May 14, 2026

Wisconsin Department of Natural Resources
Air Management Program, AM
Attn: Permits
Box 7921
Madison, WI 53707-7921

RE: Construction Permit Application and Commence Construction Waiver Request
3M - Menomonie, WI (Facility ID: 617056660)

To Whom It May Concern:

3M Company (3M) owns and operates a facility located in Menomonie, Wisconsin (Menomonie Plant; Facility ID 617056660). The Menomonie Plant currently operates under operation permit 61705666A-P46.[1] 3M is proposing to install a new ceramic fiber line, PCF13, at the Menomonie Plant. The proposed PCF13 line will operate similar to the existing ceramic fiber lines. PCF13 will be "Type 2" ceramic fiber maker with emissions routed to a new thermal oxidizer (C08) to be installed as part of this project. A construction permit application for the proposed project is attached.

3M is requesting a commence construction waiver under NR 406.03(2) for the proposed project described above. The following sections serve as a request for a waiver under NR 406.03(2) in order to commence construction prior to the WDNR issuing a construction permit. In accordance with NR 406.03(2)(b), the WDNR may grant a waiver provided the following conditions (in bold) are met. Justification for these criteria is included below each citation:

The person has submitted a complete construction permit application for the source to the department.

3M is submitting a complete construction permit application and this construction permit waiver request in conjunction with each other.

The person has submitted a complete waiver request to the department which demonstrates that undue hardship will be caused if a waiver is not granted. Undue hardship may result from any of the following:

a. Adverse weather conditions.
b. Catastrophic damage of existing equipment.
c. A substantial economic or financial hardship.
d. Other unique conditions.

Pursuant to NR 406.03(2)(b)2, 3M is requesting a construction waiver to prevent substantial economic hardship resulting from project delays for the new PCF13 ceramic fiber line. Current forecasts indicate that the facility-specific portion of this project requires substantial lead time for completion; operation is scheduled to commence in Quarter 1 of 2027. Delays in construction would result in postponement in the scheduled operation and in meeting customer demand which, in turn, would result in a direct loss in

[1] A Title V renewal application was submitted on July 7, 2022 and is still pending review by the WDNR.

incremental sales. Because the installation of specialized production equipment is strictly contingent upon the prior completion of primary facility infrastructure, granting this waiver is essential to mitigate these compounding financial losses. 3M acknowledges that all construction activities performed under this waiver are undertaken at its own risk and that the PCF13 line will not commence operation until the final construction permit has been granted.

The person has paid the waiver review fee required under s. NR 410.03(1)(bm).

The required fee of $300 will be paid electronically upon receipt of an invoice from WDNR.

The department may not grant a waiver for a source that requires a permit under ch. NR 405 or 408 or requires a permit to establish enforceable limitations on potential to emit to avoid permit requirements of ch. NR 405 or 408.

The proposed project requires a permit under NR 406 rather than NR 405 or NR 408. Additionally, the permit is not needed to establish enforceable limits on the potential to emit to avoid permitting requirements under NR 405 or NR 408. Refer to the emission calculations attached to the construction permit application.

The department may not grant a waiver for a source located or to be located within 10 kilometers of a Class I area under this subsection.

The Menomonie Facility is not located within 10 kilometers of a Class I area

3M appreciates a response from the WDNR with respect to the commence construction waiver as expeditiously as possible but anticipates a response in no more than 15 days in accordance with NR 406.03(2)(c).

3M appreciates your time and attention to this commence construction waiver request and looks forward to working with the WDNR in the permitting process. If you have any questions or comments about the information presented in this letter or attached application, please do not hesitate to contact me at (612) 816-1247 or skoehn2@mmm.com.

Sincerely,
3M



Shelley Koehn
Senior Environmental Engineer

Attachment – Construction Permit Application

CONSTRUCTION PERMIT APPLICATION
CF13 CERAMIC FIBER LINE

3M – Menomonie, WI



Prepared By:

TRINITY CONSULTANTS
2505 124th Street
Suite 225
Brookfield, WI 53005

May 13, 2026

Trinity Consultants

TABLE OF CONTENTS

1. PROJECT SUMMARY 1-1

2. EMISSION CALCULATIONS 2-1

3. REGULATORY APPLICABILITY ANALYSIS 3-1
   - 3.1 Federal Regulations 3-1
     - 3.1.1 Standards of Performance for Polymeric Coating of Supporting Substrates Facilities – 40 CFR Part 60, Subpart VVV 3-1
   - 3.2 Wisconsin State Regulations 3-1
     - 3.2.1 Prevention of Significant Deterioration (PSD) – NR 405 3-1
     - 3.2.2 Construction Permits – NR 406 3-1
     - 3.2.3 Construction Permits for Direct Major Sources in Nonattainment Areas – NR 408 3-2
     - 3.2.4 Control of Organic Compound Emissions from Process Lines – NR 424 3-2
     - 3.2.5 Control of Hazardous Pollutants – NR 445 3-2

APPENDIX A. APPLICATION FORMS A-1

APPENDIX B. EMISSION CALCULATIONS B-1

APPENDIX C. PERMIT REDLINE C-1

1. PROJECT SUMMARY

3M owns and operates a facility located in Menomonie, Wisconsin (Menomonie Plant; Facility ID 617056660). The Menomonie Plant currently operates under operation permit 61705666A-P46.

3M is proposing to install a new ceramic fiber line, CF13, at the Menomonie Plant. The proposed CF13 line will use the same raw materials and pre-sizing as is run on the existing lines; there will not be any new raw materials as a part of this project. Proposed ceramic fiber line CF13 will be considered a "Type 2" maker with a maximum feed rate of 180 lb/hr. As such, CF13 will have emissions routed to a new thermal oxidizer (C08) which will be installed as part of this project. 3M intends for proposed C08 to operate in a similar manner as existing thermal oxidizer C07, including operating with a proposed minimum 88% overall control efficiency and a 240 hour per year bypass allowance. The bypass allowance applies to any bypass of C08, including both planned and unplanned events. This project will also require the installation of non-emitting equipment, such as a continuous evaporator. Non-emitting equipment is not discussed further in this application.

The current permit provides an allowance of 240 hours per year of thermal oxidizer bypass for the existing Type 2 ceramic fiber maker lines (CF5, CF6, CF8 through CF10, and CF12) which are controlled by thermal oxidizer C07. The 240 hour per year allowance for the new thermal oxidizer, C08, is separate from the 240-hour per year allowance for thermal oxidizer, C07. Additionally, 3M requests that the existing 240 hour per year allowance for thermal oxidizer C07 be revised to include any bypass, including both planned and unplanned events.[1] Note that providing this allowance for both planned and unplanned events will not have any impact on emissions from the existing Type 2 ceramic fiber maker lines (CF5, CF6, CF8 through CF10, and CF12) which are controlled by thermal oxidizer C07 and will continue to demonstrate compliance with all applicable regulations, specifically NR 424.03.

This application includes a discussion of the applicable air permitting requirements and regulations, the required air permit application forms (Appendix A), detailed emission calculations (Appendix B), and a redline of the applicable sections of operation permit 61705666A-P46 (Appendix C).

[1] This allowance is included in Conditions I.C.1.a.(3)(b) and I.XXX.2.b.(1)(b). 3M requests that the phrase "for maintenance purposes only" be removed from this condition.

2. EMISSION CALCULATIONS

Emissions for the proposed CF13 line were calculated using site-specific emission factors derived from site-specific engineering studies for Type 2 Ceramic Fiber Makers. As a Type 2 unit, CF13 is designed as a vent-to-control system, with process emissions routed to a new thermal oxidizer (C08).

Maximum Theoretical Emissions (MTE) and Potential to Emit (PTE) were determined by scaling the 2021 Thermal Oxidizer test results to the unit's maximum capacity. Specifically, the CF13 maximum feed rate of 180 lb/hr was multiplied by the tested outlet emission rates and divided by the feed rate recorded during the test period. An 88% overall control efficiency was applied to account for the combined capture and destruction of pollutants based on the proposed permit limit.

A thermal oxidizer bypass scenario of 240 hours per year was also included, during which emissions are assumed to be uncontrolled. 3M intends that the bypass allowance apply to any bypass of C08, including both planned and unplanned events. Annual emissions were calculated by combining controlled emissions for normal operation and uncontrolled emissions during bypass periods.

Emissions from thermal oxidizer C08 for the CF13 line were calculated using a burner rating of 4 MMBtu/hr. Criteria pollutant emission factors were taken from AP-42 Section 1.4, Tables 1.4-1 and 1.4-2, and HAP emission factors from Tables 1.4-3 and 1.4-4. Emissions were estimated by multiplying the emission factors by the heat input and operating hours.

Emission estimates are provided in Appendix B.

3. REGULATORY APPLICABILITY ANALYSIS

The following sections discuss the applicable federal and state air quality regulations for the CF13 Ceramic Fiber Line.

3.1 Federal Regulations

3.1.1 Standards of Performance for Polymeric Coating of Supporting Substrates Facilities – 40 CFR Part 60, Subpart VVV

40 CFR Part 60, Subpart VVV applies to each coating operation and any onsite coating mix preparation equipment used to prepare coatings for the polymeric coating of supporting substrates, for which construction, modification, or reconstruction begins after April 30, 1987. "Polymeric coating of supporting substrates" is defined as a web coating process that applies elastomers, polymers, or prepolymers to a supporting web other than paper, plastic film, metallic foil, or metal coil.

The proposed ceramic fiber line CF13 involves a web coating process applying organic binders to a ceramic fiber web substrate and is therefore subject to this subpart. However, because VOC usage at CF13 is less than 95 Mg per 12-month period, the facility is subject only to the limited monitoring and recordkeeping requirements of 60.744(b), 60.747(b), and 60.747(c).

3.2 Wisconsin State Regulations

3.2.1 Prevention of Significant Deterioration (PSD) – NR 405

PSD regulations under NR 405 apply to new or modified major sources located in attainment or unclassifiable areas for criteria pollutants. The 3M Menomonie Plant is an existing Title V facility located in an attainment area and is an existing major source under PSD. The proposed project does not result in a significant emissions increase for any pollutants and does not constitute a major modification. Therefore, this project does not trigger PSD permitting under NR 405.

3.2.2 Construction Permits – NR 406

State construction permitting requirements are specified in Chapter NR 406, Wis. Adm. Code. This chapter outlines conditions under which construction, modification, or replacement of emissions units requires a construction permit, as well as exemptions under NR 406.04. The proposed ceramic fiber line CF13 does not qualify for any exemption under NR 406.04. Accordingly, this project requires a construction permit under NR 406.

3.2.3 Construction Permits for Direct Major Sources in Nonattainment Areas – NR 408

NR 408 applies to major modifications at major sources located in nonattainment areas for ozone or other criteria pollutants. The 3M Menomonie facility is located in Dunn County, which is designated as attainment for all pollutants. Therefore, the project does not trigger nonattainment NSR applicability.

3.2.4 Control of Organic Compound Emissions from Process Lines – NR 424

NR 424 establishes VOC control requirements for all process lines that are direct air contaminant sources and are not regulated under other specific chapters. The proposed CF13 ceramic fiber line is a process line that emits VOC and is not subject to the specific categories in chapters NR 419 to 423; therefore, it is subject to the emission limitations of NR 424.03. The facility will control VOC emissions by 88 percent through operation of the proposed thermal oxidizer (C08). Meeting 88 percent overall control for all but 240 hours per year, results in overall annual average control of at least 85 percent as required under NR 424.03(2)(b).

3.2.5 Control of Hazardous Pollutants – NR 445

Chapter NR 445 establishes emission limits and control requirements for state-regulated hazardous air pollutants (HAPs). The proposed ceramic fiber line CF13 emits NR 445 HAPs. 3M intends to conduct air dispersion modeling to demonstrate compliance with NR 445, which will be submitted at a later date.

The thermal oxidizer (C08) utilizes natural gas, which is classified as a virgin fossil fuel under NR 445.02(18). Per NR 445.07(5)(a), combustion of virgin fossil fuels is exempt from NR 445 emission limits and control requirements.

APPENDIX A. APPLICATION FORMS

AIR POLLUTION CONTROL CONSTRUCTION PERMIT

MINOR SOURCE (NR 406) CONSTRUCTION PERMIT APPLICATION CHECKLIST

AM-595 February 2026

Air pollution control minor source construction permit applications (ch. NR 406, Wis. Adm Code) must include the information listed below. Include supporting information as necessary. Complete this checklist and submit it with the application. The Wisconsin Department of Natural Resources (department) may request additional information as needed to process the application.

1. COMPLETE AND INCLUDE THE FOLLOWING FORMS

The forms in bold are required. All application forms can be found on the Air permit and compliance forms webpage. Each form includes detailed instructions. Download fillable PDF forms before opening and entering information. Visit the department's PDF Help page for more information.

☑ **Form 4530-100**

In Construction Permit Actions section A, select "New Construction/Modification"

- AND -

In Operation Permit Actions sections A and B, select the type of operation permit the facility is requesting

- OR –

In Operation Permit Actions section C, specify the type of operation permit exemption the facility is requesting or operates under.

☑ **Form 4530-101** – include a plot plan

☑ **Form 4530-102**

☑ **Form 4530-102A**

☑ **Form 4530-102B** – refrence Insignificant Emissions Units guidance

☑ **Form 4530-103 through 4530-125** as applicable, for the emissions units, stacks and control devices associated with the project.

Note: Forms 4530-118 through 4530-125 are required for Part 70 major sources only

☐ **Form 4530-130** for each emissions unit associated with the project OR identify applicable requirements (defined in s. NR 400.02(26), Wis. Adm. Code) by providing supplemental information such as a discussion of applicable requirements, a redline/strike out version of a current permit, and/or a highlighted version of a federal standard.

☐ **Form 4530-131** for each emissions unit associated with the project, as applicable.

2. PROVIDE EMISSION CALCULATIONS

☑ Include **Maximum Theoretical Emissions (MTE) and Potential to Emit (PTE) calculations** for all air contaminants in pounds per hour (lb/hr) and tons per year (tpy) for:

- Each emissions unit associated with the project
- The facility as a whole

Provide the required emission information either by completing Forms 4530-126 through 4530-129, OR by providing the information in a table or other format. Include calculation methodologies, emission factors, source of emission factors, assumptions and other information relied on to calculate emissions.

Instruction Booklet (AM-300) [PDF] has examples of MTE and PTE calculations.

In addition to the air contaminants listed in Table 3 of s. NR 407.05, Wis. Adm. Code, sources must also **provide emission calculations for 1-bromopropane** (CAS# 106-94-5). 1-Bromopropane was added to the hazardous air pollutants listed under section 112(b) of the Clean Air Act, pursuant to 40 CFR part 63 Subpart C, effective February 4, 2022. For more information, visit 1bp-q-and-a-document-final.pdf (epa.gov).

3. IF ELECTING TO LIMIT PTE OF EMISSIONS UNITS OR THE FACILITY, PROPOSE LIMITATIONS AND COMPLIANCE DEMONSTRATIONS

☑ Propose legally and practicably enforceable limitations on PTE and associated compliance demonstrations

- OR –

☐ Not applicable

4. PAY CONSTRUCTION PERMIT INITIAL APPLICATION FEE

☑ Submit the initial construction permit application fee using one of the following options:

- Enclose a check payable to Wisconsin Department of Natural Resources with the application (paper copy submittals).
- Mail a check payable to Wisconsin Department of Natural Resources under a separate cover to the address specified under Submittal Options on the How to Apply for Air Permits webpage (https://dnr.wisconsin.gov/topic/AirPermits/Apply.html).
- Request an invoice for online payment by selecting "E-Payment" in Construction Permit Actions section C of Form 4530-100. Upon receipt of the application, the department will send an email to the Billing Contact with an invoice and instructions for paying electronically. A processing fee of 2.5% is added to payments made by credit or debit card. E-Check and ACH payment options are also available.

NOTE:

- The construction permit initial application fee is available in the Construction Permit Actions section A of Form 4530-100.
- The department will not begin processing the application until the application fee is received.

5. OPTIONAL

☐ Include manufacturer or vendor documentation for emissions units and control devices.

☑ Provide a project narrative that describes the project, including the emissions units and control devices associated with the project and other relevant information.

☑ Attach a version of the current permit using redline/strikeout to indicate requested permit language changes. Refer to the Collaborative Permit Process guidance.

☐ Provide an air dispersion modeling analysis for the project and/or facility. More information on air dispersion modeling can be found in the Wisconsin Air Dispersion Modeling Guidelines.

Submit Permit Applications:

OPTION 1: Email an **ELECTRONIC COPY** to DNRAMAIRPERMIT@wisconsin.gov.

Note: Applications must be signed by the responsible official for the source. If submitting an electronic application, the department will send an email with instructions for e-Signing or submitting an ink signature upon receipt of the electronic application. A photocopied or scanned signature does not meet the department's signature requirements. The department will not begin processing an application until the signature is received.

- OR -

OPTION 2: Mail the original copy of all materials with ink signature on form 4530-100 to the address specified under Submittal Options on the How to Apply for Air Permits webpage (https://dnr.wisconsin.gov/topic/AirPermits/Apply.html).

Additional Information:

More information about applying for air permits is available on the How to Apply for Air Permits webpage.

Note: In order to fill and save this form electronically, it must be opened using Adobe Reader or Acrobat software. Save a copy of the file, open Adobe Reader, select File > Open and browse for the file you saved.

State of Wisconsin
Department of Natural Resources
dnr.wi.gov

Facility Details and Permit Actions
Air Pollution Control Permit Application

Form 4530-100 (R 03/2026)

Notice: Completion of this form is required by the department for any air pollution control permit application filed pursuant to ss. 285.61, 285.62 or 285.66, Wis. Stats. The department will not consider or act upon an application unless this form is submitted and complete. Any personal information collected will be used for administrative purposes only and may be provided to requestors to the extent required by Wisconsin's Public Records Law [ss. 19.31-19.39, Wis. Stats.].

Facility Information

1. Facility Name	2. SIC and NAICS	3. Facility ID Number (FID)
3M Menomonie	3081; 326113	617056660

4. Street Address (where pollution sources are/will be located)	5. ◉ City ○ Town ○ Village	6. County
1425 Stokke Parkway	of Menomonie	Dunn

7. Primary Operating Activity (e.g., lead-acid battery manufacturer or sulfite paper mill)
Manufacture of films and optical products

8. Is the facility located in an area designated as "nonattainment"? (refer to instructions)	9. If yes, indicate the pollutant(s) for the nonattainment designation
○ Yes ◉ No	

Applicant Contact Information

10. Responsible Official (person legally responsible for the operation of the permitted air pollution sources [see NR 400.02(136), Wis. Adm. Code])

Responsible Official Name	Title		
Janice Neitzel	3M Menomonie Plant Manager		
Mailing Address	**City**	**State**	**ZIP Code**
1425 Stokke Parkway	Menomonie	WI	54751
Email	**Phone Number**	**Ext.**	
jmneitzel@mmm.com	(715) 578-2210	N/A	

11. Permit Contact (contact for additional information concerning this permit application)

Permit Contact Name	Title		
Brad Luedtke	Environmental Engineer		
Mailing Address	**City**	**State**	**ZIP Code**
1425 Stokke Parkway	Menomonie	WI	54751
Email	**Phone Number**	**Ext.**	
bdluedtke@mmm.com	(715) 578-2318	N/A	

12. Billing Contact (contact for billing related information)

Billing Contact Name	Title		
Brad Luedtke	Environmental Engineer		
Mailing Address	**City**	**State**	**ZIP Code**
1425 Stokke Parkway	Menomonie	WI	54751
Email	**Phone Number**	**Ext.**	
bdluedtke@mmm.com	(715) 578-2318	N/A	

13. Parent Corporation (If not wholly owned by applicant)

Parent Corporation or Owner Name
3M Company

Mailing Address	City	State	ZIP Code	Country (if not U.S.)
3M Center Building 225-01-N-22	St.Paul	MN	55144	Select Country

14. Additional Owner(s) (if the facility or portion of the facility is jointly owned by an additional owner)

Additional Corporation or Owner Name

Mailing Address	City	State	ZIP Code	Country (if not U.S.)
				Select Country

Portion of the facility jointly owned:

Additional Corporation or Owner Name

Mailing Address	City	State	ZIP Code	Country (if not U.S.)
				Select Country

Portion of the facility jointly owned:

Permit Information

15. Construction Permit Actions:

Instructions:

- If applying for a construction permit action (including modification, reconstruction, relocation, replacement, revision and exemption) and the facility currently holds an operation permit, this application will also be considered an application for the revision of the facility's current operation permit, unless the applicant indicates otherwise in item 16.
- If applying for a construction permit action (including modification, reconstruction, relocation, replacement, revision, and exemption) and the facility does not currently hold an operation permit, the applicant MUST also apply for an operation permit option by selecting the appropriate options in item 16.
- The department will not begin processing an application until the application fee is received. Application fees are listed below in section A. Additional fees may be required and a final invoice will be sent when a final permit decision is made. See ch. NR 410 for current fee amounts and additional review fees.

A. Construction Permit Actions:

◉ New Construction/Modification ($10,000) – Anticipated start dates: 09/01/2026 (Construction) 01/01/2027 (Operation)

☒ **Requesting Waiver to Commence Construction** under s. NR 406.03(2), Wis. Adm. Code (include a fee of $300 in addition to construction permit initial application fee of $10.000)

◯ Construction Permit Revision ($2,500 fee) – List permit(s) to be revised: _____

◯ Construction Permit solely to generate emission reduction credits (ERCs) for a Part 70 source ($7,500)

◯ Construction Permit solely to generate emission reduction credits (ERCs) for a non-Part 70 source ($2,500)

◯ **Project involves construction of over 10,000 square feet not within an existing structure.**

B. Construction Permit Exemption Determinations: (Select one ONLY if you are requesting a review and response from the department. The department will not respond to a request until the appropriate exemption fee listed below is received.)

◯ Controlled Actual Emissions Exemption under NR 406.04(1q) (for construction project only) ($2,200)

◯ Research and Testing Exemption Under NR 406.04(1)(i) ($2,200)

◯ Modification for Source with Plant-wide Applicability Limit under NR 406.04(1f) ($1,800 / $2,900 with modeling)

◯ Significant Net Emissions Increase under NR 406.04(1k) ($5,500 / $6,500 with modeling)

◯ General Exemption under NR 406.04(2) ($1,400)

◯ Specific Categories of Exemptions under NR 406.04(1) ($1,400) **– Enter appropriate code citation(s):** _____

See specific categories of exemptions: https://docs.legis.wisconsin.gov/code/admin_code/nr/400/406/04/1

◯ Other: _____

For more information on exemption citations: https://docs.legis.wisconsin.gov/code/admin_code/nr/400/406.pdf

C. Construction Permit Actions Application Fee:
How will the application fee be paid? (select only one)

◯ Check payable to Wis. Dept. of Natural Resources is enclosed with the application (paper copy submittals only).

◯ Check payable to Wis. Dept. of Natural Resources will be sent under a separate cover to the address listed under Submittal Options on this webpage: https://dnr.wisconsin.gov/topic/AirPermits/Apply.html

◉ E—Payment. Upon receipt of the application, the department will send an email to the Billing Contact with an invoice and instructions for paying electronically. A processing fee of 2.5% is added to payments made by credit or debit card. E-check and ACH payment options are also available.

The department will not process the application until the application fee is received. See Item 15 Sections A and B for application fee information for construction permit actions. There is no application fee required for operation permit actions.

16. Operation Permit Actions:

A. Operation Permit Actions (if applying for an operation permit select the type the facility is requesting. For Operation permit exemptions see section C):

- ○ Original Operation Permit
- ○ Renewal
- ◉ Revision

NOTE: For more information:

Note: List the permit to be renewed or revised: 617056660-P46

B. Type of Operation Permit Requested (select one):

- ◉ Part 70 Source
- ○ Synthetic Minor, Non - Part 70 Source
- ○ Non - Part 70 Source
- ○ Elective

NOTE: Facilities that do not have a facility-wide operation permit issued MUST select the appropriate option. All other requests should indicate type of permit, to reflect continued or changing status.

C. Operation Permit Exemption Options (If applying for an operation permit exemption, select the type of exemption the facility is requesting)

- ○ Controlled Actual Emissions Exemption under NR 407.03(1m)
- ○ Natural Minor Source Exemption under NR 407.03(1s)
- ○ General Exemptions under NR 407.03(2)
- ○ Specific Categories of Exemptions under NR 407.03(1) - **Enter appropriate code citation(s):**

Note: Controlled Actual Emissions and Natural Minor Source Exemptions require revocation of existing operation permits.

See specific categories of exemptions: https://docs.legis.wisconsin.gov/document/administrativecode/NR 407.03(1)

17. For All Permit Actions:

Is additional information attached? ◉ Yes ○ No

Submit the completed application using either Option 1 or Option 2 below:

Option 1:

Email an ELECTRONIC COPY* to DNRAMAirPermit@wisconsin.gov.

* Applications must be signed by the Responsible Official for the source. If submitting an electronic application, the department will send an email with instructions for e-Signing or submitting an ink signature upon receipt of the electronic application. A photocopied or scanned signature does not meet the department's signature requirements. The department will not process and application until the signature is received.

OR

Option 2:

Mail the original copy of all materials with ink signature on this form to the address listed under Submittal Options on this webpage: https://dnr.wisconsin.gov/topic/AirPermits/Apply.html.

18. Signature of Responsible Official

Facility Name	Facility ID Number (FID)
3M Menomonie	617056660

A. Statement of Completeness:
I have reviewed this application in its entirety and, based on information and belief formed after reasonable inquiry, I certify that the statements and information contained in this application are true, accurate and complete.

B. Certification of Facility Compliance Status: (select one only)

This is not a requirement for initial non-part 70 source operation permit applications and initial applications for new or modified sources for which no construction permit is required. (NR 407.05(8))

(●) I certify that the facility described in this air pollution permit application is fully in compliance with all applicable requirements.

( ) I certify that the facility described in this air pollution permit application is fully in compliance with all applicable requirements, except for the following emissions unit(s) (list all non-complying units):

Signature of Responsible Official*

5/8/26
Date Signed

Janice Neitzel
Print or type name of Responsible Official

3M Menomonie Plant Manager
Print or type title of Responsible Official

* Applications must be signed by the Responsible Official for the source. If submitting an electronic application, the department will send an email with instructions for e-Signing or submitting an ink signature upon receipt of the electronic application. A photocopied or scanned signature does not meet the department's signature requirements. An electronic signature has the same effect of certifying the completeness and compliance status reflected in the above statements. The department will not begin processing an application until the signature is received.

Digital Signature Receipt

This is the electronic signature receipt. This receipt contains information about the document submitted, who signed it, when it was signed, and other technical information that may be used by the Department of Natural Resources to prove the authenticity of the document. This receipt is securely stored in the electronic signature system with the submitted document and neither the document nor this receipt can be altered. Electronic signatures are authorized under Wis. Stat. ch. 137 and have the same legal recognition as ink signatures on paper.

Document ID:	6KCN9
Document Description:	
File Name:	617056660_61705666A-P72_26-XXX-062_Emailed_Application_Need_SIG.pdf
File Size [KB]:	4557
:	jmneitzel@mmm.com
User Name:	Janice Neitzel
User Verified Status:	
Temporary PIN Sent To:	jmneitzel@mmm.com
Signature ID:	6KCKH
Signature Date/Time:	5/18/2026 2:47:42 PM
Certification Statement:	I certify, under penalty of law, that the information provided in this document is, to the best of my knowledge and belief, true, accurate, and complete. I understand that there are significant civil and criminal penalties, including fines, imprisonment, or both, for submitting false, inaccurate, or incomplete information.

For DNR Use Only:

User IP Address:	4.43.59.146□ 136.226.84.119	Public Key Type: RSA-2048	Hash Type: SHA-512
Temporary PIN Hash Value:	A2B9E0429802C79E3AB5FF493CC9E11252739C1157119435CBAE7C4226D43CE0A9924C0C9D11E8F5E2E6AD633BB7FAB115369DD94A938DD278555E0CAA6BD3CD		
Public Key Value:	0602000000A400005253413100080000010001000100E9AFE031B20522D71E1DECBE3DAB7875DFF180AA60A3CB1C22CBEE478D5A4B551B16770AC67BB49704C121A5E6831A37D997FF8EED9B23993032DA3C2C617916D7F1FCB05474DEC093DE0BB70E306E7BBB190ACF493402EB1A64F3D09D6818F723D5F645084DC6D9259B64F33B242A9F80CBACE41E604656728CB96F88986A2E796F99CF21F6C3423EDDEF85E3E7D4020D51C4158B443DBFFDA06782E18D6EB95277F3CEFA248BE406F4D35FE93DE6C79F37B370445F57E8A56B76D4B51E358176441B8134459CE65A77309987EAFE60A341D761F54B648BAD3AF38F8F9265A03F4C620D905728D97591CF849648CE2C5EE331A8A10D36D7ABBF787964115BC3		
Document Hash Value:	A0CB0B7DB8B72EEAAD356CF40FFE5DCBE2C73CCCC45CCC673DD9FF94DED0F8662EEB4D736BA2B8098F4996576E582B59CC2774AADD43B4A1CEEE5E26D0CB4356		
Document Signature Value:	A22110DC733667B9B1B497C11ABF4820DB3D6301B771F62F2DAF408B79A50258FA0451042E0FC545D907DF26EFAB970007C433D9773770BC64642EC4679D10632AB4A0C12519AECFAB121414B9677E646B49EFF86FBE5337056B03E4630DC53FEBA686F1753ADDB474F6AA189C0CFF9B998C632183DC8A3536DF87850F70E36F1A14A69267F0A7F51DBE1FA012A00E59E49868C0A55BB72815CD265A64C167114BFCB0DFC94944171A45296FCD6075E2220ECD05A7B8B354B8531FA39AE53D5ABB6E81D41258983B58452F82CC282FAF573CF9DEE02887074F661613764F70E271A594383470D9B2AACD46AB12289B5D7F3EF16554C7CFFA012028A1B8EB9E97		

State of Wisconsin
Department of Natural Resources
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FACILITY PLOT PLAN
Air Pollution Control Permit Application

Form 4530-101 (R 07/20)

Notice: Completion of this form is required for any air pollution control permit application filed pursuant to ss. 285.61, 285.62 or 285.66, Wis. Stats. The department will not consider or act upon an application unless this form is submitted and is complete. Any personal information collected will be used for administrative purposes only and may be provided to requesters to the extent required by Wisconsin's Public Records Law [ss. 19.31-19.39, Wis. Stats.].

For a comprehensive air quality analysis to be accomplished, a facility plot plan must be included with the permit application. The plot plan must include the following for the permit application to be considered complete:

- ☒ 1. A layout (blueprint, plan view, annotated aerial photograph, or graphic submitted for land use zoning approvals) including all buildings occupied by or located on the site of the facility.
- ☒ 2. The maximum height, and eave height, of each building and solid structure (excluding stack height).
- ☒ 3. The location and numerical designation of each stack. The stack designations must correspond to the appropriate stack designations listed on the other permit forms in this application and/or designations in current permits issued to the facility.
- ☒ 4. The location of fenced property lines (if any).
- ☒ 5. Identify direction "North" on all submittals.
- ☒ 6. All drawings shall be to scale and shall have the scale graphically depicted.
- ☒ 7. An additional regional map depicting the facility location in relation to the surrounding vicinity (roads or other features) shall be included.

Are there any outdoor storage piles on the facility site? ○ Yes ◉ No

If so, what material(s) does the pile(s) consist of?

Are there any dirt roads or unpaved parking lots on the facility site? ◉ Yes ○ No

If so, describe:

Unpaved roads are used for truck loading/unloading activities.

X 1500
Y 5000
ACCESS ROAD
CONTRACTOR PARKING (100 STALLS)
CONTRACTOR PARKING (130 STALLS)
50' UTILITY EASEMENT
60' TRANSMISSION LINE EASEMENT
X 5500
Y 5000
98' RI
3M DRIVE
PROPERTY LINE
BLDG 004
PROJECT CONFIDENCE DOCK
16
CF-13 Scrim exhaust stack
CF-13 Oven exhaust stack
TO#3 Thermal oxidizer exhaust stack
ACCESS ROAD
ONE WAY ACCESS ROAD
STOKKE PARKWAY
NSP SUBSTATION
SECTION CORNER
18 17
19 20
T 28N R 12W
EASEMENT TO 3M
200'
625'
100' ROADWAY EASEMENT FOR 24' PARK ACCESS WITHIN THIS AREA.
Y 2000
10' TELEPHONE EASEMENT
X 1500
Y 1500
X 2000
X 5500
Y 1500
75' UTILITY EASEMENT
PROPERTY LINE
DOMAIN ROAD

VICINITY MAP

CEDAR FALLS
CO. RD. BB
MENOMONIE JUNCTION
TO ST. PAUL
BADGER DRIVE
3M DRIVE
TO EAU CLAIRE
LAKE MENOMIN
N. BROADWAY
STOKKE PARKWAY
COUNTY ROAD B
COUNTY ROAD E
MENOMONIE
COUNTY ROAD J
25
12
94
29

ACCESS CODES	US081	US265				DESIGN REFERENCE	NEXT ASSEMBLY	
16			12-05-2012	(SAIC/KAW) PROJECT CONFIDENCE DOCK			KAW	
15	00660029		12-06-2011	(SAIC/PMS) BLDG 004 ISSUED FOR CONSTRUCTION			KAW	PMS
14	00660029		11-17-2011	(SAIC/PMS) BUILDING 004 WEST ADDITION			KAW	PMS
REV	PROJECT ID		DATE	DESCRIPTION			DRWN	CHKD

CONSULTANT NAME/LOGO

FACILITIES ENGINEERING

SCALE
1" = 150'-0"

REGISTRATION STAMP

I.S. CERTIFICATION

DRWN TBC/LHJ	DATE 07-29-2005	MFG	DATE
CHKD TBC/PMS	DATE 07-29-2005	APPVD	DATE

3M CENTER
ST. PAUL, MN 55144

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TITLE

GENERAL SITE PLAN
PROJECT LOCATION

BLDG. NO. 888

MENOMONIE WISCONSIN

SIZE DRAWING NUMBER E1 MENO-888-C-005

SHEET

REV 16

CONTRACTOR TRAILER LOT

BLDG 9

BATT. BLDG

BLDG 5

BLDG 4

NEW BLDG 8

BLDG 7

BLDG 6

CF-13 Scrim exhaust stack

CF-13 Oven exhaust stack

TO#3 Thermal oxidizer exhaust stack

BLDG 2

BLDG 3

RED LABEL ROOM

BLDG 11

BLDG 1

BLDG 10

BLDG 12

BLDG 17

BLDG 15

BLDG 13

BLDG 14

MAIN ENTRANCE

GRAVEL OVERFLOW PARKING LOT

STOKKE ROAD

3M ROAD

N.S.P. SUBSTATION

ACCESS CODES	US081	US265					DESIGN REFERENCE	NEXT ASSEMBLY		
1		01/01/15	UPDATED BLDGS & PKG. LOT						SLS	GAN
REV	PROJECT ID	DATE	DESCRIPTION						DRWN	CHKD

CONSULTANT NAME/LOGO

FACILITIES ENGINEERING

SCALE
NTS

REGISTRATION STAMP

I.S. CERTIFICATION

DRWN	DATE	MFG	DATE
RC CONSULTANTS	01-10-97		
CHKD	DATE	APPVD	DATE
D.D.HOFFMANN	01-10-97		

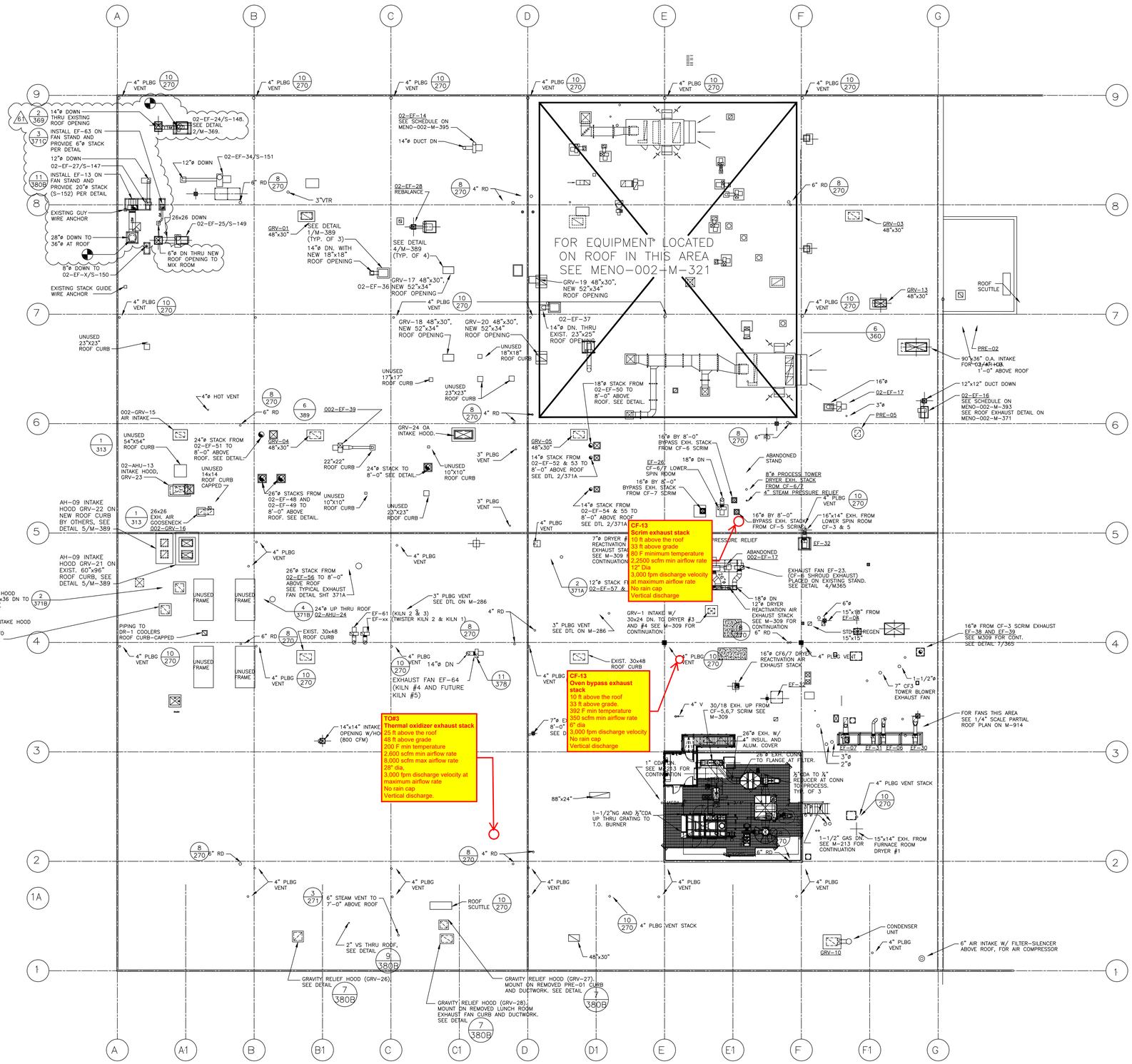
3M 3M CENTER ST. PAUL, MN 55144

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TITLE

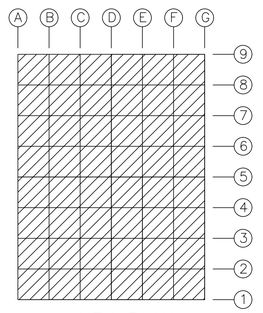
MENOMONIE OVERALL SITE MAP

MENOMONIE	BLDG. NO. 888	WISCONSIN
SIZE	DRAWING NUMBER	SHEET / REV
E II	MENO-888-A-180	1



KEY PLAN

NO SCALE



CONSTRUCTION NOTES:

1. CONTRACTOR TO RECORD EXHAUST FAN (EF-63) AIRFLOW, STATIC, FAN RPM, BRAKE HORSEPOWER, MANUFACTURER AND MODEL NUMBER.
2. BALANCE EXHAUST FAN (EF-63) TO 750 CFM.

ACCESS CODES	US081	US265				DESIGN REFERENCE	NEXT ASSEMBLY	
59	1805-194734		08-20-19	KILN #4 – CONSTRUCTION DOCUMENTS		CDJ	RES
61			02/18/2021	(MCE/MPJ) SBR VORTEX EXHAUST – ISSUE FOR BID		WDF	JGS
60			02/12/20	GAMMA OVEN DEMO		SLS	KRH
REV	PROJECT ID		DATE	DESCRIPTION		DRWN	CHKD

CONSULTANT NAME/LOGO

FACILITIES ENGINEERING

SCALE 1/16"=1'-0"

REGISTRATION STAMP

I.S. CERTIFICATION

DRWN DATE CM-R.S. RPM | MFG DATE

CHKD DATE MIKKELSON | APPVD DATE

3M CENTER ST. PAUL, MN 55144

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TITLE

AIR CONDITIONING & VENTILATION ROOF PLAN

BLDG. NO. 2

MENOMONIE WISCONSIN

SIZE DRAWING NUMBER E1 MENO-002-M-306 SHEET REV 61

State of Wisconsin
Department of Natural Resources
dnr.wi.gov

Source And Site Descriptions
Air Pollution Control Permit Application

Form 4530-102 (R 08/20) Information attached? ◯ Y ◯ N

Notice: Completion of this form is required for any air pollution control permit application filed pursuant to ss. 285.61, 285.62 or 285.66, Wis. Stats. The department will not consider or act upon an application unless this form is submitted and complete. Any personal information collected will be used for administrative purposes only and may be provided to requesters to the extent required by Wisconsin's Public Records Law [ss. 19.31-19.39, Wis. Stats.].

1. Briefly describe the proposed project or existing Unit(s) to be permitted. Attached supplemental forms as needed.

3M is proposing to install a new ceramic fiber line, CF13, at its facility located in Menomonie, Wisconsin (Menomonie Plant). Proposed ceramic fiber process CF13 will be considered a "Type 2" ceramic fiber maker and will be required to vent to the new thermal oxidizer as discussed in the attached application.

For OP Renewal Applications:

2. Were any emissions units permanently removed from operation since the last operation permit issuance date?

◯ No.

◯ Yes. List the emissions units and the dates they were removed:

Process, Stack	Process Description	Date Removed

3. Were any new or modified emissions units installed/modified at the facility since the last operation permit issuance date?

◯ No. Proceed to form 4530-102A.

◯ Yes. Complete the following table:

4. Use the following table to briefly describe any new/modified emissions units installed at the facility since the last operation permit issuance date. List any department issued construction permit, construction permit exemption and/or operation permit number(s) for each new/modified unit. If operation permit application forms were submitted for new/modified unit(s), reference the date of that application OR complete and include applicable forms 4530-103 through 4530-135. Note: Forms 4530-118 through 4530-125 are applicable to Part 70 sources only. Attach supplemental forms as needed.

Process, Stack	Process Description	Construction permit or exemption number or "not applicable"	Operation permit number or "not applicable"	Date operation permit application submitted OR	Forms attached
					☐
					☐
					☐
					☐
					☐

5. Site Description

The Menomonie Plant is a research and development campus for 3M, which manufactures products such as films and optical products.

State of Wisconsin
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Source Description - Supplemental
Air Pollution Control Permit Application

Form 4530-102A (R 087/20)

Information attached? ◯ Y ◯ N

Notice: Completion of this form is required for any air pollution control permit application filed pursuant to ss. 285.61, 285.62 or 285.66, Wis. Stats. The department will not consider or act upon an application unless this form is completed and submitted. Any personal information collected will be used for administrative purposes only and may be provided to requesters to the extent required by Wisconsin's Public Records Law [ss. 19.31-19.39, Wis. Stats.].

1. List all significant existing or proposed air pollution emissions units, operations, and activities at the facility. Include a short description of each emissions unit (e.g., boiler, printing line, etc.) followed by equipment capacity. Identify and describe any control device(s). Include the date the unit was installed or last modified and the most recent construction permit or construction permit exemption for the unit. If the unit is not covered by a construction permit include "na". For Operation Permit Renewal Applications: Identify units that are new or modified since the current operation permit was issued by checking the appropriate box. For units that are new or modified since the current operation permit was issued identify the date the required application forms were submitted OR complete forms 4530-103 through 4530-133, as applicable. Note: forms 4530-118 through 4530-125 are required for Part 70 sources only.

							For OP Renewals Applications Only		
a. Process, Stack	b. Process Description	c. Capacity	d. Control Device(s)	e. Control Device Description(s)	f. Date Installed/ Last Modified	g. Construction Permit/exemption	h. New/modified since current OP issued?	i. For new/modified units: Date forms submitted	OR Forms attached
PCF13, SCF13 A-H	CF13 Ceramic Fiber Maker	NA	C08	Thermal Oxidation			☐		☐
							☐		☐
							☐		☐
							☐		☐
							☐		☐
							☐		☐
							☐		☐
							☐		☐
							☐		☐
							☐		☐
							☐		☐
							☐		☐
							☐		☐

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Source Description - Supplemental
Air Pollution Control Permit

Form 4530-102B (R 08/20) Information attached? ○ Y ○ N

Notice: Completion of this form is required for any air pollution control permit application filed pursuant to ss. 285.61, 285.62 or 285.66, Wis Stats. The department will not consider or act upon an application unless this form is completed and submitted. Any personal information collected will be used for administrative purposes only and may be provided to requesters to the extent required by Wisconsin's Public Records Law [ss. 19.31-19.39, Wis. Stats.].

1. Identify all insignificant existing or proposed air pollution emissions units, operations and activities at the facility. For unit, operation and activity types that are not specifically listed, provide a short description of the emissions unit or activity (e.g., boiler, printing line, etc.) followed by equipment specifications. For Operation Permit Renewal Applications, identify those that are new or modified since the current operation permit was issued by checking the appropriate box. (See instruction booklet for an example Unit description.)

	For OP Renewal Applications: Check if unit, operation or activity is new or modified since issuance of current operation permit:
☒ Maintenance of Grounds, Equipment, and Buildings (lawn care, painting, etc.)	☐
☒ Boiler, Turbine, and HVAC System Maintenance	☐
☒ Pollution Control Equipment Maintenance	☐
☒ Internal Combustion Engines Used for Warehousing and Material Transport	☐
☒ Fire Control Equipment	☐
☒ Janitorial Activities	☐
☒ Office Activities	☐
☒ Convenience Water Heating	☐
☐ Convenience Space Heating (< 5 million BTU/hr Burning Gas, Liquid, or Wood)	☐
☒ Fuel Oil Storage Tanks (< 10,000 gal.)	☐
☐ Stockpiled Contaminated Soils	☐
☒ Demineralization and Oxygen Scavenging of Water for Boilers	☐
☒ Purging of Natural Gas Lines	☐
☒ Sanitary Sewer and Plumbing Venting	☐
☒ Electric Chiller	☐
☒ Welding	☐
☒ Laser Welding, Cutting, and Etching	☐
☒ Converting (plant-wide)	☐
☒ Copper Plating Process (I1)	☐
☒ Extrusion Line - Tooling	☐
☒ Hot Melt Coater (I6) - Personal Care & Related Products	☐
☒ Wire Making Lines	☐
☒ DTM Lines	☐

	For OP Renewal Applications: Check if unit, operation or activity is new or modified since issuance of current operation permit:
☒ Plant Engineering Parts Washer	☐
☒ Ceramic Fibers Parts Washer	☐
☒ Ceramic Fiber Solution Concentrator	☐
☒ Soda Blast Cabinet	☐
☒ Ceramic Fiber Test Ovens	☐
☒ Natural Gas-Fired Waste Evaporator	☐
☒ Resin Storage SIlos	☐
☒ Oil-Fired Fire-Water Heater	☐
☒ Corona & Plasma Treaters	☐
☒ Lab Fume Hoods for Quality Control Testing and Cleaning	☐
☒ Metal Grinding Operation	☐
☒ P1 Metal Vapor Deposition Web Coating Line	☐
☒ P3 Metal Vapor Deposition Web Coating Line	☐
☒ P4 Metal Vapor Deposition Web Coating Line	☐
☒ P5 Metal Vapor Deposition Web Coating Line	☐
☒ Aging Oven	☐
☒ Extruder and Resin Hoppers	☐
☒ TRX-1 Line	☐
☒ Nickel Plating Tanks (10)	☐
☒ Experimental Pilot Line	☐
☒ CF1 Rewind (P15b)	☐
☒ Fibers Converting Paint Booth	☐
☒ LC-MS Quality Test Installation	☐
☒ Z6 Process Line	☐
☒ Z7 Process Line	☐
☒ Distillate Fuel Oil Aboveground Storage Tank (96,000 gallons)	☐
☒ KOH Dissolve Tank	☐
☒ ICP Tester	☐

	For OP Renewal Applications: Check if unit, operation or activity is new or modified since issuance of current operation permit:
☒ Belt Makers (2)	☐
☒ EBO Ferrules	☐
☒ P07 Die Cleaning Stations	☐

State of Wisconsin
Department of Natural Resources

STACK IDENTIFICATION
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-103 11-93 Information attached? __ (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name:	2. Facility identification number:	3. Stack identification number:
3M Menomonie	617056660	SCF13-A

4. Exhausting Unit(s), use Unit identification number from appropriate Form(s) 4530-104, 106, 107, 108 and/or 109

4530-104 4530-106 4530-107 4530-108 4530-109

5. Identify this stack on the plot plan required on Form 4530-101 CF13 Scrim Exhaust Stack

6. Indicate by checking:
☑ This stack has an actual exhaust point. ☐ This stack serves to identify fugitive emissions.

If this stack has an actual exhaust point, then provide the following stack parameters

7. Discharge height above ground level: 33 (feet)

8. Inside dimensions at outlet (check one and complete):

☑ Circular 1 (feet) ☐ rectangular ____ length (feet) ____ width (feet)

9. Exhaust flow rate:

Normal 2500 (ACFM) Maximum _____ (ACFM)

10. Exhaust gas temperature (normal): 80 (°F)

11. Exhaust gas moisture content: Normal ____ volume percent Maximum ____ volume percent

12. Exhaust gas discharge direction: ☑ Up ☐ Down ☐ Horizontal

13. Is this stack equipped with a rainhat or any obstruction to the free flow of the exhaust gases from the stack? ☐ Yes ☑ No

***** Complete the appropriate Air Permit Application Forms(s) 4530-104, 106, 107, 108 or 109 for each Unit ***** exhausting through this stack.

State of Wisconsin
Department of Natural Resources

STACK IDENTIFICATION
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-103 11-93 Information attached? __ (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name:	2. Facility identification number:	3. Stack identification number:
3M Menomonie	617056660	SCF13-B

4. Exhausting Unit(s), use Unit identification number from appropriate Form(s) 4530-104, 106, 107, 108 and/or 109

4530-104 4530-106 4530-107 4530-108 4530-109

5. Identify this stack on the plot plan required on Form 4530-101 CF13 Oven Bypass Exhaust Stack

6. Indicate by checking:
☑ This stack has an actual exhaust point. ☐ This stack serves to identify fugitive emissions.

If this stack has an actual exhaust point, then provide the following stack parameters

7. Discharge height above ground level: 33 (feet)

8. Inside dimensions at outlet (check one and complete):

☑ Circular 0.5 (feet) ☐ rectangular ____ length (feet) ____ width (feet)

9. Exhaust flow rate:

Normal 350 (ACFM) Maximum _____ (ACFM)

10. Exhaust gas temperature (normal): 392 (°F)

11. Exhaust gas moisture content: Normal ____ volume percent Maximum ____ volume percent

12. Exhaust gas discharge direction: ☑ Up ☐ Down ☐ Horizontal

13. Is this stack equipped with a rainhat or any obstruction to the free flow of the exhaust gases from the stack? ☐ Yes ☑ No

***** Complete the appropriate Air Permit Application Forms(s) 4530-104, 106, 107, 108 or 109 for each Unit ***** exhausting through this stack.

State of Wisconsin
Department of Natural Resources

STACK IDENTIFICATION
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-103 11-93 Information attached? __ (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name:	2. Facility identification number:	3. Stack identification number:
3M Menomonie	617056660	SCF13-C

4. Exhausting Unit(s), use Unit identification number from appropriate Form(s) 4530-104, 106, 107, 108 and/or 109

4530-104 4530-106 4530-107 4530-108 4530-109

5. Identify this stack on the plot plan required on Form 4530-101 Spin Tower Exhaust

6. Indicate by checking: TBD
☐ This stack has an actual exhaust point. ☐ This stack serves to identify fugitive emissions.

If this stack has an actual exhaust point, then provide the following stack parameters

7. Discharge height above ground level: TBD (feet)

8. Inside dimensions at outlet (check one and complete): TBD

☐ Circular ____ (feet) ☐ rectangular ____ length (feet) ____ width (feet)

9. Exhaust flow rate:

Normal TBD (ACFM) Maximum _____ (ACFM)

10. Exhaust gas temperature (normal): TBD (°F)

11. Exhaust gas moisture content: TBD Normal ____ volume percent Maximum ____ volume percent

12. Exhaust gas discharge direction: TBD ☐ Up ☐ Down ☐ Horizontal

13. Is this stack equipped with a rainhat or any obstruction to the free flow of the TBD ☐ Yes ☐ No exhaust gases from the stack?

***** Complete the appropriate Air Permit Application Forms(s) 4530-104, 106, 107, 108 or 109 for each Unit ***** exhausting through this stack.

State of Wisconsin
Department of Natural Resources

STACK IDENTIFICATION
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-103 11-93 Information attached? __ (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name:	2. Facility identification number:	3. Stack identification number:
3M Menomonie	617056660	SCF13-D

4. Exhausting Unit(s), use Unit identification number from appropriate Form(s) 4530-104, 106, 107, 108 and/or 109

4530-104 4530-106 4530-107 4530-108 4530-109

5. Identify this stack on the plot plan required on Form 4530-101 Spin Tower Room Exhaust

6. Indicate by checking: TBD
☐ This stack has an actual exhaust point. ☐ This stack serves to identify fugitive emissions.

If this stack has an actual exhaust point, then provide the following stack parameters

7. Discharge height above ground level: TBD (feet)

8. Inside dimensions at outlet (check one and complete): TBD

☐ Circular ____ (feet) ☐ rectangular ____ length (feet) ____ width (feet)

9. Exhaust flow rate:

Normal TBD (ACFM) Maximum _____ (ACFM)

10. Exhaust gas temperature (normal): TBD (°F)

11. Exhaust gas moisture content: TBD Normal ____ volume percent Maximum ____ volume percent

12. Exhaust gas discharge direction: TBD ☐ Up ☐ Down ☐ Horizontal

13. Is this stack equipped with a rainhat or any obstruction to the free flow of the TBD ☐ Yes ☐ No exhaust gases from the stack?

***** Complete the appropriate Air Permit Application Forms(s) 4530-104, 106, 107, 108 or 109 for each Unit ***** exhausting through this stack.

State of Wisconsin
Department of Natural Resources

STACK IDENTIFICATION
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-103 11-93 Information attached? __ (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name:	2. Facility identification number:	3. Stack identification number:
3M Menomonie	617056660	SCF13-E

4. Exhausting Unit(s), use Unit identification number from appropriate Form(s) 4530-104, 106, 107, 108 and/or 109

4530-104 4530-106 4530-107 4530-108 4530-109

5. Identify this stack on the plot plan required on Form 4530-101 Desiccant Exhaust

6. Indicate by checking: TBD
☐ This stack has an actual exhaust point. ☐ This stack serves to identify fugitive emissions.

If this stack has an actual exhaust point, then provide the following stack parameters

7. Discharge height above ground level: TBD (feet)

8. Inside dimensions at outlet (check one and complete): TBD

☐ Circular ____ (feet) ☐ rectangular ____ length (feet) ____ width (feet)

9. Exhaust flow rate:

Normal TBD (ACFM) Maximum _____ (ACFM)

10. Exhaust gas temperature (normal): TBD (°F)

11. Exhaust gas moisture content: TBD Normal ____ volume percent Maximum ____ volume percent

12. Exhaust gas discharge direction: TBD ☐ Up ☐ Down ☐ Horizontal

13. Is this stack equipped with a rainhat or any obstruction to the free flow of the TBD ☐ Yes ☐ No exhaust gases from the stack?

***** Complete the appropriate Air Permit Application Forms(s) 4530-104, 106, 107, 108 or 109 for each Unit ***** exhausting through this stack.

State of Wisconsin
Department of Natural Resources

STACK IDENTIFICATION
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-103 11-93 Information attached? __ (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name:	2. Facility identification number:	3. Stack identification number:
3M Menomonie	617056660	SCF13-F

4. Exhausting Unit(s), use Unit identification number from appropriate Form(s) 4530-104, 106, 107, 108 and/or 109

4530-104 4530-106 4530-107 4530-108 4530-109

5. Identify this stack on the plot plan required on Form 4530-101 Furnace Exhaust

6. Indicate by checking: TBD
☐ This stack has an actual exhaust point. ☐ This stack serves to identify fugitive emissions.

If this stack has an actual exhaust point, then provide the following stack parameters

7. Discharge height above ground level: TBD (feet)

8. Inside dimensions at outlet (check one and complete): TBD

☐ Circular ____ (feet) ☐ rectangular ____ length (feet) ____ width (feet)

9. Exhaust flow rate:

Normal TBD (ACFM) Maximum _____ (ACFM)

10. Exhaust gas temperature (normal): TBD (°F)

11. Exhaust gas moisture content: TBD Normal ____ volume percent Maximum ____ volume percent

12. Exhaust gas discharge direction: TBD ☐ Up ☐ Down ☐ Horizontal

13. Is this stack equipped with a rainhat or any obstruction to the free flow of the TBD ☐ Yes ☐ No exhaust gases from the stack?

***** Complete the appropriate Air Permit Application Forms(s) 4530-104, 106, 107, 108 or 109 for each Unit ***** exhausting through this stack.

State of Wisconsin
Department of Natural Resources

STACK IDENTIFICATION
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-103 11-93 Information attached? __ (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name:	2. Facility identification number:	3. Stack identification number:
3M Menomonie	617056660	SCF13-G

4. Exhausting Unit(s), use Unit identification number from appropriate Form(s) 4530-104, 106, 107, 108 and/or 109

4530-104 4530-106 4530-107 4530-108 4530-109

5. Identify this stack on the plot plan required on Form 4530-101 Furnace Shroud Exhaust

6. Indicate by checking: TBD
☐ This stack has an actual exhaust point. ☐ This stack serves to identify fugitive emissions.

If this stack has an actual exhaust point, then provide the following stack parameters

7. Discharge height above ground level: TBD (feet)

8. Inside dimensions at outlet (check one and complete): TBD

☐ Circular ____ (feet) ☐ rectangular ____ length (feet) ____ width (feet)

9. Exhaust flow rate:

Normal TBD (ACFM) Maximum _____ (ACFM)

10. Exhaust gas temperature (normal): TBD (°F)

11. Exhaust gas moisture content: TBD Normal ____ volume percent Maximum ____ volume percent

12. Exhaust gas discharge direction: TBD ☐ Up ☐ Down ☐ Horizontal

13. Is this stack equipped with a rainhat or any obstruction to the free flow of the TBD ☐ Yes ☐ No exhaust gases from the stack?

***** Complete the appropriate Air Permit Application Forms(s) 4530-104, 106, 107, 108 or 109 for each Unit ***** exhausting through this stack.

State of Wisconsin
Department of Natural Resources

STACK IDENTIFICATION
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-103 11-93 Information attached? __ (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name:	2. Facility identification number:	3. Stack identification number:
3M Menomonie	617056660	SCF13-H

4. Exhausting Unit(s), use Unit identification number from appropriate Form(s) 4530-104, 106, 107, 108 and/or 109

4530-104 4530-106 4530-107 4530-108 4530-109

5. Identify this stack on the plot plan required on Form 4530-101 Oven/Winder Shroud Exhaust

6. Indicate by checking: TBD
☐ This stack has an actual exhaust point. ☐ This stack serves to identify fugitive emissions.

If this stack has an actual exhaust point, then provide the following stack parameters

7. Discharge height above ground level: TBD (feet)

8. Inside dimensions at outlet (check one and complete): TBD

☐ Circular ____ (feet) ☐ rectangular ____ length (feet) ____ width (feet)

9. Exhaust flow rate:

Normal TBD (ACFM) Maximum _____ (ACFM)

10. Exhaust gas temperature (normal): TBD (°F)

11. Exhaust gas moisture content: TBD Normal ____ volume percent Maximum ____ volume percent

12. Exhaust gas discharge direction: TBD ☐ Up ☐ Down ☐ Horizontal

13. Is this stack equipped with a rainhat or any obstruction to the free flow of the TBD ☐ Yes ☐ No exhaust gases from the stack?

***** Complete the appropriate Air Permit Application Forms(s) 4530-104, 106, 107, 108 or 109 for each Unit ***** exhausting through this stack.

State of Wisconsin
Department of Natural Resources

STACK IDENTIFICATION
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-103 11-93 Information attached? __ (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name:	2. Facility identification number:	3. Stack identification number:
3M Menomonie	617056660	S80

4. Exhausting Unit(s), use Unit identification number from appropriate Form(s) 4530-104, 106, 107, 108 and/or 109

4530-104 4530-106 4530-107 4530-108 4530-109

5. Identify this stack on the plot plan required on Form 4530-101 TO#3 Thermal Oxidizer Exhaust Stack

6. Indicate by checking:
☑ This stack has an actual exhaust point. ☐ This stack serves to identify fugitive emissions.

If this stack has an actual exhaust point, then provide the following stack parameters

7. Discharge height above ground level: 48 (feet)

8. Inside dimensions at outlet (check one and complete):

☑ Circular 2.33 (feet) ☐ rectangular ____ length (feet) ____ width (feet)

9. Exhaust flow rate:

Normal 2600 (ACFM) Maximum 8000 (ACFM)

10. Exhaust gas temperature (normal): 200 (°F)

11. Exhaust gas moisture content: Normal ____ volume percent Maximum ____ volume percent

12. Exhaust gas discharge direction: ☑ Up ☐ Down ☐ Horizontal

13. Is this stack equipped with a rainhat or any obstruction to the free flow of the exhaust gases from the stack? ☐ Yes ☑ No

***** Complete the appropriate Air Permit Application Forms(s) 4530-104, 106, 107, 108 or 109 for each Unit ***** exhausting through this stack.

State of Wisconsin
Department of Natural Resources

MISCELLANEOUS PROCESSES
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-109 11-93 Information attached? __ (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name: 3M Menomonie	2. Facility identification number: 617056660
3. Stack identification number:	4. Process number: PCF13

4a. Unit description: Ceramic Fiber Line 13

5. Indicate the control technology status. ☐ Uncontrolled ☑ Controlled

If the process is controlled, enter the control device number(s) from the appropriate form(s):

4530-110 ____ 4530-111 ____ 4530-112 ____ 4530-113 ✓
4530-114 ____ 4530-115 ____ 4530-116 ____ 4530-117

6. Source Classification Code (SCC):

7. Date of construction or last modification: TBD

8. Normal operating schedule: 24 hrs./day 7 days/wk. 365 days/yr.

9. Describe this process (please attach a flow diagram of the process).	Attached?
The proposed CF13 Line will use the same raw materials and pre-sizing as is run on the existing lines; .there will not be any new raw materials as a part of this project	No

10. List the types and amounts of raw materials used in this process:

Material	Storage/material handling process	Average usage	Units	Maximum usage	Units
Sol		TBD	lb/hr	180	lb/hr
Pre-Sizing		TBD	lb/hr	12.2	lb/hr
Clean-up solvents					
Other (specify)					

11. List the types and amounts of finished products:

Material	Storage/material handling process	Average amount produced	Units	Maximum amount produced	Units
N/A					

12. Process fuel usage:

Type of fuel	Maximum heat input to process million BTU/hr.	Average usage	Units	Maximum usage	Units
N/A					

13. Describe any fugitive emissions associated with this process, such as outdoor storage piles, unpaved roads, open conveyors, etc.:	Attached?

***** For this emissions unit, identify the method(s) of compliance demonstration by completing Form 4530-118, ***** DESCRIPTION OF METHODS USED FOR DETERMINING COMPLIANCE. Attach Form 4530-118 and its attachment(s) to this form. This is not a requirement of non-Part 70 sources.

***** Please complete the Air Pollution Control Permit Application Forms 4530-126 and 4530-128 for this Unit. *****

State of Wisconsin
Department of Natural Resources

CONTROL EQUIPMENT-CATALYTIC OR THERMAL OXIDATION
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-113 11-93 Information attached? __ (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

Section A

1. Facility name: 3M Menomonie
2. Facility identification number: 617056660
3. Stack identification number: S80
4. Unit identification number: PCF13
5. Control device number: C08
6. Manufacturer and model number: TBD
7. Date of installation: 9/1/2026
8. Describe in detail the oxidation system. Attach a blueprint or diagram of the system. Attached?
   Thermal oxidizer controlling ceramic fiber line, CF13.

9. List the pollutants to be controlled by this equipment and the expected control efficiency for each pollutant on the table below.
   ☐ Documentation is attached

Pollutant	Inlet pollutant concentration gr/acf	ppmv	Outlet pollutant concentration gr/acf	ppmv	Efficiency (%) hood capture	pollutant destruction
VOC and Organic HAP					88% overall control	

10: Check one: ☐ Catalytic ☑ Thermal oxidizer

11. Discuss how the spent catalyst will be handled for reuse or disposal.

12. Prepare a malfunction prevention and abatement plan (if required under s. NR 439.11) for this pollution control system. Please include the following:
    a. Identification of the individuals(s), by title, responsible for inspecting, maintaining and repairing this device.
    b. Operation variables such as temperature that will be monitored in order to detect a malfunction or breakthrough, the correct operating range of these variables, and a detailed description of monitoring or surveillance procedures that will be used to show compliance.
    c. An inspection schedule and items or conditions that will be inspected. For catalytic oxidizers, discuss the replacement and/or regeneration schedule for the bed and steps you have taken to ensure the bed's proper functioning throughout its expected lifetime.
    d. A listing of materials and spare parts that will be maintained in inventory.
    e. Is this plan available for review?

Section B

The following questions must be answered by sources installing new equipment or existing Units which cannot document control efficiency of this device by other means. (Catalytic/Thermal dependent on item 10)

Catalytic oxidation	Thermal oxidation
13a. Operating temperature (°F): Max ____ Min	b. Operating temperature (°F): Max ____ Min TBD
14a. Catalyst bed volume (ft^3):	b. Combustion chamber volume (ft^3): TBD
15a. Gas volumetric flow rate at combustion conditions (ACFM):	b. Maximum gas velocity through the device (ft./min): TBD
16a. Type of fuel used:	b. Type of fuel used: Natural Gas
17a. Maximum fuel use:	b. Maximum fuel used: 4.0 MMBtu/hr
18a. Type of catalyst used and volume of catalyst used (ft^3):	
19a. Residence time (seconds):	b. Residence time (seconds): TBD

APPENDIX B. EMISSION CALCULATIONS

Pollutant	PTE Emissions				Total PTE Emissions	
	CF13		Thermal Oxidizer (C08)			
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
NO_X	0.59	2.59	0.39	1.72	0.98	4.31
CO	0.49	2.13	0.33	1.44	0.82	3.58
PM/PM_{10}	---	---	0.03	0.13	0.03	0.13
VOC	1.42	9.35	0.02	0.09	1.45	9.44
SO_2	---	---	0.00	0.01	0.00	0.01

Pollutant	MTE Emissions				Total MTE Emissions	
	CF13		Thermal Oxidizer (C08)			
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
NO_X	0.59	2.59	0.39	1.72	0.98	4.31
CO	0.49	2.13	0.33	1.44	0.82	3.58
PM/PM_{10}	---	---	0.03	0.13	0.03	0.13
VOC	12.29	53.82	0.02	0.09	12.31	53.91
SO_2	---	---	0.00	0.01	0.00	0.01

Pollutant	CAS	MTE Emissions				Total MTE Emissions	
		CF13		Thermal Oxidizer (C08)			
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Acetaldehyde	75-07-0	1.38	6.06	---	---	1.38	6.06
Acetic Acid	64-19-7	0.51	2.22	---	---	0.51	2.22
Ammonia	7664-41-7	0.06	0.26	---	---	0.06	0.26
Dimethylformamide	68-12-2	2.49	10.91	---	---	2.49	10.91
Formaldehyde	50-00-0	0.19	0.85	2.94E-04	1.29E-03	0.19	0.85
Formic Acid	64-18-6	0.10	0.42	---	---	0.10	0.42
Hydrogen Cyanide	74-90-8	0.69	3.03	---	---	0.69	3.03
Methanol	67-56-1	0.11	0.48	---	---	0.11	0.48
2-Methylpentane	107-83-5	5.03	22.02	---	---	5.03	22.02
Benzene	71-43-2	---	---	8.24E-06	3.61E-05	8.24E-06	3.61E-05
2-Methylnaphthalene	91-57-6	---	---	9.41E-08	4.12E-07	9.41E-08	4.12E-07
3-Methylchloranthrene	56-49-5	---	---	7.06E-09	3.09E-08	7.06E-09	3.09E-08
7,12-Dimethylbenz(a)anthracene	57-97-6	---	---	6.27E-08	2.75E-07	6.27E-08	2.75E-07
Acenaphthene	83-32-9	---	---	7.06E-09	3.09E-08	7.06E-09	3.09E-08
Anthracene	120-12-7	---	---	9.41E-09	4.12E-08	9.41E-09	4.12E-08
Acenaphthylene	203-96-8	---	---	7.06E-09	3.09E-08	7.06E-09	3.09E-08
Benzo(a)anthracene	56-55-3	---	---	7.06E-09	3.09E-08	7.06E-09	3.09E-08
Benzo(b)fluoranthene	205-99-2	---	---	7.06E-09	3.09E-08	7.06E-09	3.09E-08
Benzo(k)fluoranthene	207-08-9	---	---	7.06E-09	3.09E-08	7.06E-09	3.09E-08
Benzo(g,h,i)perylene	191-24-2	---	---	4.71E-09	2.06E-08	4.71E-09	2.06E-08
Benzo(a)pyrene	50-32-8	---	---	4.71E-09	2.06E-08	4.71E-09	2.06E-08
Chrysene	218-01-9	---	---	7.06E-09	3.09E-08	7.06E-09	3.09E-08
Dibenzo(a,h)anthracene	53-70-3	---	---	4.71E-09	2.06E-08	4.71E-09	2.06E-08
Dichlorobenzene	25321-22-6	---	---	4.71E-06	2.06E-05	4.71E-06	2.06E-05
Fluoranthene	206-44-0	---	---	1.18E-08	5.15E-08	1.18E-08	5.15E-08
Fluorene	86-73-7	---	---	1.10E-08	4.81E-08	1.10E-08	4.81E-08
Hexane	110-54-3	---	---	7.06E-03	3.09E-02	7.06E-03	3.09E-02
Indeno(1,2,3-cd)pyrene	193-39-5	---	---	7.06E-09	3.09E-08	7.06E-09	3.09E-08
Naphthalene	91-20-3	---	---	2.39E-06	1.05E-05	2.39E-06	1.05E-05
Phenanthrene	85-01-8	---	---	6.67E-08	2.92E-07	6.67E-08	2.92E-07
Pyrene	129-00-0	---	---	1.96E-08	8.59E-08	1.96E-08	8.59E-08
Toluene	108-88-3	---	---	1.33E-05	5.84E-05	1.33E-05	5.84E-05
Arsenic	7440-38-2	---	---	7.84E-07	3.44E-06	7.84E-07	3.44E-06
Beryllium	7440-41-7	---	---	4.71E-08	2.06E-07	4.71E-08	2.06E-07
Cadmium	7440-43-9	---	---	4.31E-06	1.89E-05	4.31E-06	1.89E-05
Chromium	7440-47-3	---	---	5.49E-06	2.40E-05	5.49E-06	2.40E-05
Cobalt	7440-48-4	---	---	3.29E-07	1.44E-06	3.29E-07	1.44E-06
Manganese	7439-96-5	---	---	1.49E-06	6.53E-06	1.49E-06	6.53E-06
Mercury	7439-97-6	---	---	1.02E-06	4.47E-06	1.02E-06	4.47E-06
Nickel	7440-02-0	---	---	8.24E-06	3.61E-05	8.24E-06	3.61E-05
Selenium	7782-49-2	---	---	9.41E-08	4.12E-07	9.41E-08	4.12E-07

Pollutant	CAS	PTE Emissions				Total PTE Emissions	
		CF13		Thermal Oxidizer (C08)			
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Acetaldehyde	75-07-0	0.16	1.05	---	---	0.16	1.05
Acetic Acid	64-19-7	0.06	0.39	---	---	0.06	0.39
Ammonia	7664-41-7	0.01	0.05	---	---	0.01	0.05
Dimethylformamide	68-12-2	0.29	1.89	---	---	0.29	1.89
Formaldehyde	50-00-0	0.02	0.15	2.94E-04	1.29E-03	0.02	0.15
Formic Acid	64-18-6	0.01	0.07	---	---	0.01	0.07
Hydrogen Cyanide	74-90-8	0.08	0.53	---	---	0.08	0.53
Methanol	67-56-1	0.01	0.08	---	---	0.01	0.08
2-Methylpentane	107-83-5	0.58	3.82	---	---	0.58	3.82
Benzene	71-43-2	---	---	8.24E-06	3.61E-05	8.24E-06	3.61E-05
2-Methylnaphthalene	91-57-6	---	---	9.41E-08	4.12E-07	9.41E-08	4.12E-07
3-Methylchloranthrene	56-49-5	---	---	7.06E-09	3.09E-08	7.06E-09	3.09E-08
7,12-Dimethylbenz(a)anthracene	57-97-6	---	---	6.27E-08	2.75E-07	6.27E-08	2.75E-07
Acenaphthene	83-32-9	---	---	7.06E-09	3.09E-08	7.06E-09	3.09E-08
Anthracene	120-12-7	---	---	9.41E-09	4.12E-08	9.41E-09	4.12E-08
Acenaphthylene	203-96-8	---	---	7.06E-09	3.09E-08	7.06E-09	3.09E-08
Benzo(a)anthracene	56-55-3	---	---	7.06E-09	3.09E-08	7.06E-09	3.09E-08
Benzo(b)fluoranthene	205-99-2	---	---	7.06E-09	3.09E-08	7.06E-09	3.09E-08
Benzo(k)fluoranthene	207-08-9	---	---	7.06E-09	3.09E-08	7.06E-09	3.09E-08
Benzo(g,h,i)perylene	191-24-2	---	---	4.71E-09	2.06E-08	4.71E-09	2.06E-08
Benzo(a)pyrene	50-32-8	---	---	4.71E-09	2.06E-08	4.71E-09	2.06E-08
Chrysene	218-01-9	---	---	7.06E-09	3.09E-08	7.06E-09	3.09E-08
Dibenzo(a,h)anthracene	53-70-3	---	---	4.71E-09	2.06E-08	4.71E-09	2.06E-08
Dichlorobenzene	25321-22-6	---	---	4.71E-06	2.06E-05	4.71E-06	2.06E-05
Fluoranthene	206-44-0	---	---	1.18E-08	5.15E-08	1.18E-08	5.15E-08
Fluorene	86-73-7	---	---	1.10E-08	4.81E-08	1.10E-08	4.81E-08
Hexane	110-54-3	---	---	7.06E-03	3.09E-02	7.06E-03	3.09E-02
Indeno(1,2,3-cd)pyrene	193-39-5	---	---	7.06E-09	3.09E-08	7.06E-09	3.09E-08
Naphthalene	91-20-3	---	---	2.39E-06	1.05E-05	2.39E-06	1.05E-05
Phenanthrene	85-01-8	---	---	6.67E-08	2.92E-07	6.67E-08	2.92E-07
Pyrene	129-00-0	---	---	1.96E-08	8.59E-08	1.96E-08	8.59E-08
Toluene	108-88-3	---	---	1.33E-05	5.84E-05	1.33E-05	5.84E-05
Arsenic	7440-38-2	---	---	7.84E-07	3.44E-06	7.84E-07	3.44E-06
Beryllium	7440-41-7	---	---	4.71E-08	2.06E-07	4.71E-08	2.06E-07
Cadmium	7440-43-9	---	---	4.31E-06	1.89E-05	4.31E-06	1.89E-05
Chromium	7440-47-3	---	---	5.49E-06	2.40E-05	5.49E-06	2.40E-05
Cobalt	7440-48-4	---	---	3.29E-07	1.44E-06	3.29E-07	1.44E-06
Manganese	7439-96-5	---	---	1.49E-06	6.53E-06	1.49E-06	6.53E-06
Mercury	7439-97-6	---	---	1.02E-06	4.47E-06	1.02E-06	4.47E-06
Nickel	7440-02-0	---	---	8.24E-06	3.61E-05	8.24E-06	3.61E-05
Selenium	7782-49-2	---	---	9.41E-08	4.12E-07	9.41E-08	4.12E-07

CF13 - Type 2 Ceramic Fiber Maker Calculations

Parameters	
Safety Factor	1.15
Control efficiency	88%
Thermal Oxidizer Bypass (hrs/yr)	240
CF13 Maximum Feed Rate (lb/hr)	180
Operating Hours (hrs/yr)	8760

CF13 - Controlled Stacks (to Thermal Oxidizer)

Pollutant	CAS	Thermal Oxidizer Engineering Test Data[1]						CF13 Controlled Stack Emissions			
		Inlet Test Data	Outlet Test Data	Inlet Test Data with Safety Factor	Outlet Test Data with Safety Factor	Inlet Emission Factor	Outlet Emission Factor	Emissions Prior to Thermal Oxidizer		Controlled Emissions[2,3]	
		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/ton)	(lb/ton)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
Acetaldehyde	75-07-0	---	0.30	---	0.35	---	1.78	1.34	5.85	0.16	0.84
Acetic Acid	64-19-7	---	0.11	---	0.13	---	0.65	0.49	2.15	0.06	0.31
Ammonia	7664-41-7	---	0.01	---	0.01	---	0.08	0.06	0.25	0.01	0.04
Dimethylformamide	68-12-2	---	0.54	---	0.62	---	3.21	2.40	10.53	0.29	1.52
Formaldehyde	50-00-0	---	0.04	---	0.05	---	0.25	0.19	0.82	0.02	0.12
Formic Acid	64-18-6	---	0.02	---	0.02	---	0.12	0.09	0.41	0.01	0.06
Hydrogen Cyanide	74-90-8	---	0.15	---	0.17	---	0.89	0.67	2.93	0.08	0.42
Methanol	67-56-1	---	0.02	---	0.03	---	0.14	0.11	0.47	0.01	0.07
2-Methylpentane	107-83-5	---	1.09	---	1.25	---	6.47	4.85	21.26	0.58	3.06
Total VOC	NA	22.20	---	25.53	---	131.81	---	11.86	51.96	1.42	7.49
CO	NA	---	0.91	---	1.05	---	5.41	---	---	0.49	2.13
NO	NA	---	0.74	---	0.85	---	4.36	---	---	0.39	1.72
NO2	NA	---	0.37	---	0.43	---	2.20	---	---	0.20	0.87
N2O	NA	---	1.43	---	1.64	---	8.49	---	---	0.76	3.35
CH4	NA	---	0.07	---	0.08	---	0.40	---	---	0.04	0.16

1. Data from engineering testing conducted on CF8 in September 2021.
2. A thermal oxidizer bypass of 240 hours per year is assumed, during which emissions are considered uncontrolled. Annual emissions are calculated by combining controlled emissions during normal operation with uncontrolled emissions during the bypass period. The calculation is performed using the formula shown below.
Controlled Annual Emissions (tpy) = (Uncontrolled rate x 240)/2000 + (Controlled rate x operating hours - 240)/2000
3. The thermal oxidizer only controls VOC emissions and emissions of organic components.

CF13 - Uncontrolled Stacks

Pollutant	CAS	Uncontrolled Stack Engineering Test Data			CF13 Uncontrolled Stack Emissions[1, 2]	
		Test Data	Test Data with Safety Factor	Emission Factor	Uncontrolled Emissions	Uncontrolled Emissions
		(lb/hr)	(lb/hr)	(lb/ton)	(lb/hr)	(tpy)
Acetaldehyde	75-07-0	-	-	-	0.05	0.21
Acetic Acid	64-19-7	-	-	-	0.02	0.08
Ammonia	7664-41-7	-	-	-	0.002	0.009
Dimethylformamide	68-12-2	-	-	-	0.09	0.38
Formaldehyde	50-00-0	-	-	-	0.007	0.03
Formic Acid	64-18-6	-	-	-	0.003	0.01
Hydrogen Cyanide	74-90-8	-	-	-	0.02	0.10
Methanol	67-56-1	-	-	-	0.004	0.02
2-Methylpentane	107-83-5	-	-	-	0.17	0.76
Total VOC	NA	0.26	0.30	4.72	0.42	1.86
CO	NA	-	-	-	-	-
NO	NA	-	-	-	-	-
NO2	NA	-	-	-	-	-
N2O	NA	-	-	-	-	-
CH4	NA	-	-	-	-	-

1. Data from engineering testing conducted on CF8 in September 2021.
2. Emissions of individual VOC components are calculated based on the ratio of the individual component to total VOC from the controlled stacks.

CF13 Total Stacks Emissions

Pollutant	CAS	HAP?	HAC?	Uncontrolled Emissions (lb/hr)	Uncontrolled Emissions (tpy)	Controlled Emissions (lb/hr)	Controlled Emissions (tpy)
Acetaldehyde	75-07-0	Y	Y	1.38	6.06	0.16	1.05
Acetic Acid	64-19-7	N	Y	0.51	2.22	0.06	0.39
Ammonia	7664-41-7	N	Y	0.06	0.26	0.01	0.05
Dimethylformamide	68-12-2	Y	Y	2.49	10.91	0.29	1.89
Formaldehyde	50-00-0	Y	Y	0.19	0.85	0.02	0.15
Formic Acid	64-18-6	N	Y	0.10	0.42	0.01	0.07
Hydrogen Cyanide	74-90-8	N	Y	0.69	3.03	0.08	0.53
Methanol	67-56-1	Y	N	0.11	0.48	0.01	0.08
2-Methylpentane	107-83-5	N	N	5.03	22.02	0.58	3.82
Total VOC	NA	N	N	12.29	53.82	1.42	9.35
CO	NA	N	N	0.49	2.13	0.49	2.13
NO	NA	N	N	0.39	1.72	0.39	1.72
NO2	NA	N	N	0.20	0.87	0.20	0.87
N2O	NA	N	N	0.76	3.35	0.76	3.35
CH4	NA	N	N	0.04	0.16	0.04	0.16

C08 - Thermal Oxidizer

Boiler Parameters	Value	Unit
Potential Annual Operating Hours	8760	hr/year
Natural Gas Heating Value [1]	1020	Btu/scf
Maximum Heat Input Capacity[2]	4.00	MMBtu/hr

1. Natural gas heat content per AP-42 Section 1.4, Table 1.4-1, footnote a.

Pollutant	Natural Gas Combustion				
	Emission Factors (lb/MMscf)	Emission Factor (lb/MMBtu)	Reference	Emission Rate (lb/hr)	Annual Emissions (tpy)
NO_X	100	9.80E-02	1	0.39	1.72
CO	84	8.24E-02	1	0.33	1.44
PM/PM_{10}	7.6	7.45E-03	1	0.03	0.13
VOC	5.5	5.39E-03	1	0.02	0.09
SO_2	0.6	5.88E-04	1	0.00	0.01
Total HAP	See HAP Emissions Below		2	0.01	0.03

1. Natural gas emission factors per AP-42 Section 1.4, Tables 1.4-1 and 1.4-2.
2. HAP emission factors per AP-42 Section 1.4, Tables 1.4-3 and 1.4-4 as calculated below.

C08	Value	Unit
Heat Input Capacity	4.0	MMBtu/hr
Natural Gas Heating Value	1,020	BTU/scf

Pollutant	CAS	Natural Gas Combustion		
		Emission Factor[1] (lb/10^6 scf)	Emission Rate (lb/hr)	Annual Emissions (tpy)
Benzene	71-43-2	2.1E-03	8.24E-06	3.61E-05
Formaldehyde	50-00-0	7.5E-02	2.94E-04	1.29E-03
2-Methylnaphthalene	91-57-6	2.4E-05	9.41E-08	4.12E-07
3-Methylchloranthrene	56-49-5	1.8E-06	7.06E-09	3.09E-08
7,12-Dimethylbenz(a)anthracene	57-97-6	1.6E-05	6.27E-08	2.75E-07
Acenaphthene	83-32-9	1.8E-06	7.06E-09	3.09E-08
Anthracene	120-12-7	2.4E-06	9.41E-09	4.12E-08
Acenaphthylene	203-96-8	1.8E-06	7.06E-09	3.09E-08
Benzo(a)anthracene	56-55-3	1.8E-06	7.06E-09	3.09E-08
Benzo(b)fluoranthene	205-99-2	1.8E-06	7.06E-09	3.09E-08
Benzo(k)fluoranthene	207-08-9	1.8E-06	7.06E-09	3.09E-08
Benzo(g,h,i)perylene	191-24-2	1.2E-06	4.71E-09	2.06E-08
Benzo(a)pyrene	50-32-8	1.2E-06	4.71E-09	2.06E-08
Chrysene	218-01-9	1.8E-06	7.06E-09	3.09E-08
Dibenzo(a,h)anthracene	53-70-3	1.2E-06	4.71E-09	2.06E-08
Dichlorobenzene	25321-22-6	1.2E-03	4.71E-06	2.06E-05
Fluoranthene	206-44-0	3.0E-06	1.18E-08	5.15E-08
Fluorene	86-73-7	2.8E-06	1.10E-08	4.81E-08
Hexane	110-54-3	1.8E+00	7.06E-03	3.09E-02
Indeno(1,2,3-cd)pyrene	193-39-5	1.8E-06	7.06E-09	3.09E-08
Naphthalene	91-20-3	6.1E-04	2.39E-06	1.05E-05
Phenanthrene	85-01-8	1.7E-05	6.67E-08	2.92E-07
Pyrene	129-00-0	5.0E-06	1.96E-08	8.59E-08
Toluene	108-88-3	3.4E-03	1.33E-05	5.84E-05
Arsenic	7440-38-2	2.0E-04	7.84E-07	3.44E-06
Beryllium	7440-41-7	1.2E-05	4.71E-08	2.06E-07
Cadmium	7440-43-9	1.1E-03	4.31E-06	1.89E-05
Chromium	7440-47-3	1.4E-03	5.49E-06	2.40E-05
Cobalt	7440-48-4	8.4E-05	3.29E-07	1.44E-06
Manganese	7439-96-5	3.8E-04	1.49E-06	6.53E-06
Mercury	7439-97-6	2.6E-04	1.02E-06	4.47E-06
Nickel	7440-02-0	2.1E-03	8.24E-06	3.61E-05
Selenium	7782-49-2	2.4E-05	9.41E-08	4.12E-07
Total			**7.40E-03**	**0.03**

1. HAP emission factors per AP-42 Section 1.4, Tables 1.4-3 and 1.4-4.

APPENDIX C. PERMIT REDLINE

C. Ceramic Fiber Making Processes:

Process P15 — CF1 Ceramic Fiber Maker (Type 1)
Process P15b – CF1 Rewind
Process P16 — CF2 Ceramic Fiber Maker (Type 1)
Process P17 — CF3 Ceramic Fiber Maker (Type 1)
Process P18 — CF4 Ceramic Fiber Maker (Type 1)
Process P19 — CF5 Ceramic Fiber Maker (Type 2)
Process P22 — CF6 Ceramic Fiber Maker (Type 2)
Process P31 – CF8 Ceramic Fiber Maker (Type 2)
Process P32 – CF9 Ceramic Fiber Maker (Type 2)
Process P33 – CF10 Ceramic Fiber Maker (Type 2)
Process PCF11 – CF11 Ceramic Fiber Maker (Type 1)
Process PCF12 – CF12 Ceramic Fiber Maker (Type 2)
Process PCF13 – CF13 Ceramic Fiber Maker (Type 2)

1. Pollutant: Volatile Organic Compounds

a. Limitations	**b.** Compliance Demonstration	**c.** Recordkeeping, Reporting and Monitoring
(1) *New Source Performance Standard (NSPS) for Polymeric Coating of Supporting Substrates (40 CFR Part 60, subpart VVV)*: (a) Each coating operation and any onsite coating mix preparation equipment used to prepare coatings for polymeric coating of supporting substrates is an affected facility. Ceramic fiber makers CF1-CF3, CF6, CF8-~~CF12~~ CF13 and CF1 Rewind are each affected facilities.[1] [s. NR 440.74(1)(a), Wis. Adm. Code, s. 286.65(13), Wis. Stats., 40 CFR s. 60.740(a)] (b) The amount of VOC used in any affected facility (each of CF1-CF3, CF6, CF8-~~CF12~~CF13, and CF1 Rewind) shall be maintained at less than 95 Mg per 12-month period. [s. NR 440.74(1)(b), Wis. Adm. Code, ss. 285.65(7) and (13), Wis. Stats., 40 CFR s. 60.740(b)]	**(1)** *NSPS for Polymeric Coating of Supporting Substrates – Monitoring Requirements*: (a) The permittee shall make semiannual estimates of the projected annual amount of VOC to be used for the manufacture of polymeric coated substrate at each affected facility (each of CF1-CF3, CF6, CF8-~~CF12~~CF13, and CF1 Rewind) in each year. [s. NR 440.74(5)(b), Wis. Adm. Code, s. 285.65(13), Wis. Stats., 40 CFR s. 60.744(b)] (b) The permittee shall maintain records of actual VOC use. [s. NR 440.74(5)(b), Wis. Adm. Code, s, 285.65(13), Wis. Stats., 40 CFR s. 60.744(b)] (c) By the end of each calendar month, the permittee shall calculate the monthly VOC use for each affected facility for the preceding calendar month as follows: $U_{voc} = \sum X_i \times Y_i$ Where: U_{voc} is the amount of VOC used in each affected facility during the month in Mg per month; X_i is the amount of each material i, used in each affected facility in gallons per month; Y_i is the VOC content of each material i, used in each affected facility in Mg per gallon; i is each material used in each affected facility in during the month. [ss. 285.63(1)(a) and 285.65(3), Wis. Stats.](d) By the end of each calendar month the permittee shall calculate the VOC use for each affected facility (each of CF1-CF3, CF6, CF8-CF13~~CF12~~, and CF1 Rewind) over the previous 12-months in Mg, by summing the monthly VOC use (U_{voc}) for each of the preceding 12 months. [ss. 285.63(1)(a) and 285.65(3), Wis. Stats.]	**(1)** *NSPS for Polymeric Coating of Supporting Substrates – Reporting and Recordkeeping Requirements*: (a) The permittee shall submit to the department a material flow chart indicating the projected VOC use for each affected facility (each of CF1-CF3, CF6, CF8-CF13~~CF12~~, and CF1 Rewind) during the first year of operation. [s. NR 440.74(8)(b), Wis. Adm. Code, s. 285.65(13), Wis. Stats., 40 CFR s. 60.747(b)] (b) The permittee shall submit actual VOC use records for each affected facility (each of CF1-CF3, CF6, CF8-CF13~~CF12~~, and CF1 Rewind) at the end of its first year of operation. [s. NR 440.74(8)(b), Wis. Adm. Code, s. 285.65(13), Wis. Stats., 40 CFR s. 60.747(b)] (c) The permittee shall record semiannual estimates of the projected VOC use and the actual 12-monthVOC use for each affected facility (each of CF1-CF3, CF6, CF8-~~CF12~~CF13, and CF1 Rewind). [s. NR 440.74(8)(c)1., Wis. Adm. Code, s.

[1] The permittee submitted notification to US EPA dated January 14, 2016 indicating that ceramic fiber making lines CF1-CF3 and CF6-CF10 are affected facilities subject to the NSPS for Polymeric Coating of Supporting Substrates. A change in the method of operation of CF4 and/or CF5 such that they become subject to the requirements of s. NR 440.74, Wis. Adm. Code (40 CFR Part 60, subpart VVV), is not a change that is excluded from modification per s. NR 406.04(4), Wis. Adm. Code. Such a change in the method of operation of CF4 and CF5 may require a construction permit prior to the change.

C. Ceramic Fiber Making Processes:

Process P15 — CF1 Ceramic Fiber Maker (Type 1)
Process P15b – CF1 Rewind
Process P16 — CF2 Ceramic Fiber Maker (Type 1)
Process P17 — CF3 Ceramic Fiber Maker (Type 1)
Process P18 — CF4 Ceramic Fiber Maker (Type 1)
Process P19 — CF5 Ceramic Fiber Maker (Type 2)
Process P22 — CF6 Ceramic Fiber Maker (Type 2)
Process P31 – CF8 Ceramic Fiber Maker (Type 2)
Process P32 – CF9 Ceramic Fiber Maker (Type 2)
Process P33 – CF10 Ceramic Fiber Maker (Type 2)
Process PCF11 – CF11 Ceramic Fiber Maker (Type 1)
Process PCF12 – CF12 Ceramic Fiber Maker (Type 2)
Process PCF13 – CF13 Ceramic Fiber Maker (Type 2)

1. Pollutant: Volatile Organic Compounds

a. Limitations	**b.** Compliance Demonstration	**c.** Recordkeeping, Reporting and Monitoring
		285.65(13), Wis. Stats., 40 CFR s. 60.747(c)1.] *{continued on next page…}*

C. Ceramic Fiber Making Processes: CF1 – CF6 and CF8 – ~~CF12~~CF13, CF1 Rewind

1. Pollutant: Volatile Organic Compounds

a. Limitations	**b.** Compliance Demonstration	**c.** Recordkeeping, Reporting and Monitoring
(2) ***Type 1[2] Ceramic Fiber Makers (CF1, CF2 and CF4)*** - *Latest Available Control Techniques (LACT):*[3] Operate ceramic fiber makers CF1, CF2, and CF4, to produce a Type 1 ceramic fiber using a lower emitting production method, according to manufacturer's specifications and good air pollution practices that minimize emissions.[4] [s. NR 424.03(2)(c), Wis. Adm. Code, s. 285.65(7), Wis. Stats., 07-SJZ-208-P20] **(3)** ***Type 2 Ceramic Fiber Makers Controlled by Thermal Oxidizer C07:*** For ceramic fiber	**(2)** ***Type 1 Ceramic Fiber Makers - Latest Available Control Techniques (LACT):*** To demonstrate compliance with I.C.1.a.(2), the permittee shall keep the records required by I.C.1.c.(2)(a)(i) and (ii). [ss. NR 439.04(1)(d) and (3), Wis. Adm. Code, s. 285.65(3), Wis. Stats., 07-SJZ-075-P20] **(3)** ***Type 2 Ceramic Fiber Makers:*** To demonstrate compliance with	**(1)** *NSPS for Polymeric Coating of Supporting Substrates – Reporting and Recordkeeping Requirements*: *{…continued from previous page…}* (d) The permittee shall report the first semiannual estimate in which projected annual VOC use exceeds 95 Mg per 12-month period. [s. NR 440.74(8)(c)2., Wis. Adm. Code, s. 285.65(13), Wis. Stats., 40 CFR s. 60.747(c)2.] (e) For each affected facility (each of CF1-CF3, CF6, CF8-CF12, and CF1 Rewind), the permittee shall keep monthly records of: (i) The amount of each material used during the month in gallons (X_i); (ii) The VOC content of each material used during the month in Mg per gallon (Y_i); (iii) The amount of VOC used during each month in Mg (U_{voc}); and (iv) The amount of VOC used over each 12-month period as calculated in I.C.1.b.(1)(d). [s. NR 439.04(1)(d), Wis. Adm. Code]

[2] Because the maximum theoretical VOC emissions from CF3, CF11, and CF1 Rewind are each less than 15 pounds per day, they are each exempt from the requirements of ch. NR 424, Wis. Adm. Code, pursuant to s. NR 424.03(1)(a)4., Wis. Adm. Code.

[3] The requirements in conditions I.C.1.a.(2), ~~and~~ (3), and (4), including the operation of a thermal oxidizer with an overall VOC control efficiency of 88 percent, for all but 240 hours per year for ceramic fiber makers CF5-CF6, CF8-CF10, and CF12-CF13 restrict potential acetaldehyde emissions from the facility to less than the applicable s. NR 445.07, Wis. Adm. Code, Table A thresholds, for the corresponding stack height categories.

[4] At the time of permit issuance, CF1 – CF4 and CF11 were of a different equipment design than CF5 – CF10. CF1 – CF4 and CF11 were designed to produce a type of ceramic fiber that results in lower emissions than the type that CF5 – CF10 and CF12 – CF13 were designed to produce. Ceramic fiber makers of the CF1 – CF4 and CF11 type (Type 1), would have to be physically modified in order to produce the type of ceramic fibers that CF5 – CF10 and CF12 – CF13 produce (Type 2). LACT for CF1, CF2, and CF4 includes a requirement to operate equipment under the lower emitting production method.

C. Ceramic Fiber Making Processes: CF1 – CF6 and CF8 ~~–~~ ~~CF12~~CF13, CF1 Rewind		
1. Pollutant: Volatile Organic Compounds		
a. Limitations	**b.** Compliance Demonstration	**c.** Recordkeeping, Reporting and Monitoring
makers CF5, CF6, CF8 – CF10, and CF12 (P19, P22, P31, P32, P33, and PCF12): The permittee shall control volatile organic compound emissions by at least 85% by doing the following: (a) Control VOC emissions using a thermal oxidizer with an overall control efficiency of not less than 88 percent, whenever these ceramic fiber making process(es) are in operation, except during periods when maintenance is being performed on the thermal oxidizer. (b) VOC emissions from Type 2 ceramic fiber makers controlled by Thermal Oxidizer C07, may be exhausted without control (i.e. ~~the~~ thermal oxidizer C07 may be by-passed) ~~for maintenance purposes only~~, for a period not to exceed 240 hours per year, during each 12-consecutive month period. [s. NR 424.03(2)(b), Wis. Adm. Code, 07-SJZ-208-P20] **(4) *Type 2 Ceramic Fiber Makers Controlled by Thermal Oxidizer C08*:** For ceramic fiber makers CF13 (PCF13): The permittee shall control volatile organic compound emissions by at least 85% by doing the following: (a) Control VOC emissions using a thermal oxidizer with an overall control efficiency of not less than 88 percent, whenever these ceramic fiber making process(es) are in operation, except during periods when maintenance is being performed on the thermal oxidizer. (b) VOC emissions from Type 2 ceramic fiber makers controlled by Thermal Oxidizer C08, may be exhausted without control (i.e. thermal oxidizer C08 may be by-passed), for a period not to exceed 240 hours per year, during each 12-consecutive month period. [s. NR 424.03(2)(b)]	I.C.1.a.(3) and (4), the permittee shall: (a) Keep the records required by I.C.1.c.(2); (b) By the end of each calendar month, the permittee shall calculate the total hours any of ceramic fiber makers CF5, CF6, CF8 – CF10, and CF12 (P19, P22, P31, P32, P33 and/or PCF12) were operated while emissions by-passed ~~the~~ thermal oxidizer C07, over the preceding 12-consecutive months, by summing the monthly hours these ceramic fiber makers operated uncontrolled for the preceding 12 calendar months. (c) By the end of each calendar month, the permittee shall calculate the total hours any of ceramic fiber makers CF13 (PCF13) were operated while emissions by-passed thermal oxidizer C08, over the preceding 12-consecutive months, by summing the monthly hours these ceramic fiber makers operated uncontrolled for the preceding 12 calendar months. *{continued on next page…}*	**(2)** *Recordkeeping Requirements:* (a) The permittee shall keep monthly records of the following: (i) Manufacturing equipment design information indicating the type of ceramic fiber that each ceramic fiber maker can produce;[5] (ii) A unique name or identifier for each raw material used (i or j) in the ceramic fiber making processes and the raw material type (i.e. Type 1 of Type 2) of each raw material used; (iii) The total hours each ceramic fiber maker is operated during the month; (iv) The amount of each raw material used in Type 1 ceramic fiber makers during the month, in pounds (A_i); (v) The amount of each raw material used during the month, in Type 2 ceramic fiber makers while the thermal oxidizer is by-passed, in pounds ($A_{j\text{-unctl}}$); (vi) The amount of each raw material used during the month, in Type 2 ceramic fiber makers when the thermal oxidizer was controlling emissions, ($A_{j\text{-ctl}}$); *{continued on next page…}*

[5] CF1–CF4 are designed to produce a type of ceramic fiber that results in lower emissions than the type that ~~CF5–CF10 and CF12–CF13~~CF5, CF6, and CF8-CF10, CF12, and CF13 were designed to produce.

C. Ceramic Fiber Making Processes: CF1 - CF6 and CF8 – ~~CF12~~CF13, CF1 Rewind

1. Pollutant: Volatile Organic Compounds

a. Limitations	b. Compliance Demonstration	c. Recordkeeping, Reporting and Monitoring
	(3) ***Type 2 Ceramic Fiber Makers:*** *{…continued from previous page…}* (~~e~~d) Operate and maintain the thermal oxidizers C07 and C08 so that ~~it has~~each thermal oxidizer has an overall control efficiency of not less than 88 percent by: (i) maintaining the temperature in the primary chamber of the thermal oxidizers at or above 1500 degrees F (3-hour average) or the temperature measured during the most recent compliance emission test that demonstrated an overall control efficiency of at least 88 percent; and (ii) continuously monitoring the temperature of the primary chamber whenever the thermal oxidizers ~~is~~ are operating. (iii) performing monthly inspections of the thermal oxidation systems, including temperature monitoring equipment, to ensure proper operation. [ss. NR 439.04(1)(d) and (3) and NR 439.055(1)(d), (2)(a), and (5), Wis. Adm. Code, s. 285.65(3), Wis. Stats., 07-SJZ-075-P20] **(4)** (a) By the end of each calendar month, the permittee shall calculate the monthly total VOC emissions from all ceramic fiber making processes at the facility for the preceding calendar month, as follows: $CF_{mo} = (1 \text{ ton}/2000 \text{ lb}) \times \left[\sum (EF_{voc\text{-}1} \times A_i) + \sum (EF_{voc\text{-}2} \times A_{j\text{-}unctl}) + (1 - 0.88) \times \sum (EF_{voc\text{-}2} \times A_{j\text{-}ctl}) \right]$ where: CF_{mo} is the monthly total VOC emissions from all ceramic fiber making processes, in tons per month; $EF_{voc\text{-}1}$ is the VOC emission factor for Type 1 raw materials, from the most recent emission tests conducted by the permittee, in pounds VOC per pound of raw material; A_i is the amount of Type 1 raw materials used during the month on uncontrolled (Type 1) ceramic fiber makers, in pounds; i identifies each material used on uncontrolled (Type 1) ceramic fiber makers during the month; $EF_{voc\text{-}2}$ is the VOC emission factor for Type 2 raw materials, from the most recent emission tests conducted by the permittee, in pounds VOC per pound of raw material; $A_{j\text{-}unctl}$ is the amount of Type 2 raw materials used during the month on Type 2 ceramic fiber makers, when the thermal oxidizer was by-passed, in pounds; $A_{j\text{-}ctl}$ is the amount of Type 2 raw materials used during the month on Type 2 ceramic fiber makers, when the thermal oxidizer was controlling emissions, in pounds; j identifies each material used on controlled (Type 2) ceramic fiber makers during the month. (b) By the end of each calendar month, the permittee shall calculate the total amount of VOC emitted from all ceramic fiber makers over the preceding 12-consecutive months, by summing the monthly total VOC emissions (CF_{mo}), as calculated in I.C.1.b.(2)(a) for each of the 12 previous months. [s. 285.65(3), Wis. Stats., 07-SJZ-075-P20]	**(2)**(a) *Recordkeeping Requirements:* *{continued from previous page}* (vii) The dates, times and total hours that ~~the~~ thermal oxidizer C07 or C08 were~~was~~ by-passed while any Type 2 ceramic fiber makers were operated, during the month ($H_{by\text{-}pass}$); (viii) The dates, times and total hours ~~the~~ either thermal oxidizer is operated during the month; and (ix) The dates, times and total hours maintenance is performed on ~~the~~ either thermal oxidizer during the month including a description of the type of maintenance performed. (x) The total hours any of ceramic fiber makers CF5, CF6, CF8 – CF10, and/or CF12 were operated while emissions by-passed the thermal oxidizer C07, over the preceding 12-consecutive months, as calculated in I.C.1.b.(3)(b). (xi) The total hours ceramic fiber maker~~s~~ CF13 was operated while emissions by-passed the thermal oxidizer C08, over the preceding 12-consecutive months, as calculated in I.C.1.b.(3)(c). [ss. NR 439.04(1)(d) and (3), Wis. Adm. Code, 07-SJZ-075-P20] (b) In addition to the records required by paragraph (a), the permittee shall keep monthly records of the following: (i) The VOC emission factor for Type 1 raw materials, from the most recent emission tests conducted by the permittee ($EF_{voc\text{-}1}$), in pounds VOC per pound of raw material, including the details and results of the test from which the emission factor is derived; (ii) The VOC emission factor for Type 2 raw materials, from the most recent emission tests conducted by the permittee ($EF_{voc\text{-}2}$), in pounds VOC per pound of raw material, including the details and results of the test from which the emission factor is derived; (iii) The monthly total VOC emissions from the ceramic fiber making processes, as calculated in I.C.1.b.(4)(a), in tons (CF_{mo}); and (iv) The total amount of VOC emitted from all ceramic fiber makers during the previous 12-consecutive months, as calculated in I.C.1.b.(4)(b), in tons.

C. Ceramic Fiber Making Processes: CF1 - CF6 and CF8 – ~~CF12~~CF13, CF1 Rewind		
1. Pollutant: Volatile Organic Compounds		
a. Limitations	**b.** Compliance Demonstration	**c.** Recordkeeping, Reporting and Monitoring
		[ss. NR 439.04(1)(d) and (3), Wis. Adm. Code, 07-SJZ-075-P20]

C. Ceramic Fiber Making Processes: CF1 – CF6 and CF8 - ~~CF12~~CF13, CF1 Rewind		
1. Pollutant: Volatile Organic Compounds		
a. Limitations	**b.** Compliance Demonstration	**c.** Recordkeeping, Reporting and Monitoring
		(2) *Recordkeeping Requirements:* *{…continued from previous page…}* (c) The permittee shall continuously monitor the primary chamber temperature of ~~the~~ thermal oxidizers C07 and C08 as required by I.C.1.b.(3)(~~d~~e)(ii) and record the primary chamber temperature of ~~the~~ each thermal oxidizer at least once every 15 minutes. [s. NR 439.055(2)(a), Wis. Adm. Code] (d) The permittee shall keep records of the monthly inspections required by I.C.1.b.(3)(~~d~~e)(iii), which include, but are not limited to: (i) The date of the inspection; (ii) The initials of the individual performing the inspection; (iii) The items and/or components inspected; (iv) A description of the results of the inspection; and (v) A description of all calibrations, maintenance, and/or repairs performed as a result of the inspection. [ss. NR 439.04(1)(d) and (3), Wis. Adm. Code]