

Fact Sheet



***For Draft/Proposed Renewal Permitting Action Under 45CSR30 and
Title V of the Clean Air Act***

Permit Number: **R30-06700095-2024**
Application Received: **November 16, 2023**
Plant Identification Number: **03-54-067-00095**
Permittee: **JELD-WEN, Inc. dba JELD-WEN**
Facility Name: **JELD-WEN, Wood Fiber Division**
Mailing Address: **500 Jeld-Wen Road, Craigsville, WV 26205**

Physical Location: Craigsville, Nicholas County, West Virginia
UTM Coordinates: 529.8 km Easting • 4,243.8 km Northing • Zone 17
Directions: From US-19 North of Summersville, take Route 55 East. Approximately 12 miles from Route 19, turn left on Columbia Forest Products Access Road. Stay left on Jeld-Wen Road.

Facility Description

The JELD-WEN, Wood Fiber Division facility manufactures wood fiber door skins in a process similar to the hardboard manufacturing process. Wood chips are mechanically separated into individual fibers at the refiner and dried in a steam and natural gas heated tube dryer. Next, the fiber is blended with a MDI resin and formed into a fiber mat. The mat continues into an unheated pre-compressor, which is followed by a series of saws that cut each mat to size. The mats are then consolidated in a steam-heated press. After the press, the door skins are cut to the final dimensions and are coated with a waterborne primer. In addition to door skin manufacturing, the facility also produces coating products (paints, adhesives, etc.) which are consumed internally and sold externally.

SIC: Primary 2493, Secondary 2851; NAICS: 321219, 325500

Emissions Summary

Plantwide Emissions Summary [Tons per Year]		
Regulated Pollutants	Potential Emissions	2023 Actual Emissions
Carbon Monoxide (CO)	92.6	15.15
Nitrogen Oxides (NO _x)	172.8	46.05
Particulate Matter (PM _{2.5})	18.0	11.82
Particulate Matter (PM ₁₀)	23.0	11.82
Total Particulate Matter (TSP)	39.2	20.58
Sulfur Dioxide (SO ₂)	6.6	0.88
Volatile Organic Compounds (VOC)	155.0	72.95

PM₁₀ is a component of TSP.

Hazardous Air Pollutants	Potential Emissions	2023 Actual Emissions
Acetaldehyde	0.29	0.16
Acrolein	1.40	0.25
Benzene	1.20	0.13
Carbon Tetrachloride	0.02	0.02
Chlorine	0.21	< 0.01
Dichloromethane	0.08	0.03
Formaldehyde	2.60	1.14
Glycol Ethers	1.10	0.13
Hexane	0.43	0.02
Hydrogen Chloride	4.90	0.02
Lead	0.02	< 0.01
Manganese	0.42	< 0.01
Methanol	1.73	1.38
Methyl Chloroform	0.01	< 0.01
Methyl Methacrylate	0.02	None Reported
MDI	0.01	< 0.01
Naphthalene	0.03	0.02
Nickel	0.01	< 0.01

Hazardous Air Pollutants	Potential Emissions	2023 Actual Emissions
Phenol	0.19	0.15
Propionaldehyde	0.11	0.10
Styrene	0.59	0.05
Tetrachloroethylene	0.01	< 0.01
Toluene	0.24	0.10
Xylene	0.01	< 0.01
Total HAPs	15.65	3.76

Some of the above HAPs may be counted as PM or VOCs.

Title V Program Applicability Basis

This facility has the potential to emit 172.8 tpy of Nitrogen Oxides and 155.0 tpy of Volatile Organic Compounds. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, JELD-WEN, Inc. dba JELD-WEN 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.

This facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR2	To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers.
	45CSR6	Control of Air Pollution from Combustion of Refuse.
	45CSR7	Control of Particulate Matter Air Pollution from Manufacturing Processes and Associated Operations.
	45CSR10	To Prevent and Control Air Pollution from the Emission of Sulfur Oxides.
	45CSR11	Standby plans for emergency episodes.
	45CSR13	NSR Permit Requirements.
	45CSR16	Standards of Performance for New Stationary Sources.
	45CSR30	Operating Permit Requirements.
	45CSR34	Emission Standards for Hazardous Air Pollutants.
	WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	40 C.F.R. Part 60 Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.
	40 C.F.R. Part 61	Asbestos Inspection and Removal.

	40 C.F.R. Part 63 Subpart JJJJJ	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources.
	40 C.F.R. Part 64	Compliance Assurance Monitoring (CAM).
	40 C.F.R. Part 82 Subpart F	Ozone Depleting Substances.
State Only:	45CSR4	No objectionable odors.

Each State and Federally-enforceable condition of the Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the 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
R13-2192R	August 8, 2023

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," which may be downloaded from DAQ's website.

Determinations and Justifications

The following revisions have been made to the Title V operating permit:

1. Section 1.0. – Emission Units and Active R13, R14, and R19 Permits
 - a. Per the permittee's request, the Emission Units Table has been updated as follows:
 - i. The Emission Unit ID of the coating manufacturing (Emission Point ID: E15) has been changed from DC2 to CM.
 - ii. The Emission Unit ID of the die coating (Emission Point ID: E17) has been changed from DC to DB.
2. Section 3.0. – Facility-Wide Requirements
 - a. The requirements for the Operation and Maintenance of Air Pollution Control Equipment were previously included in the operating permit under Conditions 4.1.10. and 5.1.14. As these requirements are applicable to all air pollution control equipment listed in Section 1.0., the Operation and Maintenance of Air Pollution Control Equipment requirements have been added to the facility-wide requirements under Condition 3.1.11. of the operating permit.
 - b. The Record of Maintenance of Air Pollution Control Equipment and the Record of Malfunctions of Air Pollution Control Equipment were previously included in Conditions 5.4.2. and 5.4.3., respectively, of the operating permit. As these recordkeeping requirements are applicable to all air pollution control equipment

listed in Section 1.0., they have been added to the facility-wide recordkeeping requirements under Conditions 3.4.5. and 3.4.6. of the operating permit.

3. Section 4.0. – Boilers

- a. 45CSR2 has been revised since the issuance of the previous operating permit. The following changes have been made to Section 4.0. of this operating permit due to these revisions.
 - i. Condition 4.1.2. previously contained the requirement of 45CSR§2-9.1. which required the permittee to meet the visible emission standards of 45CSR§2-3 except during periods of start-ups, shutdowns, and malfunctions. This requirement was removed from 45CSR2 and, therefore, Condition 4.1.2. has been reserved.
 - ii. In the footnotes to the tables in Conditions 4.1.6. and 4.1.7., the references to 45CSR§2-4.1.b. have been revised to 45CSR§2-4.1.2.
 - iii. In Condition 4.4.2., the authority has been updated from 45CSR§2-8.3.c. to 45CSR§2-8.3.3.
 - iv. In Condition 4.5.1.b., the reference to 45CSR§2-9.3.a. has been revised to 45CSR§2-9.3.1. and “telefax” has been removed.
- b. 45CSR10 has been revised since the issuance of the previous operating permit. In the footnotes to the tables in Conditions 4.1.6. and 4.1.7., the references to 45CSR§10-3.3.f. have been revised to 45CSR§10-3.3.6.
- c. Condition 4.1.10. has been reserved. Condition 4.1.10. previously contained the Operation and Maintenance of Air Pollution Control Equipment requirements which were applicable to all air pollution control equipment listed in Section 1.0. Therefore, these requirements have been added in the facility-wide requirements under Condition 3.1.11. of this renewal permit (see 2.a. of this Fact Sheet).
- d. With the issuance of R13-2192Q and R30-06700095-2019, the JELD-WEN, Wood Fiber Division facility became an area source of HAPs, and the hogged fuel-fired boiler (B1) became subject to the tune-up and energy assessment requirements of 40 C.F.R. Part 63 Subpart JJJJJ. However, as the boiler B1 was previously subject to the standards for boilers located at major sources of HAPs under 40 C.F.R. Part 63 Subpart DDDDD, the requirements for an initial tune-up and an energy assessment have been met.
 - i. The requirement to conduct an initial tune-up of the boiler B1 as specified in §63.11214 was removed from Condition 4.1.11. Tune-ups of the boiler had previously been conducted under Subpart DDDDD and have since been performed under Subpart JJJJJ. The permittee remains subject to the requirement to conduct a tune-up biennially as specified in §63.11223.
 - ii. The one-time energy assessment requirement has been removed from Condition 4.1.12. An energy assessment of the boiler had previously been performed on February 18-22, 2013.
- e. The requirement to conduct a performance test of the hogged fuel-fired boiler B1 “within 180 days of issuance of this permit” has been removed from Condition 4.3.2. This testing requirement was first included in R13-2192Q as Condition 4.2.1. to demonstrate compliance with the boiler B1’s emission limitations and was met through the performance test conducted on October 29, 2019. The permittee remains subject to the requirement to conduct a performance test of the boiler at least once every five years.
- f. Condition 4.4.5. contains the recordkeeping requirements of 40 C.F.R. Part 63 Subpart JJJJJ which are applicable to the hogged fuel-fired boiler (B1).

- i. Paragraph a.2.iv. previously contained the standards of §63.11225(c)(2)(iv) which requires the permittee to maintain records of monthly fuel used by each boiler subject to an emission limit in Table 1 to Subpart JJJJJ of Part 63. However, as the boiler B1 is an existing biomass-fired boiler under Subpart JJJJJ, the emission limits of Table 1 to Subpart JJJJJ are inapplicable.
 - ii. Paragraph a.2.v. previously contained the standard of §63.11225(c)(2)(v) which requires the permittee to maintain records of days of operation per year for each seasonal boiler. As the hogged fuel-fired boiler does not meet the definition of a seasonal boiler, this recordkeeping requirement is inapplicable.
 - iii. Paragraph a.2.vi. contained the recordkeeping requirements of §63.11225(c)(2)(vi) which applies to each boiler meeting the definition of a limited-use boiler. As the hogged fuel-fired boiler does not meet the definition of a limited-use boiler, this recordkeeping requirement is inapplicable.
 - iv. §§63.11225(c)(4) and (c)(5) contain the Subpart JJJJJ recordkeeping requirements for periods of malfunction of the boiler and/or the associated air pollution control equipment. These requirements are applicable to the boiler B1 and have, therefore, been added to the operating permit as paragraphs a.3. and a.4. of this condition.
4. Section 5.0. – Door Skin Manufacturing
- a. Condition 5.1.14. has been Reserved. Condition 5.1.14. previously contained the Operation and Maintenance of Air Pollution Control Equipment requirements which were applicable to all the control equipment listed in Section 1.0. of the operating permit. Therefore, these requirements have been added in the facility-wide requirements under Condition 3.1.1. of this renewal permit (see 2.a. of this Fact Sheet).
 - b. Condition 5.1.18. has been removed from the operating permit. This condition previously contained the provisions of 45CSR§7-9.1. which was removed with revisions made to 45CSR7.
 - c. The Response to Excursions or Exceedances requirements of 40 C.F.R. §64.7(d) are applicable to the baghouses that are subject to CAM. As §64.7(d) has been added to the operating permit under Condition 5.2.8. (see the table of requirements added to the operating permit in 4.f. of this Fact Sheet), the requirements for detecting an excursion or exceedance have been removed from Conditions 5.2.4. and 5.3.1.
 - d. The requirement to conduct a performance test of the biofilter (BF) “within 180 days of issuance of this permit” has been removed from Condition 5.3.2. This requirement was first included in R13-2192Q as Condition 4.2.1. to demonstrate compliance with the emission limitations of the biofilter and was met through the performance test conducted on October 30-31, 2019. The permittee remains subject to the requirement to conduct a performance test of the biofilter at least once every five years.
 - e. Conditions 5.4.1. through 5.4.3. of R30-06700095-2019 (MM01) have been removed from this renewal permit, and the subsequent conditions have been renumbered accordingly.
 - i. Condition 5.4.1. contained a reference to the Record of Monitoring requirements which are included in Condition 3.4.1. As the Record of Monitoring requirements are applicable facility-wide, the reference in Condition 5.4.1. is repetitive and, therefore, has been removed.
 - ii. Conditions 5.4.2. and 5.4.3. also previously contained recordkeeping requirements which were applicable to all air pollution control equipment listed in Section 1.0. Therefore, these requirements have been added in the facility-wide recordkeeping requirements under Conditions 3.4.5. and 3.4.6. of this renewal permit (see 2.b. of this Fact Sheet).

f. 40 C.F.R. Part 64 – Compliance Assurance Monitoring (CAM)

The press vents (PV) and fiber dryer (D1) meet the CAM applicability criteria of §64.2:

§64.2(a)(1) Emissions from the press vents and fiber dryer are vented to the biofilter (BF) which is subject to emission limitations for Methanol and aggregate HAPs under Condition 4.1.6. of R13-2192R.

§64.2(a)(2) The biofilter is used to control emissions of Methanol and organic HAPs from the press vents and fiber dryer.

§64.2(a)(3) Using emission factors for the biofilter inlet derived from prior performance tests conducted in 2014, 2016, and 2018, it has been determined that pre-control device emissions of Methanol and pre-control device emissions of aggregate HAPs exceed the Title V major source thresholds of 10 tpy for a single HAP and 25 tpy for any combination of HAPs, respectively.

Therefore, the press vents and fiber dryer are pollutant-specific emissions units (PSEUs) for Methanol and aggregate HAPs. As the post-control device Methanol and aggregate HAP emissions are below Title V major source thresholds, the press vents and fiber dryer are considered “other” PSEUs, and the CAM Plan has been submitted during this operating permit renewal in accordance with 40 C.F.R. §64.5(b).

Pre-control device emissions of VOCs and other individual HAPs do not exceed the Title V major source thresholds. Therefore, the press vents and fiber dryer are not subject to CAM for these pollutants.

To demonstrate compliance with CAM for Methanol and aggregate HAPs, monitoring of the biofilter will be conducted as follows:

Press Vents (PV) and Fiber Dryer (D1)		
	Indicator No. 1	Indicator No. 2
I. Indicator	Biofilter Bed Temperature	Performance Testing of the Methanol and Aggregate HAP Emissions from the Biofilter Outlet
A. Monitoring Approach	A thermocouple will be used to monitor the biofilter bed temperature.	Performance testing will be conducted at least once every five years to ensure that the Condition 5.1.6. emission limits for Methanol and aggregate HAPs are being met.
II. Indicator Range	An excursion occurs when the 24-hour block average of the biofilter bed temperature is less than 81°F or greater than 135°F. If an excursion occurs, an evaluation of the occurrence will be conducted, and appropriate corrective actions will be taken. Any excursions and corrective actions will be documented and reported.	An exceedance occurs if the arithmetic mean of three test runs shows that emissions of Methanol and/or aggregate HAPs surpassed the respective limit in Condition 5.1.6. If an exceedance occurs, an evaluation of the occurrence will be conducted, and appropriate corrective actions will be taken. Any exceedances and corrective actions will be documented and reported.

Press Vents (PV) and Fiber Dryer (D1)		
	Indicator No. 1	Indicator No. 2
A. QIP Threshold	A threshold for requiring the implementation of a QIP has not been specified at this time. The requirements for a QIP have been included by reference in Condition 5.2.10. of the operating permit.	A threshold for requiring the implementation of a QIP has not been specified at this time. The requirements for a QIP have been included by reference in Condition 5.2.10. of the operating permit.
III. Performance Criteria		
A. Data Representativeness	The biofilter bed temperature is monitored by a single thermocouple located in the treatment media. The thermocouple has a minimum accuracy of $\pm 0.27^{\circ}\text{F}$.	The source testing will be conducted in accordance with EPA-approved test methods.
B. Verification of Operational Status	Not Applicable. The thermocouples are neither new nor modified.	Not Applicable.
C. QA/QC Practices and Criteria	The thermocouple is calibrated semi-annually.	Accredited testing companies and laboratories will conduct the performance tests.
D. Monitoring Frequency	During operation of the PSEUs, the biofilter bed temperature is monitored continuously at 15-minute intervals.	The performance tests must be conducted at least once every five years as required under Condition 5.3.2. of the Title V operating permit.
E. Data Collection Procedure	Temperature data is electronically collected and recorded.	Data will be collected during the testing in accordance with the applicable EPA approved test method.
F. Averaging Period	24-hour block average of temperature readings.	Not Applicable.

The following requirements have been added to the operating permit to demonstrate compliance with CAM:

Title V Permit Condition	Summary	Regulatory Citation
5.2.5.	To demonstrate compliance with CAM, the biofilter bed temperature must be monitored via a thermocouple. An excursion has been defined as a biofilter bed temperature (calculated as a 24-hour block average based on data collected at 15-minute intervals during operation) that is less than 81°F or greater than 135°F .	40 C.F.R. §64.6(c) 45CSR§30-5.1.c.

Title V Permit Condition	Summary	Regulatory Citation
5.2.8.	The Response to Excursions or Exceedances requirements of the CAM rule have been added as Condition 5.2.8. of the operating permit.	40 C.F.R. §64.7(d) 45CSR§30-5.1.c.
5.2.10.	A QIP may be required based on the determination made under 40 C.F.R. §64.7(d)(2). If required, the QIP must be developed and implemented in accordance with 40 C.F.R. §§64.8(b) through (e).	40 C.F.R. §64.8 45CSR§30-5.1.c.
5.3.2.	Under Condition 4.2.1. of R13-2192R, the permittee is required to conduct a performance test of the biofilter every five years to demonstrate compliance with the VOC and Total HAPs emission limits. These periodic performance tests will be used as an indicator under the CAM Plan for the biofilter. Therefore, this condition has been updated to define that, for the purposes of CAM, an exceedance of the Methanol and/or aggregate HAPs emission limits occurs when the average of three test runs surpasses the respective emission limit.	40 C.F.R. §64.6(c) 45CSR§30-5.1.c. 45CSR13

The following CAM requirements which were previously included in the operating permit are applicable to the biofilter:

Title V Permit Condition	Summary	Regulatory Citation
5.2.6.	Requirements for proper maintenance of monitoring equipment.	40 C.F.R. §64.7(b) 45CSR§30-5.1.c.
5.2.7.	The permittee shall conduct monitoring as required at all times that the PSEU is in operation.	40 C.F.R. §64.7(c) 45CSR§30-5.1.c.
5.2.9.	Requirements for documentation of need for improved monitoring.	40 C.F.R. §64.7(e) 45CSR§30-5.1.c.
5.4.4.	General recordkeeping requirements for CAM.	40 C.F.R. §64.9(b) 45CSR§30-5.1.c.
5.5.1.	General reporting requirements for monitoring under CAM.	40 C.F.R. §64.9(a) 45CSR§30-5.1.c.

Non-Applicability Determinations

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

None.

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: September 26, 2024

Ending Date: October 28, 2024

Point of Contact

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

Sarah Barron
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Division of Air Quality
601 57th Street SE
Charleston, WV 25304
304/414-1915
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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)

Not applicable.