



Michigan Department of Environmental Quality  
Air Quality Division

EFFECTIVE DATE: October 28, 2009

ISSUED TO

Guardian Fiberglass, Inc.

State Registration Number (SRN): B7205

LOCATED AT

1000 East North Street, Albion, Michigan 49224

**RENEWABLE OPERATING PERMIT**

Permit Number: MI-ROP-B7205-2009

Expiration Date: October 27, 2014

Administratively Complete ROP Renewal Application Due Between April 27, 2013 and April 27, 2014

This Renewable Operating Permit (ROP) is issued in accordance with and subject to Section 5506(3) of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Pursuant to Michigan Air Pollution Control Rule 210(1), this ROP constitutes the permittee's authority to operate the stationary source identified above in accordance with the general conditions, special conditions and attachments contained herein. Operation of the stationary source and all emission units listed in the permit are subject to all applicable future or amended rules and regulations pursuant to Act 451 and the federal Clean Air Act.

**SOURCE-WIDE PERMIT TO INSTALL**

Permit Number: MI-PTI-B7205-2009

This Permit to Install (PTI) is issued in accordance with and subject to Section 5505(5) of Act 451. Pursuant to Michigan Air Pollution Control Rule 214a, the terms and conditions herein, identified by the underlying applicable requirement citation of Rule 201(1)(a), constitute a federally enforceable PTI. The PTI terms and conditions do not expire and remain in effect unless the criteria of Rule 201(6) are met. Operation of all emission units identified in the PTI is subject to all applicable future or amended rules and regulations pursuant to Act 451 and the federal Clean Air Act.

Michigan Department of Environmental Quality

Mary A. Douglas, Kalamazoo District Supervisor

**TABLE OF CONTENTS**

**AUTHORITY AND ENFORCEABILITY .....4**

**A. GENERAL CONDITIONS .....5**

Permit Enforceability .....5

General Provisions.....5

Equipment & Design .....6

Emission Limits .....6

Testing/Sampling .....6

Monitoring/Recordkeeping .....7

Certification & Reporting .....7

Permit Shield.....8

Revisions.....9

Reopenings.....9

Renewals .....10

Stratospheric Ozone Protection .....10

Risk Management Plan.....10

Emission Trading .....10

Permit To Install (PTI) .....11

**B. SOURCE-WIDE CONDITIONS .....12**

**C. EMISSION UNIT CONDITIONS .....15**

EMISSION UNIT SUMMARY TABLE .....15

EU-MATHAND .....17

EU-EM6.....19

EU-EM8.....21

EU-RESFORMCOL.....25

EU-RESCURE .....29

EU-FACESIZEPKG.....33

EU-NRFORMCOL.....35

EU-BINDERMIX.....38

**D. FLEXIBLE GROUP CONDITIONS .....41**

FLEXIBLE GROUP SUMMARY TABLE .....41

FG-RES1.....42

FG-RES2.....45

FG-MELT7 and 9 .....50

FG-MELT6, 7, and 9 .....52

FGRULE290.....55

FGCOLDCLEANERS.....58

**E. NON-APPLICABLE REQUIREMENTS.....60**

**APPENDICES.....61**

Appendix 1: Abbreviations and Acronyms .....61

Appendix 2. Schedule of Compliance .....62

Appendix 3. Monitoring Requirements.....62

Appendix 4. Recordkeeping.....62

Appendix 5. Testing Procedures.....62

Appendix 6. Permits to Install.....62  
Appendix 7. Emission Calculations.....62

## **AUTHORITY AND ENFORCEABILITY**

For the purpose of this permit, the **permittee** is defined as any person who owns or operates an emission unit at a stationary source for which this permit has been issued. The **department** is defined in Rule 104(d) as the Director of the Michigan Department of Environmental Quality (MDEQ) or his or her designee.

The permittee shall comply with all specific details in the permit terms and conditions and the cited underlying applicable requirements. All terms and conditions in this ROP are both federally enforceable and state enforceable unless otherwise footnoted. Certain terms and conditions are applicable to most stationary sources for which an ROP has been issued. These general conditions are included in Part A of this ROP. Other terms and conditions may apply to a specific emission unit, several emission units which are represented as a flexible group, or the entire stationary source which is represented as a source-wide group. Special conditions are identified in Parts B, C, D and/or the appendices.

In accordance with Rule 213(2)(a), all underlying applicable requirements will be identified for each ROP term or condition. All terms and conditions that are included in a PTI, are streamlined or subsumed, or is state only enforceable will be noted as such.

In accordance with Section 5507 of Act 451, the permittee has included in the ROP application a compliance certification, a schedule of compliance, and a compliance plan. For applicable requirements with which the source is in compliance, the source will continue to comply with these requirements. For applicable requirements with which the source is not in compliance, the source will comply with the detailed schedule of compliance requirements that are incorporated as an appendix in this ROP. Furthermore, for any applicable requirements effective after the date of issuance of this ROP, the stationary source will meet the requirements on a timely basis, unless the underlying applicable requirement requires a more detailed schedule of compliance.

Issuance of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.

## A. GENERAL CONDITIONS

### Permit Enforceability

- All conditions in this permit are both federally enforceable and state enforceable unless otherwise noted. **(R 336.1213(5))**
- Those conditions that are hereby incorporated in a state only enforceable Source-wide PTI pursuant to Rule 201(2)(d) are designated by footnote one. **(R 336.1213(5)(a), R336.1214a(5))**
- Those conditions that are hereby incorporated in federally enforceable Source- wide PTI No. MI-PTI-B7205-2009 pursuant to Rule 201(2)(c) are designated by footnote two. **(R 336.1213(5)(b), R 336.1214a(3))**

### General Provisions

1. The permittee shall comply with all conditions of this ROP. Any ROP noncompliance constitutes a violation of Act 451, and is grounds for enforcement action, for ROP revocation or revision, or for denial of the renewal of the ROP. All terms and conditions of this ROP that are designated as federally enforceable are enforceable by the Administrator of the United States Environmental Protection Agency (USEPA) and by citizens under the provisions of the federal Clean Air Act (CAA). Any terms and conditions based on applicable requirements which are designated as "state only" are not enforceable by the USEPA or citizens pursuant to the CAA. **(R 336.1213(1)(a))**
2. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this ROP. **(R 336.1213(1)(b))**
3. This ROP may be modified, revised, or revoked for cause. The filing of a request by the permittee for a permit modification, revision, or termination, or a notification of planned changes or anticipated noncompliance does not stay any ROP term or condition. This does not supersede or affect the ability of the permittee to make changes, at the permittee's own risk, pursuant to Rule 215 and Rule 216. **(R 336.1213(1)(c))**
4. The permittee shall allow the department, or an authorized representative of the department, upon presentation of credentials and other documents as may be required by law and upon stating the authority for and purpose of the investigation, to perform any of the following activities **(R 336.1213(1)(d))**:
  - a. Enter, at reasonable times, a stationary source or other premises where emissions-related activity is conducted or where records must be kept under the conditions of the ROP.
  - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the ROP.
  - c. Inspect, at reasonable times, any of the following:
    - i. Any stationary source.
    - ii. Any emission unit.
    - iii. Any equipment, including monitoring and air pollution control equipment.
    - iv. Any work practices or operations regulated or required under the ROP.
  - d. As authorized by Section 5526 of Act 451, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the ROP or applicable requirements.
5. The permittee shall furnish to the department, within a reasonable time, any information the department may request, in writing, to determine whether cause exists for modifying, revising, or revoking the ROP or to determine compliance with this ROP. Upon request, the permittee shall also furnish to the department copies of any records that are required to be kept as a term or condition of this ROP. For information which is claimed by the permittee to be confidential, consistent with the requirements of the 1976 PA 442, MCL §15.231 et seq., and known as the Freedom of Information Act, the person may also be required to furnish the records directly to the USEPA together with a claim of confidentiality. **(R 336.1213(1)(e))**

6. A challenge by any person, the Administrator of the USEPA, or the department to a particular condition or a part of this ROP shall not set aside, delay, stay, or in any way affect the applicability or enforceability of any other condition or part of this ROP. **(R 336.1213(1)(f))**
7. The permittee shall pay fees consistent with the fee schedule and requirements pursuant to Section 5522 of Act 451. **(R 336.1213(1)(g))**
8. This ROP does not convey any property rights or any exclusive privilege. **(R 336.1213(1)(h))**

### **Equipment & Design**

9. Any collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2). **(R 336.1370)**
10. Any air cleaning device shall be installed, maintained, and operated in a satisfactory manner and in accordance with the Michigan Air Pollution Control rules and existing law. **(R 336.1910)**

### **Emission Limits**

11. Except as provided in Subrules 2, 3, and 4 of Rule 301, states in part; "a person shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of a density greater than the most stringent of Rule 301(1)(a) or (b) unless otherwise specified in this ROP." The grading of visible emissions shall be determined in accordance with Rule 303. **(R 336.1301(1) in pertinent part):**
  - a. A 6-minute average of 20 percent opacity, except for one 6-minute average per hour of not more than 27 percent opacity.
  - b. A limit specified by an applicable federal new source performance standard.
12. The permittee shall not cause or permit the emission of an air contaminant or water vapor in quantities that cause, alone or in reaction with other air contaminants, either of the following:
  - a. Injurious effects to human health or safety, animal life, plant life of significant economic value, or property.<sup>1</sup> **(R 336.1901(a))**
  - b. Unreasonable interference with the comfortable enjoyment of life and property.<sup>1</sup> **(R 336.1901(b))**

### **Testing/Sampling**

13. The department may require the owner or operator of any source of an air contaminant to conduct acceptable performance tests, at the owner's or operator's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001(1). **(R 336.2001)**
14. Any required performance testing shall be conducted in accordance with Rule 1001(2), Rule 1001(3) and Rule 1003. **(R 336.2001(2), R 336.2001(3), R 336.2003(1))**
15. Any required test results shall be submitted to the Air Quality Division (AQD) in the format prescribed by the applicable reference test method within 60 days following the last date of the test. **(R 336.2001(4))**

### Monitoring/Recordkeeping

16. Records of any periodic emission or parametric monitoring required in this ROP shall include the following information specified in Rule 213(3)(b)(i), where appropriate **(R 336.1213(3)(b))**:
- The date, location, time, and method of sampling or measurements.
  - The dates the analyses of the samples were performed.
  - The company or entity that performed the analyses of the samples.
  - The analytical techniques or methods used.
  - The results of the analyses.
  - The related process operating conditions or parameters that existed at the time of sampling or measurement.
17. All required monitoring data, support information and all reports, including reports of all instances of deviation from permit requirements, shall be kept and furnished to the department upon request for a period of not less than 5 years from the date of the monitoring sample, measurement, report or application. Support information includes all calibration and maintenance records and all original strip-chart recordings, or other original data records, for continuous monitoring instrumentation and copies of all reports required by the ROP. **(R 336.1213(1)(e), R 336.1213(3)(b)(ii))**

### Certification & Reporting

18. Except for the alternate certification schedule provided in Rule 213(3)(c)(iii)(B), any document required to be submitted to the department as a term or condition of this ROP shall contain an original certification by a responsible official which states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. **(R 336.1213(3)(c))**
19. A responsible official shall certify to the appropriate AQD District Office and to the USEPA that the stationary source is and has been in compliance with all terms and conditions contained in the ROP except for deviations that have been or are being reported to the appropriate AQD District Office pursuant to Rule 213(3)(c). This certification shall include all the information specified in Rule 213(4)(c)(i) through (v) and shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the certification are true, accurate, and complete. The USEPA address is: USEPA, Air Compliance Data - Michigan, Air and Radiation Division, 77 West Jackson Boulevard, Chicago, Illinois 60604. **(R 336.1213(4)(c))**
20. The certification of compliance shall be submitted annually for the term of this ROP as detailed in the special conditions, or more frequently if specified in an applicable requirement or in this ROP. **(R 336.1213(4)(c))**
21. The permittee shall promptly report any deviations from ROP requirements and certify the reports. The prompt reporting of deviations from ROP requirements is defined in Rule 213(3)(c)(ii) as follows, unless otherwise described in this ROP. **(R 336.1213(3)(c))**
- For deviations that exceed the emissions allowed under the ROP, prompt reporting means reporting consistent with the requirements of Rule 912 as detailed in Condition 25. All reports submitted pursuant to this paragraph shall be promptly certified as specified in Rule 213(3)(c)(iii).
  - For deviations which exceed the emissions allowed under the ROP and which are not reported pursuant to Rule 912 due to the duration of the deviation, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe reasons for each deviation and the actions taken to minimize or correct each deviation.
  - For deviations that do not exceed the emissions allowed under the ROP, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe the reasons for each deviation and the actions taken to minimize or correct each deviation.

22. For reports required pursuant to Rule 213(3)(c)(ii), prompt certification of the reports is described in Rule 213(3)(c)(iii) as either of the following **(R 336.1213(3)(c))**:
- Submitting a certification by a responsible official with each report which states that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
  - Submitting, within 30 days following the end of a calendar month during which one or more prompt reports of deviations from the emissions allowed under the ROP were submitted to the department pursuant to Rule 213(3)(c)(ii), a certification by a responsible official which states that, "based on information and belief formed after reasonable inquiry, the statements and information contained in each of the reports submitted during the previous month were true, accurate, and complete". The certification shall include a listing of the reports that are being certified. Any report submitted pursuant to Rule 213(3)(c)(ii) that will be certified on a monthly basis pursuant to this paragraph shall include a statement that certification of the report will be provided within 30 days following the end of the calendar month.
23. Semiannually for the term of the ROP as detailed in the special conditions, or more frequently if specified, the permittee shall submit certified reports of any required monitoring to the appropriate AQD District Office. All instances of deviations from ROP requirements during the reporting period shall be clearly identified in the reports. **(R 336.1213(3)(c)(i))**
24. On an annual basis, the permittee shall report the actual emissions, or the information necessary to determine the actual emissions, of each regulated air pollutant as defined in Rule 212(6) for each emission unit utilizing the emissions inventory forms provided by the department. **(R 336.1212(6))**
25. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the appropriate AQD District Office. The notice shall be provided not later than two business days after the start-up, shutdown, or discovery of the abnormal conditions or malfunction. Notice shall be by any reasonable means, including electronic, telephonic, or oral communication. Written reports, if required under Rule 912, must be submitted to the appropriate AQD District Supervisor within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal conditions or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5) and shall be certified by a responsible official in a manner consistent with the CAA. **(R 336.1912)**

#### Permit Shield

26. Compliance with the conditions of the ROP shall be considered compliance with any applicable requirements as of the date of ROP issuance, if either of the following provisions is satisfied. **(R 336.1213(6)(a)(i), R 336.1213(6)(a)(ii))**
- The applicable requirements are included and are specifically identified in the ROP.
  - The permit includes a determination or concise summary of the determination by the department that other specifically identified requirements are not applicable to the stationary source.

Any requirements identified in Part E of this ROP have been identified as non-applicable to this ROP and are included in the permit shield.

27. Nothing in this ROP shall alter or affect any of the following:
- The provisions of Section 303 of the CAA, emergency orders, including the authority of the USEPA under Section 303 of the CAA. **(R 336.1213(6)(b)(i))**
  - The liability of the owner or operator of this source for any violation of applicable requirements prior to or at the time of this ROP issuance. **(R 336.1213(6)(b)(ii))**
  - The applicable requirements of the acid rain program, consistent with Section 408(a) of the CAA. **(R 336.1213(6)(b)(iii))**

- d. The ability of the USEPA to obtain information from a source pursuant to Section 114 of the CAA. **(R 336.1213(6)(b)(iv))**
28. The permit shield shall not apply to provisions incorporated into this ROP through procedures for any of the following:
- a. Operational flexibility changes made pursuant to Rule 215. **(R 336.1215(5))**
  - b. Administrative Amendments made pursuant to Rule 216(1)(a)(i)-(iv). **(R 336.1216(1)(b)(iii))**
  - c. Administrative Amendments made pursuant to Rule 216(1)(a)(v) until the amendment has been approved by the department. **(R 336.1216(1)(c)(iii))**
  - d. Minor Permit Modifications made pursuant to Rule 216(2). **(R 336.1216(2)(f))**
  - e. State-Only Modifications made pursuant to Rule 216(4) until the changes have been approved by the department. **(R 336.1216(4)(e))**
29. Expiration of this ROP results in the loss of the permit shield. If a timely and administratively complete application for renewal is submitted not more than 18 months, but not less than 6 months, before the expiration date of the ROP, but the department fails to take final action before the end of the ROP term, the existing ROP does not expire until the renewal is issued or denied, and the permit shield shall extend beyond the original ROP term until the department takes final action. **(R 336.1217(1)(c), R 336.1217(1)(a))**

### Revisions

30. For changes to any process or process equipment covered by this ROP that do not require a revision of the ROP pursuant to Rule 216, the permittee must comply with Rule 215. **(R 336.1215, R 336.1216)**
31. A change in ownership or operational control of a stationary source covered by this ROP shall be made pursuant to Rule 216(1). **(R 336.1219(2))**
32. For revisions to this ROP, an administratively complete application shall be considered timely if it is received by the department in accordance with the time frames specified in Rule 216. **(R 336.1210(9))**
33. Pursuant to Rule 216(1)(b)(iii), Rule 216(2)(d) and Rule 216(4)(d), after a change has been made, and until the department takes final action, the permittee shall comply with both the applicable requirements governing the change and the ROP terms and conditions proposed in the application for the modification. During this time period, the permittee may choose to not comply with the existing ROP terms and conditions that the application seeks to change. However, if the permittee fails to comply with the ROP terms and conditions proposed in the application during this time period, the terms and conditions in the ROP are enforceable. **(R 336.1216(1)(c)(iii), R 336.1216(2)(d), R 336.1216(4)(d))**

### Reopenings

34. A ROP shall be reopened by the department prior to the expiration date and revised by the department under any of the following circumstances:
- a. If additional requirements become applicable to this stationary source with three or more years remaining in the term of the ROP, but not if the effective date of the new applicable requirement is later than the ROP expiration date. **(R 336.1217(2)(a)(i))**
  - b. If additional requirements pursuant to Title IV of the CAA become applicable to this stationary source. **(R 336.1217(2)(a)(ii))**
  - c. If the department determines that the ROP contains a material mistake, information required by any applicable requirement was omitted, or inaccurate statements were made in establishing emission limits or the terms or conditions of the ROP. **(R 336.1217(2)(a)(iii))**
  - d. If the department determines that the ROP must be revised to ensure compliance with the applicable requirements. **(R 336.1217(2)(a)(iv))**

## Renewals

35. For renewal of this ROP, an administratively complete application shall be considered timely if it is received by the department not more than 18 months, but not less than 6 months, before the expiration date of the ROP. **(R 336.1210(7))**

## Stratospheric Ozone Protection

36. If the permittee is subject to Title 40 of the Code of Federal Regulations (CFR), Part 82 and services, maintains, or repairs appliances except for motor vehicle air conditioners (MVAC), or disposes of appliances containing refrigerant, including MVAC and small appliances, or if the permittee is a refrigerant reclaiming, appliance owner or a manufacturer of appliances or recycling and recovery equipment, the permittee shall comply with all applicable standards for recycling and emissions reduction pursuant to 40 CFR, Part 82, Subpart F.
37. If the permittee is subject to 40 CFR, Part 82, and performs a service on motor (fleet) vehicles when this service involves refrigerant in the MVAC, the permittee is subject to all the applicable requirements as specified in 40 CFR, Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed by the original equipment manufacturer. The term MVAC as used in Subpart B does not include the air-tight sealed refrigeration system used for refrigerated cargo or an air conditioning system on passenger buses using Hydrochlorofluorocarbon-22 refrigerant.

## Risk Management Plan

38. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall register and submit to the USEPA the required data related to the risk management plan for reducing the probability of accidental releases of any regulated substances listed pursuant to Section 112(r)(3) of the CAA as amended in 40 CFR, Part 68.130. The list of substances, threshold quantities, and accident prevention regulations promulgated under 40 CFR, Part 68, do not limit in any way the general duty provisions under Section 112(r)(1).
39. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall comply with the requirements of 40 CFR, Part 68, no later than the latest of the following dates as provided in 40 CFR, Part 68.10(a):
- June 21, 1999,
  - Three years after the date on which a regulated substance is first listed under 40 CFR, Part 68.130, or
  - The date on which a regulated substance is first present above a threshold quantity in a process.
40. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall submit any additional relevant information requested by any regulatory agency necessary to ensure compliance with the requirements of 40 CFR, Part 68.
41. If subject to Section 112(r) of the CAA and 40 CFR, Part 68, the permittee shall annually certify compliance with all applicable requirements of Section 112(r) as detailed in Rule 213(4)(c)). **(40 CFR, Part 68)**

## Emission Trading

42. Emission averaging and emission reduction credit trading are allowed pursuant to any applicable interstate or regional emission trading program that has been approved by the Administrator of the USEPA as a part of Michigan's State Implementation Plan. Such activities must comply with Rule 215 and Rule 216. **(R 336.1213(12))**

**Permit To Install (PTI)**

43. The process or process equipment included in this permit shall not be reconstructed, relocated, or modified unless a PTI authorizing such action is issued by the department, except to the extent such action is exempt from the PTI requirements by any applicable rule. <sup>2</sup> **(R 336.1201(1))**
44. The department may, after notice and opportunity for a hearing, revoke PTI terms or conditions if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of the PTI or is violating the department's rules or the CAA. <sup>2</sup> **(R 336.1201(8), Section 5510 of Act 451)**
45. The terms and conditions of a PTI shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by the PTI. If a new owner or operator submits a written request to the department pursuant to Rule 219 and the department approves the request, this PTI will be amended to reflect the change of ownership or operational control. The request must include all of the information required by Subrules (1)(a), (b) and (c) of Rule 219. The written request shall be sent to the appropriate AQD District Supervisor, MDEQ. <sup>2</sup> **(R 336.1219)**
46. If the installation, reconstruction, relocation, or modification of the equipment for which PTI terms and conditions have been approved has not commenced within 18 months, or has been interrupted for 18 months, the applicable terms and conditions from that PTI shall become void unless otherwise authorized by the department. Furthermore, the person to whom that PTI was issued, or the designated authorized agent, shall notify the department via the Supervisor, Permit Section, MDEQ, AQD, P. O. Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, reconstruction, relocation, or modification of the equipment allowed by the terms and conditions from that PTI. <sup>2</sup> **(R 336.1201(4))**

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

<sup>2</sup>This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

## **B. SOURCE-WIDE CONDITIONS**

Part B outlines the Source-Wide Terms and Conditions that apply to this stationary source. The permittee is subject to these special conditions for the stationary source in addition to the general conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply to this source, NA (not applicable) has been used in the table. If there are no Source-Wide Conditions, this section will be left blank.

## SOURCE-WIDE CONDITIONS

### POLLUTION CONTROL EQUIPMENT

#### I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

#### II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

#### III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Permittee shall continue to maintain and operate its 24-hour telephone reporting system (i.e., the Guardian Fiberglass Action Line) for local residents. The telephone number for this reporting system shall be published and maintained in the current local phone book directory for the City of Albion.<sup>1</sup> **(R 336.1901)**

#### IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

#### V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. Not less than seven days prior to any performance testing required by the applicable conditions in this ROP, the permittee, or its authorized agent, shall notify the AQD Kalamazoo District Supervisor and the AQD Technical Programs Unit Supervisor, in writing, of the time and place of the testing. Representatives of the AQD shall have the opportunity to witness the testing. **(R 336.2001(3))**

#### VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall keep the following information for the facility within 30 days of the end of each calendar month:<sup>2</sup> **(R 336.1205(3), R 336.1901)**
  - a. Gallons or pounds of each HAP containing raw material used.
  - b. Where applicable, gallons or pounds of each HAP containing material reclaimed.
  - c. HAP content, in pounds per gallon or pounds per pound, of each material used.
  - d. Individual and aggregate HAP emission calculations determining the monthly emission rate of each in tons per calendar month.
  - e. Individual and aggregate HAP emission calculations determining the annual emission rate of each in tons per 12-month rolling time period as determined at the end of each calendar month. Calculations shall be performed based on the methodology outlined in Appendix 7.

All records shall be kept in a format acceptable to the AQD District Supervisor and made available to the Department upon request.

2. The owner or operator shall develop and implement a written plan as described in 40 CFR 63.6(e)(3) that contains specific procedures to be followed for operating and maintaining the source during periods of startup, shutdown, and malfunction and that contains a program of corrective actions for malfunctioning equipment. In addition to the information required in 40 CFR 63.6(e)(3), the plan shall include:<sup>2</sup> **(40 CFR 63 Subpart NNN)**
  - a. Procedures to determine and record the cause of the malfunction and the time the malfunction began and ended;
  - b. Corrective actions to be taken in the event of a malfunction, including procedures for recording the actions taken to correct the malfunction or minimize emissions; and
  - c. A maintenance schedule for each control device and process equipment that is consistent with the manufacturer's instructions and recommendations for routine and long-term maintenance.
  - d. The owner or operator shall also keep records of each event as required by 40 CFR 63.10(b) and record and report if an action taken during a startup, shutdown, or malfunction is not consistent with the procedures in the plan as described in 40 CFR 63.10(e)(3)(iv).

See Appendix 7

**VII. REPORTING**

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).  
<sup>2</sup>This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

**C. EMISSION UNIT CONDITIONS**

Part C outlines terms and conditions that are specific to individual emission units listed in the Emission Unit Summary Table. The permittee is subject to the special conditions for each emission unit in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA (not applicable) has been used in the table. If there are no conditions specific to individual emission units, this section will be left blank.

**EMISSION UNIT SUMMARY TABLE**

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EU-MATHAND	Equipment used for raw material receiving, conveying, weighing, mixing, storing, and feeding to FG-MELT6, 7, and 9; and EU-EM8, that utilizes internally and externally vented baghouse controls.	12-15-1980, 6-2-1999, 8-10-2005, 1-31-2008	NA
EU-EM6	One refractory lined electric melt furnace, controlled with an externally vented baghouse, that discharges molten glass to a refractory lined natural gas fired forehearth and then to EU-NRFORMCOL.	12-15-1980, 6-2-1999	FG-MELT6,7&9
EU-EM7	One refractory lined electric melt furnace, controlled with an externally vented baghouse, that discharges molten glass to a refractory lined natural gas fired forehearth and then to EU-NRFORMCOL.	6-8-2004	FG-MELT7&9 FG-MELT6,7&9
EU-EM8	One refractory lined electric melt furnace, controlled with an externally vented baghouse, that discharges molten glass to a refractory lined natural gas fired forehearth and then to EU-RFC2.	6-8-2004	NA
EU-BINDERMIX	The binder mixing system includes resin storage tanks, pre-reaction mix tanks, pre-reaction holding tanks, additive tanks, binder mix tanks, and process water tanks.	12-15-1980, 6-2-1999, 6-8-2004	NA
EU-EM9	One refractory lined electric melt furnace, controlled with an externally vented baghouse, that discharges molten glass to a refractory lined natural gas fired forehearth and then to EU-RESFORMCOL.	2-5-07	FG-MELT7&9 FG-MELT6,7&9
EU-RESFORMCOL	Resinated fiberglass forming and collection process consisting of natural gas fired rotary spin fiberizers; one conveyerized collection screen; binder and de-dusting oil/wax spray applicators; that utilizes a high efficiency wet scrubber control system.	12/15/1980, 6-2-1999, 6-8-2004, 3-17-2008	FG-RES1

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EU-RESCURE	One conveyor-fed natural gas fired curing oven that utilizes a high efficiency air filtration control system and a cooling section that utilizes a high efficiency wet scrubber control system.	12-15-1980, 6-2-1999, 6-8-2004, 3-17-2008	FG-RES1
EU-RFC2	Resinated fiberglass forming and collection process consisting of natural gas-fired rotary spin fiberizers; one conveyORIZED collection screen; binder and de-dusting oil/wax spray applicators; that utilizes a high efficiency wet scrubber control system.	6-8-2004, 1-5-2008	FG-RES2
EU-RC2	One conveyor-fed natural gas fired curing oven with cooling section that utilizes a high efficiency wet scrubber control system.	6-8-2004	FG-RES2
EU-FACESIZEPKG	Sizing and packaging operations for the resinated and non-resinated fiberglass production lines consisting of one or more of the following processes: facing, trimming, rolling, dicing, laminating, cleaning, and packaging operations that utilize either an internally vented wet impingement scrubber (air tumbler), an internally vented bag filter, or cyclones followed by internally vented particulate controls.	12-15-1980, 6-2-1999, 6-8-2004, 3-17-2008	NA
EU-NRFORMCOL	Non-resinated fiberglass forming and collection process consisting of natural gas-fired rotary spin fiberizers and conveyORIZED collection screens that utilize externally vented venturi scrubbers or a drum filter, and silicone and/or de-dusting oil spray applicators. The line also includes a dicing operation with fugitive emissions from the use of an anti-static additive, silicone and/or de-dusting oil application that utilizes internally vented particulate controls.	12-15-1993, 6-2-1999, 6-8-2004, 1-24-2007	NA

**EU-MATHAND  
 EMISSION UNIT CONDITIONS**

**DESCRIPTION**

Equipment used for raw material receiving, conveying, weighing, mixing, storing, and feeding to FG-MELT6, 7, and 9 and EU-EM8.

**Flexible Group ID:** NA

**POLLUTION CONTROL EQUIPMENT**

Internally and externally vented baghouse controls

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
Visible Emissions	10% Opacity <sup>2</sup>	6-minute average	EU-MATHAND	General Provisions	R 336.1301 R 336.1331 R 336.1901 40 CFR 52.21(j)

**II. MATERIAL LIMIT(S)**

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

NA

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

NA

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

- The permittee shall record the identity and weight of each raw material (except for recycled cullet manufactured on site and recycled dust) mixed and weighed, in tons per 12 month rolling time period as determined at the end of each calendar month.<sup>2</sup> **(R 336.1331), (R 336.1901), (40 CFR 52.21(j))**

2. Within 30 days of the end of each calendar month, the permittee shall calculate the mass particulate (PM10) emission rate in tons per 12 month rolling time period as determined at the end of each calendar month. The emissions shall be calculated using the methodology outlined in Appendix 7.<sup>2</sup> **(R 336.1331), (R 336.1901), (40 CFR 52.21(j))**

See Appendix 7

**VII. REPORTING**

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

<sup>2</sup>This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

**EU-EM6  
 EMISSION UNIT CONDITIONS**

**DESCRIPTION**

One refractory lined electric melt furnace that discharges molten glass to a refractory lined natural gas fired forehearth and then to EU-NRFORMCOL.

**Flexible Group ID:** FG-MELT6, 7, and 9

**POLLUTION CONTROL EQUIPMENT**

Externally vented baghouse control

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

**II. MATERIAL LIMIT(S)**

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall initiate corrective actions within one hour when any daily average value for pull rate exceeds the average value during the most recent acceptable stack test by more than 20 percent. The corrective actions shall be completed in a timely manner according to the Operation, Maintenance and Monitoring Plan. **(40 CFR 63 Subpart NNN)**
2. The permittee shall implement a Quality Improvement Plan (QIP) consistent with the compliance assurance monitoring provisions of 40 CFR 64.8 when the pull rate exceeds the average value during the most recent acceptable stack test by more than 20 percent for more than 5 percent of any 6-month block reporting period. **(40 CFR 63 Subpart NNN)**
3. The permittee shall operate EU-EM6 such that the pull rate does not exceed by more than 20 percent the average value during the most recent acceptable stack test for more than 10 percent of any 6-month block reporting period. **(40 CFR 63 Subpart NNN)**

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

NA

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. Permittee shall monitor the glass pull rate from EU-EM6 at least once every calendar day. **(R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j)), (40 CFR 63 Subpart NNN)**
2. Permittee shall maintain the following records and emission calculations:
  - a. Glass pull rates, in pounds (or tons) per hour, monitored pursuant to EU-EM6 Condition VI.1.
  - b. Log of excess glass pull rate. The log shall identify the date and time for each data point; the daily average pull rate; the date when any daily average value exceeds the average value during the most recent acceptable stack test by more than 20 percent; when corrective actions were initiated; the cause of the excess pull rate; an explanation of the corrective actions; when the cause was corrected; and, any additional information required pursuant to the Operation, Maintenance and Monitoring Plan. **(40 CFR 63 Subpart NNN)**

All records and reports shall be maintained on site for a period of five years and made available to the Department upon request. **(R 336.1225), (R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j)), (40 CFR 63 Subpart NNN)**

See Appendix 7

**VII. REPORTING**

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
SV-MELT6, 7, and 9	48	125	R 336.1225, 40 CFR 52.21(c) and (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

<sup>2</sup>This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

**EU-EM8  
 EMISSION UNIT CONDITIONS**

**DESCRIPTION**

One refractory lined electric melt furnace that discharges molten glass to a refractory lined natural gas fired forehearth and then to EU-RFC2.

**Flexible Group ID:** NA

**POLLUTION CONTROL EQUIPMENT**

Externally vented baghouse control

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. PM10	0.017 Pounds Per 1000 Pounds of Dry Exhaust Gas <sup>2*</sup>	Test Protocol	EU-EM8	Condition V(1)	R 336.1331, R 336.1901, 40 CFR 52.21(j)
2. PM	0.5 Pounds Per Ton of Glass Pulled <sup>2</sup>	Test Protocol	EU-EM8	Condition V(2)	40 CFR 63 Subpart NNN
3. PM10	0.92 Pounds Per Hour <sup>2</sup>	Test Protocol	EU-EM8	Condition V(1)	R 336.1331, R 336.1901, 40 CFR 52.21(c), (d) and (j)

\* Compliance with R 336.1331 will be evaluated using PM10 as a surrogate for total particulate and on a dry gas basis.

**II. MATERIAL LIMIT(S)**

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

- The permittee shall maintain the Operation, Maintenance and Monitoring Plan for EU-EM8. The plan shall be updated as necessary and shall satisfy the requirements of 40 CFR 63.1383. **(40 CFR 63 Subpart NNN)**
- The permittee shall initiate corrective actions within one hour of a bag leak detection system alarm. The corrective actions shall be completed in a timely manner according to the procedures in the Operation, Maintenance and Monitoring Plan.<sup>2</sup> **(40 CFR 63 Subpart NNN)**
- The permittee shall initiate corrective actions within one hour when any four hour block average value for pull rate exceeds the average value during the most recent acceptable stack test by more than 20 percent. The corrective actions shall be completed in a timely manner according to the Operation, Maintenance and Monitoring Plan.<sup>2</sup> **(40 CFR 63 Subpart NNN)**

4. The permittee shall implement a Quality Improvement Plan (QIP) consistent with the compliance assurance monitoring provisions of 40 CFR 64 Subpart D when the bag leak detection system alarm is sounded for more than 5 percent of the total operating time in a 6-month block reporting period.<sup>2</sup> **(40 CFR 63 Subpart NNN)**
5. The permittee shall initiate a QIP consistent with the compliance assurance monitoring provisions of 40 CFR 64.8 when the pull rate exceeds the average value during the most recent acceptable stack test by more than 20 percent for more than 5 percent of any six month block reporting period.<sup>2</sup> **(40 CFR 63 Subpart NNN)**
6. The permittee shall operate EU-EM8 such that the pull rate does not exceed by more than 20 percent the average value during the most recent acceptable stack test for more than 10 percent of any six month block reporting period.<sup>2</sup> **(40 CFR 63 Subpart NNN)**

#### **IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall operate EU-EM8 in conjunction with the baghouse controls being installed, maintained and operated in a satisfactory manner. Satisfactory operation is defined as operation that does not result in the triggering of the bag leak detection system alarm.<sup>2</sup> **(R 336.1225), (R 336.1331), (R 336.2001), (R 336.2003), (R 336.2004), (40 CFR 52.21(j))**

#### **V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. Once every three years, verification of the following from EU-EM8 by testing, at owner's expense, in accordance with Department requirements, will be required:
  - a. The particulate (PM10) emission rate in pounds per thousand pounds of dry exhaust gases.
  - b. The particulate (PM10) emission rate in pounds per hour and pounds per ton of glass pulled as defined in Appendix 7.
  - c. The total chromium emission rates in pounds per hour and pounds per ton of glass pulled as defined in Appendix 7.

No less than 30 days prior to each test, a complete performance testing plan must be submitted to the Air Quality Division. Testing for hexavalent chromium may be substituted for total chromium testing with prior written approval from the District Supervisor. Each performance testing plan must be approved by the Air Quality Division prior to testing. A complete report of the results of required testing shall be submitted to the Technical Programs Unit, Air Quality Division and the District Supervisor, Air Quality Division within 60 days following the last date of testing.<sup>2</sup> **(R 336.1225), (R 336.1331), (R 336.2001), (R 336.2003), (R 336.2004), (40 CFR 52.21(j))**

2. Verification of the particulate (PM) emission rate, in pounds per ton of glass pulled as defined in 40 CFR 60 Subpart PPP, from EU-EM8, by testing, at owner's expense, in accordance with Department requirements, will be required. No less than 30 days prior to each test, a complete performance testing plan must be submitted to the Air Quality Division. The performance testing plan must be approved by the Air Quality Division prior to testing. A complete report of the results of required testing shall be submitted to the Technical Programs Unit, Air Quality Division and the District Supervisor, Air Quality Division within 60 days following the last date of testing.<sup>2</sup> **(40 CFR 63 Subpart NNN)**

**See Appendix 7**

#### **VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall equip, calibrate, operate and maintain EU-EM8 with continuous pull rate monitors capable of monitoring the glass pull rate on an hourly basis.<sup>2</sup> **(R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j)), (40 CFR 63 Subpart NNN)**

2. The permittee shall install, calibrate, maintain and continuously operate in a satisfactory manner a baghouse leak detection (i.e. breakthrough) monitor and recorder for EU-EM8.<sup>2</sup> **(R 336.1225), (R 336.1331), (R 336.1901), (40 CFR 52.21(j)), (40 CFR 63 Subpart NNN)**
3. The permittee shall maintain the following records and emission calculations:<sup>2</sup> **(R 336.1225), (R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j)), (40 CFR 63 Subpart NNN)**
  - a. Hourly glass pull rate, in pounds (or tons) per hour, monitored pursuant to Condition No. VI(1) of EU-EM8 in this ROP.
  - b. Log of excess pull rate. The log shall identify the date and time for each data point; the 4-hour block average pull rate; the date and time when any one 4-hour block average exceeds the average value during the most recent acceptable stack test by more than 20 percent; when corrective actions were initiated; the cause of the excess pull rate; an explanation of the corrective actions; when the cause was corrected; and, any additional information required pursuant to the Operation, Maintenance and Monitoring Plan.
  - c. Log of bag leak detection system alarms. The log shall identify the control device and include the date and time of the alarm; when the corrective actions were initiated; the cause of the alarm; an explanation of the corrective actions; when the cause was corrected; and, any additional information required pursuant to the Operation, Maintenance and Monitoring Plan. For alarm events greater than 2-hours in duration, an estimate of the quantity of PM10 emissions released.
  - d. Within 30 days of the end of each calendar month, emission calculations showing:
    - i. The mass PM10 emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.
    - ii. The mass VOC emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.
    - iii. The total chromium emission rates in tons per 12-month rolling time period as determined at the end of each calendar month.
  - e. Calculations shall be performed based on the emission rates determined from the most recent performance tests in terms of pounds per ton of glass pulled multiplied by 1.15 times the actual tons of glass pulled, where the pull rate is determined according to the methodology in Appendix 7. The 1.15 factor accounts for the annual melter efficiency (i.e. the weight of raw materials added into EU-EM8 that does not become glass pulled).

**See Appendix 7**

## **VII. REPORTING**

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

**See Appendix 8**

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
SV-EP0022	42 <sup>2</sup>	150 <sup>2</sup>	R 336.1225, 40 CFR 52.21 Subparts (c) and (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

<sup>2</sup> This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

**EU-RESFORMCOL  
 EMISSION UNIT CONDITIONS**

**DESCRIPTION**

Resinated fiberglass forming and collection process consisting of natural gas-fired rotary spin fiberizers, one conveyORIZED collection screen, and binder and de-dusting oil/wax spray applicators.

**Flexible Group ID:** FG-RES1

**POLLUTION CONTROL EQUIPMENT**

High efficiency wet scrubber

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. PM10	0.04 Pounds per 1000 Pounds of Dry Exhaust Gases <sup>2*</sup>	Test Protocol	EU-RESFORMCOL	Condition IV(1), V(1), VI(2)	R 336.1331, R 336.1901, 40 CFR 52.21(j)
2. PM10	12.8 Pounds Per Hour <sup>2</sup>	Test Protocol	EU-RESFORMCOL	Condition IV(1), V(1), VI(2)	R 336.1331, R 336.1901, 40 CFR 52.21(j)
3. Ammonia (CAS 7664- 41-7)	57.0 mg/m <sup>3</sup> of exhaust gases <sup>1**</sup>	Test Protocol	EU-RESFORMCOL	Condition IV(1), V(1)	R 336.1225, R 336.1901
4. Formaldehyde (CAS 50-00-0)	7.0 mg/m <sup>3</sup> of exhaust gases <sup>1**</sup>	Test Protocol	EU-RESFORMCOL	Condition IV(1), V(1)	R 336.1225, R 336.1901
5. Phenol (CAS 108-95- 2)	25.0 mg/m <sup>3</sup> of exhaust gases <sup>1**</sup>	Test Protocol	EU-RESFORMCOL	Condition IV(1), V(1)	R 336.1225, R 336.1901
* Compliance with R 336.1331 will be evaluated using PM10 as a surrogate for total particulate and on a dry gas basis.					
** Limit specified is in terms of milligrams per cubic meter of exhaust gas, corrected to 70 °F and 29.92 inches Hg					

**II. MATERIAL LIMIT(S)**

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

- The permittee shall maintain the Operation, Maintenance and Monitoring Plan for EU-RESFORMCOL. The plan shall be updated as necessary and shall satisfy the requirements of 40 CFR 63.1383. **(40 CFR 63 Subpart NNN)**

2. The permittee shall initiate corrective actions within one hour when any three hour block average value for any wet scrubber monitored parameter (pressure drop, scrubber liquid flow rate, or chemical addition feed rate) falls outside the range established during the most recent acceptable stack test. The corrective actions shall be completed in a timely manner according to the procedures in the Operation, Maintenance and Monitoring Plan.<sup>2</sup> **(40 CFR 63 Subpart NNN)**
3. The permittee shall initiate a Quality Improvement Plan (QIP) consistent with the compliance assurance monitoring provisions of 40 CFR 64.8 when any wet scrubber monitored parameter (pressure drop, scrubber liquid flow rate, or chemical addition feed rate) falls outside the range established during the most recent acceptable stack test for more than 5 percent of any six month block reporting period.<sup>2</sup> **(40 CFR 63 Subpart NNN)**
4. The permittee shall operate each wet scrubber such that no monitored parameter (pressure drop, scrubber liquid flow rate, or chemical addition feed rate) falls outside the range established during the most recent acceptable stack test for more than 10 percent of any six month block reporting period.<sup>2</sup> **(40 CFR 63 Subpart NNN)**

#### **IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall operate EU-RESFORMCOL in conjunction with the wet scrubber control system being installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the high efficiency wet scrubber control system is demonstrated by maintaining pressure drop, scrubber liquid flow rate, and chemical addition feed rate within the range established during the most recent acceptable stack test.<sup>2</sup> **(R 336.1225), (R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 63 Subpart NNN), (40 CFR 52.21(j))**
2. Permittee shall equip, calibrate, operate, and maintain the high efficiency wet scrubber control system as follows:<sup>2</sup> **(R 336.1225), (R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 63 Subpart NNN), (40 CFR 52.21(j))**
  - a. With differential pressure monitors that are certified by their manufacturer to within +/- one inch of water gauge over their operating range.
  - b. With scrubber liquid flowmeters that are certified by their manufacturer to within 5 percent over their operating range.
  - c. The differential pressure monitors and scrubber liquid flow meters are to be recalibrated in accordance with procedures specified under the Operation, Maintenance and Monitoring Plan pursuant to 40 CFR 63.1383.

#### **V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. Once every three years, verification of the following, by testing, at owner's expense, in accordance with Department requirements, will be required.<sup>2</sup> **(R 336.1225), (R 336.1331), (R 336.1702(a)), (40 CFR 60 Subpart PPP), (40 CFR 52.21(j)), (40 CFR 63 Subpart NNN)**
  - a. The particulate (PM10) emission rate in pounds per thousand pounds of dry exhaust gases.
  - b. The particulate (PM10) emission rate, in pounds per hour and, to calculate the limit in Condition I(1) of FG-RES1 in this ROP, pounds per ton of glass pulled as defined in 40 CFR 60 Subpart PPP.
  - c. The particulate (PM10) emission rate, in pounds per hour and pounds per ton of glass pulled as defined in Appendix 7.
  - d. The ammonia exhaust concentration in pounds per hour and milligrams per cubic meter of exhaust gas, corrected to 70°F and 29.92 inches Hg.
  - e. The formaldehyde exhaust concentration in pounds per hour and milligrams per cubic meter of exhaust gas, corrected to 70°F and 29.92 inches Hg; and, to calculate the limit in Condition I(3) of FG-RES1 in this ROP, pounds per ton of glass pulled pursuant to 40 CFR 63 Subpart NNN.
  - f. The phenol exhaust concentration in pounds per hour and milligrams per cubic meter of exhaust gas, corrected to 70°F and 29.92 inches Hg.
  - g. To establish the operating ranges for wet scrubber pressure drop, liquid flow rate and chemical addition feed rate.

No less than 30 days prior to each stack test, a complete performance testing plan must be submitted to the AQD. Each performance testing plan must be approved by the AQD prior to testing. A complete report of the results of required testing shall be submitted to the Technical Programs Unit, Air Quality Division and the District Supervisor, Air Quality Division within 60 days following the last date of testing.<sup>2</sup> (R 336.1225), (R 336.1331), (R 336.1702(a)), (40 CFR 60 Subpart PPP), (40 CFR 52.21(j)), (40 CFR 63 Subpart NNN)

## **VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. Permittee shall monitor, in a satisfactory manner, the pressure drop, scrubber liquid flow rate, and chemical addition feed rate to the wet scrubber on a continuous basis.<sup>2</sup> (R 336.1225), (R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 63 Subpart NNN), (40 CFR 52.21(j))
2. Permittee shall maintain the following records and emission calculations:<sup>2</sup> (R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j))
  - a. High efficiency wet scrubber pressure drop, scrubber liquid flow rate, and chemical addition feed rate data.
  - b. Log of wet scrubber operating parameters (pressure drop, scrubber liquid flow rate, and chemical addition feed rate) monitored pursuant to VI(1) of EU-RESFORMCOL in this ROP. The log shall identify the date and time for each operating parameter; the 3-hour block average for each monitored operating parameter; the date and time when any one 3-hour block average falls outside the range established during the most recent acceptable stack test; when the corrective actions were initiated; the cause of the out-of-range parameter; an explanation of the corrective actions; when the cause was corrected; and, any additional information required pursuant to the Operation, Maintenance and Monitoring Plan.
  - c. Within 30 days of the end of each calendar month, emission calculations showing the mass particulate (PM10) emission rate in tons per 12-month rolling time period as determined at the end of each calendar month. Calculations shall be performed based on the PM10 emission rate determined from the most recent performance test in terms of pounds per ton of glass pulled multiplied by the actual tons of glass pulled, where the pull rate is determined according to the methodology in Appendix 7.

All records shall be kept in a format acceptable to the AQD District Supervisor and made available to the Department upon request.

See Appendix 7

## **VII. REPORTING**

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (R 336.1213(3)(c)(ii))
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (R 336.1213(3)(c)(i))
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. (R 336.1213(4)(c))
4. Permittee shall submit semi-annual reports of monitored out-of-range pressure differential, scrubber liquid flow rates, and chemical addition feed rates to the District Supervisor. The semi-annual reports are due by March 15 for reporting period July 1 to December 31 and by September 15 for reporting period January 1 to June 30. The reports shall include all the information required to be kept pursuant to VI(2)(b) of EU-RESFORMCOL in this ROP.<sup>2</sup> (R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 60 Subpart PPP), (40 CFR 52.21(j))

See Appendix 8

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
SV-SCRUBBER	86 <sup>2</sup>	168 <sup>2</sup>	R 336.1225, 40 CFR 52.21 Subparts(c) and (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

<sup>2</sup>This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

**EU-RESCURE  
 EMISSION UNIT CONDITIONS**

**DESCRIPTION**

One conveyor-fed natural gas fired curing oven and cooling section.

**Flexible Group ID:** FG-RES1

**POLLUTION CONTROL EQUIPMENT**

High efficiency air filtration control system  
 High efficiency wet scrubber control system

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. PM10	0.03 Pounds per 1000 Pounds of Dry Exhaust Gases <sup>2*</sup>	Test Protocol	EU-RESCURE	Condition IV(1), IV(2), V(1), VI(3)	R 336.1331, R 336.1901, 40 CFR 52.21(j)
2. PM10	7.91 Pounds Per Hour <sup>2</sup>	Test Protocol	EU-RESCURE	Condition IV(1), IV(2), V(1), VI(3)	R 336.1331, R 336.1901, 40 CFR 52.21 (c), (d), and (j)
3. Ammonia (CAS 7664-41-7)	65.8 mg/m <sup>3</sup> of exhaust gases <sup>1**</sup>	Test Protocol	EU-RESCURE	Condition IV(1), IV(2), V(1)	R 336.1225, R 336.1901
4. Formaldehyde (CAS 50-00-0)	12.3 mg/m <sup>3</sup> of exhaust gases <sup>1**</sup>	Test Protocol	EU-RESCURE	Condition V(1)	R 336.1225, R 336.1901
5. Phenol (CAS 108-95-2)	15.0 mg/m <sup>3</sup> of exhaust gases <sup>1**</sup>	Test Protocol	EU-RESCURE	Condition IV(1), IV(2), V(1)	R 336.1225, R 336.1901

\* Compliance with R 336.1331 will be evaluated using PM10 as a surrogate for total particulate and on a dry gas basis.

\*\* Limit specified is in terms of milligrams per cubic meter of exhaust gas, corrected to 70 °F and 29.92 inches Hg.

**II. MATERIAL LIMIT(S)**

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

- The permittee shall maintain the Operation, Maintenance and Monitoring Plan for EU-RESCURE. The plan shall be updated as necessary and shall satisfy the requirements of 40 CFR 63.1383.<sup>2</sup> **(40 CFR 63 Subpart NNN)**

2. The permittee shall initiate corrective actions within one hour when any three hour block average value for any wet scrubber monitored parameter (pressure drop, scrubber liquid flow rate, or chemical addition feed rate) falls outside the range established during the most recent acceptable stack test. The corrective actions shall be completed in a timely manner according to the procedures in the Operation, Maintenance and Monitoring Plan.<sup>2</sup> **(40 CFR 63 Subpart NNN)**
3. The permittee shall initiate a Quality Improvement Plan (QIP) consistent with the compliance assurance monitoring provisions of 40 CFR 64.8 when any wet scrubber monitored parameter (pressure drop, scrubber liquid flow rate, or chemical addition feed rate) falls outside the range established during the most recent acceptable stack test for more than 5 percent of any six month block reporting period.<sup>2</sup> **(40 CFR 63 Subpart NNN)**
4. The permittee shall operate each wet scrubber such that no monitored parameter (pressure drop, scrubber liquid flow rate, or chemical addition feed rate) falls outside the range established during the most recent acceptable stack test for more than 10 percent of any six month block reporting period.<sup>2</sup> **(40 CFR 63 Subpart NNN)**

#### **IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall operate EU-RESCURE in conjunction with the high efficiency air filtration control system being installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the high efficiency air filtration control system is demonstrated by maintaining pressure drop, draft fan amperage, and temperature within 70 percent or more of the lowest value and 130 percent or less of the highest value of each monitored operating parameter recorded during the most recent acceptable performance test.<sup>2</sup> **(R 336.1225), (R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j))**
2. The permittee shall operate EU-RESCURE in conjunction with the high efficiency wet scrubber control system being installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the high efficiency wet scrubber control system is demonstrated by maintaining pressure drop, scrubber liquid flow, and chemical addition feed rate within the range established during the most recent acceptable stack test.<sup>2</sup> **(R 336.1225), (R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j)), (40 CFR 63 Subpart NNN)**
3. Permittee shall equip, calibrate, operate, and maintain the high efficiency wet scrubber control system as follows:<sup>2</sup> **(R 336.1225), (R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j)), (40 CFR 63 Subpart NNN), (40 CFR 60 Subpart PPP)**
  - a. With differential pressure monitors that are certified by their manufacturer to within +/- one inch of water gauge over their operating range.
  - b. With scrubber liquid flowmeters that are certified by their manufacturer to within 5 percent over their operating range.
  - c. The differential pressure monitors and scrubber liquid flowmeters are to be calibrated in accordance with the Operation, Maintenance, and Monitoring Plan pursuant to 40 CFR 63.1383.
4. Permittee shall equip, calibrate, operate and maintain the high efficiency air filtration control system with differential pressure gauges, temperature sensing devices, and draft fan amperage meters.<sup>2</sup> **(R 336.1225), (R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j))**

#### **V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. Once every three years, verification of the following, by testing, at owner's expense, in accordance with Department requirements, will be required.<sup>2</sup> **(R 336.1225), (R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 60 Subpart PPP), (40 CFR 52.21(j))**
  - a. The particulate (PM10) emission rate in pounds per thousand pounds of dry exhaust gases.
  - b. The particulate (PM10) emission rate, in pounds per hour and, to calculate the limit in Condition I(1) of FG-RES1 in this ROP, pounds per ton of glass pulled as defined in 40 CFR 60 Subpart PPP.
  - c. The particulate (PM10) emission rate, in pounds per hour and pounds per ton of glass pulled as defined in Appendix 7.

- d. The ammonia exhaust concentration in pounds per hour and milligrams per cubic meter of exhaust gas, corrected to 70°F and 29.92 inches Hg.
  - e. The formaldehyde exhaust concentration in pounds per hour and milligrams per cubic meter of exhaust gas, corrected to 70°F and 29.92 inches Hg; and to calculate the limit in Condition I(3) of FG-RES1 in this ROP, pounds per ton of glass pulled pursuant to 40 CFR 63 Subpart NNN.
  - f. The phenol exhaust concentration in pounds per hour and milligrams per cubic meter of exhaust gas, corrected to 70°F and 29.92 inches Hg.
  - g. To establish the operating ranges for wet scrubber pressure drop, liquid flow rate and chemical addition feed rate.
  - h. To establish the operating ranges within 70 percent or more of the lowest value and 130 percent or less of the highest monitored value for the high efficiency air filtration control system pressure drop, draft fan amperage and temperature. The operating range for temperature shall be determined based on the monitored values in degrees Fahrenheit.
2. No less than 30 days prior to each stack test, a complete performance testing plan must be submitted to the AQD. Each performance testing plan must be approved by the AQD prior to testing. A complete report of the results of required testing shall be submitted to the Technical Programs Unit, Air Quality Division and the District Supervisor, Air Quality Division within 60 days following the last date of testing.<sup>2</sup> **(R 336.1225), (R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 60 Subpart PPP), (40 CFR 52.21(j))**

## **VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. Permittee shall monitor and record the pressure drop, draft fan amperage and temperature of each high efficiency air filtration control system at least once every four hours.<sup>2</sup> **(R 336.1225), (R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j))**
2. Permittee shall monitor, in a satisfactory manner, the pressure drop, scrubber liquid flow rate, and chemical addition feed rate to the wet scrubber on a continuous basis.<sup>2</sup> **(R 336.1225), (R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j)), (40 CFR 63 Subpart NNN)**
3. Permittee shall maintain the following records and emission calculations:<sup>2</sup> **(R 336.1702(a)), (R 336.1901), (R 336.1910), (40 CFR 52.21(j))**
  - a. High efficiency air filtration system pressure drop, draft fan amperage and temperature data monitored pursuant to Special Condition VI(1).
  - b. High efficiency wet scrubber control system pressure drop, scrubber liquid flow rate, and chemical addition feed rate data monitored pursuant to Special Condition VI(2).
  - c. Log of wet scrubber operating parameters (pressure drop, scrubber liquid flow rate, and chemical addition feed rate) monitored pursuant to Special Condition VI(2). The log shall identify the date and time for each operating parameter; the 3-hour block average for each monitored operating parameter; the date and time when any one 3-hour block average falls outside the range established during the most recent acceptable stack test; when the corrective actions were initiated; the cause of the out-of-range parameter; an explanation of the corrective actions; when the cause was corrected; and any additional information pursuant to the Operation, Maintenance and Monitoring Plan.
  - d. Operator's log of each cure oven fire event. At a minimum, the fire log shall continue to include information on the date, time, duration and severity of the cure oven fire, production and cure oven operational data during the fire event, visual assessment of oven emissions to the outside air during or within a reasonable time after the fire event, identification of probable causes and actions taken to correct and prevent reoccurrence of the fire event.
  - e. Within 30 days of the end of each calendar month, emission calculations showing the mass particulate (PM10) emission rate in tons per 12-month rolling time period as determined at the end of each calendar month. Calculations shall be performed based on the PM10 emission rate determined from the most recent performance test in terms of pounds per ton of glass pulled, as defined in Attachment 7, multiplied by the actual tons of glass pulled, where the pull rate is determined according to the methodology in Attachment 7.

**See Appendix 7**

**VII. REPORTING**

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**
4. Permittee shall submit semi-annual reports of monitored out-of-range control system parameters. For the high efficiency air filtration control system this includes: pressure differential, draft fan amperage, and temperature consistent with Condition V(1)(h) and VI(1) of EU-RESCURE in this ROP. For the wet scrubber this includes: pressure differential, scrubber liquid flow rate, and chemical addition feed rate consistent with condition V(1)(g) and VI(2) of EU-RESCURE in this ROP. All reports shall be submitted to the District Supervisor. The semi-annual reports are due by March 15 for reporting period July 1 to December 31 and by September 15 for reporting period January 1 to June 30<sup>2</sup>. **(R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 60 Subpart PPP), (40 CFR 52.21(j)), (40 CFR 63 Subpart NNN)**

See Appendix 8

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
SV-HEAF	60 <sup>2</sup>	150 <sup>2</sup>	R 336.1225 40 CFR 52.21 Subparts (c) and (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

<sup>2</sup>This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

**EU-FACESIZEPKG  
 EMISSION UNIT CONDITIONS**

**DESCRIPTION**

Sizing and packaging operations for the resinated and non-resinated fiberglass production lines consisting of one or more of the following processes: facing, trimming, rolling, dicing, laminating, and packaging operations. Adhesive operations and associated cleanup activities to be included as well.

**Flexible Group ID:** NA

**POLLUTION CONTROL EQUIPMENT**

An internally vented wet impingement scrubber (air tumbler), an internally vented bag filter, or cyclones followed by internally vented particulate controls

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. VOC	17.0 tons <sup>2</sup>	Per 12-month rolling time period as determined at the end of each calendar month	EUFACEISIZEPKG	VI.3	R 336.1225 R 336.1702(a)

**II. MATERIAL LIMIT(S)**

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

- The permittee shall capture all waste adhesive and cleanup solvent material(s) and shall store them in closed containers. The permittee shall dispose of all waste adhesive and cleanup solvent material(s) in an acceptable manner in compliance with all applicable state rules and federal regulations.<sup>2</sup> **(R 336.1224), (R 336.1702(a))**

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

- The permittee shall exhaust the emissions from the adhesive and cleanup solvent equipment associated with the roll packaging operation for the FG-RES1 line to SV-HEAF.<sup>2</sup> **(R 336.1225)**

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

- The permittee shall determine the VOC content, water content and density of any adhesive and cleanup solvent material(s) associated with the adhesive application portion of EUFACEISIZEPKG, as applied and as received, using federal Reference Test Method 24. Upon prior written approval by the AQD District Supervisor, the permittee may determine the VOC content from manufacturer's formulation data. If the Method 24 and the formulation values should differ, the permittee shall use the Method 24 results to determine compliance.<sup>2</sup> **(R 336.1225), (R 336.1702(a)), (R 336.2001), (R 336.2003), (R 336.2004), (R 336.2040(5))**

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the 30th day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition.<sup>2</sup> **(R 336.1224), (R 336.1225), (R 336.1299), (R 336.1702(a))**
2. The permittee shall maintain a current listing from the manufacturer of the chemical composition of each adhesive and cleaning material, including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both as deemed acceptable by the AQD District Supervisor. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request.<sup>2</sup> **(R 336.1224), (R 336.1225), (R 336.1299), (R 336.1702(a))**
3. Permittee shall maintain the following records and emission calculations:<sup>2</sup> **(R 336.1331), (R 336.1702(a)), (40 CFR 52.21(j))**
  - a. Identity and VOC content of each VOC-containing raw material used in EU-FACESIZEPKG.
  - b. Monthly usage of each VOC-containing raw material in EU-FACESIZEPKG.
  - c. Within 30 days of the end of each calendar month, emission calculations showing the mass particulate and VOC emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.

**VII. REPORTING**

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
SV-HEAF (for adhesive and associated cleanup solvent emissions only)	60 <sup>2</sup>	150 <sup>2</sup>	R 336.1225, R 336.1901, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

<sup>2</sup>This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

**EU-NRFORMCOL  
 EMISSION UNIT CONDITIONS**

**DESCRIPTION**

Non-resinated fiberglass forming and collection process consisting of natural gas-fired rotary spin fiberizers, conveyORIZED collection screens, and silicone and/or de-dusting oil spray applicators. Also includes a dicing operation with an anti-static additive, silicone application, and/or a de-dusting oil application.

**Flexible Group ID:** NA

**POLLUTION CONTROL EQUIPMENT**

Two venturi scrubbers, and/or a drum filter  
 Cyclone and an internally vented screen room and bag filters

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. PM10	0.03 Pounds per 1000 Pounds of Dry Exhaust Gases <sup>2</sup> *	Test Protocol	EU-NRFORMCOL	Condition V(3)	R 336.1331, R 336.1901, 40 CFR 52.21(j)
2. PM10	8.92 Pounds Per Hour <sup>2</sup>	Test Protocol	EU-NRFORMCOL	Condition V(3)	R 336.1331, R 336.1901, 40 CFR 52.21(j)
3. VOC	50.0 Tons <sup>2</sup>	12-month Rolling Time Period	EU-NRFORMCOL	Condition V(1), V(2), VI(1), IX(1)	R 336.1702(a), R 336.1901, 40 CFR 52.21(j)

\* Compliance with R 336.1331 will be evaluated using PM10 as a surrogate for total particulate and on a dry gas basis.

**II. MATERIAL LIMIT(S)**

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

- The permittee shall not pull more than 119 tons of glass in EU-NRFORMCOL per calendar day. The amount of glass pulled shall be determined in accordance with the methodology set forth in Appendix 7.<sup>2</sup> **(R 336.1331), (R 336.1702(a)), (R 336.1901)**
- The permittee shall not pull more than 39,420 tons of glass in EU-NRFORMCOL per 12-month rolling time period as determined at the end of each calendar month. The amount of glass pulled shall be determined in accordance with the methodology set forth in Appendix 7.<sup>2</sup> **(R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j))**

**See Appendix 7**

#### **IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall operate EU-NRFORMCOL in conjunction with the wet scrubber control system and/or the drum filter being installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the wet scrubber control system is demonstrated by maintaining the pressure drop and liquid flow rate within ranges specified by the manufacturer.<sup>2</sup> **(R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j))**

#### **V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The VOC content, water content and density of any raw material, except de-dusting oil, used in EU-NRFORMCOL shall be determined using federal Reference Test Method 24. The VOC content of de-dusting oil shall be taken as 100 percent. Upon prior written approval by the AQD District Supervisor, the VOC content, water content or density of any raw material, may be determined from manufacturer's formulation data or alternative test methodology.<sup>2</sup> **(R 336.1225), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j))**
2. Within 60 days after request by the Department, permittee shall submit a complete performance testing plan to verify the retention of de-dusting oil on the finished product in terms of pounds of de-dusting oil retained per pound of de-dusting oil used. Within 30 days after Department approval of the performance testing plan, permittee shall commence the performance testing, at owner's expense. Each performance testing plan must be approved by the AQD prior to testing. A complete report of the results of required testing shall be submitted to the Technical Programs Unit, Air Quality Division and the District Supervisor, Air Quality Division within 60 days following the last date of testing.<sup>2</sup> **(R 336.1225), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j))**
3. Once every three years, verification of the following, by testing, at owner's expense, in accordance with Department requirements, will be required:<sup>2</sup> **(R 336.1331), (R 336.1702(a)), (R 336.2001), (R 336.2003), (R 336.2004), (40 CFR 52.21(j))**
  - a. The particulate (PM10) emission rate in pounds per thousand pounds of dry exhaust gases.
  - b. The particulate (PM10) emission rate, in pounds per hour and pound per ton of glass pulled.
4. No less than 30 days prior to each stack test, a complete performance testing plan must be submitted to the AQD. Each performance testing plan must be approved by the AQD prior to testing. A complete report of the results of required testing shall be submitted to the Technical Programs Unit, Air Quality Division and the District Supervisor, Air Quality Division within 60 days following the last date of testing.<sup>2</sup> **(R 336.1331), (R 336.1702(a)), (R 336.2001), (R 336.2003), (R 336.2004), (40 CFR 52.21(j))**

#### **VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. Permittee shall maintain the following records and emission calculations:<sup>2</sup> **(R 336.1331), (R 336.1702(a)), (40 CFR 52.21(j))**
  - a. Daily weight of glass pulled by EU-NRFORMCOL in tons as defined in Appendix 7.
  - b. Within 30 days of the end of each calendar month, annual weight of glass pulled by EU-NRFORMCOL as defined in Appendix 7 in tons per 12-month rolling time period as determined at the end of each calendar month.
  - c. Weight of de-dusting oil used during each calendar month.
  - d. Within 30 days of the end of each calendar month, emission calculations showing the mass particulate (PM10) emission rate in tons per 12-month rolling time period as determined at the end of each calendar month. Calculations shall be performed based on the PM10 emission rate determined from the most recent performance test in terms of pounds per ton of glass pulled multiplied by the actual tons of glass pulled where the pull rate is determined according to the methodology in Appendix 7.

- e. Within 30 days of the end of each calendar month, emission calculations showing the mass VOC emission rate in tons per 12-month rolling time period as determined at the end of each calendar month. Calculations shall be performed based on the methodology outlined in Appendix 7.
  - f. Log of wet scrubber system alarms. At a minimum, the log shall identify the control device and include the time, date, duration, probable causes or reasons for the system alarm, and a description of any corrective measures taken. For alarm events greater than 2-hours in duration, an estimate of the quantity of PM10 emissions released.
2. The permittee shall equip, operate, calibrate, and maintain each wet scrubber system with an approved visible and audible alarm for pressure drop and liquid flow rate located such that they can be seen and heard by the appropriate plant personnel. The alarms shall activate when the pressure drop and liquid flow rate fall outside the manufacturer's recommended specifications.<sup>2</sup> **(R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j))**

See Appendix 7

**VII. REPORTING**

- 1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
- 2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
- 3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
SV-WETSCRUBBER	72 <sup>2</sup>	125 <sup>2</sup>	40 CFR 52.21 Subparts (c) and (d)

**IX. OTHER REQUIREMENT(S)**

- 1. The permittee shall maintain a current listing from the manufacturer of the chemical composition of each raw material used on EU-NRFORMCOL, including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both. All records shall be kept on file for a period of at least five years and made available to the Department upon request.<sup>2</sup> **(R 336.1225), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j))**

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).  
<sup>2</sup>This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

**EU-BINDERMIX  
 EMISSION UNIT CONDITIONS**

**DESCRIPTION**

Equipment including resin storage tanks, pre-reaction mix tanks, pre-reaction holding tanks, additive tanks, binder mix tanks and process water tanks.

**Flexible Group ID:** NA

**POLLUTION CONTROL EQUIPMENT**

NA

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

**II. MATERIAL LIMIT(S)**

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall use a resin in the formulation of 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 most recent acceptable performance test<sup>2</sup>. **(40 CFR 63 Subpart NNN)**
2. The permittee shall use a binder formulation that does not vary from the specification and operating range established and used during the most recent acceptable performance test. For the purposes of this requirement, adding or increasing the quantity of urea and/or lignin in the binder formulation does not constitute a change in the binder formulation<sup>2</sup>. **(40 CFR 63 Subpart NNN)**

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

NA

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The VOC content, of each raw material used in EU-BINDERMIX shall be determined using federal Reference Test Method 24. Upon prior written approval by the AQD District Supervisor, the VOC content of any raw material, may be determined from manufacturer's formulation data or alternative test methodology.<sup>2</sup> **(R 336.1225), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j))**

2. The free-formaldehyde range and specification for the resin used; and the specification and operating range for the binder formulation used in FG-RES1 and FG-RES2, shall be established by testing, at owner's expense, in accordance with Department requirements and consistent with the requirements of 40 CFR 63.1384.<sup>2</sup> **(40 CFR Subpart NNN)**
3. No less than 30 days prior to each stack test, a complete performance testing plan must be submitted to the AQD. Each performance testing plan must be approved by the AQD prior to testing. A complete report of the results of required testing shall be submitted to the Technical Programs Unit, Air Quality Division and the District Supervisor, Air Quality Division within 60 days following the last date of testing.<sup>2</sup> **(40 CFR 63 Subpart NNN)**

## **VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall maintain a current listing from the manufacturer of the chemical composition of each raw material used in the manufacture of binder solution, including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data or both.<sup>2</sup> **(R 336.1225), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j))**
2. The permittee shall maintain the following records and emission calculations:<sup>2</sup> **(40 CFR 63 Subpart NNN)**

For batch manufacturing of binder solution:

- a. Identity, weight, and VOC content of each raw material used to manufacture each batch of binder solution.
- b. Identity and as-purchased free-formaldehyde content of each resin used in each batch of binder solution compared with the free-formaldehyde content range of the resin used during the most recent acceptable performance test.
- c. The as-used VOC content of each batch of binder solution.
- d. Within 30 days of the end of each calendar month, total weight of all binder solution manufactured in tons per 12-month rolling time period as determined at the end of each calendar month.

For continuous manufacturing of binder solution:

- a. Identity, weigh, and VOC content of each raw material used each calendar month to manufacture binder solution.
- b. Identity and as-purchased free-formaldehyde content of each resin used in the manufacture of binder solution compared with the free-formaldehyde content range of the resin used during the most recent acceptable performance test.
- c. The monthly as-used VOC content of binder solution used.
- d. Within 30 days of the end of each calendar month, total weight of all binder solution manufactured in tons per 12-month rolling time period as determined at the end of each calendar month.

**See Appendix 7**

## **VII. REPORTING**

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

**See Appendix 8**

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
NA	NA	NA	NA

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

<sup>2</sup>This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

**D. FLEXIBLE GROUP CONDITIONS**

Part D outlines the terms and conditions that apply to more than one emission unit. The permittee is subject to the special conditions for each flexible group in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA (not applicable) has been used in the table. If there are no special conditions that apply to more than one emission unit, this section will be left blank.

**FLEXIBLE GROUP SUMMARY TABLE**

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FG-RES1	A flexible group that limits the VOC emissions from two emission groups, and defines the testing and monitoring required to assure compliance.	EU-RESFORMCOL EU-RESCURE
FG-RES2	A flexible group that limits the VOC emissions from two emission groups, and defines the testing and monitoring required to assure compliance.	EU-RFC2 EU-RC2
FGR290	Any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rules 290.	NA
FG-MELT7 and 9	Refractory lined electric melt units 7 and 9.	EU-EM7 and EU-EM9
FG-MELT6, 7, and 9	A flexible group that includes melters associated with resinated line #1 and the non-resinated line, which are all vented to existing baghouses and stack.	EU-EM6, EU-EM7 and EU-EM9
FGCOLDCLEANERS	Any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 278 and Rule 281(h), or Rule 285(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979.	NA

**FG-RES1**  
**FLEXIBLE GROUP CONDITIONS**

**DESCRIPTION**

A flexible group that limits the VOC emissions from two emission groups and defines the testing and monitoring required to assure compliance.

**Emission Units:** EU-RESFORMCOL, EU-RESCURE

**POLLUTION CONTROL EQUIPMENT**

High efficiency air filtration control system  
 High efficiency wet scrubber control system

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. PM10	11.0 Pounds Per Ton of Glass Pulled <sup>2</sup> *	Test Protocol	FG-RES1	Condition V(1) of EURESFORMCOL and Condition V(1) of EURESCURE	R 336.1331, R 336.1901, 40 CFR 60 Subpart PPP
2. VOC	140.0 Tons <sup>2</sup>	12-month Rolling Time Period	FG-RES1	Condition V(1), V(2), V(3) and VI(1)	R 336.1702(a), 40 CFR 52.21(j)
3. Formaldehyde (CAS 50-00-0)	1.2 Pounds Per Ton of Glass Pulled <sup>2</sup>	Test Protocol	FG-RES1	Condition V(1) of EURESFORMCOL and Condition V(1) of EURESCURE	R 336.1225, R 336.1901, 40 CFR 63 Subpart NNN

\* Compliance with R 336.1331 and 40 CFR 60 Subpart PPP will be evaluated using PM10 as a surrogate for total particulate and on a dry gas basis.

**II. MATERIAL LIMIT(S)**

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

- The permittee shall not pull more than 108 tons of glass in FG-RES1 per calendar day. The amount of glass pulled shall be determined in accordance with the methodology set forth in Appendix 7.<sup>2</sup> **(R 336.1225), (R 336.1901), (40 CFR 52.21(j)), (40 CFR 63 Subpart NNN)**

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

NA

## **V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The VOC content of each raw material, except de-dusting oil, used in FG-RES1 shall be determined using federal Reference Test Method 24. The VOC content of de-dusting oil shall be taken as 100 percent. Upon prior written approval by the AQD District Supervisor, the VOC content of any raw material may be determined from manufacturer's formulation data or alternative test methodology.<sup>2</sup> **(R 336.1225), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j))**
2. Within 60 days after request by the Division, the permittee shall submit a complete performance testing plan to verify the retention of de-dusting oil on the finished product in terms of pounds of de-dusting oil retained per pound de-dusting oil used. Within 30 days after Department approval of the performance testing plan, permittee shall commence the performance testing at owner's expense. Each performance testing plan must be approved by the AQD prior to testing. A complete report of the results of required testing shall be submitted to the Technical Programs Unit, Air Quality Division and the District Supervisor, Air Quality Division within 60 days following the last date of testing.<sup>2</sup> **(R 336.1225), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j))**
3. Within 60 days after request by the Division, the permittee shall submit a complete performance testing plan to verify the conversion of free formaldehyde into binder solids by laboratory testing designed to simulate production conditions using the resin with the highest free formaldehyde content, at owner's expense, in accordance with Department requirements. Within 30 days after Department approval of the performance testing plan, permittee shall commence the performance testing. Each performance testing plan must be approved by the AQD prior to testing. A complete report of the results of required testing shall be submitted to the Technical Programs Unit, Air Quality Division and the District Supervisor, Air Quality Division within 60 days following the last date of testing.<sup>2</sup> **(R 336.1205(3)), (R 336.1225), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j))**

## **VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. Permittee shall maintain the following records and emission calculations:<sup>2</sup> **(R 336.1331, R 336.1702(a), R 336.1901, 40 CFR 52.21(j))**
  - a. Daily weight of glass pulled by FG-RES1 in tons as defined in Appendix 7.
  - b. Within 30 days of the end of each calendar month, annual weight of glass pulled by FG-RES1, as defined in Appendix 7, in tons per 12-month rolling time period as determined at the end of each calendar month.
  - c. Identity and quantity of each batch of binder solution used during each calendar month.  
The as-used VOC content of binder solution used.
  - d. Weight of de-dusting oil used during each calendar month.
  - e. Within 30 days of the end of each calendar month, emission calculations showing the mass VOC emission rate in tons per 12-month rolling time period as determined at the end of each calendar month. Calculations shall be performed based on the methodology outlined in Appendix 7.
2. The permittee shall maintain a current listing from the manufacturer of the chemical composition of each raw material used in the manufacture of binder solution, including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both. All records shall be kept on file for a period of at least five years and made available to the Department upon request.<sup>2</sup> **(R 336.1225), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j))**
3. The permittee shall monitor the loss on ignition and product density of each bonded wool fiberglass product manufactured at least once every 8 hours.<sup>2</sup> **(40 CFR 63 Subpart NNN)**

4. The permittee shall submit semi-annual excess emission reports to the District Supervisor. The semi-annual reports are due prior to March 15 and September 15 for each semi-annual reporting period. The reports shall include all the information required to be kept pursuant to 40 CFR 60 Subpart PPP and 40 CFR 63 Subpart NNN<sup>2</sup>. **(R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 60 Subpart PPP), (40 CFR 63 Subpart NNN), (40 CFR 52.21(j))**

See Appendix 7

**VII. REPORTING**

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
NA	NA	NA	NA

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

<sup>2</sup>This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

**FG-RES2  
 FLEXIBLE GROUP CONDITIONS**

**DESCRIPTION**

A flexible group that limits the VOC emissions from two emission groups and defines the testing and monitoring required to assure compliance.

**Emission Unit:** EU-RFC2, EU-RC2

**POLLUTION CONTROL EQUIPMENT**

High efficiency wet scrubber control system

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. PM10	0.036 Pounds per 1000 Pounds of Dry Exhaust Gas <sup>2 *</sup>	Test Protocol	FG-RES2	Condition IV(1), V(4), VI(1)	R 336.1331, R 336.1901, 40 CFR 52.21(j)
2. PM10	11.0 Pounds per Ton of Glass Pulled <sup>2</sup>	Test Protocol	FG-RES2	Condition IV(1), V(4), VI(1)	R 336.1331, R 336.1901, 40 CFR 60 Subpart PPP
3. PM10	19.2 Pounds per Hour <sup>2</sup>	Test Protocol	FG-RES2	Condition IV(1), V(4), VI(1)	R 336.1331, R 336.1901, 40 CFR 52.21(j)
4. VOC	124.4 Tons <sup>2</sup>	12-month Rolling Time Period	FG-RES2	Condition V(1), V(2), V(3), VI(1)	R 336.1702(a), 40 CFR 52.21(j)
5. Ammonia (CAS 7664-41-7)	59.7 mg/m <sup>3</sup> of exhaust gases <sup>1</sup> **	Test Protocol	FG-RES2	Condition IV(1), V(4)	R 336.1224, R 336.1225, R 336.1901
6. Formaldehyde (CAS 50-00-0)	0.8 Pounds Per Ton of Glass Pulled <sup>2</sup>	Test Protocol	FG-RES2	Condition IV(1), V(4)	40 CFR 63 Subpart NNN
7. Formaldehyde (CAS 50-00-0)	7.25 mg/m <sup>3</sup> of exhaust gases <sup>1</sup> **	Test Protocol	FG-RES2	Condition IV(1), V(4)	R 336.1225, R 336.1901
8. Phenol (CAS 108-95-2)	20.0 mg/m <sup>3</sup> of exhaust gases <sup>1</sup> **	Test Protocol	FG-RES2	Condition IV(1), V(4)	R 336.1225, R 336.1901

\* Compliance with R 336.1331 and 40 CFR 60 Subpart PPP will be evaluated using PM10 as a surrogate for total particulate and on a dry gas basis.

\*\* Limit specified is in terms of milligrams per cubic meter of exhaust gas, corrected to 70°F and 29.92 inches Hg.

**II. MATERIAL LIMIT(S)**

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall not pull more than 108.0 tons of glass in FG-RES2 per calendar day. The amount of glass pulled shall be determined in accordance with the methodology set forth in Appendix 7.<sup>2</sup> **(R 336.1225), (R 336.1901), (40 CFR 52.21(j))**
2. The permittee shall maintain the Operation, Maintenance and Monitoring Plan for FG-RES2. The plan shall satisfy the requirements of 40 CFR 63.1383 and Condition No. VI(2) of Source Wide Conditions within this ROP.<sup>2</sup> **(40 CFR 63 Subpart NNN)**
3. The permittee shall initiate corrective actions within one hour when any three hour block average value for any wet scrubber monitored parameter (pressure drop, scrubber liquid flow rate, or chemical addition feed rate) falls outside the range established during the most recent acceptable stack test. The corrective actions shall be completed in a timely manner according to the Operation, Maintenance and Monitoring Plan.<sup>2</sup> **(40 CFR 63 Subpart NNN), (40 CFR 64.6(d))**
4. The permittee shall initiate a Quality Improvement Plan consistent with the compliance assurance monitoring provisions of 40 CFR 64.8 when any wet scrubber monitored parameter (pressure drop, scrubber liquid flow rate, or chemical addition feed rate) falls outside the range established during the most recent acceptable stack test for more than 5 percent of any six month block reporting period.<sup>2</sup> **(40 CFR 63 Subpart NNN), (40 CFR 64.8)**
5. The permittee shall operate each wet scrubber such that no monitored parameter (pressure drop, scrubber liquid flow rate, or chemical addition feed rate) falls outside the range established during the most recent acceptable stack test for more than 10 percent of any six month block reporting period.<sup>2</sup> **(40 CFR 63 Subpart NNN), (40 CFR 64.6(c))**

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall operate FG-RES2 in conjunction with the wet scrubber control systems being installed, maintained and operated in a satisfactory manner. Satisfactory operation of the high efficiency wet scrubber control systems is demonstrated by maintaining pressure drop, scrubber liquid flow rate, and chemical addition feed rate within the range established during the most recent acceptable stack test.<sup>2</sup> **(R 336.1225), (R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j)), (40 CFR 63 Subpart NNN), (40 CFR 64.6(c))**

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The VOC content of each raw material, except de-dusting oil, used in FG-RES2 shall be determined using federal Reference Test Method 24. The VOC content of de-dusting oil shall be taken as 100 percent. Upon prior written approval by the AQD District Supervisor, the VOC content of any raw material may be determined from manufacturer's formulation data or alternative test methodology.<sup>2</sup> **(R 336.1225), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j))**
2. Within 60 days after request by the Division, the permittee shall submit a complete performance testing plan to verify the retention of de-dusting oil on the finished product in terms of pounds of de-dusting oil retained per pound de-dusting oil used. Within 30 days after Department approval of the performance testing plan, permittee shall commence the performance testing at owner's expense. Each performance testing plan must be approved by the AQD prior to testing. A complete report of the results of required testing shall be submitted to the Technical Programs Unit, Air Quality Division and the District Supervisor, Air Quality Division within 60 days following the last date of testing.<sup>2</sup> **(R 336.1225), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j))**

3. Within 60 days after request by the Division, the permittee shall submit a complete performance testing plan to verify the conversion of free formaldehyde into binder solids by laboratory testing designed to simulate production conditions using the resin with the highest free formaldehyde content, at owner's expense, in accordance with Department requirements. Within 30 days after Department approval of the performance testing plan, permittee shall commence the performance testing. Each performance testing plan must be approved by the AQD prior to testing. A complete report of the results of required testing shall be submitted to the Technical Programs Unit, Air Quality Division and the District Supervisor, Air Quality Division within 60 days following the last date of testing.<sup>2</sup> **(R 336.1205(3)), (R 336.1225), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j))**
4. Once every three years, the permittee shall verify:<sup>2</sup> **(R 336.1225), (R 336.1331), (R 336.1702(a)) (40 CFR 60 Subpart PPP), (40 CFR 52.21(j)), (40 CFR 63 Subpart NNN)**
  - a. The particulate (PM10) emission rate in pounds per thousand pounds of dry exhaust gases.
  - b. The particulate (PM10) emission rate, in pounds per hour and, to calculate the limit in Condition I(2), pounds per ton of glass pulled as defined in 40 CFR 60 Subpart PPP.
  - c. The particulate (PM10) emission rate, in pounds per hour and pounds per ton of glass pulled as defined in Appendix 7.
  - d. The ammonia exhaust concentration in pounds per hour and milligrams per cubic meter of exhaust gas, corrected to 70 degrees Fahrenheit and 29.92 inches Hg.
  - e. The formaldehyde exhaust concentration in pounds per hour, milligrams per cubic meter of exhaust gas, corrected to 70 degrees Fahrenheit and 29.92 inches Hg, and to calculate the limit in Condition I(6), pounds per ton of glass pulled pursuant to 40 CFR 63 Subpart NNN.
  - f. The phenol exhaust concentration in pounds per hour and milligrams per cubic meter of exhaust gas, corrected to 70 degrees Fahrenheit and 29.92 inches Hg.
  - g. To establish the operating ranges for wet scrubber pressure drop, liquid flow rate and chemical addition feed rate.
5. No less than 30 days prior to each stack test, a complete performance testing plan must be submitted to the AQD. Each performance testing plan must be approved by the AQD prior to testing. A complete report of the results of required testing shall be submitted to the Technical Programs Unit, Air Quality Division and the District Supervisor, Air Quality Division within 60 days following the last date of testing.<sup>2</sup> **(R 336.1225), (R 336.1331), (R 336.1702(a)), (40 CFR 60 Subpart PPP), (40 CFR 52.21(j)), (40 CFR 63 Subpart NNN)**

## **VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. Permittee shall maintain the following records and emission calculations:<sup>2</sup> **(R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j))**
  - a. Within 30 days of the end of each calendar month, annual weight of glass pulled by FG-RES2, as defined in Appendix 7, in tons per 12-month rolling time period as determined at the end of each calendar month.
  - b. Identity and quantity of each batch of binder solution used during each calendar month.
  - c. The as-used VOC content of binder solution used.
  - d. Weight of de-dusting oil used during each calendar month.
  - e. For each wet scrubber control system: pressure drop, scrubber liquid flow rate, and chemical addition feed rate data.
  - f. For each wet scrubber control system, a log of wet scrubber operating parameters (pressure drop, scrubber liquid flow rate, and chemical addition feed rate) monitored pursuant to Condition VI(4). The log shall identify the date and time for each operating parameter; the 3-hour block average for each monitored operating parameter; the date and time when any one 3-hour block average falls outside the range established during the most recent acceptable stack test; when the corrective actions were initiated; the cause of the out-of-range parameter; an explanation of the corrective actions; when the cause was corrected; and, any additional information required pursuant to the Operation, Maintenance and Monitoring Plan.

- g. Within 30 days of the end of each calendar month, emission calculations showing the mass particulate (PM10) emission rate in tons per 12-month rolling time period as determined at the end of each calendar month. Calculations shall be performed based on the PM10 emission rate determined from the most recent performance test in terms of pounds per ton of glass pulled multiplied by the actual tons of glass pulled, where the pull rate is determined according to the methodology in Appendix 7.
  - h. Within 30 days of the end of each calendar month, emission calculations showing the mass VOC emission rate in tons per 12-month rolling time period as determined at the end of each calendar month. Calculations shall be performed based on the methodology outlined in Appendix 7.
2. The permittee shall maintain a current listing from the manufacturer of the chemical composition of each raw material used in the manufacture of binder solution, including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both. All records shall be kept on file for a period of at least five years and made available to the Department upon request.<sup>2</sup> **(R 336.1225), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j))**
  3. The permittee shall monitor the loss on ignition and product density of each bonded wool fiberglass product manufactured at least once every 8 hours.<sup>2</sup> **(40 CFR 63 Subpart NNN)**
  4. The permittee shall monitor, in a satisfactory manner, the pressure drop, scrubber liquid flow rate, and chemical addition feed rate to the wet scrubber on a continuous basis.<sup>2</sup> **(R 336.1225), (R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 60 Subpart PPP), (40 CFR 52.21(j)), (40 CFR 63 Subpart NNN), (40 CFR 64(c))**
  5. The permittee shall equip, calibrate, operate and maintain the high efficiency wet scrubber control systems as follows:<sup>2</sup> **(R 336.1225), (R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 60 Subpart PPP), (40 CFR 52.21(j)), (40 CFR 63 Subpart NNN), (40 CFR 64(c))**
    - a. With differential pressure monitors that are certified by their manufacturer to within +/- one inch of water gauge over their operating range.
    - b. With scrubber liquid flow meters that are certified by their manufacturer to within 5 percent over their operating range.
    - c. The differential pressure monitors and scrubber liquid flow meters are to be recalibrated in accordance with the Operation, Maintenance and Monitoring Plan pursuant to 40 CFR 63.1383.
  6. The permittee shall properly maintain the monitoring system including keeping necessary parts for routine repair of the monitoring equipment. **(40 CFR 64.7(b))**

**See Appendix 7**

## **VII. REPORTING**

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**
4. The permittee shall submit semi-annual excess emission reports to the District Supervisor. The semi-annual reports are due prior to March 15 and September 15 for each semi-annual reporting period. The reports shall include all the information required to be kept pursuant to 40 CFR 60 Subpart PPP and 40 CFR 63 Subpart NNN.<sup>2</sup> If there were no excursions and/or exceedances in the reporting period, then this report shall include a statement that there were no excursions and/or exceedances. **(40 CFR 60 Subpart PPP), (40 CFR 63 Subpart NNN), (40 CFR 64.9(a))**

**See Appendix 8**

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
SV-EP0023	90	168	R 336.1225 40 CFR 52.21 (c) and (d)

**IX. OTHER REQUIREMENT(S)**

1. The permittee shall comply with all applicable requirements of 40 CFR Part 64. **(40 CFR Part 64)**
2. The permittee shall promptly notify AQD for the need to modify the CAM Plan if the existing plan is found to be inadequate and shall submit a proposed modification to the ROP if necessary. **(40 CFR 64.7(e))**

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

<sup>2</sup>This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

**FG-MELT7 and 9  
 FLEXIBLE GROUP CONDITIONS**

**DESCRIPTION**

Refractory lined electric melt units 7 and 9.

**Emission Unit:** EU-EM7, EU-EM9

**POLLUTION CONTROL EQUIPMENT**

Externally vented baghouse control

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

**II. MATERIAL LIMIT(S)**

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall initiate corrective actions within one hour when any 4-hour block average value for pull rate exceeds the average value during the most recent acceptable stack test by more than 20 percent. The corrective actions shall be completed in a timely manner according to the Operation, Maintenance and Monitoring Plan. **(40 CFR 63 Subpart NNN)**
2. The permittee shall implement a Quality Improvement Plan (QIP) consistent with the compliance assurance monitoring provisions of 40 CFR 64.8 when the pull rate exceeds the average value during the most recent acceptable stack test by more than 20 percent for more than 5 percent of any 6-month block reporting period. **(40 CFR 63 Subpart NNN)**
3. The permittee shall operate FG-MELT7&9 such that the pull rate does not exceed by more than 20 percent the average value during the most recent acceptable stack test for more than 10 percent of any 6-month block reporting period. **(40 CFR 63 Subpart NNN)**

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

NA

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. Permittee shall equip, calibrate, operate and maintain FG-MELT7&9 with continuous pull rate monitors capable of monitoring the glass pull rate on an hourly basis. **(R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j)) (40 CFR 63 Subpart NNN)**
2. Permittee shall maintain the following records and emission calculations:
  - a. Glass pull rates, in pounds (or tons) per hour, monitored pursuant to FG-MELT7 & 9 Condition VI.
  - b. Log of excess glass pull rate. The log shall identify the date and time for each data point; the 4-hour block average pull rate; the date and time when any one 4-hour block average exceeds the average value during the most recent acceptable stack test by more than 20 percent; when corrective actions were initiated; the cause of the excess pull rate; an explanation of the corrective actions; when the cause was corrected; and, any additional information required pursuant to the Operation, Maintenance and Monitoring Plan. **(40 CFR 63 Subpart NNN)**

All records and reports shall be maintained on site for a period of five years and made available to the Department upon request. **(R 336.1225), (R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j)), (40 CFR 63 Subpart NNN)**

**VII. REPORTING**

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
SV-MELT6,7&9	48	125	R 336.1225, 40 CFR 52.21(c) and (d)

**IX. OTHER REQUIREMENT(S)**

NA

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

<sup>2</sup>This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

**FG-MELT6, 7, and 9  
 FLEXIBLE GROUP CONDITIONS**

**DESCRIPTION**

Three melters which are all vented to existing baghouses and stack.

**Emission Unit:** EU-EM6, EU-EM7, EU-EM9

**POLLUTION CONTROL EQUIPMENT**

Externally vented baghouse control

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. PM10	.01 Pounds Per 1000 Pounds of Dry Exhaust Gas*	Test Protocol	FG-MELT6,7&9	Condition V.1	R 336.1331, R 336.1901 and 40 CFR 52.21(j)
2. PM	0.5 Pounds Per Ton of Glass Pulled	Test Protocol	FG-MELT6,7&9	Condition V.1	40 CFR 63 Subpart NNN
3. PM10	2.08 Pounds Per Hour	Test Protocol	FG-MELT6,7&9	Condition V.1	R 336.1331, R 336.1901 and 40 CFR 52.21(c), (d) and (j)
* Compliance with R 336.1331 will be evaluated using PM10 as a surrogate for total particulate and on a dry gas basis					

**II. MATERIAL LIMIT(S)**

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

- The permittee shall maintain the Operation, Maintenance and Monitoring Plan for FG-MELT6, 7, and 9. The plan shall satisfy the requirements of 40 CFR 63.1383. **(40 CFR 63 Subpart NNN)**
- The permittee shall implement a Quality Improvement Plan consistent with the compliance assurance monitoring provisions of 40 CFR 64.8 when a bag leak detection system alarm is sounded for more than 5 percent of the total operating time in a 6-month block reporting period. **(40 CFR 63 Subpart NNN), (40 CFR 64.8)**
- The permittee shall initiate corrective actions within one hour of an alarm from a bag leak detection system. The corrective actions shall be completed in a timely manner according to the Operation, Maintenance and Monitoring Plan.<sup>2</sup> **(40 CFR 63 Subpart NNN), (40 CFR 64.7(d))**

#### **IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall operate FG-MELT6, 7, and 9 in conjunction with the baghouse controls being installed, maintained and operated in a satisfactory manner. Satisfactory operation is defined as operation that does not result in the triggering of the bag leak detection system alarm. The bag leak detection system shall be set to alarm when the value exceeds the limits specified in the Operation, Maintenance and Monitoring Plan. **(R 336.1225), (R 336.1331), (R 336.2001), (R 336.2003), (R 336.2004), and (40 CFR 52.21(j)), (40 CFR 64.6(c))**

#### **V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. Once every three years, verification of the following from FG-MELT6,7&9 by testing, at owner's expense, in accordance with Department requirements, will be required:
  - a. The particulate (PM10) emission rate in pounds per thousand pounds of dry exhaust gases.
  - b. The particulate (PM10) emission rate in pounds per hour and pounds per ton of glass pulled as defined in Appendix 7.
  - c. The total chromium emission rates in pounds per hour and pounds per ton of glass pulled as defined in Appendix 7.

No less than 30 days prior to each test, a complete performance testing plan must be submitted to the Air Quality Division. Testing for hexavalent chromium may be substituted for total chromium testing with prior written approval from the District Supervisor. Each performance testing plan must be approved by the Air Quality Division prior to testing. A complete report of the results of required testing shall be submitted to the Technical Programs Unit, Air Quality Division and the District Supervisor, Air Quality Division within 60 days following the last date of testing. **(R 336.1225), (R 336.1331), (R 336.2001-2004), (40 CFR 52.21(j)), (40 CFR 63 Subpart NNN)**

2. Verification of the particulate (PM) emission rate, in pounds per ton of glass pulled as defined in 40 CFR 63 Subpart NNN, from FG-MELT6,7&9 by testing, at owner's expense, in accordance with Department requirements, will be required. No less than 30 days prior to each test, a complete performance testing plan must be submitted to the Air Quality Division. The performance testing plan must be approved by the Air Quality Division prior to testing. A complete report of the results of required testing shall be submitted to the Technical Programs Unit, Air Quality Division and the District Supervisor, Air Quality Division within 60 days following the last date of testing. **(40 CFR 63 Subpart NNN)**

#### **VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall install, calibrate, maintain and continuously operate in a satisfactory manner an approved baghouse leak detection (i.e., breakthrough) monitor and recorder for each externally vented baghouse. **(R 336.1225), (R 336.1331), (R 336.1901), (40 CFR 52.21(j)), (40 CFR 63 Subpart NNN), (40 CFR 64.6(c))**
2. Permittee shall maintain the following records and emission calculations:
  - a. Log of bag leak detection system alarms. The log shall identify the control device and include the date and time of the alarm; when the corrective actions were initiated; the cause of the alarm; an explanation of the corrective actions; when the cause was corrected; and, any additional information required pursuant to the Operation, Maintenance and Monitoring Plan. For alarm events greater than 2-hours in duration, an estimate of the quantity of PM10 emissions released.
  - b. Within 30 days of the end of each calendar month, emission calculations showing:
    - i. The mass PM10 emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.
    - ii. The mass VOC emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.
    - iii. The total chromium emission rates in tons per 12-month rolling time period as determined at the end of each calendar month.

- c. Calculations shall be performed based on the emission rates determined from the most recent performance tests in terms of pounds per ton of glass pulled multiplied by 1.15 times the actual tons of glass pulled, where the pull rate is determined according to the methodology in Appendix 7. The 1.15 factor accounts for the annual melter efficiency (i.e., the weight of raw materials added into FG-MELT6, 7, and 9 that does not become glass pulled).

All records and reports shall be maintained on site for a period of five years and made available to the Department upon request. **(R 336.1225), (R 336.1331), (R 336.1702(a)), (R 336.1901), (40 CFR 52.21(j)), (40 CFR 63 Subpart NNN), (40 CFR 64.6(c))**

- 3. The permittee shall properly maintain the monitoring system including keeping necessary parts for routine repair of the monitoring equipment. **(40 CFR 64.7(b))**

**VII. REPORTING**

- 1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
- 2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
- 3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**
- 4. The permittee shall submit semi-annual excess emission reports to the District Supervisor. The semi-annual reports are due prior to March 15 and September 15 for each semi-annual reporting period. The reports shall include all the information required to be kept pursuant to 40 CFR 63 Subpart NNN.<sup>2</sup> If there were no excursions and/or exceedances in the reporting period, then this report shall include a statement that there were no excursions and/or exceedances. **(40 CFR 63 Subpart NNN), (40 CFR 64.9(a))**

See Appendix 8

**VIII. STACK/VENT RESTRICTION(S)**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
SV-MELT6,7&9	48	125	R 336.1225, 40 CFR 52.21(c) and (d)

**IX. OTHER REQUIREMENT(S)**

- 1. The permittee shall comply with all applicable requirements of 40 CFR Part 64. **(40 CFR Part 64)**
- 2. The permittee shall promptly notify AQD for the need to modify the CAM Plan if the existing plan is found to be inadequate and shall submit a proposed modification to the ROP if necessary. **(40 CFR 64.7(e))**

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

<sup>2</sup>This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

**FGRULE290**  
**FLEXIBLE GROUP CONDITIONS**

**DESCRIPTION**

Any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rules 278 and 290.

**Emission Unit:**

**POLLUTION CONTROL EQUIPMENT**

NA

**I. EMISSION LIMIT(S)**

1. Each emission unit that emits only noncarcinogenic volatile organic compounds or noncarcinogenic materials which are listed in Rule 122(f) as not contributing appreciably to the formation of ozone if the total uncontrolled or controlled emissions of air contaminants are not more than 1,000 or 500 pounds per month, respectively. **(R 336.1290(a)(i))**
2. Each emission unit that the total uncontrolled or controlled emissions of air contaminants are not more than 1,000 or 500 pounds per month, respectively, and all the following criteria listed below are met: **(R 336.1290(a)(ii))**
  - a. For noncarcinogenic air contaminants, excluding noncarcinogenic volatile organic compounds and noncarcinogenic materials which are listed in Rule 122(f) as not contributing appreciably to the formation of ozone, with initial threshold screening levels greater than or equal to 2.0 micrograms per cubic meter, the uncontrolled or controlled emissions shall not exceed 1,000 or 500 pounds per month, respectively. **(R 336.1290(a)(ii)(A))**
  - b. For noncarcinogenic air contaminants, excluding noncarcinogenic volatile organic compounds and noncarcinogenic materials which are listed in Rule 122(f) as not contributing appreciably to the formation of ozone, with initial threshold screening levels greater than or equal to 0.04 microgram per cubic meter and less than 2.0 micrograms per cubic meter, the uncontrolled or controlled emissions shall not exceed 20 or 10 pounds per month, respectively. **(R 336.1290(a)(ii)(B))**
  - c. For carcinogenic air contaminants with initial risk screening levels greater than or equal to 0.04 microgram per cubic meter, the uncontrolled or controlled emissions shall not exceed 20 or 10 pounds per month, respectively. **(R 336.1290(a)(ii)(C))**
  - d. The emission unit shall not emit any air contaminants, excluding non-carcinogenic volatile organic compounds and noncarcinogenic materials which are listed in Rule 122(f) as not contributing appreciably to the formation of ozone, with an initial threshold screening level or initial risk screening level less than 0.04 microgram per cubic meter. **(R 336.1290(a)(ii)(D))**
3. Each emission unit that emits only noncarcinogenic particulate air contaminants and other air contaminants that are exempted under Rule 290(a)(i) and/or Rule 290(a)(ii), if all of the following provisions are met: **(R 336.1290(a)(iii))**
  - a. The particulate emissions are controlled by an appropriately designed and operated fabric filter collector or an equivalent control system which is designed to control particulate matter to a concentration of less than or equal to 0.01 pound of particulate per 1,000 pounds of exhaust gases and which does not have an exhaust gas flow rate more than 30,000 actual cubic feet per minute. **(R 336.1290(a)(iii)(A))**
  - b. The visible emissions from the emission unit are not more than 5 percent opacity in accordance with the methods contained in Rule 303. **(R 336.1290(a)(iii)(B))**
  - c. The initial threshold screening level for each particulate air contaminant, excluding nuisance particulate, is more than 2.0 micrograms per cubic meter. **(R 336.1290(a)(iii)(C))**

**II. MATERIAL LIMIT(S)**

NA

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The provisions of Rule 290 apply to each emission unit that is operating pursuant to Rule 290. **(R 336.1290)**

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

NA

**V. TESTING/SAMPLING**

NA

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall maintain records of the following information for each emission unit for each calendar month using the methods outlined in the DEQ, AQD Rule 290, Permit to Install Exemption Record form (EQP 3558) or an alternative format that is approved by the AQD District Supervisor. **(R 336.1213(3))**
  - a. Records identifying each air contaminant that is emitted. **(R 336.1213(3))**
  - b. Records identifying if each air contaminant is controlled or uncontrolled. **(R 336.1213(3))**
  - c. Records identifying if each air contaminant is either carcinogenic or non-carcinogenic. **(R 336.1213(3))**
  - d. Records identifying the ITSL and IRSL, if established, of each air contaminant that is being emitted under the provisions of Rules 290(a)(ii) and (iii). **(R 336.1213(3))**
  - e. Material use and calculations identifying the quality, nature, and quantity of the air contaminant emissions in sufficient detail to demonstrate that the actual emissions of the emission unit meet the emission limits outlined in this table and Rule 290. **(R 336.1213(3)), (R 336.1290(c))**
2. The permittee shall maintain an inventory of each emission unit that is exempt pursuant to Rule 290. This inventory shall include the following information. **(R 336.1213(3))**
  - a. The permittee shall maintain a written description of each emission unit as it is maintained and operated throughout the life of the emission unit. **(R 336.1290(b)), (R 336.1213(3))**
  - b. For each emission unit that emits noncarcinogenic particulate air contaminants pursuant to Rule 290(a)(iii), the permittee shall maintain a written description of the control device, including the designed control efficiency and the designed exhaust gas flow rate. **(R 336.1213(3))**
3. For each emission unit that emits noncarcinogenic particulate air contaminants pursuant to Rule 290(a)(iii), the permittee shall perform a monthly visible emission observation of each stack or vent during routine operating conditions. This observation need not be performed using Method 9. The permittee shall keep a written record of the results of each observation. **(R 336.1213(3))**

**VII. REPORTING**

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

**See Appendix 8**

**VIII. STACK/VENT RESTRICTION(S)**

NA

**IX. OTHER REQUIREMENT(S)**

NA

**FGCOLDCLEANERS  
FLEXIBLE GROUP CONDITIONS**

**DESCRIPTION**

Any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 278 and Rule 281(h) or Rule 285(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979.

**Emission Unit:**

**I. EMISSION LIMIT(S)**

NA

**II. MATERIAL LIMIT(S)**

1. The permittee shall not use cleaning solvents containing more than 5 percent by weight of the following halogenated compounds: methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, chloroform, or any combination thereof. **(R 336.1213(2))**

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. Cleaned parts shall be drained for no less than 15 seconds or until dripping ceases. **(R 336.1611(2)(b), R 336.1707(3)(b))**
2. The permittee shall perform routine maintenance on each cold cleaner as recommended by the manufacturer. **(R 336.1213(3))**

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The cold cleaner must meet one of the following design requirements:
  - a. The air/vapor interface of the cold cleaner is no more than ten square feet. **(R 336.1281(h))**
  - b. The cold cleaner is used for cleaning metal parts and the emissions are released to the general in-plant environment. **(R 336.1285(r)(iv))**
2. The cold cleaner shall be equipped with a device for draining cleaned parts. **(R 336.1611(2)(b), R 336.1707(3)(b))**
3. All new and existing cold cleaners shall be equipped with a cover and the cover shall be closed whenever parts are not being handled in the cold cleaner. **(R 336.1611(2)(a)), (R 336.1707(3)(a))**
4. The cover of a new cold cleaner shall be mechanically assisted if the Reid vapor pressure of the solvent is more than 0.3 psia or if the solvent is agitated or heated. **(R 336.1707(3)(a))**
5. If the Reid vapor pressure of any solvent used in a new cold cleaner is greater than 0.6 psia; or, if any solvent used in a new cold cleaner is heated above 120 degrees fahrenheit, then the cold cleaner must comply with at least one of the following provisions:
  - a. The cold cleaner must be designed such that the ratio of the freeboard height to the width of the cleaner is equal to or greater than 0.7. **(R 336.1707(2)(a))**
  - b. The solvent bath must be covered with water if the solvent is insoluble and has a specific gravity of more than 1.0. **(R 336.1707(2)(b))**
  - c. The cold cleaner must be controlled by a carbon adsorption system, condensation system, or other method of equivalent control approved by the AQD. **(R 336.1707(2)(c))**

**V. TESTING/SAMPLING**

NA

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. For each new cold cleaner in which the solvent is heated, the solvent temperature shall be monitored and recorded at least once each calendar week during routine operating conditions. **(R 336.1213(3))**
2. The permittee shall maintain the following information on file for each cold cleaner: **(R 336.1213(3))**
  - a. A serial number, model number, or other unique identifier for each cold cleaner.
  - b. The date the unit was installed, manufactured, or that it commenced operation.
  - c. The air/vapor interface area for any unit claimed to be exempt under Rule 281(h).
  - d. The applicable Rule 201 exemption.
  - e. The Reid vapor pressure of each solvent used.
  - f. If applicable, the option chosen to comply with Rule 707(2).
3. The permittee shall maintain written operating procedures for each cold cleaner. These written procedures shall be posted in an accessible, conspicuous location near each cold cleaner. **(R 336.1611(3)), (R 336.1707(4))**
4. As noted in Rule 611(2)(c) and Rule 707(3)(c), if applicable, an initial demonstration that the waste solvent is a safety hazard shall be made prior to storage in non-closed containers. If the waste solvent is a safety hazard and is stored in non-closed containers, verification that the waste solvent is disposed of so that not more than 20 percent, by weight, is allowed to evaporate into the atmosphere shall be made on a monthly basis. **(R 336.1213(3)), (R 336.1611(2)(c)), (R 336.1707(3)(c))**

**VII. REPORTING**

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**
3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

**See Appendix 8**

**VIII. STACK/VENT RESTRICTION(S)**

NA

**IX. OTHER REQUIREMENT(S)**

NA

**E. NON-APPLICABLE REQUIREMENTS**

At the time of the ROP issuance, the AQD has determined that the requirements identified in the table below are not applicable to the specified emission unit(s) and/or flexible group(s). This determination is incorporated into the permit shield provisions set forth in the General Conditions in Part A pursuant to Rule 213(6)(a)(ii). If the permittee makes a change that affects the basis of the non-applicability determination, the permit shield established as a result of that non-applicability decision is no longer valid for that emission unit or flexible group.

<b>Emission Unit/Flexible Group ID</b>	<b>Non-Applicable Requirement</b>	<b>Justification</b>
Source Wide	40 CFR 60 Subpart CC – Glass Manufacturing NSPS	This facility manufactures “fiberglass wool insulation,” not “glass.” There is a separate NSPS for fiberglass wool insulation that is applicable to this facility.

**APPENDICES**

**Appendix 1: Abbreviations and Acronyms**

The following is an alphabetical listing of abbreviations/acronyms that may be used in this permit.

AQD	Air Quality Division	MM	Million
acfm	Actual cubic feet per minute	MSDS	Material Safety Data Sheet
BACT	Best Available Control Technology	MW	Megawatts
BTU	British Thermal Unit	NA	Not Applicable
°C	Degrees Celsius	NAAQS	National Ambient Air Quality Standards
CAA	Federal Clean Air Act	NESHAP	National Emission Standard for Hazardous Air Pollutants
CAM	Compliance Assurance Monitoring	NMOC	Non-methane Organic Compounds
CEM	Continuous Emission Monitoring	NOx	Oxides of Nitrogen
CFR	Code of Federal Regulations	NSPS	New Source Performance Standards
CO	Carbon Monoxide	NSR	New Source Review
COM	Continuous Opacity Monitoring	PM	Particulate Matter
department	Michigan Department of Environmental Quality	PM-10	Particulate Matter less than 10 microns in diameter
dscf	Dry standard cubic foot	pph	Pound per hour
dscm	Dry standard cubic meter	ppm	Parts per million
EPA	United States Environmental Protection Agency	ppmv	Parts per million by volume
EU	Emission Unit	ppmw	Parts per million by weight
°F	Degrees Fahrenheit	PS	Performance Specification
FG	Flexible Group	PSD	Prevention of Significant Deterioration
GACS	Gallon of Applied Coating Solids	psia	Pounds per square inch absolute
gr	Grains	psig	Pounds per square inch gauge
HAP	Hazardous Air Pollutant	PeTE	Permanent Total Enclosure
Hg	Mercury	PTI	Permit to Install
hr	Hour	RACT	Reasonable Available Control Technology
HP	Horsepower	ROP	Renewable Operating Permit
H <sub>2</sub> S	Hydrogen Sulfide	SC	Special Condition
HVLP	High Volume Low Pressure *	scf	Standard cubic feet
ID	Identification (Number)	sec	Seconds
IRSL	Initial Risk Screening Level	SCR	Selective Catalytic Reduction
ITSL	Initial Threshold Screening Level	SO <sub>2</sub>	Sulfur Dioxide
LAER	Lowest Achievable Emission Rate	SRN	State Registration Number
lb	Pound	TAC	Toxic Air Contaminant
m	Meter	Temp	Temperature
MACT	Maximum Achievable Control Technology	THC	Total Hydrocarbons
MAERS	Michigan Air Emissions Reporting System	tpy	Tons per year
MAP	Malfunction Abatement Plan	µg	Microgram
MDEQ	Michigan Department of Environmental Quality	VE	Visible Emissions
mg	Milligram	VOC	Volatile Organic Compounds
mm	Millimeter	yr	Year

\*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 pounds per square inch gauge (psig).

**Appendix 2. Schedule of Compliance**

The permittee certified in the ROP application that this stationary source is in compliance with all applicable requirements and the permittee shall continue to comply with all terms and conditions of this ROP. A Schedule of Compliance is not required. (R 336.1213(4)(a)), (R 336.1119(a)(ii))

**Appendix 3. Monitoring Requirements**

Specific monitoring requirement procedures, methods or specifications are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, this appendix is not applicable.

**Appendix 4. Recordkeeping**

Specific recordkeeping requirement formats and procedures are detailed in Part A or the appropriate source-wide, emission unit and/or flexible group special conditions. Therefore, this appendix is not applicable.

**Appendix 5. Testing Procedures**

Specific testing requirement plans, procedures, and averaging times are detailed in the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, this appendix is not applicable.

**Appendix 6. Permits to Install**

The following table lists any PTIs issued since the effective date of previously issued ROP No. MI-ROP-B7205-2004c. **This includes any PTIs that were incorporated into the Source-wide PTI No MI-PTI-B7205-2004c through amendments or modifications and any PTIs that remained off-permit until this ROP renewal.**

Permit to Install Number	Description of Equipment	Corresponding Emission Unit(s) or Flexible Group(s)
282-02D	New electric melt unit	EU-EM9
282-02E	Production Increase for FG-RES2	FG-RES2
27-08	Sizing and packing operations	EUFACE SIZEPKG

**Appendix 7. Emission Calculations**

A. The permittee shall use the following calculations in conjunction with monitoring, testing, or recordkeeping data to determine compliance with the applicable requirements referenced in FG-MELT6, 7, and 9; FG-RES1, FG-RES2, EU-EM8, and EU-NRFORMCOL.

Glass Pull Rate Calculation Methodology

The glass pull rate shall be calculated as the total rate of molten glass exiting the forehearth minus the glass that is reclaimed as cullet, in terms of pounds per hour.

$$\text{Pull Rate (lb/hr)} = \text{Melt Rate at Forehearth Exit (lb/hr)} - \text{Cullet Rate (lb/hr)}$$

B. The permittee shall use the following calculations in conjunction with monitoring, testing, or recordkeeping data to determine compliance with the applicable requirements referenced in EU-MATHAND.

Particulate Mass Emission Calculation Methodology for EU-MATHAND

Particulate (PM10) mass emissions from raw material handling operations (EU-MATHAND) shall be calculated using an emission factor (E.F.) developed from the following equation:

$$E.F. = (1.5N_U + 1.5N_{UC}(1 - 0.99) + 0.1N_S + 0.1N_{SC}(1 - 0.99) + 0.3N_M)$$

Where:  $N_U$  = The number of uncontrolled unloading and conveying points  
 $N_{UC}$  = The number of controlled unloading and conveying points  
 $N_S$  = The number of uncontrolled silos and storage bins  
 $N_{SC}$  = The number of controlled silos and storage bins  
 $N_M$  = The number of mixing and weighing stations

Particulate (PM10) mass emissions from raw material handling operations shall be calculated using the following equation:

$$PM10 \text{ (tons)} = (E.F.) \times (\text{Tons of Raw Materials Used or Mixed}) \times (1 - 0.98) \times 1/2000$$

- C. The permittee shall use the following calculations in conjunction with monitoring, testing, or recordkeeping data to determine compliance with the applicable requirements referenced in EU-NRFORMCOL.

VOC Mass Emission Calculation Methodology for EU-NRFORMCOL

VOC mass emissions from EU-NRFORMCOL shall be calculated as the total mass of VOC entering the process minus the total mass of VOC retained in the final product. The total mass of VOC entering the process shall be determined by multiplying the VOC content (lb/gal) of each raw material used by the quantity (gallons) of raw material used. The VOC content of de-dusting oil shall be equal to 100 percent of the de-dusting oil. The mass of VOC retained in the final product shall be 70 percent, by weight, of the de-dusting oil used (unless a different quantity is identified by testing as required under Condition V(2) of EU-NRFORMCOL).

$$VOC \text{ Emissions} = \text{Mass VOC Entering} - \text{Mass VOC Retained}$$

$$\text{Mass VOC Entering} = \text{Mass VOC in Raw Materials}^*$$

\*Determined consistent with Condition No. V(1) of EU-NRFORMCOL

$$\text{Mass VOC Retained} = 0.70^{**} \times \text{Mass of De-Dusting Oil}$$

\*\* Unless testing consistent with Condition V(2) of EU-NRFORMCOL indicates a different value is appropriate.

- D. The permittee shall use the following calculations in conjunction with monitoring, testing, or recordkeeping data to determine compliance with the applicable requirements referenced in FG-RES1 and FG-RES2.

VOC Mass Emission Calculation Methodology for FG- RES1 and FG-RES2

VOC mass emissions from FG-RES1 and FG-RES2 shall be calculated as the mass of VOC entering the process minus the mass of VOC consumed by chemical reaction or retained in the final product. The mass of VOC entering the process includes the mass of VOC in the binder solution and the mass of de-dusting oil applied. The mass of VOC consumed by chemical reaction shall be 97 percent (by weight) of the free formaldehyde, by formulation, in the resin portion of the binder solution unless a different quantity is identified by the testing required under Condition V(3) of FG-RES1 or Condition V(3) of FG-RES2. The mass of VOC retained in the final product shall be 77 percent, by weight of the de-dusting oil used (unless a different quantity is identified by testing as required under Condition V(2) of FG-RES1 or Condition V(2) of FG-RES2).

$$VOC \text{ Emissions} = \text{Mass VOC Entering} - (\text{Mass VOC Reacted} + \text{Mass VOC Retained})$$

$$\text{Mass VOC Entering} = \text{Mass VOC in Binder Solution}^* + \text{Mass of De-Dusting Oil}$$

\*Based on the VOC content of each raw material used to manufacture the Binder Solution determined consistent with Condition V(1) of FG- RES1 or Condition V(1) of FG-RES2 multiplied by the mass of each raw material used.

Mass VOC Reacted =  $0.97^{**}$  x Mass Free Formaldehyde in the Resin Portion of the Binder Solution (by Formula)

\*\* Unless testing consistent with Condition V(3) of FG- RES1 or Condition V(3) of FG-RES2 indicates a different value is appropriate

Mass VOC Retained =  $0.77^{***}$  x Mass of De-Dusting Oil

\*\*\* Unless testing consistent with Condition V(2) of FG-RES1 or Condition V(2) of FG-RES2 indicates a different value is appropriate

E. The permittee shall use the following calculations in conjunction with monitoring, testing, or recordkeeping data to determine compliance with the applicable requirements referenced in Section B (Source Wide Conditions).

Individual and Aggregate HAP Mass Emission Calculation Methodology (Source Wide)

Individual and aggregate HAP mass emissions from the facility shall be calculated as the mass of each volatile HAP entering the process plus the mass of each HAP generated during the production process. Formaldehyde entering the process in the binder solution formulation should be reduced according to the quantity of free formaldehyde that reacts to become binder solids as determined in Appendix 7(D) as "Mass VOC Reacted". Total chromium emissions should be included as determined by testing conducted in accordance with Condition V(1)(c) of EU-EM8 or Condition V(1)(c) of FG-MELT6,7&9.

HAP Emissions = Raw Material HAP Content (lb/lb or lb/gal) x (Raw Material Used - Raw Material Reclaimed (lb or gal))

Total Chromium Emission = Total Chromium Emission Rate (lb/ton of glass pulled) x Total Glass Pulled (tons)

Aggregate HAP Emissions = Sum of All Individual HAP Emissions

**Appendix 8. Reporting**

**A. Annual, Semiannual, and Deviation Certification Reporting**

The permittee shall use the MDEQ Report Certification form (EQP 5736) and MDEQ Deviation Report form (EQP 5737) for the annual, semiannual and deviation certification reporting referenced in the Reporting Section of the Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Alternative formats must meet the provisions of Rule 213(4)(c) and Rule 213(3)(c)(i), respectively, and be approved by the AQD District Supervisor.

**B. Other Reporting**

Specific reporting requirement formats and procedures are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, Part B of this appendix is not applicable.