West Virginia Department of Environmental Protection
Division of Air Quality

Fact Sheet

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

This Fact Sheet serves to address the changes specific to this Minor Modification, and shall be considered a supplement to the Fact Sheet corresponding with the Title V operating permit issued on November 13, 2024.

Permit Number: **R30-06700095-2024**
Application Received: **July 31, 2024**
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**

Permit Action Number: *MM01* Revised: *April 1, 2025*

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.

This minor modification incorporates the revisions made with the Class II Administrative Update R13-2192S. With this application, the maximum hourly and annual production throughputs have increased. No physical changes must be made to the facility as a result of this modification.

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

Emissions Summary

This minor modification resulted in the following changes in emissions:

Change in Facility-Wide Potential Emissions

Regulated Pollutants	R13-2192Q* Potential Emissions (tpy)	R13-2192S Potential Emissions (tpy)	Change in Potential Emissions
Carbon Monoxide (CO)	92.60	97.2	+ 4.6
Nitrogen Oxides (NO_X)	172.78	181.4	+ 8.62
Particulate Matter ($PM_{2.5}$)	18.88	19.0	+ 0.12
Particulate Matter (PM_{10})	23.24	25.2	+ 1.96
Total Particulate Matter (TSP)	39.13	43.9	+ 4.77
Sulfur Dioxide (SO_2)	6.60	7.0	+ 0.4
Volatile Organic Compounds (VOC)	155.61	162.6	+ 6.99

PM_{10} is a component of TSP.

Hazardous Air Pollutants (HAPs)	R13-2192Q* Potential Emissions (tpy)	R13-2192S Potential Emissions (tpy)	Change in Potential Emissions
Acetaldehyde	0.29	0.38	+ 0.09
Acrolein	1.40	1.40	--
Benzene	1.20	1.20	--
Carbon Tetrachloride	0.02	0.02	--
Chlorine	0.21	0.22	+ 0.01
Dichloromethane	0.08	0.08	--
Formaldehyde	2.60	2.80	+ 0.20
Glycol Ethers	1.10	1.20	+ 0.10
Hexane	0.43	0.45	+ 0.02
Hydrogen Chloride	4.90	5.20	+ 0.30
Lead	0.01	0.01	--
Manganese	0.42	0.44	+ 0.02
Methanol	1.73	2.39	+ 0.66
Methyl Methacrylate	0.02	0.02	--
MDI	0.01	0.01	--

Hazardous Air Pollutants (HAPs)	R13-2192Q* Potential Emissions (tpy)	R13-2192S Potential Emissions (tpy)	Change in Potential Emissions
Naphthalene	0.03	0.03	--
Nickel	0.01	0.01	--
Phenol	0.19	0.74	+ 0.55
Propionaldehyde	0.11	0.14	+ 0.03
Styrene	0.59	0.62	+ 0.03
Tetrachloroethene	0.01	0.01	--
Toluene	0.24	0.25	+ 0.01
Trichloroethene	0.01	0.01	--
Methyl Chloroform	0.01	0.01	--
Xylene	0.01	0.01	--
Other HAPs	0.01	0.06	+ 0.05
Hazardous Air Pollutants (HAPs)	15.64	17.71	+ 2.07

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

* R13-2192R did not result in a change of the facility's potential-to-emit.

Title V Program Applicability Basis

With the proposed changes associated with this modification, this facility maintains the potential to emit 181.4 tpy of Nitrogen Oxides and 162.6 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.

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

Federal and State:	45CSR2	Control of Particulate Matter Air Pollution from the Combustion of Fuel in Indirect Heat Exchangers.
	45CSR7	Control of Particulate Matter Air Pollution from Manufacturing Processes and Associated Operations.
	45CSR10	Control of Air Pollution from the Emission of Sulfur Oxides.
	45CSR13	Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, Permission to Commence Construction, and Procedures for Evaluation.
	45CSR30	Requirements for Operating Permits.

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

The active permits/consent orders affected by this modification are as follows:

Permit or Consent Order Number	Date of Issuance
R13-2192S	November 18, 2024

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

This minor modification incorporates the revisions made with the Class II Administrative Update R13-2192S. With this application, the maximum hourly and annual production throughputs have increased. No physical changes must be made to the facility as a result of this modification.

The following changes have been made to the Title V operating permit for this modification:

1. Section 1.0. – Emission Units and Active R13, R14, and R19 Permits

   a. The design capacity of the following emission units has increased:

Emission Unit ID	Emission Point ID	Emission Unit Description	R13-2192R Design Capacity	R13-2192S Design Capacity	Control Device
TD	E1	Truck Dump	38,053 lbs/hr	39,303 lbs/hr	None
C2	E4	Recycle Cyclone	1,404 lbs/hr	1,370 lbs/hr	BH3
C3		Waste Cyclone	3,037 lbs/hr	3,084 lbs/hr	
C4		Middle Reject Cyclone	1,404 lbs/hr	1,416 lbs/hr	
C6		Chip Cyclone	23,944 lbs/hr	25,141 lbs/hr	
D1	E18	Fiber Dryer	23,942 lbs/hr	25,139 lbs/hr	BH1a
C1		Dryer Cyclone	30,257 lbs/hr	31,450 lbs/hr	BH1b
C8		Dryer Baghouse Purge Cyclone	302 lbs/hr	314.3 lbs/hr	BH1c
PV		Press Vents	21,591 SF/hr*	22,671 SF/hr	BF
C7		Press Vent Baghouse Purge Cyclone	3.2 lbs/hr	3.4 lbs/hr	BH6
FLb	E12	Fiber Line After Press (Sizer)	21,591 SF/hr	22,671 SF/hr	BH4
C5		Chip Cleaning Cyclone	2,667 lbs/hr	2,602 lbs/hr	
PL	E14	Primeline (Paint Booth)	71.0 gal/hr	74.6 gals/hr	None

Emission Unit ID	Emission Point ID	Emission Unit Description	R13-2192R Design Capacity	R13-2192S Design Capacity	Control Device
RV	E16	Refiner Rotary Valve	23,944 lbs/hr	25,141 lbs/hr	None
CV1–CV5	Fugitive	Conveyors	148 tons/hr (total)	71.7 tons/hr (total)	None

* In R13-2192R and R30-06700095-2024, the press vent design capacity was incorrectly listed as 23,942 SF/hr.

i. In the Emission Units Table of R13-2192S, the design capacity of the press vents was incorrectly reported as 3.8 lbs/hr. The Attachment L: Emission Unit Data Sheet for the press vents states that the door skin production rate is 22,671 SF/hr, and the potential emission calculations for the press vents in Attachment N are based on this production rate. Therefore, the design capacity of the press vents was corrected to 22,671 SF/hr in the Emission Units Table of the operating permit.

ii. In R13-2192S, the design capacity of the conveyors (CV1 to CV5) was listed as 13.91 tpy, which is the collective potential emissions of TSP from the conveyors. In Table 13 of the revision application's Attachment N: Supporting Emissions Calculations, the collective maximum hourly throughput of the conveyors is 71.7 tons/hr (based on the following throughputs for each conveyor: 18.4 tons/hr for CV1, 18.4 tons/hr for CV2, 18.4 tons/hr for CV3, 12.6 tons/hr for CV4, and 3.9 tons/hr for CV5). Therefore, the design capacity of the conveyors has been corrected to 71.7 tons/hr in the Emission Units Table of the operating permit.

b. The table of Active R13, R14, and R19 Permits was updated with R13-2192S which was issued on November 18, 2024.

2. Section 4.0. – Boilers

a. The annual heat input of the hogged fuel-fired boiler (Emission Unit: B1, Emission Point: E5) was increased from 520,125 mmBTU/yr to 546,131 mmBTU/yr.

i. The annual emission limits of Condition 4.1.6. were increased in accordance with Condition 4.1.7. of R13-2192S.

ii. The annual heat input limit in Condition 4.1.13. was updated in accordance with Condition 4.1.19. of R13-2192S.

The hourly heat input and hourly emission limits of the hogged fuel-fired boiler were not changed. As the hourly PM and SO_2 emission limits were not affected by the permit revisions, compliance with the limits established under R13-2192S will continue to demonstrate compliance with the limits of 45CSR§2-4.1.2. and 45CSR§10-3.3.6.

b. The annual heat input of the natural gas-fired boiler (Emission Unit: B2, Emission Point: E6) was increased from 313,739 mmBTU/yr to 329,426 mmBTU/yr.

i. The annual emission limits of Condition 4.1.7. were increased in accordance with Condition 4.1.8. of R13-2192S.

ii. The annual heat input limit in Condition 4.1.14. was updated in accordance with Condition 4.1.20. of R13-2192S.

The hourly heat input and hourly emission limits of the natural gas-fired boiler were not changed. As the hourly PM and SO_2 emission limits were not affected by the permit revisions, compliance with the limits established under R13-2192S will continue to demonstrate compliance with the limits of 45CSR§2-4.1.2. and 45CSR§10-3.3.6.

3. Section 5.0. – Door Skin Manufacturing

a. In Conditions 5.1.2. through 5.1.5., the maximum hourly and annual limits for the furnish dryer throughput, the door skins production, the hogged door skins production, and the primer usage were updated in accordance with Conditions 4.1.2. through 4.1.5. of R13-2192S.

b. The hourly and annual emission limits for the biofilter in Condition 5.1.6. were updated in accordance with Condition 4.1.6. of R13-2192S.

i. The biofilter receives emissions from the press vents and fiber dryer which are routed to the dryer baghouses (BH1a to BH1c) prior to entering the biofilter. The biofilter's criteria pollutant emission limits are based on the emission loading to the biofilter with a 5% control efficiency of VOCs. These limits were revised due to the increased production rates.

1. The press vent and fiber dryer operations are subject to the PM emission limits of 45CSR§7-4.1. which is based on Table 45-7A of 45CSR7 and the process weight rate of the operating source operation.

Under 45CSR§7-2.40., the source operation is the last operation in a manufacturing process preceding the emission of air contaminants which operation: results in the separation of air contaminants from the process materials or in the conversion of the process materials into air contaminants; and is not an air pollution abatement operation. For emission point E18, the source operation is the dryer cyclone (C1) which separates wood fiber exiting the dryer from the air stream. The dryer cyclone has a process weight rate of 31,450 lbs/hr. Therefore, 45CSR§7-4.1. establishes a particulate matter emission limit of 22.9 lbs/hr for emission point E18.

Condition 4.1.6. of R13-2192S establishes a $PM/PM_{10}/PM_{2.5}$ emission limit of 0.18 lbs/hr for the biofilter and emission point E18. As this limit is much less than the limit established under 45CSR§7-4.1., compliance with the limit of R13-2192S will also demonstrate compliance with 45CSR7.

ii. The potential emissions of HAPs from the biofilter are based on the maximum door skin production rate and on the average of the emission factors derived from the onsite performance tests with a 2x standard deviation. With this permit revision, the HAP emission factors were revised to account for more recent performance test results. Therefore, the HAP emission limits for the biofilter were revised due to the increased production rate as well as the updated emission factors.

c. In Condition 5.1.7., the rotary valve's (RV) emission limits for PM, $PM_{10}/PM_{2.5}$, VOCs, Acrolein, Methanol, and total HAPs have increased due to the production rate changes, in accordance with Condition 4.1.9. of R13-2192S.

The rotary valve is subject to the PM emission limit established under 45CSR§7-4.1. The limit is based on Table 45-7A of 45CSR7 and the rotary valve throughput of 25,141 lbs/hr. Therefore, 45CSR§7-4.1. establishes a particulate matter emission limit of 19.08 lbs/hr.

Condition 4.1.9. of R13-2192S establishes a PM emission limit of 2.46 lbs/hr and a $PM_{10}/PM_{2.5}$ emission limit of 0.62 lbs/hr for the rotary valve (Emission Point: E16). As these limits are more stringent than that of 45CSR§7-4.1., compliance with the limits of R13-2192S will also demonstrate compliance with 45CSR7.

d. Condition 5.1.8. contains emission limits for PM, PM_{10}, and VOC/HAPs from the former baghouse (Emission Point ID: E10), waste baghouse (Emission Point ID: E4), and the sizer baghouse (Emission Point ID: E12). These emission limits have been updated in accordance with Condition 4.1.10. of R13-2192S.

i. The former baghouse (BH2) controls PM emissions from the fiber line prior to press (former) (FLa), which is subject to the PM emission limit established under 45CSR§7-4.1. The limit is based on Table 45-7A of 45CSR7 and the process weight rate of the operating source operation. FLa has a maximum throughput of 13,323 lbs/hr, which results in a particulate matter emission limit of 11.9 lbs/hr under 45CSR§7-4.1.

Condition 4.1.10. of R13-2192S establishes a more stringent PM/PM_{10} emission limit of 0.95 lbs/hr for BH2. Thus, compliance with the limit of R13-2192S will also demonstrate compliance with 45CSR7.

ii. The waste baghouse (BH3) controls PM emissions from several emission units which are subject to 45CSR§7-4.1. The particulate matter emission limit established under 45CSR§7-4.1. is based on Table 45-7A of 45CSR7 and the process weight rates of the two source operations, the waste cyclone (C3) and the middle reject cyclone (C4).

1. The waste cyclone C3 receives materials from several other emission units, and the exhaust from the cyclone is routed directly to BH3. The cyclone has a maximum throughput of 3,084 lbs/hr.

2. The middle reject cyclone C4 receives materials from the fiber line prior to press (FLa), and the exhaust from the cyclone is routed directly to BH3. The cyclone has a maximum throughput of 1,416 lbs/hr.

These sources have a combined process weight rate of 4,500 lbs/hr, which results in a particulate matter emission limit of 4.6 lbs/hr under 45CSR§7-4.1. Condition 4.1.10. of R13-2192S establishes a more stringent PM/PM_{10} emission limit of 0.38 lbs/hr for BH3. Thus, compliance with the limit of R13-2192S will also demonstrate compliance with 45CSR§7-4.1.

iii. The sizer baghouse (BH4) controls PM emissions from the fiber line after press (sizer) (FLb), the chip cleaning cyclone (C5), and the die cleaning operation (DC). These three processes are source operations which route emissions to BH4.

1. The fiber line after press (sizer) is composed of the material sent to the skin sizer as well as rejected skin hogger. Collectively, these operations have a maximum throughput of 12,025 lbs/hr.

2. The chip cleaning cyclone has a maximum throughput of 2,602 lbs/hr.

3. The die cleaning operation has a maximum throughput of 120 lbs/hr of Na_2CO_3.

These sources have a combined process weight rate of 14,747 lbs/hr, which results in a particulate matter emission limit of 12.8 lbs/hr under 45CSR§7-4.1. Condition 4.1.10. of R13-2192S establishes a more stringent PM/PM_{10} emission limit of 6.14 lbs/hr for BH4. Thus, compliance with the limit of R13-2192S will also demonstrate compliance with 45CSR§7-4.1.

e. Condition 5.1.9. contains the hourly and annual emission limits for the primeline ovens (Emission Point ID: E13). Due to the increase of the annual design heat inputs of the primeline ovens, the annual emission limits for PM, CO, and NO_X have been updated in accordance with Condition 4.1.11. of R13-2192S.

The hourly heat input and hourly emission limits of the primeline ovens were not changed. As the hourly PM emission limit was not affected by the permit revisions, compliance with the limits established under R13-2192S will continue to demonstrate compliance with the limit of 45CSR§7-4.1.

f. Condition 5.1.10. contains hourly and annual emission limits for the primeline paint booth (Emission Point ID: E14). Due to the hourly and annual maximum primer usages, the limits for PM/PM_{10}/$PM_{2.5}$, VOCs, total HAPs, Styrene, and Glycol Ether have been revised in accordance with Condition 4.1.12. of R13-2192S.

The primeline paint booth is subject to the PM emission limit established under 45CSR§7-4.1. The limit is based on Table 45-7A of 45CSR7 and the primeline paint booth throughput of 1,034 lbs/hr (the hourly primer usage is 74.6 gallons per hour and the primer density is 13.86 lbs/gal). Therefore, 45CSR§7-4.1. establishes a particulate matter emission limit of 1.24 lbs/hr.

Condition 4.1.12. of R13-2192S establishes a $PM/PM_{10}/PM_{2.5}$ emission limit of 0.62 lbs/hr for the primeline paint booth (Emission Point: E14). As this limit is more stringent than that of 45CSR§7-4.1., compliance with the limits of R13-2192S will also demonstrate compliance with 45CSR§7-4.1.

g. In Condition 5.1.11., the glycol ether and VOC emission limits for certain ingredients in the Coating Manufacturing (Emission Point: E15) process have been updated in accordance with Condition 4.1.13. of R163-2192S. The PM emission limits were not affected by the permit revisions. Therefore, compliance with the limits established under R13-2192S will continue to demonstrate compliance with 45CSR§7-4.1.

Non-Applicability Determinations

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

Not Applicable

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: Not Applicable
Ending Date: Not Applicable

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)

Not applicable.