

Fact Sheet



For Final Significant Modification Permitting Action Under 45CSR30 and Title V of the Clean Air Act

This Fact Sheet serves to address the changes specific to this Significant Modification, and shall be considered a supplement to the Fact Sheet corresponding with the Title V operating permit issued on November 1, 2011.

Permit Number: **R30-03100030-2011**
Application Received: **February 6, 2015**
Plant Identification Number: **03-54-031-00030**
Permittee: **American Woodmark Corporation**
Facility Name: **South Branch Plant**
Mailing Address: **587 Robert C. Byrd Industrial Park, Moorefield, WV 26836**

Permit Action Number: *SM02* Revised: *January 5, 2016*

Physical Location: Moorefield, Hardy County, West Virginia
UTM Coordinates: 677.73 km Easting • 4,327.129 km Northing • Zone 17
Directions: From Town of Moorefield at intersection of Route 28 and Route 55, take
Route 55 East (Winchester Ave.) approximately 2.2 miles to Robert C.
Byrd Industrial Park Road on left. Plant is approximately 0.5 miles from
Route 55 East on Robert C. Byrd Industrial Park Road.

Facility Description

The main process of the facility is the manufacture and finishing of wood doors and frames for shipment to American Woodmark Corporation facilities across the nation for final assembly into finished kitchen and vanity cabinets. Primary processes include dimensioning of kiln-dried wood; assembly of parts to create either doors or frames; and finishing of doors, frames and miscellaneous parts.

Proposed Modification

This modification is based on recently issued permit R13-2571M and covers:

- 1) addition of one new woodworking line (21 woodworking machines) and one new Finishing Line 3 (23 machines);
- 2) addition of new Recuperative Thermal Oxidizer RTO3 (capture efficiency of 92% and destruction efficiency of 95%) to control VOC and HAP emissions from Finishing operations (Emission Point E22);
- 3) addition of Baghouses B9 and B10 to control emissions from new woodworking operation (Emission Points E19 and E20 respectively) and Baghouse B11 to control emissions from Finishing Line 3 (Emission Point E21);
- 4) increase of the throughputs of the existing waste-solvent recovery still (Emission Unit ID PR-SS2, Emission Point E11) and the manual spray booth (Emission Unit ID TB1, Emission Point E12).

Emissions Summary

The table below summarizes the changes in potential emissions (tons per year) for affected pollutants associated with this significant modification.

Pollutant	Current	SM02	Proposed
TSP	91.63	+ 61.29*	152.92
PM ₁₀	91.63	+ 61.29*	152.92
SO ₂	1.13	+0.00	1.13
NO _x	35.55	+24.66	60.21
VOC	249.4	+0.00**	249.4
CO	48.6	+15.66	64.26
Toluene	63.19	+ 24.00	87.19
Xylene	40.91	+ 3.83	44.74
Total HAPs	152.29	+ 27.83	180.12

*Conservatively, all particulate matter emissions are assumed to be less than 2.5 microns. Includes condensables.

**As the South Branch Plant has a facility-wide VOC limit of 249.4 TPY, that will not change as a result of the proposed modification, there is no increase in VOC PTE from the modifications.

Title V Program Applicability Basis

With the proposed changes associated with this modification, this facility maintains the potential to emit 152.92 TPY of PM10, 249.4 TPY of VOC; 36.07 TPY of methanol; 87.19 TPY of toluene; 44.74 tpy of xylene; and 180.12 tpy of aggregate HAPs. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, over 10 tons per year of a single HAP, and over 25 tons per year of aggregate HAPs, American Woodmark Corporation's South Branch plant is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

The modification to this facility has been found to be subject to the following applicable rules:

Federal and State: 45CSR6 To Prevent and Control PM from Combustion of Refuse

45CSR7	Control of PM from Manufacturing Processes
45CSR13	Construction/modification permits
45CSR30	Operating permit requirement.
45CSR34	Emission standards for HAPs
40 C.F.R. 63 Subpart JJ	National Emission Standards for Wood Furniture Manufacturing
40 C.F.R. Part 64	Compliance Assurance Monitoring (CAM)

State Only: None

Each State and Federally-enforceable condition of the draft Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the draft Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the draft Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit (<i>if any</i>)
R13-2571M	June 8, 2015	

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table B," which may be downloaded from DAQ's website.

Determinations and Justifications

- Emission Units Table 1.1-** the following changes were done:
 - the Table was revised to add new equipment, listed on page 2 of this Fact Sheet; Emission Units AWC-054 through AWC-062 were included in the permit application, but were overlooked during the R13-2571M processing, therefore they were added during this modification.
 - in the underlying permit R13-2571M Emission Point ID "E22" was mistakenly assigned to two control devices (Thermal Oxidizer RTO3 and Baghouse B11). This typo was corrected by assigning the Baghouse B11 with the Emission Point ID "E21";
 - capacity of waste-solvent recovery still (Emission Unit ID PR-SS2, Emission Point E11) was increased from 1.71 gal/hr to 5.13 gal/hr, and capacity of the manual spray booth (Emission Unit ID TB1, Emission Point E12) was increased from 1 gal/day to 10 gal/hr;
 - existing emission unit "Mill Area" (emission points E1, E2, E3 and E4) was overlooked and not included with the underlying R13 permit before, but was added at this time.
 - Emission unit Dust-MA12 installation was planned for year of 2013, but it was not installed then and will be installed in 2015 (installation year was revised from 2013 to 2015).
 - capacity of both thermal oxidizers RTO1 and RTO2 was revised from "58,500 CFM" to "45,000 CFM" (typo).

Also, the Emission Units Table in the underlying permit R13-2571M was re-arranged in order to list equipment per each specific group of operations. We will wait to adopt this format during next

operating permit renewal in order to avoid intense re-formatting efforts during this significant modification.

2. **Requirement 9.1.2** was moved to Section 8.1 and re-numbered to “8.1.3”, because it is applicable to spray booths, not to the UV Ovens.
3. **45CSR7 – To Prevent and Control Particulate Matter Air Pollution from Manufacturing Processes and Associated Operations.** The proposed new woodworking machines meet the definition of a “manufacturing process” in 45CSR§7-2.20. The new woodworking machines are subject to the following requirements in the rule:
 - a. **45CSR§7-3.1. Opacity standard.** The 20% opacity limit for “source operations” as defined under 45CSR§7-2.38. is applicable to the new woodworking and finishing machines. The permittee has proposed the use of two new Baghouses B9 and B10 (Emission Points E19 and E20 respectively) to control the particulate matter emissions from the new woodworking machines (in addition to the existing baghouses) and new Baghouse B11 (Emission Point E21) to control the particulate matter emissions from the new finishing line. Proper operation and maintenance of the baghouses should allow for compliance with the opacity limit, which is already set forth in permit condition 4.1.4. By including emission points E19, E20 and E22 in the heading of permit section 4.0, the emission points are included within the scope of this permit condition.
 - b. **45CSR§7-4.1. Weight emission standard.** 45CSR§7-4.1 requires that each manufacturing process source operation or duplicate source operation meet a particulate matter limit based on the weight of material processed through the source operation. For the purpose of this evaluation, all facility-wide cabinet component woodworking and finishing are defined as the “source operation.” This broad grouping is required as there are many individual pieces of equipment venting to eleven (11) different baghouses. As needs change, the equipment vented to a particulate baghouse also changes. Therefore, the compliance determination for this section shall be based on the total process weight rate of all the woodworking operations and the aggregate emission rate from all baghouses. This is considered the most appropriate method of determining compliance with Section 4 of 45CSR7 for this facility and the woodworking operations.

The woodworking operations are defined as a type ‘a’ source type operation under 45CSR§7-2.39. Based on information provided to the R13-2571L writer, the aggregate maximum amount of material charged through all the existing woodworking operations was 59,508 pounds per hour (lb/hr). This number does not include what would be a large addition of throughput associated with the proposed new woodworking line. However, it may still be used as a very conservative (in this case, low) estimate of the total process weight rate. Therefore, based on Table 45-7A, the aggregate particulate matter limit for all existing and new woodworking lines would be 31.38 lb/hr. The maximum aggregate particulate matter emission rate from all baghouses (including the three new baghouses) is 26.77 lbs/hr, or 85.31% of the 45CSR7 limit. Therefore, the existing streamlining language in permit condition 4.1.1 is valid for BH9, BH10 and BH11.

4. **40 C.F.R. Part 64 Compliance Assurance Monitoring (CAM).** The new equipment must be evaluated to determine if CAM applies to the sources. The following analyses will examine the new woodworking machines and new finishing line, and their baghouses.

WOODWORKING MACHINES, FINISHING MACHINES & BAGHOUSES

The new woodworking machines are vented to the existing Baghouses and two new Baghouses B9 and B10 subject to a PM limit in permit condition 4.1.1. The new baghouses have controlled particulate matter (PM=PM_{2.5}=PM₁₀) emissions of 40.54 TPY. With the baghouses’ efficiency of 99% (for the calculation purposes), pre-control device PM₁₀ emissions are 4,054 TPY, or 2,027 TPY per each baghouse (greater than 100 TPY). Therefore, all applicability criteria in §§64.2(a)(1)-(3) are met and

none of the exemptions in §§64.2(b)(1)(i)-(vi) are applicable. Thus, CAM is applicable to the woodworking machines.

The new finishing line machines are vented to the new Baghouse B11 subject to a PM limit in permit condition 4.1.1. The controlled particulate matter (PM=PM_{2.5}=PM₁₀) emissions from the Baghouse B11 are estimated to be 20.27 TPY from woodworking operations associated with the finishing line, and 0.048 TPY from the finishing line coating operations (20.318 TPY total). With the baghouse's efficiency of 99% (for the calculation purposes), pre-control device PM₁₀ emissions are 2,032 TPY (greater than 100 TPY). Therefore, all applicability criteria in §§64.2(a)(1)-(3) are met and none of the exemptions in §§64.2(b)(1)(i)-(vi) are applicable. Thus, CAM is applicable to the finishing machines and their Baghouse B11.

The table below is the CAM plan for the Baghouses B9, B10 and B11, which is identical to the CAM plan for the existing Baghouses B7 and B8 (already included in the permit).

CAM Plan for Woodworking Machines controlled by Baghouses 9, 10 and 11

	Indicator No.1	Indicator No.2
I. Indicator Measurement Approach	Pressure Drop	Visible Emissions
	Pressure Gauge	Observation by trained observer
II. Indicator Range QIP threshold	0.5" to 4.0" water (4.2.3.a. references 4.1.3.) An excursion is defined in 4.2.3.a. Excursions trigger an inspection and evaluation, corrective action, recordkeeping and a reporting requirement (permit conditions 4.2.7., 4.4.1., and 4.5.1.).	No visible emissions (4.2.3.b.) An excursion is defined in 4.2.3.b. Excursions trigger an inspection and evaluation, corrective action, recordkeeping and a reporting requirement (permit conditions 4.2.7., 4.4.1., and 4.5.1.).
	A QIP threshold is not required for this permitting action. However, the potential for a QIP is accounted for in condition 4.2.9.	A QIP threshold is not required for this permitting action. However, the potential for a QIP is accounted for in condition 4.2.9.
III. Performance Criteria - Data Representativeness - Verification of Operational Status - QA/QC Practices and Criteria - Monitoring frequency - Data Collection Procedure - Averaging Period	Pressure gauge measuring differential pressure of baghouse.	Method 22 observation
	Manufacturer's recommendations	Employee training (4.2.2.). Method 22 prescribes the necessary training in its section 2.3.
	Maintain gauge according to manufacturer's recommendations. In particular, existing condition 4.3.1. serves as a QA/QC practice that will be made applicable to BH9, B10 and BH11.	Employee training (4.2.2.). Method 22 prescribes the necessary training in its section 2.3.
	Daily (4.2.1.)	Monthly (4.2.2.)
	Maintain daily records of observed pressure drop reading (4.2.3.a., and 4.4.1., which also incorporates 3.4.1. and 3.4.2.).	Maintain monthly records of Method 22 observations (4.2.3.b., and 4.4.1., which also incorporates 3.4.1. and 3.4.2.).
	Not applicable	Not applicable

Indicator & Monitoring Approach

Pressure drop is an appropriate indicator of baghouse performance. The permittee will utilize a differential pressure gauge to measure the differential pressure. Considering that it is possible for a

baghouse to have a bag with a hole in it, and still be within the pressure drop range, VE observations serve as an appropriate back-up indicator to ensure that the baghouse is performing as intended. Method 22 observations are appropriate in this case since there will be normally no visible emissions under typical operations.

Specifications for obtaining representative data

The differential pressure gauge will measure the pressure difference between the inlet and outlet of the baghouse during operation. Moreover, the device will be installed in accordance with the manufacturer's recommendations. For monitoring of visible emissions, the specifications found in Method 22 will be adhered to.

QA/QC

Current permit condition 4.3.1 requires the permittee to annually verify and calibrate the differential pressure sensing devices for the eight (8) existing baghouses (B1 through B8). The new baghouses BH9, B10 and BH11 were added to the citation of authority. Since CAM does not apply to the baghouses B1 through B6, but is applicable to B7 through B11, a separate citation of authority is written for the CAM-affected baghouses. For monitoring of visible emissions, the specifications found in Method 22 are sufficient QA/QC practices, and this method is integral to condition 4.2.2.

Monitoring Frequency

Estimated uncontrolled PM PTE for new Baghouses B9 and B10 (for new woodworking operations) is 4,054 TPY. Taking into account the 99% control efficiency of the baghouses, the aggregate potential emissions after control are 40.54 TPY. Estimated uncontrolled PM PTE for new Baghouse B11 (for new finishing line) is 2,032 TPY. Taking into account the 99% control efficiency of the baghouses the aggregate potential emissions after control are 20.32 TPY.

Since the PTE calculated including the effect of the control device is less than the major source threshold for PM₁₀ (100 TPY), the frequency of data collection may be less than that specified in 40 C.F.R. §64.3(b)(4)(ii) but shall include some data collection at least once per 24-hour period in accordance with 40 C.F.R. §64.3(b)(4)(iii). The permittee proposes to monitor the differential pressure at least once per day, which meets this applicable CAM requirement. The monthly monitoring frequency of visible emissions is sufficient since there are normally no visible emissions and the Method 22 monitoring is used in conjunction with the daily pressure drop monitoring.

Data Collection Procedures & Data Averaging

Pressure drop data is polled and recorded by an observer at least once per day. There is no averaging of data in this case. The monthly Method 22 observation is not averaged (due to the nature of Method 22 yielding "yes" or "no" results as opposed to a numeric value).

5. 40 C.F.R. 63 - Subpart JJ, National Emission Standards for Wood Furniture Manufacturing Operations.

Per §63.800(a), the facility is subject to this Subpart since it is engaged in the manufacture of wood furniture or wood furniture components at the site of a major source as defined in 40 C.F.R. §63.2. There are two previously installed Thermal Oxidizers RTO1 and RTO2, and the new Thermal Oxidizer RTO3 (to control VOC and HAP emissions from the new finishing line machines) at this facility. As per §63.804(f)(4)(iv)(A), the minimum combustion temperature for each RTO shall be the operating parameter for initial compliance. Continued compliance is required, and shall be demonstrated by maintaining the minimum combustion chamber temperature (already included in the permit under requirement 6.1.4). As per §63.804(g)(4)(ii), an incinerator shall have a temperature monitoring device equipped with a continuous recorder. In accordance with §63.804(g)(4)(ii)(A), the temperature monitoring device shall be installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs (already included in permit under requirement 6.2.1). Therefore, there are no new conditions added to the permit from this Subpart.

Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

1. **45CSR§7-5.1** states that each manufacturing process that generates fugitive particulate matter must include a system to minimize such emissions. As the new woodworking and finishing machines are fully controlled by baghouses, no substantial source of fugitive particulate matter is included in this modification, therefore this section does not apply to the new woodworking and finishing machines incorporated by this permitting action.
2. **40 C.F.R. Part 64 Compliance Assurance Monitoring (CAM).**

WASTE-SOLVENT RECOVERY STILL - The proposed throughput increase of Waste-Solvent Recovery Still (Em. Unit ID PR-SS2) will result in an increase of xylene (which is both a HAP and VOC) PTE to 5.37 TPY. There is no control device utilized for the still. Since the criteria of 40 C.F.R. §§64.2(a)(2) and (3) are not met, CAM is not applicable.

NEW FINISHING LINE 3 MACHINES AND THERMAL OXIDIZER RTO3 – The new finishing line 3 machines vent to the new Thermal Oxidizer RTO3 or existing Thermal Oxidizers RTO1 or RTO2. The finishing operations have VOC and HAP emission limits set forth in the requirement 6.1.2, use RTO1-RTO3 to achieve compliance, and potentially have pre-control device emissions exceeding major source thresholds. Therefore, the applicability criteria at §§64.2(a)(1)-(3) are met, however the exemptions at §§64.2(b)(1)(i) and (vi) are applicable, thus CAM does not apply to the new finishing line 3. Continuous compliance determination method is included with the requirements 6.1.4 and 6.2.1 (monitoring and recordkeeping of the (3) hour rolling average combustion chamber temperature in order to maintain it at or above the minimum temperature of 1,550°F), which is exempt from CAM applicability per §64.2(b)(1)(vi). The finishing line machines and the oxidizer are subject to the emission limitations and standards of the Part 63 Subpart JJ, *National Emission Standards for Wood Furniture Manufacturing Operations*, which is exempt from CAM applicability per §64.2(b)(1)(i).

Request for Variances or Alternatives

None.

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date: November 18, 2015
Ending Date: December 18, 2015

Point of Contact

All written comments should be addressed to the following individual and office:

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Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Response to Comments (Statement of Basis)

N/A