



State of Ohio Environmental Protection Agency

**RE: FINAL PERMIT TO INSTALL
COLUMBIANA COUNTY**

CERTIFIED MAIL

Street Address:

50 West Town Street, Suite 700

Lazarus Gov. Center TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:

Lazarus Gov. Center
P.O. Box 1049

Application No: 02-22974

Fac ID: 0215030122

DATE: 5/20/2008

E.R. Advanced Ceramics, Inc.
Robert C. McGuire
600 East Clark St.
East Palestine, OH 44413

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00 which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
309 South Fourth Street, Room 222
Columbus, OH 43215

Sincerely,

Michael W. Ahern, Manager
Permit Issuance and Data Management Section
Division of Air Pollution Control

CC: USEPA

NEDO



**Permit To Install
Terms and Conditions**

**Issue Date: 5/20/2008
Effective Date: 5/20/2008**

FINAL PERMIT TO INSTALL 02-22974

Application Number: 02-22974
Facility ID: 0215030122
Permit Fee: **\$400**
Name of Facility: E.R. Advanced Ceramics, Inc.
Person to Contact: Robert C. McGuire
Address: 600 East Clark St.
East Palestine, OH 44413

Location of proposed air contaminant source(s) [emissions unit(s)]:
**600 East Clark St.
East Palestine, Ohio**

Description of proposed emissions unit(s):
C-Kiln with afterburner.

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Chris Korleski
Director

Part I - GENERAL TERMS AND CONDITIONS

A. Permit to Install General Terms and Conditions

1. Compliance Requirements

The emissions unit(s) identified in this Permit to Install shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

2. Reporting Requirements

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
- b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted (i.e., postmarked) quarterly by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

3. Records Retention Requirements

Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

4. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon

E.R. Advanced Ceramics, Inc.
PTI Application: 02-22974
Issued: 5/20/2008

Facility ID: 0215030122

the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State air pollution laws and regulations and the terms and conditions of this permit. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

5. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emissions unit(s) that is (are) served by such control system(s).

6. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

7. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

8. Termination of Permit to Install

This Permit to Install shall terminate within eighteen months of the effective date of the Permit to Install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

9. Construction of New Sources(s)

E.R. Advanced Ceramics, Inc.
PTI Application: 02-22974
Issued: 5/20/2008

Facility ID: 0215030122

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

If the construction of the proposed emissions unit(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.

10. Public Disclosure

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

11. Applicability

This Permit To Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate Permit To Install for the installation or modification of any other emissions unit(s) are required for any emissions unit for which a Permit To Install is required.

12. Best Available Technology

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

E.R. Advanced Ceramics, Inc.
 PTI Application: 02-22974
 Issued: 5/20/2008

Facility ID: 0215030122

13. Source Operation and Operating Permit Requirements After Completion of Construction

This facility is permitted to operate each source described by this Permit to Install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the emissions unit(s) covered by this permit.

14. Construction Compliance Certification

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit to Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

15. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable Permit to Install fees within 30 days after the issuance of this Permit to Install.

B. Permit to Install Summary of Allowable Emissions

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

SUMMARY (for informational purposes only)
 TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Tons Per Year</u>
PE	0.4
SO ₂	0.5
NO _x	0.4
VOC	0.3
CO	2.6

7

E.R. Advanced Ceramics, Inc.
PTI Application: 02-22974
Issued: 5/20/2008

Facility ID: 0215030122

HF

0.4

Issued: 5/20/2008

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**A. Applicable Emissions Limitations and/or Control Requirements**

- The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment -(P009) - C-Kiln and afterburner

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(A)(3)	<p>Particulate emissions (PE) shall not exceed 2.1 lbs/day, 0.4 ton per year.</p> <p>Nitrogen oxide (NOx) emissions shall not exceed 2.3 lbs/day, 0.4 ton per year.</p> <p>Volatile organic compound (VOC) emissions shall not exceed 1.8 lbs/day, 0.3 ton per year.</p> <p>Carbon monoxide (CO) emissions shall not exceed 14.0 lbs/day, 2.6 tons per year.</p> <p>Hydrogen fluoride (HF) emissions shall not exceed 2.0 lbs/day, 0.4 ton per year.</p> <p>See section A.2.a.</p> <p>Visible particulate emissions from the stack serving this emissions unit shall not exceed 5 percent opacity, as a 6-minute average.</p>
OAC rule 3745-17-07(A)	The visible particulate emissions limitation specified by this rule is less stringent than the visible particulate emissions limitation established pursuant to OAC rule 3745-31-05(A)(3).
OAC rule 3745-17-11(B)(1)	The emissions limitation specified by this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-05(A)(3).

Issued: 5/20/2008

40 CFR 63, Subpart RRRRRR	Area source MACT for Clay Ceramic Manufacturing is not applicable. See section A.2.b.
---------------------------	--

2. Additional Terms and Conditions

- 2.a** Best Available Technology is applicable because this emissions unit was installed prior August 2006. The emissions limitations established pursuant to OAC rule 3745-31-05(A)(3) are based on calculations using the maximum load of 4.25 tons of product per day to be fired.
- 2.b** Hydrogen fluoride (HF) is emitted from the drying of ceramic products, and is identified as a hazardous air pollutant (HAP) and also as an air toxic. This emissions unit is not subject to the requirements of 40 CFR 63, Subpart RRRRRR because it fires only un-glazed ceramic ware. The facility is not subject to the requirements of this subpart at this time because the annual production is less than 50 tons per year.

B. Operational Restrictions

1. There shall be no sulfur in the raw materials used in the products that are fired within this emissions unit.
2. The material to be fired shall not be glazed.
3. The permittee shall burn only natural gas as fuel for this emissions unit.
4. The afterburner shall be in operation at all times while the kiln is in operation. The afterburner shall operate with a 0.5 - 0.6 second retention time at 1670 degrees Fahrenheit.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly operate and maintain equipment to continuously monitor and record the temperature of the afterburner when this emissions unit is in operation.
2. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack

Issued: 5/20/2008

serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

- a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. whether the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to minimize or eliminate the visible emissions.
3. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.
 4. If the raw material to be fired in this emissions unit contains any sulfur or is glazed, the permittee shall record the date, amount of material containing the sulfur, and the percent sulfur content in the material and/or that the material was glazed.
 5. Modeling to demonstrate compliance with the "Toxic Air Contaminant Statute" in ORC 3704.03(F)(4)(b) was not necessary because the emissions unit's maximum annual emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any toxic air contaminant to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.

D. Reporting Requirements

1. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Ohio EPA, Northeast District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.
2. The permittee shall submit deviation (excursion) reports that identify each day (a) when a fuel other than natural gas was burned in this emissions unit, (b) when sulfur is

Emissions Unit ID: P009

present within the raw material, (c) when the material to be fired was glazed and/or (d) when the temperature of the afterburner was below 1670 degrees Fahrenheit while this emissions unit was in operation. Each report shall be submitted within 30 days after the deviation occurs.

E. Testing Requirements

1. Emission Limitation:

Particulate emissions (PE) shall not exceed 2.1 lbs/day, 0.4 ton per year.

Applicable Compliance Method:

If required by the Ohio EPA, compliance with the allowable particulate emission limit shall be determined in accordance with the following methods: Methods 1 through 5 of 40 CFR Part 60, Appendix A.

2. Emission Limitation:

Nitrogen oxide (NOx) emissions shall not exceed 2.3 lbs/day, 0.4 ton per year.

Applicable Compliance Method:

If required by the Ohio EPA, compliance with the allowable emission limit shall be determined in accordance with Method 7 of 40 CFR Part 60, Appendix A.

3. Emission Limitation:

Volatile organic compound (VOC) emissions shall not exceed 1.8 lbs/day, 0.3 ton per year.

Applicable Compliance Method:

If required by the Ohio EPA, compliance with the allowable emission limit shall be determined in accordance with Methods 18, 25 or 25A of 40 CFR Part 60, Appendix A.

4. Emission Limitation:

Carbon monoxide (CO) emissions shall not exceed 14.0 lbs/day, 2.6 tons per year.

Applicable Compliance Method:

If required by the Ohio EPA, compliance with the allowable emission limit shall be determined in accordance with Method 10 of 40 CFR Part 60, Appendix A.

5. Emission Limitation:

Hydrogen fluoride (HF) emissions shall not exceed 2.0 lbs/day, 0.4 ton per year.

Applicable Compliance Method:

Issued: 5/20/2008

If required by the Ohio EPA, compliance with the allowable emission limit shall be determined in accordance with Method 13A or 13B of 40 CFR Part 60, Appendix A, or any other approved method acceptable to Ohio EPA.

6. Emission Limitation:

Visible particulate emissions from the stack serving this emissions unit shall not exceed 5 percent opacity, as a 6-minute average.

Applicable Compliance Method:

If required by the Ohio EPA, compliance shall be determined through visible particulate emission observations performed in accordance with Method 9 of 40 CFR Part 60, Appendix A and the procedures specified in OAC rule 3745-17-03(B)(1).

F. Miscellaneous Requirements

None