

Draft AIR QUALITY PERMIT

Permit No.
3296-081-0063-P-01-0

Effective Date

In accordance with the provisions of the Georgia Air Quality Act, O.C.G.A. Section 12-9-1, et seq and the Rules, Chapter 391-3-1, adopted pursuant to and in effect under that Act,

Facility Name: **Owens Corning**

Mailing Address: One Owens Corning Parkway
Toledo, Ohio 43659

is issued a Permit for the following:

The construction and operation of a Wool Fiberglass Insulation Manufacturing Facility.

Facility Location: 3105 Pateville Road
Cordele, Georgia 31015 (Crisp County)

This Permit is conditioned upon compliance with all provisions of The Georgia Air Quality Act, O.C.G.A. Section 12-9-1, et seq, the Rules, Chapter 391-3-1, adopted and in effect under that Act, or any other condition of this Permit.

This Permit may be subject to revocation, suspension, modification or amendment by the Director for cause including evidence of noncompliance with any of the above; or for any misrepresentation made in Application No. PSD-15839 dated November 19, 2004; any other applications upon which this Permit is based; supporting data entered therein or attached thereto; or any subsequent submittals or supporting data; or for any alterations affecting the emissions from this source.

This Permit is further subject to and conditioned upon the terms, conditions, limitations, standards, or schedules contained in or specified on the attached **20** pages, which pages are a part of this Permit.

Director
Environmental Protection Division

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Table 1 - Source List

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices		Stack
ID No.	Description		ID No.	Description	
CG100	Raw Material Handling CG-1 & CG-2	40 CFR 52.21, PSD/BACT GA Rule 391-3-1-.02(2)(b) GA Rule 391-3-1-.02(2)(e)	FF100-FF120	Baghouses	RM100
CG101	Electric-Fired Glass Melt Furnace	40 CFR 63, Subpart A 40 CFR 63, Subpart NNN 40 CFR 52.21, PSD/BACT GA Rule 391-3-1-.02(2)(b) GA Rule 391-3-1-.02(2)(e) GA Rule 391-3-1-.02(2)(g)*		Batch Water Spray System	F101A F101B
CG-1	Bonded Rotary Spin Fiberglass Manufacturing Line				
CG104	Bonded Forming Section	40 CFR 63, Subpart A 40 CFR 63, Subpart NNN 40 CFR 60, Subpart A 40 CFR 60, Subpart PPP 40 CFR 52.21, PSD/BACT GA Rule 391-3-1-.02(2)(b) GA Rule 391-3-1-.02(2)(g) GA Rule 391-3-1-.02(2)(oo)	IS101, IS102, IS103, IS104, IS105, IS106	Proprietary Wet Scrubbers (Inline Low Pressure Drop Scrubbers)	MC100
CG105	Curing Oven	40 CFR 63, Subpart A 40 CFR 63, Subpart NNN 40 CFR 60, Subpart A 40 CFR 60, Subpart PPP 40 CFR 52.21, PSD/BACT GA Rule 391-3-1-.02(2)(b) GA Rule 391-3-1-.02(2)(g) GA Rule 391-3-1-.02(2)(oo)	TO100	Fume Incinerator	MC100
CG106	Cooling Section	40 CFR 63, Subpart A 40 CFR 63, Subpart NNN 40 CFR 60, Subpart A 40 CFR 60, Subpart PPP 40 CFR 52.21, PSD/BACT GA Rule 391-3-1-.02(2)(b) GA Rule 391-3-1-.02(2)(oo)	SC100	Low Pressure Drop Scrubber	CS100
CG-2	Unbonded Rotary Spin Fiberglass Manufacturing Line				
CG204	Unbonded Forming Section	40 CFR 60, Subpart A 40 CFR 60, Subpart PPP 40 CFR 52.21, PSD/BACT GA Rule 391-3-1-.02(2)(b) GA Rule 391-3-1-.02(2)(g) GA Rule 391-3-1-.02(2)(oo)	IS201, IS202	Proprietary Wet Scrubbers (Inline Low-Pressure Drop Scrubbers)	FS200

* These requirements apply only to the electric-fired glass-melting furnace (CG101) during extended power losses when natural gas combustion is required to maintain the glass in a molten state.

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1. General Requirements

- 1.1 At all times, including periods of startup, shutdown, and malfunction, the Permittee shall maintain and operate this source, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Division which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection or surveillance of the source.
- 1.2 The Permittee shall not build, erect, install or use any article, machine, equipment or process the use of which conceals an emission which would otherwise constitute a violation of an applicable emission standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard that is based on the concentration of a pollutant in the gases discharged into the atmosphere.
- 1.3 The Permittee shall submit a Georgia Air Quality Permit application to the Division prior to the commencement of any modification, as defined in 391-3-1-.01(pp), which may result in air pollution and which is not exempt under 391-3-1-.03(6). Such application shall be submitted sufficiently in advance of any critical date involved to allow adequate time for review, discussion, or revision of plans, if necessary. The application shall include, but not be limited to, information describing the precise nature of the change, modifications to any emission control system, production capacity and pollutant emission rates of the plant before and after the change, and the anticipated completion date of the change.
- 1.4 In cases where conditions of this Permit conflict with each other for any particular source or operation, the most stringent condition shall prevail.

2. Allowable Emissions

- 2.1 The Permittee shall comply with all applicable provisions of the National Emission Standard for Hazardous Air Pollutants (NESHAP) as found in 40 CFR Part 63, in Subpart A – “General Provisions,” as indicated in Table 1 of Subpart NNN of Part 63-Applicability of General Provisions to Subpart NNN.
[40 CFR 63, Subpart A]
- 2.2 The Permittee shall comply with all applicable provisions of 40 CFR 63, Subpart NNN – “National Emission Standards for Hazardous Air Pollutants for Wool Fiberglass Manufacturing”.
[40 CFR 63, Subpart NNN]
- 2.3 The Permittee shall comply with all applicable provisions of 40 CFR Part 60 in Subpart A – “General Provisions,” New Source Performance Standards (NSPS).
[40 CFR 60, Subpart A]

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- 2.4 The Permittee shall comply with all applicable provisions of 40 CFR Part 60, Subpart PPP- “Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants”.
[40 CFR 60, Subpart PPP]
- 2.5 The Permittee shall not discharge or cause the discharge into the atmosphere from the Rotary Spin Fiberglass Manufacturing Line CG-1 any gases which contain formaldehyde in excess of 0.8 pounds per ton of molten glass pulled from the line.
[Subpart NNN - 40 CFR 63.1382(a)(2)(ii)]
- 2.6 The Permittee shall not discharge or cause the discharge into the atmosphere from the Raw Material Handling System CG100 any gases which contain particulate matter (PM) in excess of 0.01 grain per dry standard cubic foot of exhaust gas.
[PSD/BACT - 40 CFR 52.21; Rule 391-3-1-.02(2)(e)1.(i) Subsumed]
- 2.7 The Permittee shall not discharge or cause the discharge into the atmosphere PM emissions in excess of the following limits, from the following emission units:
 - a. Electric-fired glass-melting furnace CG101: filterable PM in excess of 0.5 pounds per ton of molten glass pulled from the line.
[PSD/BACT, 40 CFR 52.21; 40 CFR 63.1382(a)(1)]
 - b. Bonded forming section CG104 and curing section CG105, through mixing chamber: total PM in excess of 7.84 pounds per ton of molten glass pulled from the line.
[PSD/BACT - 40 CFR 52.21; 40 CFR 60.682 Subsumed]
 - c. Bonded line cooling section CG106: total PM in excess of 0.95 pounds per ton of molten glass pulled from the line.
[PSD/BACT - 40 CFR 52.21; 40 CFR 60.682 Subsumed]
 - d. Rotary spin fiberglass manufacturing line CG-2: total PM in excess of 4.0 pounds per ton of molten glass pulled from the line.
[PSD/BACT - 40 CFR 52.21; 40 CFR 60.682 Subsumed]
- 2.8 The Permittee shall not discharge or cause the discharge into the atmosphere nitrogen oxide (NO_x) emissions in excess of the following limits, from the following emission units:
[PSD/BACT, 40 CFR 52.21]
 - a. Electric-fired glass-melting furnace CG101: NO_x in excess of 13.5 pounds per ton of molten glass, pulled from the line.
 - b. Bonded forming section CG104 and curing section CG105, through mixing chamber: NO_x in excess of 3.0 pounds per ton of molten glass pulled from the line.
 - c. Rotary spin fiberglass manufacturing line CG-2: NO_x in excess of 0.8 pounds per ton of molten glass pulled from the line.

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2.9 The Permittee shall not discharge or cause the discharge into the atmosphere carbon monoxide (CO) emissions in excess of the following limits, from the following emission units:

[PSD/BACT - 40 CFR 52.21]

- a. Electric-fired glass-melting furnace CG101: CO in excess of 0.5 pounds per ton of molten glass pulled from the line.
- b. Bonded forming section CG104 and curing section CG105, through mixing chamber: CO in excess of 5.0 pounds per ton of molten glass pulled from the line.
- c. Rotary spin fiberglass manufacturing line CG-2: CO in excess of 2.4 pounds per ton of molten glass pulled from the line.

2.10 The Permittee shall not discharge or cause the discharge into the atmosphere volatile organic compounds (VOC) emissions in excess of the following limits, from the following emission units:

[PSD/BACT - 40 CFR 52.21]

- a. Electric-fired glass melt furnace CG101: VOC in excess of 0.38 pounds per ton of molten glass pulled from the line.
- b. Bonded forming section CG104 and curing section CG105, through mixing chamber: VOC in excess of 4.0 pounds per ton of molten glass pulled from the line.
- c. Cooling section CG106: VOC in excess of 0.2 pounds per ton of molten glass pulled from the line.
- d. Rotary spin fiberglass manufacturing line CG-2: VOC in excess of 2.37 pounds per ton of molten glass pulled from the line.

2.11 The Permittee shall not discharge into the atmosphere from any emission point (i.e., Stack ID No. F101A) of the following emission units any gases which exhibit opacity equal to or greater than 40 percent:

[391-3-1-.02(2)(b)]

Emission Units		
ID No.	Stack ID No.	Description
CG100	RM100	Raw Material Handling
CG101	F101A F101B	Electric-Fired Glass Melt Furnace
CG104, CG105	MC100	Bonded Forming and Curing Sections
CG106	CS100	Bonded Cooling Section
CG204	FS200	Unbonded Forming Section

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- 2.12 The Permittee shall not cause, let, suffer, or allow the rate of emissions of particulate matter equal to or exceeding the following; $E = 4.1(P^{0.67})$ for Emission Units CG100 and CG101 where E equals the emission rate in pounds per hour and P equals the process input rate in tons per hour.
[Rule 391-3-1-.02(2)(e)1.(i)]
- 2.13 The Permittee shall not burn fuel containing more than 2.5 percent sulfur, by weight, in the Glass Melting Furnace CG101, Bonded Forming Section CG104, Curing Oven CG105, Incinerator TO100 and Unbonded Forming Section CG204.
[391-3-1-.02(2)(g)]
- 2.14 The Permittee shall not discharge or cause the discharge into the atmosphere from the Rotary Spin Fiberglass Manufacturing Line CG-1, which shall include Bonded Forming Section CG104, Curing Section CG105 and Cooling Section CG106, any gases which contain PM in excess of 0.04 grain per dry standard cubic foot.
[Rule 391-3-1-.02(2)(oo)]
- 2.15 The Permittee shall not discharge or cause the discharge into the atmosphere from the Rotary Spin Fiberglass Manufacturing Line CG-2, which shall include Unbonded Forming Section CG204, any gases which contain PM in excess of 0.04 grain per dry standard cubic foot.
[Rule 391-3-1-.02(2)(oo)]
- 2.16 The Permittee shall, on and after the date of the performance test required by §63.7 and §63.1384, initiate corrective action within 1 hour when the average glass pull rate of any 4-hour block period for glass melting furnace CG101 exceeds the average glass pull rate established for the melter during the most recent performance test by greater than 20 percent, and complete corrective actions in a timely manner according to the procedures in the operations, maintenance, and monitoring plan (OMMP).
[Subpart NNN - 40 CFR 63.1382(b)(5)(i)]
- 2.17 The Permittee shall, on and after the date of the performance test required by §63.7 and §63.1384, implement a Quality Improvement Plan (QIP) consistent with the compliance assurance monitoring provisions of 40 CFR 64, Subpart D when the glass pull rate for the melter exceeds, by more than 20 percent, the average glass pull rate established during the performance test as specified in §63.1384 for more than 5 percent of the total operating time in a 6-month block reporting period.
[Subpart NNN - 40 CFR 63.1382(b)(5)(ii)]
- 2.18 The Permittee shall, on and after the date of the performance test required by §63.7 and §63.1384, operate Glass Melting Furnace CG101 such that the glass pull rate from the melter does not exceed, by more than 20 percent, the average glass pull rate established during the performance test as specified in §63.1384 for more than 10 percent of the total operating time in a 6-month block reporting period.
[Subpart NNN - 40 CFR 63.1382(b)(5)(iii)]

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2.19 The Permittee shall, on and after the date of the performance test required by §63.7 and §63.1384, operate Incinerator TO100, used to control formaldehyde emissions from curing, such that any 3-hour block average temperature in the firebox does not fall below the average established during the performance test as specified in §63.1384.
[Subpart NNN - 40 CFR 63.1382(b)(6)]

2.20 The Permittee shall, on and after the date of the performance test required by §63.7 and §63.1384, use a resin in the formulation of the binder such that the free-formaldehyde content of the resin used does not exceed the free-formaldehyde range contained in the specification for the resin used during the performance test, determined in accordance with Condition 6.8.
[Subpart NNN - 40 CFR 63.1382(b)(9)]

2.21 The Permittee shall, on and after the date of the performance test required by §63.7 and §63.1384, use a binder formulation that does not vary from the specification and operating range established and used during the performance test, determined in accordance with Condition 6.8. The addition of urea and/or lignin in the binder formulation shall not constitute a change in the binder formulation.
[Subpart NNN - 40 CFR 63.1382(b)(10)]

3. Fugitive Emissions

3.1 The Permittee shall take all reasonable precautions with any operation, process, handling, transportation, or storage facilities to prevent fugitive emissions of air contaminants.
[391-3-1-.02(2)(n)]

3.2 The Permittee shall not discharge or cause the discharge into the atmosphere from the plant roads any fugitive dust which exhibits opacity equal to or greater than 20 percent.
[391-3-1-.02(2)(n)]

4. Process & Control Equipment

4.1 The Permittee shall maintain an inventory of filter bags such that an adequate supply of bags is on hand to replace any damaged or worn bags in each baghouse.
[391-3-1-.03(2)(c)]

5. Monitoring

5.1 The Permittee shall calibrate, maintain, and operate monitoring devices for the measurement of the indicated parameters on the following equipment. Data shall be recorded at the frequency specified below. Where such performance specification(s) exist, each system shall meet the applicable performance specification(s) of the Division's monitoring requirements.
[391-3-1-.02(6)(b)1]

- a. Glass pull rate of Furnace CG101. The Permittee shall maintain a continuous glass pull rate monitor that monitors and records this parameter on an hourly basis.
[40 CFR 63.1383(f)(2)]

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- b. Water flow rate to the batch wetting system on Glass Melt Furnace CG101. Data shall be recorded four times per day. The time interval between recordings shall be at least five hours.
 - c. Differential pressure across each of the scrubbers with ID Nos. IS101 – IS106, SC100, IS201 and IS202. Data shall be recorded every four hours for each scrubber associated with manufacturing line CG-1 or CG-2 when that manufacturing line is in operation. Each pressure drop monitoring device must be certified by the manufacturer to be accurate to within 1 inch water gauge over its operating range. The monitoring devices must be recalibrated each quarter.
 - d. Liquid recirculation rate for each of the scrubbers with ID Nos. IS101 – IS106, SC100, IS201 and IS202. Data shall be recorded every four hours for each scrubber associated with manufacturing line CG-1 or CG-2 when that manufacturing line is in operation. Each flow rate monitoring device must be certified by the manufacturer to be accurate to within 5% over its operating range. The monitoring devices must be recalibrated each quarter.
- 5.2 The Permittee shall install, calibrate, maintain, and operate a monitoring device that continuously measures and records the operating temperature in the Incinerator TO100 firebox.
[Subpart NNN - 40 CFR 63.1383(g)(1)]
- 5.3 The Permittee shall inspect Incinerator TO100 at least once per year according to the procedures in the OMMP. The plan must include the following information:
[Subpart NNN - 40 CFR 63.1383(g)(2)]
- a. Inspect all burners, pilot assemblies, and pilot sensing devices for proper operation and clean pilot sensor, as necessary;
 - b. Ensure proper adjustment of combustion air and adjust, as necessary;
 - c. Inspect, when possible, internal structures, (e.g., baffles) to ensure structural integrity per the design specification;
 - d. Inspect dampers, fans, and blowers for proper operation;
 - e. Inspect for proper sealing;
 - f. Inspect motors for proper operation;
 - g. Inspect combustion chamber refractory lining and clean and repair/replace lining, as necessary;
 - h. Inspect incinerator shell for corrosion and /or hot spots;

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- i. For the burn cycle that follows the inspection, document that the incinerator is operating properly and make any necessary adjustments; and
 - j. Generally observe that the equipment is maintained in good operating condition.
 - k. Complete all necessary repairs as soon as practicable.
- 5.4 The Permittee shall monitor and record the free-formaldehyde content of each resin shipment received and used in the formulation of binder.
[Subpart NNN - 40 CFR 63.1383(j)]
- 5.5 The Permittee shall monitor and record the formulation of each batch of binder used in Rotary Spin Fiberglass Manufacturing Line CG-1.
[Subpart NNN - 40 CFR 63.1383(k)]
- 5.6 The Permittee shall monitor and record at least once every 8 hours, the product Loss On Ignition (LOI) and product density of the bonded wool fiberglass product manufactured in Rotary Spin Fiberglass Manufacturing Line CG-1.
[Subpart NNN - 40 CFR 63.1383(l)]
- 5.7 Beginning on the date on which the initial performance tests required by §63.7 and §63.1384 are completed, the Permittee shall monitor the Glass Melting Furnace CG101 and the Rotary Spin Manufacturing Line CG-1 per the written operations, maintenance, and monitoring plan (OMMP). The OMMP shall be submitted to the Division for review and approval as part of the application for a Part 70 permit. The plan must include the following information:
[Subpart NNN - 40 CFR 63.1383(a)]
- a. Procedures for the proper operation and maintenance of process modifications and add-on control devices used to meet the emission limits in §63.1382.
 - b. Procedures for the proper operation and maintenance of monitoring devices used to determine compliance, including quarterly calibration, and certification of accuracy of each monitoring device according to the manufacturers instructions.
 - c. Corrective actions to be taken when process parameters or add-on control device parameters deviate from the limit(s) established during the performance test(s) required by §63.7 and §63.1384.

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5.8 The Permittee shall perform a check of the visible emissions from the Raw Material Handling Stack (RM100). Checks shall be daily, for each day or portion of each day of operation of the raw material handling system. The Permittee shall retain a record in a visible emissions (VE) log suitable for inspection or submittal. The checks shall be conducted using the procedure below except when atmospheric conditions or sun positioning prevent any opportunity to perform the daily VE check. Any operational day/night when atmospheric conditions or sun position prevent a daily reading the VE check during the next day of operation shall serve as the representative VE reading for the previous operating day(s)/night(s). Method 9 certification is not required for individuals conducting the daily visible emissions checks. [391-3-1-.02(6)(b)1]

- a. The person performing the determination shall stand at a distance of at least 15 feet, which is sufficient to provide a clear view of the plume against a contrasting background with the sun in the 140° sector at his/her back. Consistent with this requirement, the determination shall be made from a position such that the line of vision is approximately perpendicular to the plume direction. Only one exhaust point shall be in the line of sight at any time when multiple emission points are in proximity to each other.
- b. For each observation of visible emissions, the Permittee shall determine the cause of visible emissions and correct the problem in the most expedient manner possible. The Permittee shall note the cause of the visible emissions, any other pertinent operating parameters, and the corrective action taken in the maintenance log.

5.9 For determination of visible emissions, as per Condition 5.8, the Permittee shall determine the cause of the excursion and correct the problem in the most expedient manner possible. In the maintenance log, the Permittee shall note the cause of the excursion and other pertinent operating parameters, and the corrective action taken. [391-3-1-.02(6)(b)1]

5.10 Within 60 days of initial startup of any operation that exhausts through baghouses FF100 through FF120, the Permittee shall develop and implement a Preventative Maintenance Program (PMP) to assure that the provisions of Condition 1.1 are met. The program shall be subject to review and modification by the Division. At a minimum, the following operation and maintenance checks shall be made on at least a weekly basis, and a record of the findings and corrective actions taken shall be kept in a maintenance log: [391-3-1-.02(6)(b)1]

- a. For baghouses equipped with compressed air cleaning systems, check the system for proper operation. This may include checking for low pressure, leaks, proper lubrication, and proper operation of timer and valves.
- b. For baghouses equipped with reverse air cleaning systems, check the system for proper operation. This may include checking damper, bypass, and isolation valves for proper operation.

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c. Check dust collector hoppers and conveying systems for proper operation.

5.11 The Permittee may change the parameter ranges established during the performance tests required by §63.7 and §63.1384 if additional performance testing is conducted to verify that, at the new control device or process parameter levels, the Permittee complies with the allowable emissions in Section 2 of this permit. Any additional performance tests shall be conducted according to the procedures in §63.7 and §63.1384.
[Subpart NNN - 40 CFR 63.1383(m)]

6. Performance Testing

6.1 The Permittee shall cause to be conducted a performance test at any specified emission point when so directed by the Division. The following provisions shall apply with regard to such tests:

- a. All tests shall be conducted and data reduced in accordance with applicable procedures and methods specified in the Division's Procedures for Testing and Monitoring Sources of Air Pollutants.
- b. All test results shall be submitted to the Division within sixty (60) days of the completion of testing.
- c. The Permittee shall provide the Division thirty (30) days prior written notice of the date of any performance test(s) to afford the Division the opportunity to witness and/or audit the test, and shall provide with the notification a test plan in accordance with Division guidelines.
- d. All monitoring systems and/or monitoring devices required by the Division shall be installed, calibrated and operational prior to conducting any performance test(s). For any performance test, the Permittee shall, using the monitoring systems and/or monitoring devices, acquire data during each performance test run. All monitoring system and/or monitoring device data acquired during the performance testing shall be submitted with the performance test results.

6.2 Performance and compliance tests shall be conducted and data reduced in accordance with applicable procedures and methods specified in the Division's Procedures for Testing and Monitoring Sources of Air Pollutants. The methods for the determination of compliance with emission limits listed under Sections 3.2, 3.3, 3.4 and 3.5 which pertain to the emission units listed in Section 3.1 are as follows:

- a. Method 1 shall be used for selection of sampling site and number of traverse points.
- b. Method 2 shall be used to determine stack gas flow rate.
- c. Method 3 or 3A shall be used to determine gas molecular weight.

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- d. Method 4 shall be used to determine moisture concentration.
- e. Method 5 shall be used to determine the PM concentration, except as specified below:
 - (i) For Glass Melt Furnace CG101, Method 5 shall be used with a minimum run time of at least 120 minutes and a minimum sample volume of at least 60 dry standard cubic feet (dscf). The probe and filter holder heating system shall be set to provide a gas temperature no greater than 177 ± 14 °C (350 ± 25 °F).
 - (ii) For Fiberglass-manufacturing Lines CG-1 and CG-2, Method 5E shall be used to determine the PM concentration. Each run shall consist of a minimum run time of at least 120 minutes and a minimum sample volume of at least 90.1 dscf.
- f. Method 9 and the procedures of Section 1.3 of the above referenced document shall be used to determine opacity.
- g. Method 316 or Method 318 (Appendix A, 40 CFR 63) shall be used to determine the concentration of formaldehyde. Each run shall consist of a minimum run time of 1 hour.
- h. Methods and procedures contained in Appendix A of 40 CFR 63, Subpart NNN, shall be used to determine the product Loss On Ignition (LOI).
- i. Methods and procedures contained in Appendix B of 40 CFR 63, Subpart NNN, shall be used to determine the free-formaldehyde content of resin.
- j. Methods and procedures contained in Appendix C of 40 CFR 63, Subpart NNN, shall be used to determine the product density.
- k. Method 10 shall be used to determine the CO concentration.
- l. Method 25A for the determination of Total Gaseous Nonmethane Organic Emissions (TGNMO), as carbon. A conversion factor of 1.15 shall be used to convert the TGNMO (as carbon) results to actual VOC and the results of formaldehyde testing (per Condition 6.2 g.) added to calculate total VOC emissions.
- m. Method 7E shall be used to determine the NO_x concentration.

Minor changes in methodology may be specified or approved by the Director or his designee when necessitated by process variables, changes in facility design, or improvement or corrections that, in his opinion, render those methods or procedures, or portions thereof, more reliable.

[391-3-1-.02(3)(a)]

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- 6.3 The Permittee shall, within 180 days after the startup of the Electric Fired Glass Melt Furnace CG101 and the Rotary Spin Bonded Fiberglass Manufacturing Line CG-1, conduct performance test(s) to demonstrate compliance with the PM and the formaldehyde emission limits in Conditions Nos. 2.5 and 2.7 a.
[Subpart NNN - 40 CFR 63.7(a) and 40 CFR 63.1384]
- 6.4 The Permittee shall ensure, prior to the performance test required by Condition 6.3, as per §63.7 and §63.1384, that all monitoring systems and equipment are installed, operational, and calibrated.
[Subpart NNN - 40 CFR 63.1384(a)(1)]
- 6.5 The Permittee shall monitor and record process and add-on control device parameters at least every 15 minutes during the performance tests required by Condition 6.3, as per §63.7 and §63.1384, except as specified in Condition 6.9. The arithmetic average for each parameter must be calculated using all of the recorded measurements for the parameter.
[Subpart NNN - 40 CFR 63.1384(a)(2)]
- 6.6 During each performance test(s) required by Condition 6.3, as per §63.7 and §63.1384, the Permittee shall monitor and record the glass pull rate for the Glass Melting Furnace CG101 and, if different, the glass pull rate for the associated Rotary Spin Fiberglass Manufacturing Line CG-1, every 15 minutes. The Permittee shall determine the arithmetic average of the recorded measurements for each test run and calculate the average of the three test runs.
[Subpart NNN - 40 CFR 63.1384(a)(3)]
- 6.7 The Permittee shall, while conducting the performance test required by Condition 6.3 for Rotary Spin Fiberglass Manufacturing Line CG-1, be producing the building insulation with the highest Loss On Ignition (LOI) expected to be produced on line CG-1.
[Subpart NNN - 40 CFR 63.1384(a)(8)]
- 6.8 The Permittee shall, while conducting the performance tests required by Condition 6.3 for the Rotary Spin Fiberglass Manufacturing Line CG-1, use the resin with the highest free-formaldehyde content. During the test, the Permittee shall monitor and record the free-formaldehyde content of the resin, the binder formulation used, the product LOI, and the product density.
[Subpart NNN - 40 CFR 63.1384(a)(9)]
- 6.9 During each performance test(s), required by Condition 6.3, as per §63.7 and §63.1384, the Permittee shall continuously record the operating temperature of Incinerator TO100 and record the average during each 1-hour test. The average operating temperature of the three 1-hour tests shall be used to monitor compliance.
[Subpart NNN - 40 CFR 63.1384(a)(12)]
- 6.10 The Permittee may conduct short-term experimental production runs using binder formulations or other process modifications, where the process parameter values would be outside those established during the performance test required by Condition No. 6.3, provided the Division receives 15 days notification prior to commencement of the short-term

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experimental production runs and the Permittee complies with the requirements of §63.1384(a)(13), detailing the requirements for short-term experimental runs.
[Subpart NNN - 40 CFR 63.1384(a)(13)]

- 6.11 The Permittee shall use the following equation to determine compliance with the PM emission limits of Condition No. 2.7 a for Glass Melting Furnace CG101:
[Subpart NNN - 40 CFR 63.1384(b)]

$$E = \frac{(C)(Q)(K_1)}{P}$$

where:

- E = Emission rate of PM, lb/ton of glass pulled
- C = Concentration of PM, gr/dscf
- Q = Volumetric flow rate of exhaust gases, dscf/hr
- K₁ = Conversion factor, 1 lb/7000 gr
- P = Average glass pull rate, tons/hr

- 6.12 During any performance test(s) of the Glass Melting Furnace CG101 required by Condition 6.3, as per §63.7 as per §63.1384, the Permittee shall monitor and record the batch water spray flow rate, every 15 minutes. The Permittee shall determine the arithmetic average of the recorded measurements for each test run and calculate the average of the three test runs. The Permittee shall establish the minimum and/or maximum value(s) that will be used to indicate compliance after the test.
[Subpart NNN - 40 CFR 63.1384(a)]

- 6.13 The Permittee shall use the following equation to determine compliance with the formaldehyde emission limit of Condition No. 2.5 for Rotary Spin Fiberglass Manufacturing Line CG-1:
[Subpart NNN - 40 CFR 63.1384(c)]

$$E = \frac{(C)(MW)(Q)(K_1)(K_2)}{(K_3)(P)(10^6)}$$

where:

- E = Emission rate of formaldehyde, lb/ton of glass pulled
- C = Measured volume fraction of formaldehyde, ppm
- MW = Molecular weight of formaldehyde, 30.03 g/g-mol
- Q = Volumetric flow rate of exhaust gases, dscf/hr
- K₁ = Conversion factor, 1 lb/453.6 g
- K₂ = Conversion factor, 28.3L/ft³
- K₃ = Conversion factor, 24.45 L/g-mol
- P = Average glass pull rate, tons/hr

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- 6.14 The Permittee shall, within 60 days after achieving the maximum production rate but not later than 180 days after initial start-up of each Rotary Spin Fiberglass Manufacturing Line (CG-1 and CG-2), conduct performance test(s) to demonstrate compliance with the PM limits in Condition Nos. 2.7 b through 2.7 d. The results of the performance test(s) shall be submitted to the Division within sixty (60) days after maximum production or 180 days after startup. [Subpart PPP - 40 CFR 60.8; 391-3-1-.02(6)(b)1(i)]
- 6.15 The Permittee shall, while conducting the performance tests for Rotary Spin Fiberglass Manufacturing Line CG-1, produce the building insulation with the highest LOI expected to be produced by the facility. During the tests, the Permittee shall monitor and record the product LOI every 30 minutes during each 2-hour test run. [Subpart PPP - 40 CFR 60.685(b)]
- 6.16 During any performance test of the Rotary Spin Fiberglass Manufacturing Lines CG-1 and CG-2 required by §60.8 and §60.682, the Permittee shall monitor and record the pressure drop and liquid flow rate across each scrubber controlling Line CG-1 (IS101-IS106 and SC100) and each scrubber controlling Line CG-2 (S201 and IS202) every 30 minutes during each 2-hour test run. The Permittee shall determine the arithmetic average of the recorded measurements for each test run for each control unit and calculate the average of the three test runs. The Permittee shall establish the minimum value(s) that will be used to indicate compliance after the test. [Subpart PPP - 40 CFR 60.683(a) and 40 CFR 60.684(a)]
- 6.17 The Permittee shall, within 180 days after initial start-up of each Rotary Spin Fiberglass Manufacturing Line (CG-1 and CG-2), conduct performance tests for PM to verify compliance with the emission limits stipulated in Condition Nos. 2.6, 2.14 and 2.15. [391-3-1-.02(6)(b)1(i)]
- 6.18 The Permittee shall, within 180 days after initial start-up of each Rotary Spin Fiberglass Manufacturing Line (CG-1 and CG-2), conduct performance tests for NO_x, CO and VOC to verify compliance with the emission limits for NO_x, CO and VOC stipulated in Condition Nos. 2.8, 2.9 and 2.10, respectively. [391-3-1-.02(6)(b)1(i)]
- 6.19 The Permittee shall use the following equation to determine compliance with the PM emission limits of Conditions No. 2.7 for Rotary Spin Fiberglass Manufacturing Lines CG-1 and CG-2, as follows:
[Subpart PPP - 40 CFR 60.685(c)]

$$E = \frac{(C_t)(Q_{sd})}{(P_{avg})(K)}$$

where:

E = Emission rate of PM, lb/ton
C_t = Concentration of PM, g/dscf

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Q_{sd} = Volumetric flow rate of effluent gas, dscf/hr
 P_{avg} = Average glass pull rate from three test runs (P_i), ton/hr
 K = Conversion factor, 7,000 gr/lb

$$P_i = (K')(L_s)(W_m)(M) \left(1.0 - \left(\frac{LOI}{100} \right) \right)$$

where:

P_i = Glass pull rate at interval "i", ton/hr
 L_s = Line speed, ft/min
 W_m = Trimmed mat width, ft
 M = Mat gram weight, lb/ft²
LOI = Loss on ignition, weight percent
 K' = Conversion factor, [0.03 (min-ton)/(hr-lb)]

- 6.20 The Permittee shall determine the line speed (L_s), trimmed mat width (W_m), and mat gram weight (M) for each performance test run on Rotary Spin Fiberglass Manufacturing Lines CG-1 and CG-2, from the process information or from direct measurements.
[Subpart PPP - 40 CFR 60.685(c)(3)(ii)]

7. Notification, Reporting and Record Keeping Requirements

Record Keeping Requirements

- 7.1 All records required to be maintained by this Permit shall be recorded in a permanent form suitable for inspection and submission to the Division. The records shall be retained for at least five (5) years following the date of entry.
[391-3-1-.02(6)(b)1(i)]
- 7.2 The Permittee shall maintain records describing the routine maintenance performed on all air pollution control equipment.
[391-3-1-.02(2)(a)10.]
- 7.3 The Permittee shall maintain a record of all actions taken in accordance with Conditions Nos. 3.1 and 3.2 to suppress fugitive dust from roads, storage piles, or any other source of fugitive dust. Such records shall include the date and time of occurrence and a description of the actions taken.
[391-3-1-.02(6)(b)1]
- 7.4 The Permittee shall maintain records of the formulation of each binder batch and the LOI and density for each product manufactured on Rotary Spin Fiberglass Manufacturing Line CG-1 and the free-formaldehyde content of each resin shipment received and used in the binder formulation.
[Subpart NNN - 40 CFR 63.1386(d)(2)(v)]

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- 7.5 The Permittee shall maintain records of the incinerator operating temperature and results of periodic inspection of incinerator components, including any period when the temperature fell below the established average or the inspection identified problems with the incinerator, the date and time of the problem, when corrective actions were initiated, the cause of the problem, an explanation of the corrective actions taken, and when the problem was corrected.
[Subpart NNN - 40 CFR 63.1386(d)(2)(viii)]
- 7.6 The Permittee shall maintain a record of the glass pull rate for Electric Fired Glass Melt Furnace CG101, including any period when the pull rate exceeded the average pull rate established during the performance test by more than 20 percent, the date and time of the exceedance, when corrective actions were initiated, the cause of the exceedance, an explanation of the corrective actions taken, and when the cause of the exceedance was corrected.
[Subpart NNN - 40 CFR 63.1386(d)(2)(ix)]
- 7.7 The Permittee shall record at 30-minute intervals during each 2-hour test run of each performance test on Emission Units CG104, CG106 and CG204 the measurements required by 40 CFR 60.683(a) on the scrubbers (IS101 – IS106, SC100, IS201 and IS202). The Permittee shall record these measurements at least once every 4 hours after the performance test.
[Subpart PPP - 40 CFR 60.684(a) and (c)]
- 7.8 The Permittee shall, each day, determine and record the average pounds of NO_x per ton of glass pulled from Glass Melting Furnace CG101 using the following procedures:
[391-3-1-.02(6)(b)1]
- a. Record the quantity (pounds) of NaNO₃ used in the furnace.
 - b. Calculate pounds of NO_x by multiplying the pounds of sodium nitrate used in the furnace by 0.541.
 - c. Record the tons of glass pulled from the furnace.
 - d. Calculate the pounds of NO_x per ton of glass pulled for the furnace by dividing the pounds of NO_x by the tons of glass pulled.
- 7.9 The Permittee shall develop and implement a written plan as described in §63.6(e)(3) that contains specific procedures to be followed for operating and maintaining equipment subject to Subpart NNN during periods of startup, shutdown, and malfunction and a program of corrective action for malfunctioning process modifications and control systems used to comply with the standard. In addition to the requirements of §63.6(e)(3), the plan shall include the following:
[Subpart NNN - 40 CFR 63.1386(c)]
- a. Procedures to determine and record the cause of the malfunction and the time the malfunction began and ended.

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- b. Corrective actions to be taken in the event of a malfunction of a control device or process modification, including procedures for recording the actions taken to correct the malfunction or minimize emissions.
- c. A maintenance schedule for each control device and process modification that is consistent with the manufacturer's instructions and recommendations for routine and long-term maintenance.

Reporting Requirements

7.10 The Permittee shall furnish the Division written notification as follows:
[40 CFR 52.21; 40 CFR 60.7]

- a. A notification of the actual date of initial startup of Electric-Fired Glass Melt Furnace CG101 and each Rotary Spin Fiberglass-manufacturing Line (CG-1 and CG-2), postmarked within 15 days after such date. For purposes of this permit, "startup" shall mean the initial setting in operation of an affected facility for any purpose.
- b. Certification that a final inspection has shown that construction of Electric-fired Glass Melt Furnace CG101 and each Rotary Spin Fiberglass Manufacturing Line (CG-1 and CG-2) has been completed in accordance with the application, plans, specifications and supporting documents submitted in support of this permit. The certifications shall be included with the notification required by paragraph (a).

7.11 In addition to any other reporting requirements of this Permit, the Permittee shall report to the Division in writing, within seven (7) days, any deviations from applicable requirements associated with any malfunction or breakdown of process or emission control equipment for a period of four hours or more which results in excessive emissions.

The Permittee shall submit a written report, which shall contain the probable cause of the deviation(s), duration of the deviation(s), and any corrective actions or preventive measures taken.

[391-3-1-.02(6)(b)1.(iv)]

7.12 The Permittee shall submit a written report containing excess emissions, exceedances, and/or excursions as described in this permit and any monitor malfunctions for each semiannual period ending June 30 and December 31 of each year. All reports shall be postmarked by the 30th day following the end of each reporting period, July 30 and January 30, respectively. In the event that there have not been any excess emissions, exceedances, excursions or malfunctions during a reporting period, the report should so state. Otherwise, the contents of each report shall be as specified by the Division's Procedures for Testing and Monitoring Sources of Air Pollutants and shall contain the following:

[391-3-1-.02(6)(b)1]

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- a. A summary report of excess emissions, exceedances and excursions, and monitor downtime, in accordance with Section 1.5(c) and (d) of the above referenced document, including any failure to follow required work practice procedures.
- b. Total operating time during each reporting period.
- c. The magnitude of all excess emissions, exceedances and excursions computed in accordance with the applicable definitions as determined by the Director, and any conversion factors used, and the date and time of the commencement and completion of each time period of occurrence.
- d. Specific identification of each period of such excess emissions, exceedances, and excursions that occur during startups, shutdowns, or malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventive measures adopted.
- e. The date and time identifying each period during which any required monitoring system or device was inoperative (including periods of malfunction) except for zero and span checks, and the nature of the repairs, adjustments, or replacement. When the monitoring system or device has not been inoperative, repaired, or adjusted, such information shall be stated in the report.
- f. Certification that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.

7.13 The Permittee shall maintain files of all measurements, including continuous monitoring systems, monitoring devices, and performance testing measurements; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices. These files shall be kept in a permanent form suitable for inspection and shall be maintained for a period of at least five (5) years following the date of such measurements, reports, maintenance and records.

[391-3-1-.03(2)(c)]

7.14 For the purpose of reporting excess emissions, exceedances or excursions in the report required in Condition 7.12, the following excess emissions, exceedances, and excursions shall be reported:

- a. Excess emissions: (means for the purpose of this Condition and Condition No. 7.12, any condition that is detected by monitoring or record keeping which is specifically defined, or stated to be, excess emissions by an applicable requirement)

None required to be reported in accordance with 7.12.

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- b. Exceedances: (means for the purpose of this Condition and Condition 7.12, any condition that is detected by monitoring or record keeping that provides data in terms of an emission limitation or standard and that indicates that emissions (or opacity) do not meet the applicable emission limitation or standard consistent with the averaging period specified for averaging the results of the monitoring)
- i. Any 4-hour block period when the glass pull rate from Electric-Fired Glass Melt Furnace CG101 exceeds the average pull rate, established during the most recent performance test, by more than 20 percent.
 - ii. Any determination that the glass pull rate from Electric-Fired Glass Melt Furnace CG101 is outside of the range established during the most recent performance test, for more than ten percent of the total operating time in a 6-month block reporting period.
 - iii. Any determination that a binder formulation is used that varies from the specification and operating range established and used during the most recent performance test, except during short-term experimental production runs that comply with Condition 6.10.
 - iv. Any product loss on ignition (LOI) or product density of any bonded wool fiberglass product manufactured, monitored and recorded as required once every 8 hours, that is greater than the average product LOI or density measured during the most recent performance test.
 - v. Any free-formaldehyde content of any resin shipment received and used in the formulation of binder, that is greater than the free-formaldehyde content measured, using the resin with the highest free-formaldehyde content, during the most recent performance test.
 - vi. Any monitoring data that are less than 70 percent of the lowest value of each operating parameter of the Scrubbers IS101 – IS106, SC100, IS201 and IS202, recorded during the most recent performance test.
 - vii. Any day during which the emissions of NO_x from the Glass Melt Furnace CG101, as determined by the procedures in Condition 7.8, exceeds 13.5 pounds per ton of glass pulled.
- c. Excursions: (means for the purpose of this Condition and Condition 7.12, any departure from an indicator range or value established for monitoring consistent with any averaging period specified for averaging the results of the monitoring)
- i. Any two consecutive water flow rates, recorded in accordance with the requirements of Condition 5.1 b. for the batch wetting systems on Furnace CG101, that are less than 90 percent of the average flow rate measured during the most recent performance test.

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- ii. Any 3-hour block period, for which the average temperature of Incinerator TO100 is below the average temperature established for the incinerator during the performance test.
 - iii. Any visible emissions, as determined in accordance with Condition 5.8, from the Raw Material Handling Stack (RM100).
- d. In addition to the excess emissions, exceedances and excursions specified above, the following should also be included with the report required in Condition 7.12:
- i. Any failure to implement any QIP as required by Condition 2.17.

8. Modifications

- 8.1 Prior to any source commencing a modification as defined in Georgia Rule 391-3-1-.01(pp), which may result in air pollution and not exempted by Georgia Rule 391-3-1-.03(6), the Permittee shall submit a Permit application to the Division. The application shall be submitted sufficiently in advance of any critical data involved to allow adequate time for review, discussion, or revision of plans, if necessary. Such application shall include, but not be limited to, information describing the precise nature of the change, modifications to any emission control system, production capacity of the plant before and after the change, and the anticipated completion date of the change. The application shall be in the form of a Georgia air quality Permit application to construct or modify (otherwise known as a SIP application) and shall be submitted on forms supplied by the Division, unless otherwise notified by the Division.

9. Special Conditions

- 9.1 At any time that the Division determines that additional control of emissions from the facility may reasonably be needed to provide for the continued protection of public health, safety and welfare, the Division reserves the right to amend the provisions of this Permit pursuant to the Division's authority as established in the Georgia Air Quality Act and the rules adopted pursuant to that Act.
- 9.2 The Permittee shall commence construction of the facilities described in Application No. 15839 within 18 months of the date of issuance of this Permit, and shall not stop construction activities of the facilities described in Application No. 15839 for any period exceeding 18 months, otherwise approval to construct these facilities shall become invalid. For purposes of this Permit, the definition of "commence" is given in 40 CFR 52.21(b)(9).
- 9.3 The Permittee shall, within 12 months of startup of the facility, submit a Title V Operating Permit Application.