



west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: R13-1147R
Plant ID No.: 083-00025
Applicant: Armstrong Hardwood Flooring Company
Facility Name: Beverly Facility
Location: Randolph County
NAICS Code: 321918
Application Type: Class II Administrative Update
Received Date: October 7, 2015
Engineer Assigned: Caraline Griffith
Fee Amount: \$300.00
Date Received: October 7, 2015
Complete Date: December 18, 2015
Due Date: February 16, 2016
Applicant Ad Date: December 10, 2015
Newspaper: *The Inter-Mountain*
UTM's: Easting: 597.41 km Northing: 4,296.88 km Zone: 17
Description: Updates to Table 1.1: revise the No. 2, 3, 5, and 7 Baghouse design capacities based on correct air flow capacity, revise the maximum throughput capacity of the Visually Distressed Flooring Lines to 3,620 ft²/hr due to adding a second line in the PUMA operations, and revise the average hourly throughput rate of 29,500 ft² per 8 hour shift of kiln-dried lumber per flooring mill line to a daily maximum production rate of 350,000 ft²/day of unfinished hardwood flooring for the flooring mill. Update Table 5.1.1 to reflect a new maximum PM and PM10 emission rates from No. 2, 3, 5, and 7 Baghouse based on the correction to the design air flow capacity of the baghouse. Also, correct all references to the Visually Distressed Flooring Lines. Updates to machinery (addition of polishers and saws) in No. 2 and No. 5 Baghouses will also be made.

DESCRIPTION OF PROCESS

Overall Facility Process Description

Green lumber is purchased and stacked in the Mill Yard to facilitate air drying of the lumber. The lumber is then further dried in the steam heated pre-dryer and/or one of 38 lumber kilns. Kiln-dried lumber is transferred by one of the three lumber tilts to the Mill rough end saws. The rough end saws cut the lumber into strips for transfer to one of six lines of knot saws, side matchers, and end matchers. The unfinished wood flooring is graded and packaged for shipment to mill customers. Two wood-fired boilers provide heat and steam to the plant.

Facility Changes:

The Armstrong Hardwood Flooring Company - Beverly Mill is submitting changes to the Flooring Mill and Visually Distressed Flooring Lines, specifically PUMA Line #1. The changes will include installation of several saws and sanders that will allow the facility to begin producing wire brushed visual products in varied widths, repurposing of the existing PUMA Lines, and expansion of the PUMA Line 1 conveying system from one line to two. The new equipment will exhaust to existing Baghouses Nos. 2, 3, and 5. The proposed process and operation modifications will not result in any increases to the existing limits.

Expansion of the PUMA conveying system and the introduction of a new white wash stain will increase the throughput capacity of the system and actual VOC emissions. The VOC content of the new stain will be less than the black wash stain currently in use. No changes are being requested to the existing VOC emission limit for the Visually Distressed Flooring Lines.

The existing 5/16 Wood Hog, which currently exhausts through Cyclone #4 and into Baghouse No. 5 will be relocated to exhaust through Cyclone #4 and then into Baghouse No. 3. A second new hog will also be installed to exhaust through Cyclone #4 and into Baghouse No. 3. The added air flow from the cyclone will increase the total air flow to Baghouse No. 3 and subsequently the potential PM and PM10 emissions. Removal of the cyclone exhaust from Baghouse No. 5 will result in a decrease to the maximum air flow capacity and potential PM and PM10 emissions.

A reduction to the maximum air flows for Baghouses Nos. 2 and 7 will result in a decrease in potential PM and PM10 emissions.

Lastly, a revision to the design capacity of the flooring mill from an hourly throughput rate to an annual production rate in Table 1.1, corrections to typographical errors, and a change to the maximum throughput capacity of the Visually Distressed Floor Lines in Table 1.1 of the permit will also be addressed.

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Armstrong Hardwood Flooring Company
Beverly Facility

Promoting a healthy environment.

SITE INSPECTION

Dan Bauerle of the DAQ Compliance and Enforcement section inspected the facility on June 6, 2015. It was found to be in compliance with all regulations except the biannual boiler tune-ups from 2014. However, upon speaking with Mr. Bauerle, it was determined that this would not hinder Armstrong Hardwood Flooring Company from obtaining this permit update.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

After reviewing the current actual air flow, the future planned air flow, and the design capacity of Baghouses No. 2, 3, 5 and 7, it was determined that the permit needs to reflect the new Potential Emission Rates, provided in Table 1 compared to the old emission rates.

The PM/PM10 calculations were done using the following equation with an emission factor of 0.005 g / ft³:

$$EmissionRate(lb / hr) = EmissionFactor(g / ft^3) \times AirFlow(cfm) \times 60 \text{ min}/hr \div 7000(g / lb)$$

Table 1: Estimated Maximum Emission Rates for PM/PM10 in No. 5 Baghouse

Emission Unit	Emission Unit Point ID	Maximum Emission Rates R13-1147Q				Maximum Emission Rates R13-1147R			
		PM		PM10		PM		PM10	
No. 2 Baghouse	S04	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
		2.16	9.46	0.43	1.89	2.13	9.33	0.43	1.87
No. 3 Baghouse	S05	2.24	9.80	0.45	1.96	2.45	10.71	0.49	2.14
No. 5 Baghouse	S07	2.22	9.72	0.44	1.94	1.86	8.13	0.37	1.63
No. 7 Baghouse	S10	2.27	9.95	0.45	1.99	2.14	9.36	0.43	1.87

Table 2: Change in Emissions in Nos. 2, 3, 5, and 7 Baghouses

Emission Unit	Emission Unit Point ID	Maximum Emission Rates			
		PM		PM10	
No. 2 Baghouse	S04	lb/hr	TPY	lb/hr	TPY
				-0.03	-0.13
No. 3 Baghouse	S05	+0.21	+0.91	+0.04	+0.18
No. 5 Baghouse	S07	-0.36	-1.59	-0.07	-0.31
No. 7 Baghouse	S10	-0.13	-0.59	-0.02	-0.12

The proposed addition of the second line in the PUMA Line Operations will double the material consumption with a 210% increase in usage. Since the Blackwash material has the higher VOC constant of 0.13 lbs/gal, compared to the Whitewash (0.06 lbs/gal), doubling the VOC amount would be 0.06 TPY VOC, which is still under the permitted limit of 5.1 TPY. Therefore the limit of 5.1 TPY for VOC emissions in the Visually Distressed Flooring Lines shall not change.

REGULATORY APPLICABILITY

STATE RULES

45CSR2 To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers.

Per §45-2-3.1 visible emission from the source shall not exceed 10% opacity based on a six minute block average. The existing permit already contains opacity monitoring requirements that should ensure compliance with this rule.

45CSR13 Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits, and Procedures for Evaluation.

No regulated pollutant is increased in excess of six (6) lbs/hour, and ten (10) TPY or 144 lbs/day and, therefore, the proposed changes are eligible for a Class II Administrative Update.

Armstrong Hardwood Flooring Company has demonstrated compliance with 45CSR13 by submitting a complete R13 permit application, placing a legal advertisement in *The Inter-Mountain* on December 10, 2015 and paying the applicable fees.

45CSR22 Air Quality Management Fee Program

AC&S, Inc. is required to keep their Certificate to Operate current. They paid the \$300 fee associated with a Class II Permit Update application.

45CSR30 Requirements for Operating Permits.

The source is an existing major source under Title V and has an existing Title V permit.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

No non-criteria regulated pollutants are effected by this permit modification. PM, PM₁₀, and VOC are the only pollutants that will be effected by this update.

AIR QUALITY IMPACT ANALYSIS

Since this is an administrative update to a minor source, as defined in 45CSR14, no modeling was performed.

MONITORING OF OPERATIONS

There are already monitoring requirements in place that require Armstrong Hardwood Flooring Company to do weekly Method 22 visible emissions checks in section 5.2.1 of the permit. They must also continue to make sure that each cyclone, baghouse, and exhaust system will be operated and maintained in accordance with the manufacture's specifications to ensure 99.9% control efficiency.

RECOMMENDATION TO DIRECTOR

Information supplied in the application indicates that compliance with all applicable regulations will be achieved. Therefore it is the recommendation of the writer that permit R13-1147R for the administrative update to tables and PTEs in Beverly, Randolph County, be granted to Armstrong Hardwood Flooring Company.



Caraline Griffith
Permit Engineer



DATE

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