



COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
Central Regional Office, 627 Main Street, Worcester, MA 01608

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Secretary

LAUREN A. LISS  
Commissioner

Norton Company  
One New Bond Street  
Worcester, MA 01606

Attn: Christopher Scholl,  
Environmental Manager  
Greendale Facility

Re: CR - Worcester  
Regulation 310 CMR 7.18(17)  
Reasonably Available Control  
Technology (RACT) C-P-90-083  
Transmittal #138827

AMENDED FINAL APPROVAL

Dear Mr. Scholl:

The Department of Environmental Protection, Bureau of Waste Prevention, Permitting Section (the "Department"), has reviewed the plans, specifications, Standard Operating Procedures and Standard Maintenance Procedures for the source specific Reasonably Available Control Technology (RACT) plan for volatile organic compounds (VOCs) from the Norton/Saint Gobain Industrial Ceramics ("Norton") Greendale, Massachusetts facility located in Worcester, Massachusetts. This AMENDED PLAN is being submitted to the Environmental Protection Agency (EPA) for inclusion into the Federal Register as a revision to the Massachusetts State Implementation Plan (SIP) establishing and requiring the use of RACT at this Norton facility in accordance with 310 CMR 7.18(17).

I. GENERAL INFORMATION/BACKGROUND

Norton is a manufacturer of abrasive products, ceramic grinding wheels and high performance refractories. The manufacturing of these products involves various processes including, but not limited to mixing, truing, grinding, curing, firing, labeling, inspecting and packing.

The Department submitted to EPA the FINAL APPROVAL, dated May 11, 1991 and amended May 20, 1991, as a source specific SIP revision. EPA proposed to approve the SIP revision following a Notice of Proposed Rulemaking (NPR), published December 16, 1991 in the Federal Register.

This information is available in alternate format by calling our ADA Coordinator at (617) 574-6872.

<http://www.state.ma.us/dep> • Phone (508) 792-7650 • Fax (508) 792-7621 • TDD # (508) 767-2788

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On December 9, 1992, the Department submitted an amended FINAL APPROVAL, dated December 2, 1992, to EPA that addressed the issues outlined by EPA in the NPR. Specifically, EPA requested the Department to issue an additional plan approval defining RACT for VOC emitting processes not previously approved.

In response to the Department's submittal, EPA proposed several additional changes. In a letter dated February 5, 1993, EPA requested enforceable short term limits for vitrified formulations be included as well as a narrative stating that the degreasing operations are applicable to 310 CMR 7.18(8), Solvent Metal Degreasing.

In an agreement with the Department dated July 2, 1997, Norton was required to submit a new RACT plan. This RACT plan is designed to allow the Norton business units the flexibility and independence necessary to operate under the facility organization. Enforceable short and long term RACT limits are specified and tracked by business unit or similar unit operations (processes) as opposed to tracking unit operations building by building (see Table 1). Plant 8 (Organics) is removed from the RACT plan as substantial modifications in this plant were subject to Best Available Control Technology.

This AMENDED FINAL APPROVAL incorporates these additional comments and changes, reflects current facility operations and supersedes the December 2, 1992 RACT FINAL APPROVAL.

This AMENDED FINAL APPROVAL shall become final after approval by EPA and inclusion into the Massachusetts State Implementation Plan. Additional background information is on file at the Department's Central Regional Office.

## II. VOC RACT EMISSION REDUCTIONS TO DATE

Norton has taken numerous steps to reduce emissions of VOC. These emission reductions are the result of raw material substitution, reformulation, emission control, good housekeeping and better operating procedures. Before implementing the RACT plan, facility-wide **actual** VOC emissions were greater than 390 tons per year in 1987. With full implementation of this RACT plan, the **potential** VOC emissions will be reduced to 47.5 tons per year for more than an 85% reduction in total RACT VOC emissions.

The following list summarizes key reduction measures and material substitution taken to date:

- \* Eliminated P-Dichlorobenzene from manufacturing and replacement with non-regulated organic products;
- \* Eliminated all halogenated organic compounds (HOC), which are ozone depleting compounds, from manufacturing by the end of 1993;



- \* Eliminated three vapor degreasers to clean metal parts;
- \* Discontinued the use of Service Cement, a volatile organic compound, through process redesign;
- \* Reformulated Vitrified formulations to contain less than 8% ethylene glycol by weight;
- \* Installed incinerator equipped kilns, added two thermal oxidizers and upgraded a catalytic oxidizer on existing equipment, further reducing VOC emissions;
- \* Reformulated paints used in stenciling to water-base;
- \* Replaced some mold release compounds with non-VOC formulations;
- \* Reformulated Hybond glue for cardboard strip cementing to a lower VOC content;
- \* Substituted Hybond glue with solid hot melt technology.

### III. EMISSION LIMITS

A. Several products contained in non-refillable aerosol containers with a capacity of one liter or less were included in the original RACT plan approved on December 2, 1992. These products are now regulated under 310 CMR 7.25 Consumer and Commercial products. Therefore they are not included in this RACT plan.

- \* Krylon spray paints
- \* Engine Degreasers
- \* Some Cleaners (i.e., Carb, Zep 40)
- \* Architectural Coating

B. The Norton facility utilizes cold degreasers (e.g., Safety Kleen, Zep) throughout the different plants. These units are regulated under 310 CMR 7.18(8)(a), Cold Cleaning Degreasing. Therefore they are not included in this RACT plan.

C. Non-regulated VOC (materials which contain organic compounds that are exempt from the definition of VOC as defined in 310 CMR 7.00, and materials which emit VOC as a result of combustion, i.e., dextrin, organic solids, latex, cutting oil type fluids, glycerin, etc.) are not included in the RACT plan per 310 CMR 7.18(17)(b)(4).

D. Listed below (Table 1) are the remaining Norton processes covered by this 7.18(17) RACT Approval which actually emit significant amounts (>1tpy) of various VOCs and non-photochemically reactive Hydrocarbons. Miscellaneous VOC emissions (<1 tpy) are discussed within the RACT plan and shall be reported annually to the Department in the Emission Statement/Source Registration (ES/SR) report.

Norton shall not exceed the short and long-term emission limits noted in Table 1 below:

Table 1		
Process Description	Short-term RACT Limit	Long Term Emission Limit <sup>1</sup> (tons)
<b>Vitrified Products</b>		
1. Mixing/Molding	Formulations containing no more than 8% <sub>wt</sub> ethylene glycol (EG)	
2. Firing/drying	Substitution of PDB formulations with nonregulated <sup>2</sup> VOCs and organic solids	
3. Finishing: Hole Cementing	<12.8 lbs VOC/gallon of solids as applied.	
4. Finishing: Adhesive	<5.5 lbs VOC/gallon coating (minus water) as applied.	
5. Balancing	Good housekeeping	
6. Finishing: Painting	<3.5 lbs VOC/gallon of coating (minus water)as applied.	
7. Miscellaneous Sources: (<1 TPY each)	Solvent use minimization, good housekeeping, and source substitution	
<b>Total</b>		<b>33.5</b>



Table 1 (Cont.)

Process Description	Short-Term RACT Limit	Long Term Emission Limit <sup>2</sup> (tons)
<b>Super Abrasives</b>		
8. Finishing: Painting	<3.5 lbs VOC gallon of coating (minus water)	
9. Cleaning: (hand cleaning) Trichloroethylene	Good housekeeping	
10. Miscellaneous Sources: (<1 TPY each)	Solvent use minimization, good housekeeping, and source substitution	
<b>Total</b>		<b>5.0</b>
<b>Refractory</b>		
11. Firing/Drying	Use only non-regulated VOC <sup>2</sup> containing materials for binders.	
12. Press Mold Release	Solvent use minimization by source reduction and substitution, good housekeeping	
13. Miscellaneous Sources: (<1 TPY each)	Solvent use minimization, good housekeeping, and source substitution	
<b>Total</b>		<b>4.0</b>
<b>Other Facility VOC Sources in buildings</b>		
14. Miscellaneous Sources (<1 TPY)	Solvent use minimization, good housekeeping, source substitution	<b>5.0</b>

<sup>1</sup> Long-term limits (tons) are per consecutive 12 month period. Long term limits are determined after control.

<sup>2</sup> Non-regulated VOCs include materials which contain organic compounds that are exempt from the definition of VOC as defined in 310 CMR 7.00, and materials which emit VOCs as a result of combustion (e.g., dextrin, organic solids, latex, cutting oil type fluids, glycerin etc.).

IV. SPECIAL CONDITIONS

- A. Norton shall implement good housekeeping measures and work practice procedures to minimize all volatile organic compound, hydrocarbon and halogenated organic compound (hereinafter will be referred to as VOC) emissions by:

1. Storing all formulations containing VOCs in covered containers;
  2. HVLP spray gun application shall be used at all paint spray stations and shall be maintained and operated in accordance with the recommendations of the manufacturer. Waterbase spray gun cleaning shall be performed in a manner which minimizes VOC emissions to the atmosphere;
  3. Handling products containing VOCs in such a manner so as to prevent spillage and loss. Any spilled materials shall be promptly cleaned up and stored in covered containers; and
  4. Keeping waste solvent and saturated rags in covered containers and minimizing solvent use. Clean up solutions shall be recirculated, stored and disposed of in a manner which shall minimize evaporation to the atmosphere .
- B. This RACT plan covers miscellaneous sources as listed in Table 1. Miscellaneous sources are defined as activities with actual VOC emissions less than 1 TPY, and not regulated under 310 CMR 7.25 or identified as a significant process in this RACT Plan.
- C. Norton shall notify the Department whenever they identify a VOC containing material in production that is not tracked or exempted under this RACT Plan.
- D. Norton shall conduct testing or request that the manufacturer certify the VOC content (i.e., report MSDS data) and report the results to the Department prior to using in production a new material or formulation containing VOCs not otherwise covered or exempted under this RACT plan.
- E. Future new processes regulated under 310 CMR 7.02 that emit VOCs shall also be reported in accordance with the requirements of the RACT Plan, recordkeeping and reporting procedures at the Department's discretion.
- F. A consecutive twelve month long term emission compliance summary indicating the status of each significant (>1 TPY) process noted in this approval shall be submitted to the Department on a semi-annual basis (a sample monthly RACT report is provided in Attachment A). One submittal shall be included with the annual Emission statement/Source Registration (ES/SR), and the other shall be submitted six months subsequent to the ES/SR submittal. Miscellaneous sources shall be reported annually with the ES/SR submittal.
- G. Norton shall notify this office immediately when a non-compliance situation with this RACT Plan is identified and Norton shall submit a letter within 5 working days describing the noncompliance situation and the steps taken to correct the situation.



- H. Norton shall submit an annual RACT status report indicating new actions or evaluations taken by Norton to further reduce emissions of VOCs. This status report shall be submitted to the Department's Central Regional Office at the same time as the ES/SR.
- I. Norton may request that the VOC RACT plan be evaluated or modified if a listed process is eliminated, sold or transferred to a different business. Norton will then work with the Department to properly adjust the total long-term emission limit for that business unit.

#### V. RECORDKEEPING AND REPORTING REQUIREMENTS

Recordkeeping and reporting requirements shall be met for each process and/or process area as designated in Table 2 below:

Table 2		
Process Description	Recordkeeping	Reporting
<b>Vitrified Products</b>		
1. Mixing/Molding	Material usage of EG shall be tracked monthly using computerized mix slips. VOC content shall be determined based upon mix slips and formulations. VOC emissions shall be based upon EG usage and add-on control overall efficiency.	Formulation records shall be kept on-site at the facility. EG emissions shall be reported to the Department semi-annually as specified in Condition IV.6.
2. Firing/drying	N/A	N/A
3. Finishing: Hole Cementing	Material shall be tracked by logging purchasing receipts and reconciling monthly inventory. VOC content shall be determined based on manufacturers' MSDS.	Hole cement VOC content, usage and emissions shall be reported to the Department semi-annually as specified in Condition IV.6.
4. Finishing: Adhesive	Material shall be tracked by logging purchasing receipts and reconciling monthly inventory. VOC content shall be determined based on manufacturers' MSDS.	Adhesive VOC content, usage and emissions shall be reported to the Department semi-annually as specified in Condition IV.6.
5. Balancing	Material usage of isopropyl alcohol (IPA) shall be tracked using daily material usage logs. Logs shall be totaled on a monthly basis. VOC content shall be determined based on manufacturer's MSDS.	VOC usage and emissions shall be reported to the Department semi-annually as specified in Condition IV.6.
6. Finishing: Painting	Material usage shall be tracked by logging purchasing receipts and reconciling inventory on a monthly basis. VOC content shall be determined based on manufacturers' MSDS.	Paint usage, VOC content and emissions shall be reported to the Department semi-annually as specified in Condition IV.6.



Table 2 (Cont.)		
Process Description	Recordkeeping	Reporting
7. Miscellaneous Sources:	Material shall be tracked by logging purchasing receipts and reconciling inventory on an annual basis.	Usage shall be reported to the Department annually with the ES/SR.
<b>Super Abrasives</b>		
8. Finishing: Painting	Material shall be tracked by logging purchasing receipts and reconciling inventory on a monthly basis. VOC content shall be determined based on manufacturers' MSDS.	Paint usage, VOC content and emissions shall be reported to the Department semi-annually as specified in Condition IV.6.
9. Cleaning: Trichloroethylene	Material usage shall be tracked by logging purchasing receipts and reconciling inventory on a monthly basis.	Material usage and emissions shall be reported to the Department semi-annually as specified in Condition IV.6.
10. Miscellaneous Sources	Material shall be tracked by logging purchasing receipts and reconciling inventory on an annual basis. VOC content shall be determined based on manufacturer's MSDS.	Usage shall be reported annually to the Department on the ES/SR.
<b>Refractory</b>		
11. Drying Ovens	None	None
12. Press Mold Release	Material shall be tracked by logging purchasing receipts and reconciling inventory on a monthly basis.	Usage shall be reported to the Department semi-annually as specified in Condition IV.6.
13. Miscellaneous Sources:	Material shall be tracked by logging purchasing receipts and reconciling inventory on an annual basis. VOC content shall be determined based on manufacturer's MSDS.	Usage will be reported annually to the Department with the ES/SR.
<b>Other Facility VOC Sources</b>		
14. Miscellaneous Sources	Material usage shall be tracked by logging purchasing receipts and reconciling inventory on an annual basis.	Usage shall be reported annually to the Department with the ES/SR.

Records to demonstrate compliance shall be kept on site for five years and shall be made available to representatives of the Department and EPA in accordance with 310 CMR 7.00 and upon request by the Department or EPA.



## VI. TESTING REQUIREMENTS

Testing to document compliance with the short and long term emission limits shall be conducted at the request of the Department or the Environmental Protection Agency. Any emission testing shall be conducted in accordance with the Environmental Protection Agency test methods as specified in the Code of Federal Regulations, Title 40, Part 60, Appendix A, Standards of Performance for New Stationary Sources, or by another method correlated to the above method to the satisfaction of the Department and in accordance with the requirements noted in 310 CMR 7.13.

## VII. GENERAL CONDITIONS

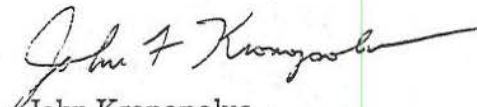
- A. Operation - No person shall operate this facility except in conformance with the requirements established in this approval.
- B. Suspension - This approval may be suspended, modified, or revoked by the Department if, at any time, the Department determines that the facility is violating any condition or part of the approval.
- C. Other Regulations - This approval does not negate the responsibility of the owner/operator to comply with this or any other applicable federal, state, or local regulations now or in the future. Nor does this approval imply compliance with any other applicable federal, state or local regulation now or in the future.
- D. Noise - Noise from the facility during routine operation, including startups and shutdowns, shall not exceed the Department noise guidelines and shall not cause a condition of air pollution as defined in Regulation 310 CMR 7.01 and 310 CMR 7.10.
- E. Modifications - Any proposed increase in emissions greater than 1 ton above the limits contained in this approval must first be approved in writing, by the Department, pursuant to 310 CMR 7.02. In addition, any increase may subject the facility to additional regulatory requirements.
- F. Removal of Air Pollution Control Equipment - No person shall cause, suffer, allow, or permit the removal, alteration or shall otherwise render inoperative, any air pollution control equipment or equipment used to monitor emissions which has been installed as a requirement of 310 CMR 7.00, other than for reasonable maintenance periods or unexpected and unavoidable failure of the equipment, provided that the Department has been notified of such failure, or in accordance with specific written approval of the Department.
- G. Inspections - Department personnel shall have access to the plant site, buildings, and all pertinent records for the purpose of making inspections, surveys, collecting samples, obtaining data and reviewing records during reasonable times.

This approval is an action of the Department. You have a limited right to appeal; please refer to the enclosed information.

The Department has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Environmental Affairs, for air quality control purposes, was not required prior to this action by the Department. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and Regulation 301 CMR 11.00, Section 11.03, provide certain "Fail-Safe Provisions" which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report at a later time.

If you have any questions concerning this APPROVAL, please contact Dana Nicoll, (508) 792-7650, extension 3772 at this office.

Yours truly,

  
John Kronopolus  
Regional Permit Chief  
Bureau of Waste Prevention

Date: 8/5/99

JFK/DN/jc  
Attachment: Appeal

cc: Worcester Health Department  
Don Squires, DEP, Boston  
Dana Samuelson, DEP, CERO  
David Conroy, USEPA



APPEAL OF APPROVAL

This approval is an action of the Department. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and post-marked within twenty-one (21) days of the date of issuance of this Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts which are the grounds for the request, and the relief sought. Additionally, the request must state why the Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to Commonwealth of Massachusetts in the amount of one hundred dollars ( \$100.00) must be mailed to:

Commonwealth of Massachusetts  
Department of Environmental Protection  
P.O. Box 4062  
Boston, MA 02211

The request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver described below:

The filing fee is not required if the appellant is a city or town (or municipal agency) county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

The Department may waive the adjudicatory hearing filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

## ATTACHMENT A

### MONTHLY VOC RACT REPORT

Norton Company, 1 New Bond Street, Worcester, MA 01615 MAD 001126234

MONTH \_\_\_\_\_ YEAR \_\_\_\_\_

Table Reference Number	Process Description	Material Desc.	Material VOC Content	Short term VOC Limit	monthly VOC emission (tons)	Consecutive 2 Month VOC Emission (tons)	Business Group Consecutive twelve Month Long term VOC Limit (tons)	Comments
1	Vitrified Products - mixing/molding	Ethylene Glycol		< 8% by weight			NA	
3	Vitrified Products - hole cementing			<12.8 lbs voc/ gal solids as applied			NA	
4	Vitrified Products - Adhesive			<5.5 lbs voc/ gal coating as applied			NA	
5	Vitrified Products - Balancing		NA	Good Housekeeping			NA	
6	Vitrified Products- Painting			<3.5 lbs voc/ gal coating as applied			NA	
	<b>Vitrified Products - Total VOCs</b>	NA	NA	NA	NA		<b>33.5<sup>2</sup></b>	
8	Super Abrasives - Painting			<3.5 lbs voc/ gal coating as applied			NA	
9	Super Abrasives - Cleaning	Trichloro-ethylene	NA	Good Housekeeping			NA	
	<b>Super Abrasives-Total VOCs</b>	NA	NA	NA	NA		<b>5<sup>2</sup></b>	
12	Refractory-Mold Release		NA	Good Housekeeping			NA	
	<b>Refractory - Total VOCs</b>	NA	NA	NA	NA		<b>4<sup>2</sup></b>	
14	<b>Miscellaneous Facility Sources</b>	NA	NA	Good Housekeeping	NA		<b>5<sup>2</sup></b>	

<sup>1</sup> All VOC contents as reported reflect the highest VOC content material used during the reporting month.

<sup>2</sup> Miscellaneous sources from all business groups are tracked and inventoried per calendar year. The previous calendar year total is added into that groups long term limit.

All numbers presented are true and accurate to the best of my knowledge.

Signed: \_\_\_\_\_ Dated: \_\_\_\_\_

Norton Company is also in compliance with all other requirements of the VOC RACT plan.