to be exceeded, or interfere with the maintenance of air quality standards. [OAC 252:100-29]
8. No sulfur oxide emissions from new gas-fired fuel-burning equipment shall exceed 0.2 lbs/MMBTU. No existing source shall exceed the listed ambient air standards for sulfur dioxide. [OAC 252:100-31]
  9. Volatile Organic Compound (VOC) storage tanks built after December 28, 1974, and with a capacity of 400 gallons or more storing a liquid with a vapor pressure of 1.5 psia or greater under actual conditions shall be equipped with a permanent submerged fill pipe or with an organic material vapor-recovery system. [OAC 252:100-37-15(b)]
  10. All fuel-burning equipment shall at all times be properly operated and maintained in a manner that will minimize emissions of VOCs. [OAC 252:100-37-36]
- G. Any owner or operator subject to provisions of NSPS shall provide written notification as follows: [40 CFR 60.7 (a)]
1. A notification of the date construction (or reconstruction as defined under §60.15) of an affected facility is commenced postmarked no later than 30 days after such date. This requirement shall not apply in the case of mass-produced facilities which are purchased in completed form.
  2. A notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under an applicable subpart or in §60.14(e). This notice shall be postmarked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The Administrator may request additional relevant information subsequent to this notice.
  3. A notification of the actual date of initial start-up of an affected facility postmarked within 15 days after such date.
  4. If a continuous emission monitoring system is included in the construction, a notification of the date upon which the test demonstrating the system performance will commence, along with a pretest plan, postmarked no less than 30 days prior to such a date.
- H. Any owner or operator subject to provisions of NSPS shall maintain records of the occurrence and duration of any start-up, shutdown, or malfunction in the operation of an affected facility or any malfunction of the air pollution control equipment. [40 CFR 60.7 (b)]
- I. Any owner or operator subject to the provisions of NSPS shall maintain a file of all measurements and other information required by this subpart recorded in a permanent file suitable for inspection. This file shall be retained for at least five years following the date of such measurements, maintenance, and records. [40 CFR 60.7 (f)]
- J. Any owner or operator subject to the provisions of NSPS shall conduct performance test(s) and furnish to AQD a written report of the results of such test(s). Test(s) shall be conducted within 60 days after achieving the maximum production rate at which the facility will be operated, but not later than 180 days after initial start-up. [40 CFR 60.8]

Attn: Mr. Jay Kreft, Plant Manager  
Herbert Malarkey Roofing Company  
3400 S. Council Road  
Oklahoma City, OK 73179

Re: Operating Permit No. **2011-649-O (M-1)**  
Herbert Malarkey Roofing Company  
Oklahoma City Plant (Facility ID: 8304)  
Latitude: 35.43119°N; Longitude: 97.65337°W  
3400 S. Council Road, Section 17, Township 11N, Range 4W  
Oklahoma City, Oklahoma County, Oklahoma

Dear Mr. Kreft:

Enclosed is the permit authorizing operation of the referenced facility. Please note that this permit is issued subject to standard and specific conditions, which are attached. These conditions must be carefully followed since they define the limits of the permit and will be confirmed by periodic inspections.

Also note that you are required to annually submit an emissions inventory for this facility. An emissions inventory must be completed through DEQ's electronic reporting system by April 1<sup>st</sup> of every year. Any questions concerning the submittal process should be referred to the Emissions Inventory Staff at (405) 702-4100.

Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact the permit writer at [iftekhhar.hossain@deq.ok.gov](mailto:iftekhhar.hossain@deq.ok.gov), or at (405) 702-4199.

Sincerely,

**DRAFT**

Lee Warden, P.E.  
Permits and Engineering Group Manager  
**AIR QUALITY DIVISION**

Enclosure





# PERMIT

AIR QUALITY DIVISION  
STATE OF OKLAHOMA  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
707 NORTH ROBINSON, SUITE 4100  
P. O. BOX 1677  
OKLAHOMA CITY, OKLAHOMA 73101-1677

FESOP No. 2011-649-O (M-1)

Herbert Malarkey Roofing Company,

having complied with the requirements of the law, is hereby granted permission to  
operate their Oklahoma City Plant at 3400 S. Council Road, (Section 17, Township  
11N, Range 4W), Oklahoma City, Oklahoma County, OK, subject to Standard  
Conditions dated February 13, 2020, and Specific Conditions, both attached.

DRAFT.

\_\_\_\_\_  
Lee Warden, P.E.  
Permits and Engineering Group Manager

\_\_\_\_\_  
Issuance Date

**Department of Environmental Quality (DEQ)**  
**Air Quality Division (AQD)**  
**Acronym List**  
**9-10-21**

<b>ACFM</b>	Actual Cubic Feet per Minute	<b>GDF</b>	Gasoline Dispensing Facility
<b>AD</b>	Applicability Determination	<b>GEP</b>	Good Engineering Practice
<b>AFRC</b>	Air-to-Fuel Ratio Controller	<b>GHG</b>	Greenhouse Gases
<b>API</b>	American Petroleum Institute	<b>GR</b>	Grain(s) (gr)
<b>ASTM</b>	American Society for Testing and Materials	<b>H<sub>2</sub>CO</b>	Formaldehyde
		<b>H<sub>2</sub>S</b>	Hydrogen Sulfide
<b>BACT</b>	Best Available Control Technology	<b>HAP</b>	Hazardous Air Pollutants
<b>BAE</b>	Baseline Actual Emissions	<b>HC</b>	Hydrocarbon
<b>BBL</b>	Barrel(s)	<b>HCFC</b>	Hydrochlorofluorocarbon
<b>BHP</b>	Brake Horsepower (bhp)	<b>HFR</b>	Horizontal Fixed Roof
<b>BTU</b>	British thermal unit (Btu)	<b>HON</b>	Hazardous Organic NESHAP
		<b>HP</b>	Horsepower (hp)
<b>C&amp;E</b>	Compliance and Enforcement	<b>HR</b>	Hour (hr)
<b>CAA</b>	Clean Air Act	<b>I&amp;M</b>	Inspection and Maintenance
<b>CAM</b>	Compliance Assurance Monitoring	<b>IBR</b>	Incorporation by Reference
<b>CAS</b>	Chemical Abstract Service	<b>ICE</b>	Internal Combustion Engine
<b>CAAA</b>	Clean Air Act Amendments	<b>LAER</b>	Lowest Achievable Emission Rate
<b>CC</b>	Catalytic Converter	<b>LB</b>	Pound(s) [Mass] (lb, lbs, lbm)
<b>CCR</b>	Continuous Catalyst Regeneration	<b>LB/HR</b>	Pound(s) per Hour (lb/hr)
<b>CD</b>	Consent Decree	<b>LDAR</b>	Leak Detection and Repair
<b>CEM</b>	Continuous Emission Monitor	<b>LNG</b>	Liquefied Natural Gas
<b>CFC</b>	Chlorofluorocarbon	<b>LT</b>	Long Ton(s) (metric)
<b>CFR</b>	Code of Federal Regulations	<b>M</b>	Thousand (Roman Numeral)
<b>CI</b>	Compression Ignition	<b>MAAC</b>	Maximum Acceptable Ambient Concentration
<b>CNG</b>	Compressed Natural Gas	<b>MACT</b>	Maximum Achievable Control Technology
<b>CO</b>	Carbon Monoxide or Consent Order	<b>MM</b>	Prefix used for Million (Thousand-Thousand)
<b>COA</b>	Capable of Accommodating	<b>MMBTU</b>	Million British Thermal Units (MMBtu)
<b>COM</b>	Continuous Opacity Monitor	<b>MMBTUH</b>	Million British Thermal Units per Hour (MMBtu/hr)
<b>D</b>	Day	<b>MMSCF</b>	Million Standard Cubic Feet (MMscf)
<b>DEF</b>	Diesel Exhaust Fluid	<b>MMSCFD</b>	Million Standard Cubic Feet per Day
<b>DG</b>	Demand Growth	<b>MSDS</b>	Material Safety Data Sheet
<b>DSCF</b>	Dry Standard (At Standard Conditions) Cubic Foot (Feet)	<b>MWC</b>	Municipal Waste Combustor
		<b>MWe</b>	Megawatt Electrical
<b>EGU</b>	Electric Generating Unit	<b>NA</b>	Nonattainment
<b>EI</b>	Emissions Inventory	<b>NAAQS</b>	National Ambient Air Quality Standards
<b>EPA</b>	Environmental Protection Agency	<b>NAICS</b>	North American Industry Classification System
<b>ESP</b>	Electrostatic Precipitator	<b>NESHAP</b>	National Emission Standards for Hazardous Air Pollutants
<b>EUG</b>	Emissions Unit Group	<b>NH<sub>3</sub></b>	Ammonia
<b>EUSGU</b>	Electric Utility Steam Generating Unit	<b>NMHC</b>	Non-methane Hydrocarbon
<b>FCE</b>	Full Compliance Evaluation	<b>NGL</b>	Natural Gas Liquids
<b>FCCU</b>	Fluid Catalytic Cracking Unit	<b>NO<sub>2</sub></b>	Nitrogen Dioxide
<b>FEL</b>	Federally Enforceable Limit(s)	<b>NO<sub>x</sub></b>	Nitrogen Oxides
<b>FESOP</b>	Federally Enforceable State Operating Permit	<b>NOI</b>	Notice of Intent
<b>FIP</b>	Federal Implementation Plan		
<b>FR</b>	Federal Register		
<b>GACT</b>	Generally Achievable Control Technology		
<b>GAL</b>	Gallon (gal)		

<b>NSCR</b>	Non-Selective Catalytic Reduction	<b>SIP</b>	State Implementation Plan
<b>NSPS</b>	New Source Performance Standards	<b>SNCR</b>	Selective Non-Catalytic Reduction
<b>NSR</b>	New Source Review	<b>SO<sub>2</sub></b>	Sulfur Dioxide
		<b>SO<sub>x</sub></b>	Sulfur Oxides
<b>O<sub>3</sub></b>	Ozone	<b>SOP</b>	Standard Operating Procedure
<b>O&amp;G</b>	Oil and Gas	<b>SRU</b>	Sulfur Recovery Unit
<b>O&amp;M</b>	Operation and Maintenance		
<b>O&amp;NG</b>	Oil and Natural Gas	<b>T</b>	Tons
<b>OAC</b>	Oklahoma Administrative Code	<b>TAC</b>	Toxic Air Contaminant
<b>OC</b>	Oxidation Catalyst	<b>TEG</b>	Triethylene Glycol
		<b>THC</b>	Total Hydrocarbons
<b>PAH</b>	Polycyclic Aromatic Hydrocarbons	<b>TPY</b>	Tons per Year
<b>PAE</b>	Projected Actual Emissions	<b>TRS</b>	Total Reduced Sulfur
<b>PAL</b>	Plant-wide Applicability Limit	<b>TSP</b>	Total Suspended Particulates
<b>Pb</b>	Lead	<b>TV</b>	Title V of the Federal Clean Air Act
<b>PBR</b>	Permit by Rule		
<b>PCB</b>	Polychlorinated Biphenyls	<b>µg/m<sup>3</sup></b>	Micrograms per Cubic Meter
<b>PCE</b>	Partial Compliance Evaluation	<b>US EPA</b>	U. S. Environmental Protection Agency
<b>PEA</b>	Portable Emissions Analyzer		
<b>PFAS</b>	Per- and Polyfluoroalkyl Substance	<b>VFR</b>	Vertical Fixed Roof
<b>PM</b>	Particulate Matter	<b>VMT</b>	Vehicle Miles Traveled
<b>PM<sub>2.5</sub></b>	Particulate Matter with an Aerodynamic Diameter <= 2.5 Micrometers	<b>VOC</b>	Volatile Organic Compound
		<b>VOL</b>	Volatile Organic Liquid
<b>PM<sub>10</sub></b>	Particulate Matter with an Aerodynamic Diameter <= 10 Micrometers	<b>VRT</b>	Vapor Recovery Tower
		<b>VRU</b>	Vapor Recovery Unit
<b>POM</b>	Particulate Organic Matter or Polycyclic Organic Matter	<b>YR</b>	Year
<b>ppb</b>	Parts per Billion		
<b>ppm</b>	Parts per Million	<b>2SLB</b>	2-Stroke Lean Burn
<b>ppmv</b>	Parts per Million Volume	<b>4SLB</b>	4-Stroke Lean Burn
<b>ppmvd</b>	Parts per Million Dry Volume	<b>4SRB</b>	4-Stroke Rich Burn
<b>PSD</b>	Prevention of Significant Deterioration		
<b>psi</b>	Pounds per Square Inch		
<b>psia</b>	Pounds per Square Inch Absolute		
<b>psig</b>	Pounds per Square Inch Gage		
<b>RACT</b>	Reasonably Available Control Technology		
<b>RATA</b>	Relative Accuracy Test Audit		
<b>RAP</b>	Regulated Air Pollutant or Reclaimed Asphalt Pavement		
<b>RFG</b>	Refinery Fuel Gas		
<b>RICE</b>	Reciprocating Internal Combustion Engine		
<b>RO</b>	Responsible Official		
<b>ROAT</b>	Regional Office at Tulsa		
<b>RVP</b>	Reid Vapor Pressure		
<b>SCC</b>	Source Classification Code		
<b>SCF</b>	Standard Cubic Foot		
<b>SCFD</b>	Standard Cubic Feet per Day		
<b>SCFM</b>	Standard Cubic Feet per Minute		
<b>SCR</b>	Selective Catalytic Reduction		
<b>SER</b>	Significant Emission Rate		
<b>SI</b>	Spark Ignition		
<b>SIC</b>	Standard Industrial Classification		