

**AIR EMISSION PERMIT NO. 08900022- 001  
IS ISSUED TO**

Nordic Fiberglass, Inc.  
Highway 75 South  
Warren, Marshall County, MN 56762

The emission units, control equipment and emission stacks at the stationary source authorized in this permit are as described in the following permit application:

Permit Type	Application Date
Total Facility Operating Permit	April 6, 1995

This permit authorizes the Permittee to operate and modify the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

**Permit Type:** Federal; Part 70/Limits to avoid NSR

**Issue Date:** April 12, 2001

**Expiration:** April 12, 2006

All Title I Conditions do not expire.

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Rodney E. Massey, P.E.  
District Director

for Karen A. Studders  
Commissioner  
Minnesota Pollution Control Agency

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**NOTICE TO THE PERMITTEE:**

Your stationary source may be subject to the requirements of the Minnesota Pollution Control Agency's (MPCA) solid waste, hazardous waste, and water quality programs. If you wish to obtain information on these programs, including information on obtaining any required permits, please contact the MPCA general information number at:

Metro Area	(651) 296-6300
Outside Metro Area	1-800-657-3864
TTY	(651) 282-5332

The rules governing these programs are contained in Minn. R. chs. 7000-7105. Written questions may be sent to: Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

Questions about this air emission permit or about air quality requirements can also be directed to the telephone numbers and address listed above.

**PERMIT SHIELD:**

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition.

Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

**FACILITY DESCRIPTION:**

Nordic Fiberglass Inc. operates a fiberglass reinforced plastics production facility in Warren, Minnesota, manufacturing plastic products for the electric utility industry. The facility consists of five separate buildings, or plants, on a single property. Each plant houses roughly the same operations: resin and/or gelcoat application using spray up or flowcoat technology (facility is currently changing over to flowcoat); sanding; and surface coating using either spray, flowcoat, or manual application.

The facility emissions are limited to 240 tons per year (tpy) on a 12-month rolling sum basis. This limit inherently limits HAP emissions to 240 tpy and PM emissions to less than 100 tpy (PM emissions will be reduced further when the changeover to flowcoat technology is complete). The facility is a major source under the Part 70 operating permit program. The facility is a major source of HAP emissions and will be subject to the future MACT for Reinforced Plastic Composites. The source is a non-major source under the federal New Source Review program, by virtue of the federally enforceable limits on emissions.

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

04/12/01

Facility Name: Nordic Fiberglass Inc

Permit Number: 08900022 - 001

**Table A contains limits and other requirements with which your facility must comply. The limits are located in the first column of the table (What To do). The limits can be emission limits or operational limits. This column also contains the actions that you must take and the records you must keep to show that you are complying with the limits. The second column of Table A (Why to do it) lists the regulatory basis for these limits. Appendices included as conditions of your permit are listed in Table A under total facility requirements.**

**Subject Item:****Total Facility**

<b>What to do</b>	<b>Why to do it</b>
This permit establishes limits on the facility to keep it a minor source under New Source Review. The Permittee cannot make any change at the source that would make the source a major source under New Source Review until a major permit amendment has been issued. This includes changes that might otherwise qualify as insignificant modifications and minor or moderate amendments.	Title I Condition: Limit to avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000
The Permittee shall not begin construction of any single project or projects that are connected or phased which will cause a total increase in actual emissions of greater than 99 tons per year for any criteria pollutant without first getting a permit amendment to authorize the project. Connected and phased have meanings as defined in Minn. R. 4410.0200 subps. 9b and 60. The Permittee shall not begin construction of any other project which is listed in Minn. R. 4410.4300 or Minn. R. 4410.4400 without first getting a permit amendment to authorize the project. Such projects may require the completion of an Environmental Assessment Worksheet or an Environmental Impact Statement prior to the amendment being issued. this is a state only requirement and is not federally enforceable.	Minn. R. 4410.4300 and Minn. R. 4410.4400
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and shall include a preventative maintenance program for that equipment, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment, and the records kept to demonstrate plan implementation.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
Monitoring Equipment: Install or make needed repairs to monitoring equipment within 60 days of issuance of the permit if monitoring equipment is not installed and operational on the date the permit is issued.	Minn. R. 7007.0800, subp. 4(D)
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp. 4(D)
Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.	Minn. R. 7011.0020
Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3.  At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.	Minn. R. 7019.1000, subp. 3

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

04/12/01

Facility Name: Nordic Fiberglass Inc

Permit Number: 08900022 - 001

Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2.  At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.	Minn. R. 7019.1000, subp. 2
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1
Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1
Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.	Minn. R. 7019.1000, subp. 4
Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 through Minn. R. 7007.1500
Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)
Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007. 1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350 subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007. 0800, subp. 5(B)
Record keeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7030.0010 - 7030.0080
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).	Minn. R. 7007.0800, subp. 9(A)
Emission Inventory Report: due 91 days after end of each calendar year following permit issuance (April 1). To be submitted on a form approved by the Commissioner.	Minn. R. 7019.3000 through Minn. R. 7019.3010
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

04/12/01

Facility Name: Nordic Fiberglass Inc

Permit Number: 08900022 - 001

**Subject Item: GP 001 VOC Sources**

**Associated Items:** EU 009 Plant 6 Spray Up Gun  
 EU 010 Plant 6 Surface Coating (brush)  
 EU 013 Popcorn Gun  
 EU 021 Plant 7 Gel Coat Gun  
 EU 025 Plant 8 Surface Coating (brush)  
 EU 035 Plant 10 Spray Up Gun  
 EU 039 Plant 5 Flowcoat Gun  
 EU 040 Plant 5 Gelcoat Flowcoat Gun  
 EU 041 Plant 6 Flowcoat Gun  
 EU 042 Plant 7 Closed Mold Press  
 EU 043 Plant 8 Flowcoat Gun  
 EU 044 Plant 10 Flowcoat Gun  
 EU 045 Plant 10 Gelcoat Flowcoat Gun

What to do	Why to do it
<b>EMISSION LIMITS</b>	hdr
Volatile Organic Compounds: less than or equal to 240 tons/year using 12-month Rolling Sum . VOC content shall be determined as described in the Material Content requirement of this section. All sources listed in GP001 shall be included in the 12-month rolling sum. The 12-month rolling sum shall be calculated as described in this permit.	Title I Condition: Limit to avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
<b>OPERATIONAL LIMITS</b>	hdr
Material Content: VOC contents of raw materials shall be determined by the Material Safety Data Sheet (MSDS) provided by the supplier for each material used. The Permittee shall obtain a certification from the supplier as to the accuracy of the MSDS. If the MSDS provides a material content range, the highest number in the range shall be used for all calculations. Other alternative methods approved by the MPCA may be used to determine the VOC content. The MPCA reserves the right to require the Permittee to take samples of VOC containing materials and to conduct analysis for VOC as per EPA and ASTM reference methods. If the EPA or ASTM reference method is used, it shall supersede the MSDS.	Minn. R. 7007.0800, subp. 4
Pre-Authorized Changes: The Permittee may replace or move listed emission units, or add new emission units similar to those listed in GP001. All changes must meet the requirements for GP001. Emissions from all units must be included in monthly calculations. Emissions from any resin spray-up or flowcoat operation must be vented to control equipment meeting the requirements of GP002.  If a proposed change triggers an applicable requirement that is not contained in this permit, the change must go through the appropriate procedures in Minn. R. ch. 7007.  Any change that would constitute "construction" or "reconstruction" under 40 CFR Section 63.41 is not authorized under this permit.	Title I Condition: To avoid classification of equipment changes as modifications under 40 CFR Section 52.21 or 40 CFR Section 63.41
<b>RECORDKEEPING REQUIREMENTS</b>	hdr
Monthly Recordkeeping -- VOC Emissions By the 15th of each month, the Permittee shall calculate and record the following: 1. The total quantity of all VOC and HAP containing materials used in the units listed in GP001. 2. The VOC content of each VOC containing material used in the previous month, as determined by the Material Content requirement of this section. 3. The VOC emissions for the previous month using the formulas specified in this section. 4. The 12-month rolling sum of VOC emissions from the previous 12 months, by summing the monthly VOC emissions calculated from the previous 12 months.	Minn. R. 7007.0800, subp. 4 and subp. 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

04/12/01

Facility Name: Nordic Fiberglass Inc

Permit Number: 08900022 - 001

<p>Monthly Calculations -- VOC Emissions</p> <p>The Permittee shall calculate VOC emissions using the following equations:</p> $\text{VOC} = [\text{MAT}(1) \times \text{EF}(1)] + [\text{MAT}(2) \times \text{EF}(2)] + [\text{MAT}(3) \times \text{EF}(3)] + \dots \text{etc.}$ <p>Where:</p> <p>VOC = VOC emissions, in tons per month</p> <p>MAT(#) = Amount of VOC-containing material used, in tons/month</p> <p>EF(#) = The total VOC emission factor for each material used, in tons per ton of material used.</p> <p>For each material used in an open molding process, EF is calculated as follows:</p> $\text{EF} = [0.0005 \times \text{S}(\text{OM})] + [0.0005 \times \text{M}(\text{OM})] + \text{V}(\text{other})$ <p>For each material used in the closed mold operation, EF is calculated as follows:</p> $\text{EF} = \text{S}(\text{CM}) + \text{V}(\text{other})$	Minn. R. 7007.0800, subp. 4 and subp. 5
<p>Monthly Calculations - VOC Emissions, continued</p> <p>Where:</p> <p>S(OM) = The styrene emission factor for the corresponding open molding process (Appendix 1), in pounds per ton of material (see Note 1)</p> <p>M(OM) = The methyl methacrylate emission factor for the corresponding open molding process (Appendix 1), in pounds per ton of material (see Note 1)</p> <p>S(CM) = The styrene emission factor for the closed mold operation, in tons per ton of material (see Note 1). <math>\text{S}(\text{CM}) = 0.03 \times \text{weight-percent styrene in material}</math> (e.g., if weight percent styrene is 50%, <math>\text{S}(\text{CM}) = 0.03 \times 0.50 = 0.015</math>)</p>	Minn. R. 7007.0800, subp. 4 and subp. 5
<p>Monthly Calculations - VOC Emissions, continued</p> <p>V(other) = The emission factor for VOC other than styrene or methyl methacrylate from an open molding process, or the emission factor for VOC other than styrene from the closed mold operation, or the emission factor for any VOC (including styrene or methyl methacrylate) from any process other than open or closed molding (see Note 1). V(other) = the weight-percent VOC in the material (e.g., if the weight percent of VOC is 85%, <math>\text{V}(\text{other}) = 0.85</math>)</p> <p>The 12-month rolling sum is calculated monthly by summing the monthly totals from the previous 12 months.</p> <p>NOTE 1: In the event that EPA finalizes an emission factor (either in AP-42 or other published documentation) for any pollutant for any of the above operations, the new AP-42 or EPA-approved emission factor supersedes emission factors used herein.</p>	Minn. R. 7007.0800, subp. 4 and subp. 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

04/12/01

Facility Name: Nordic Fiberglass Inc

Permit Number: 08900022 - 001

**Subject Item: GP 002 Panel Filter Requirements****Associated Items:** CE 001 Mat or Panel Filter

CE 002 Mat or Panel Filter

CE 003 Mat or Panel Filter

CE 004 Mat or Panel Filter

CE 005 Mat or Panel Filter

CE 006 Mat or Panel Filter

CE 007 Mat or Panel Filter

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: greater than or equal to 73.6 percent control efficiency (capture efficiency of booth x collection efficiency of filter)	Title I Condition: Limit to avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7011.0715
Particulate Matter < 10 micron: greater than or equal to 73.6 percent control efficiency (capture efficiency of booth x collection efficiency of filter)	Title I Condition: Limit to avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000
The Permittee shall operate and maintain the control equipment any time the process equipment that it controls is in operation.	Title I Condition: Limit to avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000
Operation and Maintenance of Filters: The Permittee shall operate and maintain each filter according to the manufacturer's specifications.	Minn. R. 7007.0800, subp. 2, subp. 5, and subp. 14
MONITORING AND RECORDKEEPING	hdr
Daily Inspections: Once each operating day, the Permittee shall visually inspect the condition of the filters, including, but not limited to, alignment, saturation, tears, and holes. The Permittee shall maintain a daily written record of filter inspections.	Minn. R. 7007.0800, subp. 2, subp. 5, and subp. 14
Periodic Inspections: The Permittee shall inspect the control equipment components as required by the manufacturer's specifications. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subp. 2, subp. 5, and subp. 14
Corrective Actions: If the filters or any of their components are found to need repair during the inspections, the Permittee shall follow the Operation and Maintenance Plan for the filter and take corrective action as soon as possible. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subp. 2, subp. 5, and subp. 14
Hood Certification: Each control device hood (booth) must conform to the requirements listed in Minn. R. 7011.0070, subp. 1, and the Permittee shall certify this for each hood as specified in Minn. R. 7011.0070, subp. 3. The Permittee shall maintain a copy of each certification on site, as well as an annual record of the fan rotation speed, fan power draw or face velocity of each hood (booth), or other comparable air flow indication method.	Minn. R. 7007.0800, subp. 2, subp. 5, and subp. 14



**TABLE A: LIMITS AND OTHER REQUIREMENTS**

04/12/01

Facility Name: Nordic Fiberglass Inc

Permit Number: 08900022 - 001

**Subject Item:** GP 003 Sanding Booths**Associated Items:** EU 005 Plant 5 Sanding Booth

EU 014 Sanding Booth

EU 022 Plant 7 Sanding Booth

EU 028 Plant 8 Sanding Booth

EU 038 Plant 10 Sanding Booth

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas, unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This limit applies separately to each emission unit listed in GP003.  Under maximum operating conditions, the limits under the rule would be 0.096 gr/dscf, or approximately 6.48 lb/hr for each unit listed in GP003.  The uncontrolled potential emissions of each unit listed in GP003 is 5.68 lb/hr.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity . This limit applies separately to each unit listed in GP003.	Minn. R. 7011.0715, subp. 1(B)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

04/12/01

Facility Name: Nordic Fiberglass Inc

Permit Number: 08900022 - 001

**Subject Item: GP 004 Resin/Gelcoat Application with Controlled PM Emissions**

**Associated Items:** EU 009 Plant 6 Spray Up Gun  
 EU 021 Plant 7 Gel Coat Gun  
 EU 035 Plant 10 Spray Up Gun  
 EU 039 Plant 5 Flowcoat Gun  
 EU 040 Plant 5 Gelcoat Flowcoat Gun  
 EU 041 Plant 6 Flowcoat Gun  
 EU 043 Plant 8 Flowcoat Gun  
 EU 044 Plant 10 Flowcoat Gun  
 EU 045 Plant 10 Gelcoat Flowcoat Gun

What to do	Why to do it
<b>EMISSION LIMITS</b>	hdr
<p>Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas, unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This limit applies separately to each emission unit listed in GP004.</p> <p>Under maximum operating conditions, the limits for EU040 and EU045 would be 0.096 gr/dscf, or approximately 6.48 lb/hr. The controlled potential emissions for each of these units is 3.12 lb/hr.</p> <p>The limits for each of the remaining units would be 0.086 gr/dscf, or approximately 8.23 lb/hr.</p> <p>The controlled potential emissions of the remaining units are as follows:          EU009 &amp; EU035 -- 6.22 lb/hr          EU039, EU041, EU043, &amp; EU044 -- 1.13 lb/hr          EU021 -- 0.59 lb/hr</p>	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity . This limit applies separately to each unit listed in GP004.	Minn. R. 7011.0715, subp. 1(B)
<b>OPERATING REQUIREMENTS</b>	hdr
The Permittee shall vent emissions from all units listed in GP004 to control equipment meeting the requirements of GP002. See Subject Item GP002 for specific operating requirements of control equipment.	Title I Condition: Limit to avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

04/12/01

Facility Name: Nordic Fiberglass Inc

Permit Number: 08900022 - 001

**Subject Item:** GP 005 Operations with no PM emitted to atmosphere**Associated Items:** EU 010 Plant 6 Surface Coating (brush)

EU 013 Popcorn Gun

EU 025 Plant 8 Surface Coating (brush)

EU 042 Plant 7 Closed Mold Press

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas, unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This limit applies separately to each emission unit listed in GP005.  EU013 emits inside the building, and is not vented outdoors. The remaining units in GP005 are not expected to produce particulate emissions.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity . This limit applies separately to each unit listed in GP005. Emissions from EU013 are emitted inside the building, and are not vented to a stack. The remaining units in GP005 are not expected to produce particulate emissions.	Minn. R. 7011.0715, subp. 1(B)

## TABLE B: SUBMITTALS

04/12/01

Facility Name: Nordic Fiberglass Inc  
Permit Number: 08900022 - 001

Table B lists most of the submittals required by this permit. Please note that some submittal requirements may appear in Table A or, if applicable, within a compliance schedule located in Table C. Table B is divided into two sections in order to separately list one-time only and recurrent submittal requirements.

Each submittal must be postmarked or received by the date specified in the applicable Table. Those submittals required by parts 7007.0100 to 7007.1850 must be certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Other submittals shall be certified as appropriate if certification is required by an applicable rule or permit condition.

Send any application for a permit or permit amendment to:

Permit Technical Advisor  
Permit Section  
Air Quality Division  
Minnesota Pollution Control Agency  
520 Lafayette Road North  
St. Paul, Minnesota 55155-4194

Also, where required by an applicable rule or permit condition, send to the Permit Technical Advisor notices of:

- accumulated insignificant activities,
- installation of control equipment,
- replacement of an emissions unit, and
- changes that contravene a permit term.

Unless another person is identified in the applicable Table, send all other submittals to:

Supervisor  
Compliance Determination Unit  
Air Quality Division  
Minnesota Pollution Control Agency  
520 Lafayette Road North  
St. Paul, Minnesota 55155-4194

Send submittals that are required to be submitted to the U.S. EPA regional office to:

Mr. George Czerniak  
Air and Radiation Branch  
EPA Region V  
77 West Jackson Boulevard  
Chicago, Illinois 60604

Send submittals that are required by the Acid Rain Program to:

U.S. Environmental Protection Agency  
Clean Air Markets Division  
1200 Pennsylvania Avenue NW (6204N)  
Washington, D.C. 20460

**TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS**

04/12/01

Facility Name: Nordic Fiberglass Inc

Permit Number: 08900022 - 001

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Request for Information Response	due 1,096 days after Permit Issuance. Submit modeling data for sources of particulate matter smaller than 10 microns (PM10) as specified i the MPCA modeling guidance for Modeling Information Requests. This modeling information is for data collection purposes only, no modeling analysis is required at this time. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Total Facility

**TABLE B: RECURRENT SUBMITTALS**

04/12/01

Facility Name: Nordic Fiberglass Inc

Permit Number: 08900022 - 001

What to send	When to send	Portion of Facility Affected
Semiannual Deviations Report	due 30 days after end of each calendar half-year following Permit Issuance. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Total Facility
Annual Report	due 30 days after end of each calendar year following Permit Issuance. The Permittee shall submit an annual report by April 1, describing the changes made at the facility during the previous calendar year. The report shall document the VOC 12-month rolling sum calculations for the previous calendar year and applicable National Emission Standards for Hazardous Air Pollutants that were triggered or promulgated in the last calendar year. This report may be submitted with the annual emissions inventory, but it shall be a separate document marked as the Annual Report. As part of the Annual Report, the Permittee shall verify and certify that the facility has maintained minor source status for New Source Review.	Total Facility
Compliance Certification	due 30 days after end of each calendar year following Permit Issuance (for the previous calendar year). To be submitted on a form approved by the Commissioner, both to the Commissioner, and to the U.S. EPA regional office in Chicago. This report covers all deviations experienced during the calendar year.	Total Facility

**Facility Name:** Nordic Fiberglass, Inc  
**Permit Number:** 08900022-001

## Emission Rate in Pounds of Styrene Emitted per Ton of Resin or Gelcoat Processed

[illegible]

### Emission Rate in Pounds of Methyl Methacrylate Emitted per Ton of Gelcoat Processed

Application Process	MMA content in gelcoat, % <sup>(5)</sup>																			
	1	2	3	4	5	6	7	8	9	0	11	12	13	14	15	16	17	18	19	≥20
Gel coat application <sup>(6)</sup>	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	0.75 x %MMA x 2000

#### Notes

1. Including styrene monomer content as supplied, plus any extra styrene monomer added by the molder, but before addition of other additives such as powders, fillers, glass,...etc.
2. *Formulas for materials with styrene content < 33% are based on the emission rate at 33% (constant emission factor expressed as percent of available styrene), and for styrene content > 50% on the emission rate based on the extrapolated factor equations; these are not based on test data but are believed to be conservative estimates. The value for "% styrene" in the formulas should be input as a fraction. For example, use the input value 0.30 for a resin with 30% styrene content by weight.*
3. The VSR reduction factor is determined by testing each resin/suppressant formulation according to the procedures detailed in the *CFA Vapor Suppressant Effectiveness Test*.
4. The effect of vapor suppressants on emissions from filament winding operations is based on the *Dow Filament Winding Emissions Study*.
5. Including MMA monomer content as supplied, plus any extra MMA monomer added by the molder, but before addition of other additives such as powders, fillers, glass,...etc.
6. Based on gelcoat data from *NMMA Emission Study*.

This table is based on the CFA *Unified Emissions Factors* document, dated April 7, 1999.



**APPENDIX 2**

Facility Name: **Nordic Fiberglass, Inc.**  
Permit Number: **08900022-001**

**Insignificant Activities and Applicable Requirements**

<b>Minn. R. 7007.1300, subpart</b>	<b>Rule Description of the Activity</b>	<b>Applicable Requirement</b>
3(A)	<i>Fuel use: space heaters fueled by, kerosene, natural gas, or propane.</i> <ul style="list-style-type: none"><li>• Ten natural gas fired space heaters</li></ul>	Minn. R. 7011.0510/0515
3(I)	Individual emissions units at a stationary source, each of which have a potential to emit the following pollutants in amounts less than:  1. 4,000 lbs/year of carbon monoxide; and  2. 2,000 lbs/year each of nitrogen oxide, sulfur dioxide, particulate matter, particulate matter less than ten microns, volatile organic compounds (including hazardous air pollutant-containing VOC), and ozone. <ul style="list-style-type: none"><li>• Five natural gas fired make-up air furnaces, each of which has potential emissions less than the thresholds.</li></ul>	Minn. R. 7011.0610

**TECHNICAL SUPPORT DOCUMENT**  
**For**  
**AIR EMISSION PERMIT NO. 08900022-001**

This technical support document is intended for all parties interested in the permit. The purpose of this document is to set forth the legal and factual bases for the permit conditions, including references to the applicable statutory or regulatory provisions.

## **1. General Information**

### **1.1. Applicant and Stationary Source Location:**

Owner and Operator Address and Phone Number	Facility Address (SIC Code: 3089)
Nordic Fiberglass Inc. P.O. Box 27 Warren, MN 56762  Wayne Spidahl – General Manager Jason Johnson – Operations Manager (218)745-5095 – voice (218)745-4990 – fax	Nordic Fiberglass, Inc. Highway 75 South Warren, Marshall County, Minnesota

### **1.2. Description of the facility**

Nordic Fiberglass Inc. operates a fiberglass reinforced plastics production facility in Warren, MN, manufacturing plastic products for the electric utility industry. The facility consists of five separate buildings, or plants, on a single property. “Plant 5” consists of a resin flowcoat operation, a sanding booth, and a flowcoat gelcoat booth. “Plant 6” consists of a resin spray up operation (which will be replaced with flowcoat technology), a sanding booth, and a surface coating (brush) operation. “Plant 7” consists of a gelcoat operation, a closed molding press, and a sanding booth. “Plant 8” consists of a resin flowcoat operation, a sanding booth, and a surface coating (brush) operation. “Plant 10” consists of a resin spray up operation (which will be replaced with flowcoat technology), a sanding booth, and a gelcoat operation. The primary emissions at the facility are volatile organic compounds (VOC) consisting primarily of styrene from the resin and gelcoat operations. The gelcoat operation also emits methyl methacrylate. There are particulate matter emissions associated with spraying operations and with the sanding booths. There are also some small heaters at the facility, all of which are insignificant activities under Minnesota Rules.

The VOC emissions are limited to 240 tons per year (tpy) on a rolling sum basis. This limit inherently limits HAP emissions to 240 tpy, as well as limiting PM emissions to below 250 tons per year. The permit limits the emissions of the facility such that the facility is classified as non-major under federal New Source Review regulations. The facility is a major source under the Part 70 Permitting program. When promulgated, this facility will be subject to the Maximum Achievable Control Technology (MACT) standard for Reinforced Plastic Composites.

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### 1.3 Description of any changes allowed with this permit issuance

This permit pre-authorizes replacement, movement, and installation of the equipment types listed in GP001, provided no applicable requirements not already listed in the permit are triggered.

### 1.4 Description of all amendments issued since the issuance of the last total facility permit and to be included in the Part 70 Permit.

None.

### 1.5 Changes made since public notice of the Draft Permit

Requirements to submit modeling information were added to the permit, because since the draft permit was placed on public notice, MPCA policy regarding modeling requirements was revised. Since this is an addition of recordkeeping requirements, additional public notice is not required.

### 1.6 Facility Emissions:

**Table 1. Total Facility Potential to Emit Summary:**

	PM Tpy	PM <sub>10</sub> tpy	SO <sub>2</sub> tpy	NO <sub>x</sub> tpy	CO tpy	VOC tpy	Styrene tpy	Total HAPs tpy
Total Facility Limited Potential Emissions*	162.9	162.9	0.03	4.28	3.6	240.2	240.0	240.0
Total Facility Actual Emissions**	5.15	5.15	---	0.14	0.13	52.89	NR	NR

\*Includes combustion from insignificant activities

\*\*As reported in the 1998 Emission Inventory

NR = Not reported

**Table 2. Total Facility and Permit Classification**

Classification	Major/Affected Source	*Synthetic Minor	*Minor
PSD		VOC, PM, PM <sub>10</sub>	All others
NAAR – NA			
Part 70 Permit Program	VOC, HAP, PM <sub>10</sub>	None	All others

\* Refers to potential emissions that are less than those specified as major by 40 CFR 52.21, 40 CFR pt. 51 Appendix S, and 40 CFR pt. 70.

## 2. Regulatory Overview of Facility

The facility has taken limits to avoid major source classification for New Source Review (40 CFR § 52.21). However, the facility is a major source under the federal operating permits program (40 CFR pt. 70). The facility is a major source under the National Emission Standards for Hazardous Air Pollutants for Source Categories (NESHAPS, 40 CFR pt. 63) and will be subject to the requirements of the NESHAP for Reinforced Plastic Composites when it is promulgated. There are no federal New Source Performance Standards or state standards of

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performance that apply to the facility at this time. The following table contains an overview of the currently applicable regulations for the facility.

**Table 3. Regulatory Overview**

	Applicable Regulations	Comments:
GP001	40 CFR § 52.21; Minn. R. 7011.0715	Prevention of Significant Deterioration (PSD) (limits taken to avoid major source classification under PSD for VOC and PM/PM <sub>10</sub> emissions); Standards of Performance for Post 1969 Industrial Process Equipment.
GP003, GP004, GP005, EU040, EU045	Minn. R. 7007.0715	Standards of Performance for Post 1969 Industrial Process Equipment

### **3. Technical Information**

#### **3.1 Potential to Emit Calculations**

Attachment 1 to the TSD contains the PTE summary of the facility, and supporting calculations.

The facility has elected to accept a limit on VOC emissions to remain a non-major source under 40 CFR § 52.21 (PSD). The primary source of VOC emissions is application of resin, gelcoat, and paint.

##### ***Styrene***

Potential styrene emissions from the spray up, flowcoat, gelcoat, and brush application operations are calculated using the equipment capacity, the maximum styrene content of the resin or gelcoat, and the United Emission Factors (UEF) for open molding of composites (AP-42 emission factor in the case of the closed molding operation). These factors are reproduced in Appendix I of the permit. Resin spray technology is a combination of mechanical atomized spray and mechanical nonatomized spray (the facility is in the process of converting to flowcoat technology). The permit allows replacement of equipment, as long as all actual emissions are properly accounted for using the appropriate emission factor for the technology in use.

Styrene emissions are limited to 240 tons per year actual emissions, by virtue of the total VOC limit of 240 tons per year.

##### ***Methyl Methacrylate***

Potential methyl methacrylate (MMA) emissions are calculated using the equipment capacity, the maximum MMA content of the gelcoat, and the UEF for open molding of composites.

MMA emissions are not limited by the VOC limit, since potential MMA emissions are less than 240 tons per year.

### *Other VOC*

Potential VOC emissions other than styrene from open or closed molding and MMA from gelcoating are calculated using the capacity of the equipment and the maximum VOC content of the material, assuming that all is emitted. This is a standard mass-balance calculation.

Total VOC emissions are limited to 240 tons per year on a 12-month rolling sum basis, calculated monthly using the following equation:

$$\text{VOC} = [\text{MAT}(1) \times \text{EF}(1)] + [\text{MAT}(2) \times \text{EF}(2)] + [\text{MAT}(3) \times \text{EF}(3)] + \dots \text{etc.}$$

Where:

VOC = VOC emissions, in tons per month

MAT(#) = Amount of each VOC-containing material used, in tons/month. If 11 separate VOC-containing materials were used in a month, the equation would go up to MAT(11) and EF(11).

EF(#) = The total VOC emission factor for each material used, in tons per ton of material used. For each material used in an open molding process, EF is equal to the styrene emission factor (if applicable) plus the methyl methacrylate emission factor (if applicable) plus an emission factor for any VOC other than styrene or methyl methacrylate that may be in the material:

- For each Open Molding process:  $\text{EF}(\#) = [0.0005 \times \text{S}(\text{OM})] + [0.0005 \times \text{M}(\text{OM})] + \text{V}(\text{other})$

S(OM) = the styrene emission factor for the appropriate open molding process (atomized, nonatomized, gelcoat application, etc.), in pounds per ton of resin or gelcoat (see Attachment 2).

M(OM) = the methyl methacrylate emission factor for gelcoat application, in pounds per ton of gelcoat (see Attachment 2).

V(other) = the weight percent of VOC other than styrene or methyl methacrylate in the material. For instance, if the total VOC content of the material is 60%, the styrene content is 40% and the methyl methacrylate content is 2%, then the weight percent of VOC other than styrene or methyl methacrylate is  $60\% - (40\% + 2\%) = 18\%$ , and  $\text{V}(\text{other}) = 0.18$  tons/ton resin or gelcoat.

- For the Closed Molding process,  $\text{EF}(\#) = \text{S}(\text{CM}) + \text{V}(\text{other})$

S(CM) = the styrene emission factor for closed molding, in tons per ton of resin. S(CM) is calculated by multiplying the weight percent of styrene in the resin by 3%. (3% is the styrene emission factor in AP-42 for closed molding.) For instance, if the styrene content of the resin used in the closed molding process is 40%, then  $\text{S}(\text{CM}) = 0.4 \times 0.03 = 0.012$  tons/ton of resin. If there are any other VOCs in the resin used in the closed molding process, V(other) is calculated as described above.

- For any process other than open molding or closed molding (e.g., painting),  $\text{EF}(\#) = \text{V}(\text{other})$

In this case, V(other) is equal to the total weight percent of VOC in the material. For instance, if the total VOC content is 25%,  $\text{V}(\text{other}) = 0.25$  tons/ton of material.

### *PM/PM10*

Potential PM emissions are calculated using the equipment capacity, the maximum solids content of the material, an assumed transfer efficiency of 89% for sprayup guns (actually varies from

88% to 89% for the same guns at a different facility), and approximately 98% for the flowcoat equipment, a capture efficiency of 80%, and an assumed control efficiency of 92% (panel filters, per Minn. R. 7011.0070). This calculation method is likely conservative. The capture efficiency of a spray booth is usually around 95%; we assume 80% per the control equipment rule (Minn. R. 7011.0070), which is deliberately conservative so that noncompliance is unlikely. Hood certification is required.

Particulate emissions are inherently limited by the VOC limit of 240 tons per year. If one chooses the operation producing the most particulate matter emissions, in this case the sprayup guns, and calculates the maximum PM that could be generated if that operation emits all of the 240 tons of VOC, you get a maximum PM emission rate of 93.7 tons per year. Since sprayup is being phased out, the actual PM emissions will be even lower.

### **3.2 Periodic Monitoring**

In accordance with the Clean Air Act, it is the responsibility of the owner or operator of a facility to have sufficient knowledge of the facility to certify that the facility is in compliance with all applicable requirements. To achieve this objective, the U.S. EPA requires periodic monitoring for permitted sources.

In evaluating the monitoring included in the permit, the MPCA considered the following:

- The likelihood of violating the applicable requirement;
- Whether add-on controls are necessary to meet an emission limit;
- The variability of emissions over time;
- The type of monitoring, process, maintenance, or control equipment data already available for the emission unit.

Table 4 summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate.

**Table 4. Emission Units Subject to Periodic Monitoring**

EU/GP/CE	Emission limit (basis)	Additional Monitoring	Discussion
GP001 units	VOC $\leq$ 240 tpy on a 12-month rolling sum basis (limit to avoid NSR)	<u>Recordkeeping:</u> Monthly records of material use, ongoing records of VOC content  <u>Calculations:</u> Monthly calculation of VOC emissions	The facility will base records on actual quantity of VOC and VOC-containing materials used. Styrene and methyl methacrylate from the resin and gelcoat are to be calculated using the UEF emission factors (see section 3.1 of this document). All other VOCs are calculating using a conventional mass-balance technique
GP002 units	Control efficiency $\geq$ 73.6% (Minn. R. 7011.0070, control equipment rule; required to remain below NSR thresholds; Minn. R. 7011.0715, Industrial Process Equipment Rule)	Certification of hood (booth) performance in accordance with control equipment rule.	The only true limit that applies is under Minn. R. 7011.0715. The calculated emission rates using the conservative estimates described in section 3.1 of this document show that PM emissions will be less than what is allowed under Minn. R. 7011.0715. Non-compliance is unlikely, and stack testing is not being required at this time.
GP003 units	PM, opacity: limits under Minn. R. 7011.0715	None	Potential emissions of these sanding operations are below what is allowed under the rule, based on previous testing done at the facility, without use of control equipment. The equipment does not operate at maximum capacity or on a steady basis, so it is unlikely that the limit would be violated, and no further testing is being requested at this time.

EU/GP/CE	Emission limit (basis)	Additional Monitoring	Discussion
GP004 units	PM, opacity: limits under Minn. R. 7011.0715	None (operating and monitoring of control equipment under GP002)	Controlled potential emissions based on the conservative mass balance technique used are below the limits allowed under the rule. If the control equipment is operated and maintained (required under GP002), then it is unlikely that the limits would be exceeded. No testing required at this time.
GP005 units	PM, opacity: limits under Minn. R. 7011.0715	None	The popcorn gun does not exhaust through any collection ducting system to the atmosphere, and the remaining units are not expected to produce particulate matter.

### 3.3 Insignificant Activities

The facility has several natural gas fired heaters that qualify as insignificant operations. These are included in the Appendix to the permit, along with the applicable requirements.

## 4. Conclusion

Based on the information provided by Nordic Fiberglass Inc., the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 08900022-001 and this technical support document, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Toni Volkmeier, Cary Hernandez

Attachment:   1. Calculations and PTE summary  
                   2. CFA emission factors for open molding  
                   3. CD-01 Forms and Facility Description Forms





# **Attachment 1**

## **Calculations and PTE Summary**



# **Attachment 2**

## **CFA Emission Factors for Open Molding**



# **Attachment 3**

## **CD-01 Forms and Facility Description Forms**