Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services

STATEMENT OF BASIS

Wood Fiber Division - Louisiana
JELD-WEN, Inc.
Winnfield, Winn Parish, Louisiana
Agency Interest Number: 145506
Activity Number: PER20060001
Draft Permit 3420-00028-V0

I. APPLICANT:

Company:
JELD-WEN, Inc.
P.O. Box 1329
Klamath Falls, OR 97601

Facility:
Wood Fiber Division - Louisiana
Hwy 176 E, 7 miles North of Winnfield, Winn Parish, Louisiana
Approximate UTM coordinates are 533.16 kilometers East and 3544.39 kilometers North, Zone 15

II. FACILITY AND CURRENT PERMIT STATUS:

Wood Fiber Division - Louisiana is a proposed doorskin manufacturing facility to be constructed on a greenfield site. No known industrial activity has ever occurred on the proposed plant site.

III. PROPOSED PERMIT / PROJECT INFORMATION:

Proposed Permit

A permit application and Emission Inventory Questionnaire were submitted by JELD-WELD Inc on September 23, 2006, requesting a Part 70 operating permit. Additional information dated October 5, 2006, November 1, 2006, November 9, 2006, November 14, 2006, November 16, 2006, and November 21, 2006, was also received.

With this application, JELD-WEN, Inc. proposes to construct and operate a doorskin manufacturing facility.

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Project Description

The proposed doorskin manufacturing process will begin with wood chips delivered by truck. The wood chips will be emptied into a hopper which will feed onto a conveyor to the disc screener where the wood chips will be screened for use in the manufacturing process and/or for use as fuel in the Wood Fired Boiler (EQT 19). Wood chips screened for use in the manufacturing process will be pneumatically transferred into two chip silos; while wood chips screened for use as fuel will be pneumatically conveyed to the Green Fuel Silo, which is controlled by the Silo Suction Baghouse (EQT 16).

Wood chips deposited in the two chip silos, which will also be controlled by the Silo Suction Baghouse, will be sent to the Refiner Infeed Cyclone (EQT 21). The wood chips will then exit the Refiner Infeed Cyclone into a Surge Bin, which will feed a Rotary Valve that will meter chips into the Preheater. Emissions from the Rotary Valve will be routed to the Rotary Valve Cyclone, which will be vented to the Biofilter (TRT 1) for control. The material captured by the Rotary Valve Cyclone will be recycled back into the surge bin.

The wood chips entering the Preheater will be preheated by a continuous stream of high pressure steam which will soften the raw material. The raw material will then be fed into the Pressurized Refiner where the raw material will be disintegrated (i.e., refined) into fibers and fiber bundles without excessively damaging the wood fibers. During a "cold" start-up and during shutdowns, excess condensation is blown from the Pressurized Refiner and released to atmosphere through the Condensate Blowdown Exhaust (EQT 17). Following the Pressurized Refiner, wax and resin will be incorporated into the wood fiber mixture (i.e., wood fiber, steam, and water) prior to being sent into the Tube Dryer. It is important to note that following start-ups and shut-downs, the wood fiber mixture will be temporarily routed into the Start-up Cyclone (EQT 15) for quality control purposes instead of entering the Tube Dryer. Material collected by the Start-up Cyclone is eventually used as fuel in the Wood Fired Boiler.

In the Tube Dryer, the fiber mixture will be combined with hot air produced by a steam/air exchanger to drive off excess moisture. The dry fiber will then be routed to either Dryer Cyclone #1 or Dryer Cyclone #2. A bank of parallel Dryer Baghouses and a Biofilter will control the air exhausted from these cyclones. The Biofilter is designed to reduce emissions of methanol and/or formaldehyde by 90%. The dried fiber mixture will then exit the bottom of Dryer Cyclone #1 or Dryer Cyclone #2 onto the Dryer Discharge Conveyer where it will be sent to the Doffing Unit.

The Doffing Unit will discharge the fiber mixture pile into a fiber mat. The fiber mat will then be sent to the Forming Head where the loose and bulky fiber mat will be initially trimmed to size and weighed. The loose and bulky fiber mat will then be taken through a continuously operating Precompressor belt, which will precompress the loose fiber mat prior to conveying into the Hot Press. The reduction of mat height and the increased mat density also reduces the spillage of fiber from the mat and makes it easier to trim the mat edges with the Mat Trim Saw and Cross Cut Saw. Excess material trimmed from the precompressed fiber mats will be sent to the Mat Trim Cyclone where the collected larger fibers will be recycled back onto the Dryer Discharge Conveyer for reuse. The particulates exiting the top of the Mat Trim Cyclone as well as the particulates/excess wood fiber waste recovered from the Dryer Discharge Conveyor, Doffing Unit, Forming Head, Weigh Scale, Precompressor, and associated transfer conveyors will be sent to the Main Waste Cyclone which will be controlled by the Press Line Baghouse (EQT 20). The particulates collected in the Main Waste Cyclone and the Press Line Baghouse will be sent to the Dry Fuel Silo for eventual use as fuel in the Wood Fired Boiler.

Before the fiber mats enter the Hot Press, any mats not meeting quality control standards will be rejected. The rejected fiber mats will be sent to the Reject Hopper and/or the Mat Dump Screw. Rejected mats sent to the Reject Hopper will be sent to the Mat Reject Recycle Cyclone where the collected fiber material will be recycled back onto the Dryer Discharge Conveyor which feeds the Doffing Unit. The collected particulates will be eventually used as fuel in the Wood Fired Boiler via a closed loop system. Rejected mats sent to the Mat Dump Screw will be sent to the Mat Reject Waste Cyclone where the collected fiber material as well as the collected particulates will be eventually used as fuel in the Wood Fired Boiler. The precompressed fiber mats that meet quality specifications will be sent to the Hot Press.

In the Hot Press, the fiber mats will be hydraulically pressed between two heating platens allowing the wax and resin impregnated fiber mats to cure, forming the master panels which will then be unloaded into a Board Cooler. The Hot Press and Board Cooler will be enclosed to capture emissions generated during the pressing and cooling operations. The captured emissions will be routed to the Biofilter for control. Any master panels not meeting quality standards will be rejected to the Reject Hog, which will be controlled by the Press Hog Cyclone and Press Line Baghouse. Captured particulates will eventually be used as fuel in the Wood Fired Boiler. Master Panels are then cut to length and stacked. Additionally, particulates generated by the two Length Saws following the Hot Press will be routed to the Press Line Baghouse where the captured particulates will be eventually used as fuel in the Wood Fired Boiler.

The stacked master panels will then be sent from the stackers to either Priming Line #1 or Priming Line #2. Because both priming lines will be identical, a single process description is provided. From the stackers, individual master panels will be fed onto conveyers and the master panels will enter an electric Pre-Heat Oven to heat the surface to a temperature, which ensures better primer adhesion. Following the Pre-Heat Oven, the master panels enter a Paint Booth where a water-based primer will be applied to the master panel. The Paint Booth will be equipped with filters to control particulate emissions associated with the primer application. The master panels will then enter a steam heated Convection Oven to ensure the primer is dry prior to entering the Cooler where the master panels will be allowed to reach temperatures suitable for stacking. Following the Cooler, master panels will be cut to size with the Multi-Rip Saws. Particulates generated by the Multi-Rip Saws will be sent to the Paint Line Baghouse (EQT 3) where the captured particulate will be eventually used as fuel in the Wood Fired Boiler. Any doorskin not meeting quality standards will be sent to the Reject Hog for eventual use as fuel in the Wood Fired Boiler. Doorskins that meet quality specifications will be sent to Packaging and Shipping.

Process steam will be generated onsite by the Wood Fired Boiler. The Wood Fired Boiler will utilize bark, screened fines, saw trim and other wood residue generated throughout the doorskin manufacturing process. The Wood Fired Boiler's combustion gasses, including start-ups, will pass through a multiclone and subsequent electrostatic precipitator (ESP) prior to being emitted to the atmosphere.

Approximately 3.2 MM gallons of water-based primer will be formulated for use on JELD-WEN products made at this plant and other off-site JELD-WEN facilities. This primer will be made by mixing water-based latex with a number of additives and water. The process will produce primer in approximately 4,000-5,000 gallon batches. The facility plans to produce approximately 750 batches per year, totaling approximately 3.2 MM gallons per year. Each batch will take 5-6 hours to complete.

The water-based latex will be pumped from tanker trucks to two on-site 10,000-gallon storage tanks. Liquid additives such as defoamers, tints, surfactants, and wetting agents will be delivered in recyclable 55-gallon drums. Additionally, powdered additives used as pigments and thickening agents will be delivered in recyclable 1,000-lb. supersacks.

The primer manufacturing process begins by mixing water and calcium carbonate in a 10,000-gallon tank to make a slurry. The slurry is then mixed with pigment in two dispersion mixing vessels. These vessels are equipped with hinged lids that are kept closed when the vessels contain material and the pigment is added

through an opening in the closed vessel's lids. A dual-shaft disperser is used to mix these ingredients. During the pigment addition process, the disperser will not operate in order to minimize any potential particulate emissions. A dust collector with a 6-inch hose is positioned adjacent to the lid opening to draw any particulate that becomes suspended during the addition of the powder. Once the ingredients are added, the 6-inch vacuum hose is attached to the opening in the lid to collect any material suspended during the dispersion process. The particulate matter collected by the dust collector is reused in subsequent batches. The final product of the dispersion process is a paste.

Once the dispersion paste is completed and passes the appropriate quality tests, it is pumped via installed piping to a 6,000-gallon mixing tank. The latex resin is added to the dispersion paste via piping installed between the two 10,000-gallon latex storage tanks and the mixing tank. The latex and dispersion paste are slowly agitated in the covered vessel. Final ingredients are added to adjust color and satisfy other quality control requirements as needed. To reduce emissions and prevent a skin from forming on the surface of the primer, the mixing tank lid is kept closed. The temperature of the process is approximately 120°F, which is well below the boiling points of the organic compounds found in the paint. Once the primer has passed the quality requirements, it is piped to one of two 10,000-gallon primer storage tanks. For final shipment and/or final product storage, the primer is filtered as it is pumped from the two primer storage tanks to a bladder mounted on a flatbed truck, tank truck, other appropriate shipping containers or a single 10,000 gallon final storage tank.

To prevent spills, most of the liquid transfers at this facility will be via permanently installed piping. All pump junctions will have drip pans to catch any leaks. Any such leaks will be promptly repaired. All tanks and pump lines used in the manufacturing process will be immediately rinsed with clean water between batches. The rinse water will be reused in subsequent batches of primer. All empty supersacks will be returned to the pigment manufacturer for reuse. Empty drums will be sent to a reconditioner. All storage tanks are designed with secondary containment. All emissions associated with primer manufacturing are included in the Paint Manufacturing (GRP 1) emission source.

Section 6 of the Permit Application, dated September 23, 2006, lists the permitted emission rate before and after the project (in tons per year) for each emission point in the permit. These changes are summarized in the Permitted Air Emissions Section.

Permitted Air Emissions

Estimated changes in permitted emissions in tons per year are as follows:

Pollutant	Emissions
PM_{10}	103.60
SO_2	18.62
NO_X	179.90
CO	180.05
VOC	179.95

Prevention of Significant Deterioration Applicability

The pollutants are not being increased by significant amounts by the project. Therefore, the proposed facility is not subject to the requirements of the PSD program.

This application was reviewed for compliance with 40 CFR 70, the Louisiana Air Quality Regulations, New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP).

MACT Requirements

Wood Fiber Division - Louisiana is a major source for toxic air pollutants and must address maximum achievable control technology (MACT) pursuant to the requirements of LAC 33:III.Chapter 51. Acetaldehyde (Class II), acrolein (Class II), arsenic (and compounds) (Class I), barium (and compounds) (Class II), benzene (Class I), chlorinated dibenzofurans (Class II), chlorinated dibenzo-p-dioxins (Class II), chlorine (Class III), chlorobenzene (Class II), chromium VI (and compounds) (Class I), copper (and compounds) (Class II), formaldehyde (Class I), hydrochloric acid (Class III), manganese (and compounds) (Class II), methanol (Class III), nickel (and compounds) (Class I), phenol (Class II), polynuclear aromatic hydrocarbons (Class II), styrene (Class II), and zinc (and compounds) (Class III) are emitted in amounts in excess of their respective Minimum Emission Rates (MER). JELD-WEN shall control emissions of acetaldehyde, acrolein, arsenic (and compounds), barium (and compounds), benzene, chlorinated dibenzofurans, chlorinated dibenzo-p-dioxins, chlorobenzene, chromium VI (and compounds), copper (and compounds), formaldehyde, manganese (and compounds), nickel (and compounds), phenol, polynuclear aromatic hydrocarbons, and styrene by complying with 40 CFR 63, Subparts DDDD, QQQQ, DDDDD, and HHHHH. Compliance with these subparts is MACT for acetaldehyde, acrolein, arsenic (and compounds), barium (and compounds), benzene, chlorinated dibenzofurans, chlorinated dibenzo-p-dioxins, chlorobenzene, chromium VI (and compounds), copper (and compounds),

formaldehyde, manganese (and compounds), nickel (and compounds), phenol, polynuclear aromatic hydrocarbons, and styrene emissions.

The facility complies with the ambient air standards (AAS). Compliance with 40 CFR 63, Subparts DDDD, QQQQ, DDDDD, and HHHHH was determined to be MACT, along with additional information in the tables.

Air Modeling Analysis

Dispersion Model(s) Used: ISCST3

Pollutant	Time Period	Calculated Maximum Ground Level Concentration	Louisiana Toxic Air Pollutant Ambient Air Quality Standard or (National Ambient Air Quality Standard {NAAQS})
PM_{10}	Annual avg.	47.39 $\mu g/m^3$	(50 $\mu g/m^3$)
	24-hour avg.	145.51 $\mu g/m^3$	(150 $\mu g/m^3$)
Acetaldehyde	Annual avg.	0.20 $\mu g/m^3$	45.50 $\mu g/m^3$
Acrolein	8-hour avg.	5.04 $\mu g/m^3$	5.40 $\mu g/m^3$
Arsenic	Annual avg.	0.00097 $\mu g/m^3$	0.02 $\mu g/m^3$
Barium	8-hour avg.	0.18 $\mu g/m^3$	11.90 $\mu g/m^3$
Benzene	Annual avg.	0.19 $\mu g/m^3$	12.00 $\mu g/m^3$
Chlorinated dibenzofurans	Annual avg.	< 0.000004 $\mu g/m^3$	0.003 $\mu g/m^3$
Chlorinated dibenzo-p-dioxins	Annual avg.	< 0.000004 $\mu g/m^3$	0.003 $\mu g/m^3$
Chlorine	8-hour avg.	0.82 $\mu g/m^3$	35.70 $\mu g/m^3$
Chlorobenzene	8-hour avg.	0.03 $\mu g/m^3$	1,100.00 $\mu g/m^3$
Chromium	Annual avg.	0.00093 $\mu g/m^3$	0.01 $\mu g/m^3$
Copper	8-hour avg.	0.05 $\mu g/m^3$	23.80 $\mu g/m^3$
Formaldehyde	Annual avg.	6.02 $\mu g/m^3$	7.69 $\mu g/m^3$
Hydrochloric Acid	8-hour avg.	19.80 $\mu g/m^3$	180.00 $\mu g/m^3$
Manganese	8-hour avg.	1.67 $\mu g/m^3$	4.76 $\mu g/m^3$
Methanol	8-hour avg.	82.73 $\mu g/m^3$	6,240.00 $\mu g/m^3$
Nickel	Annual avg.	0.00146 $\mu g/m^3$	0.21 $\mu g/m^3$
PAHs	Annual avg.	0.00123 $\mu g/m^3$	0.06 $\mu g/m^3$
Phenol	8-hour avg.	69.26 $\mu g/m^3$	452.00 $\mu g/m^3$
Styrene	8-hour avg.	12.55 $\mu g/m^3$	5,070.00 $\mu g/m^3$
Zinc	8-hour avg.	0.44 $\mu g/m^3$	119.00 $\mu g/m^3$

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to Section VIII of the draft Part 70 permit.

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to Section IX of the draft Part 70 permit.

Regulatory Analysis

The applicability of the appropriate regulations is straightforward and provided in the Facility Specific Requirements Section of the draft permit, or where provided, Tables 2, 3 and 4 of the draft permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are provided in the Facility Specific Requirements Section of the draft permit, or where provided, Tables 2, 3 and 4 of the draft permit.

IV. Permit Shields

There is no permit shield.

V. Periodic Monitoring

Compliance Assurance Monitoring

Federal regulation 40 CFR 64-Compliance Assurance Monitoring is applicable to this facility. Applicability for each pollutant requires that the unit be subject to an emission limitation or standard and must use an active control device to achieve compliance. The following emission sources with pollution control equipment have a pre-control emission rate of a pollutant over 100 tons per year and were determined to require a CAM Plan: Primeline Surface Coating (ARE 1)Paint Line Baghouse (EQT 3), Wood Fired Boiler (EQT 19), Press Line Baghouse (EQT 20), and Biofilter (TRT 1). A CAM Plan for each of these sources must be submitted with the first renewal of the permit.

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VI. Applicability and Exemptions of Selected Subject Items		
ID No:	Requirement	Notes
EQT 19	Emission Standards for Sulfur Dioxide [LAC 33:III.1503]	EXEMPT. Unit emits less than 250 tons of SO_2 per year.
	NSPS Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units [40 CFR 60.40c]	DOES NOT APPLY. Unit has a maximum heat input > 100 MMBTU/hr. [40 CFR 60.40c(a)]
EQTs 5-7, 11-13, 18, & 22-24	Storage of Volatile Organic Compounds [LAC 33:III.2103.A]	DOES NOT APPLY. Storage tanks contain materials with a maximum true vapor pressure < 1.5 psia. [LAC 33:III.2103.A]
	NSPS Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984. [40 CFR 60.110b]	DOES NOT APPLY. Storage tanks have a capacity < 75 m^3. [40 CFR 60.110b(a)]
EQT 10	NESHAP Subpart DDDD – National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products [40 CFR 63.2230]	DOES NOT APPLY. Baghouse is not a part of a plywood or composite wood products manufacturing process. [40 CFR 63.2231]
	NESHAP Subpart HHHHH – National Emission Standards for Hazardous Air Pollutants: Miscellaneous Coating Manufacturing [40 CFR.63.7980]	DOES NOT APPLY. Baghouse is ancillary equipment not directly involved in the manufacture of a coating. [40 CFR 63.7985(d)(3).

VII. *Streamlined Requirements*			
Unit or Plant Site	**Programs Being Streamlined**	**Stream Applicability**	**Overall Most Stringent Program**
Wood Fiber Division - Louisiana	None	-	-

VIII. Glossary

Best Available Control Technologies (BACT) - An emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under this part which would be emitted from any proposed major stationary source or major modification which the administrative authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant.

Carbon Monoxide (CO) – A colorless, odorless gas which is an oxide of carbon.

Grandfathered Status- Those facilities that were under actual construction or operation as of June 19, 1969, the signature date of the original Clean Air Act. These facilities are not required to obtain a permit. Facilities that are subject to Part 70 (Title V) requirements lose grandfathered status and must apply for a permit.

Hydrogen Sulfide - A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the action of acids on metallic sulfides, and is an important chemical reagent.

Maximum Achievable Control Technology (MACT) - The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

New Source Review (NSR) - A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C ("Prevention of Significant Deterioration of Air Quality") and D ("Nonattainment New Source Review").

Nitrogen Oxides (NO_x) - Compounds whose molecules consists of nitrogen and oxygen.

Nonattainment New Source Review (NNSR) - A New Source Review permitting program for major sources in geographic areas that do not meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. Nonattainment NSR is designed to ensure that emissions associated with new or modified sources will be regulated with the goal of improving ambient air quality.

Organic Compound - Any compound of carbon and another element. Examples: Methane (CH_4), Ethane (C_2H_6), Carbon Disulfide (CS_2)

Part 70 Operating Permit- Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: $\geq$ 10 tons per year of any toxic air pollutant; $\geq$ 25 tons of total toxic air pollutants; and $\geq$ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM_{10}- Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) - The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO_2) – An oxide of sulphur.

Title V permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) - Any organic compound which participates in atmospheric photochemical reactions; that is, any organic compound other than those which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.