

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Air Permit Review

Permit Issue Date: XX

Region: Washington Regional Office
County: Lenoir
NC Facility ID: 5400187
Inspector's Name:
Date of Last Inspection: 03/24/2004
Compliance Code: C/In Compliance With
 Procedural Reqr

Facility Data			Permit Applicability (this application only)		
Applicant (Facility's Name): MBCI - MasterBrand Cabinets Inc Facility Address: MBCI - MasterBrand Cabinets Inc 651 Collier Loftin Road Kinston, NC 28502 SIC: 2434 / Wood Kitchen Cabinets NAICS: 33711 / Wood Kitchen Cabinet and Countertop Manufacturing Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V			SIP: NSPS: NESHAP: PSD: PSD Avoidance: NC Toxics: 112(r): Other:		
Contact Data			Application Data		
Facility Contact	Authorized Contact	Technical Contact	Application Number: 5400187.01A Date Received: 03/29/2001 Application Type: Modification Application Schedule: TV-1 st Time Existing Permit Data Existing Permit Number: 08804/R04 Existing Permit Issue Date: 12/20/2004 Existing Permit Expiration Date: 11/30/2005		
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Review Engineer: Kevin Godwin Review Engineer's Signature: _____ Date: XX			Comments / Recommendations: Issue 08804/T05 Permit Issue Date: XX Permit Expiration Date: XX		

1. Introduction

The U. S. Environmental Protection Agency (EPA) has given final approval to North Carolina's Title V operating permits program effective on October 1, 2001. This EPA approval triggered the requirements for Title V facilities to submit permit applications to the Division of Air Quality (DAQ). Title V facilities are required to obtain an operating permit which addresses all applicable regulations under the State Implementation Plan, Federal Implementation Plan, and other provisions of the Clean Air Act (CAA). The Title V Operating Permit will define all of the facility's obligations under the CAA.

This 1st time Title V Air Permit application review intends to convey all pertinent emissions data, rules, policies, and engineering assumptions used to construct the Title V Operating Permit. The primary source of information used to construct the permit is the above referenced permit application.

2. Background Information

The 1st time Title V Operating Permit replaces an existing Air Quality Construction and Operation Permit No. 08804R04 which was issued on December 20, 2004 and is currently scheduled to expire on November 30, 2005.

Pursuant to 15A NCAC 2Q .0506, MBCI – Kinston, Plant No. 9 submitted its initial Title V application to the DAQ on March 29, 2001. The application was considered complete for processing on May 28, 2001. The DRAFT permit is required to go to public notice pursuant to 15A NCAC 2Q .0521.

3. Facility Description

MBCI manufactures wooden furniture (kitchen cabinets) at this Lenoir County site. The facility operates two furniture finishing lines; the Conventional Cabinet Manufacturing (CCM) Line and the High Volume Cabinet Manufacturing (HVCM) Line. The CCM Line includes sixteen dry filter-type spray booths, a natural gas-fired drying operation, a roll coater, an IR bake oven, and seven bagfilters installed on various woodworking equipment. The HVCM Line includes twenty spray booths, a natural gas-fired drying operation, and a laminator with roll coating station.

4. Statement of Compliance

The DAQ has reviewed the compliance status of this facility. On its latest inspection conducted in March 24, 2005 by Ms. Michelle Stephens (Washington Regional Office), the facility was found to be in compliance with all applicable requirements. The applicant has certified that the facility will be in compliance with all applicable requirements. The applicant has also certified that the facility will be in compliance with any applicable requirements taking effect during the term of the permit and will meet such requirements on a timely basis.

5. Summary of Emission Sources and Control Devices

The following table identifies all emission sources and associated control devices for which the 1st time Title V Operating Permit is being issued:

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
PSD, MACT ES-CF1	Conventional cabinet finishing operations including: sixteen (16) dry filter-type spray booths (ID Nos. ES1 through ES16), a natural gas-fired drying operation (ID No. ESDRY1), and a roll coater (ID No. ES23) with associated IR bake oven (ID No. ES24)	N/A	N/A
ES-WO	Woodworking operations consisting of separate group processes, including: woodworking operations (ID No. ES21), woodworking operations for High Volume Line (ID No. ES23-B), and woodworking operations consisting of saws (ID No. ES1-C)	BH-1 through BH-7	Seven bagfilters (5,684; 5,684; 5,684; 5,477; 4,350; 6,297; and 6,297 square feet of filter area, respectively)

PSD, MACT ES-CF2	High volume line cabinet finishing operations including: twenty (20) topcoat dry filter-type spray booths (ID Nos. ES-1B through ES-20B), and a natural gas-fired drying operation (ID No. ESDRY2)	N/A	N/A
MACT ES3-D	Laminator with roll coating station	N/A	N/A
MACT ES-DO	Drying operations including: six (6) natural gas-fired drying ovens as follows: 0.81 million Btu/hr (ID No. ES17) 1.8 million Btu/hr (ID No. ES18) 1.3 million Btu/hr (ID No. ES19) 1.2 million Btu/hr (ID No. ES20) 0.8 million Btu/hr (ID No. ES21-B) 0.8 million Btu/hr (ID No. ES22-B)	N/A	N/A

6. Emission Source-by-Source Evaluation

A. Thirty six (36) dry filter-type spray booths (ID Nos. ES1 through ES16 and ES1B through ES20B)

Spray booths (ID Nos. ES1 through ES16) are part of the Conventional Cabinet Manufacturing Line.
Spray booths (ID Nos. ES1B through ES20B) are part of the High Volume Manufacturing Line.

The following provides a summary of limits and/or standards for the emission source(s) described above. A review of the information in the application was performed to ensure the appropriate limits and associated calculations used to show compliance were correct.

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter including PM ₁₀	Adequate ductwork and properly designed collectors	15A NCAC 2D .0512
Particulate matter	To avoid applicability of 15A NCAC 2D .0530, PM emissions must be less than 25 tons per consecutive 12-month period (See Section 7)	15A NCAC 2Q .0317
PM ₁₀	To avoid applicability of 15A NCAC 2D .0530, PM ₁₀ emissions must be less than 15 tons per consecutive 12-month period (See Section 7)	15A NCAC 2Q .0317
Visible emissions	20 percent opacity	15A NCAC 2D .0521(d)
VOC	Less than 620 tons per consecutive 12-month period (See Section 7)	15A NCAC 2D .0530
Hazardous air pollutants	40 CFR 63, Subpart JJ: NATIONAL EMISSIONS STANDARDS FOR WOODEN FURNITURE MANUFACTURING OPERATIONS (See Section 8)	15A NCAC 2D .1111
Odorous emissions	State enforceable only: odorous emission must be controlled	15A NCAC 2D .1806

i. 15A NCAC 2D .0512: “Particulates from Miscellaneous Wood Products Finishing Operations”

This regulation requires adequate ductwork and properly designed collectors on woodworking processes. The spray booths are all equipped with dry filters. The applicant estimates that the filters remove 97% of the particulate matter. Compliance with this requirement is expected.

a. Testing requirements

Stack testing is not required to demonstrate compliance as there is not a numerical emission standard.

b. Monitoring requirements

The Permittee shall perform inspections of the filters and ductwork as recommended by the manufacturer. As a minimum, the inspections will include weekly inspection of the spray booths’ filters noting the condition, and an annual (for each 12-month period following the initial inspection) inspection of the system ductwork noting structural integrity.

c. Recordkeeping requirements

The results of inspection and maintenance for the spray booths shall be maintained in a log (written or electronic format) on-site and made available to an authorized representative upon request. The log shall record the date and time of each recorded action, the results of each inspection, and the results of maintenance performed on any filters.

ii. 15A NCAC 2D .0521: “Control of Visible Emissions”

a. These spray booths were manufactured after July 1, 1971 and are therefore subject to 2D .0521(d). Visible emissions from the spray booths shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity. Compliance with this regulation is indicated because the latest inspection report did not cite any exceedances.

b. Monitoring requirements

The Permittee shall establish “normal” visible emissions for these sources in the first 30 days following the permit effective date. Once a month the Permittee shall observe the emission points of these sources for any visible emissions above “normal.”

c. Recordkeeping requirements

The results of the monitoring shall be maintained in a log (written or electronic format) on-site and made available to an authorized representative upon request. The log shall record the date and time of each recorded action, the results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and the results of any corrective actions performed.

d. Reporting requirements

The Permittee shall submit a summary report of the observations postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements must be clearly identified.

B. Woodworking operations (ID No. ES-WO) consisting of separate group processes including: woodworking operations (ID No. ES21), woodworking operations for the High Volume Line (ID No. ES23-B), and woodworking operations consisting of saws (ID No. ES1-C) equipped with seven bagfilters (ID Nos. BH1 through BH7)

The following provides a summary of limits and/or standards for the emission source(s) described above. A review of the information in the application was performed to ensure the appropriate limits and associated calculations used to show compliance were correct.

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter including PM ₁₀	Adequate ductwork and properly designed collectors	15A NCAC 2D .0512
Visible emissions	20 percent opacity	15A NCAC 2D .0521

i. 15A NCAC 2D .0512: “Particulates from Miscellaneous Wood Products Finishing Operations”

- a. This regulation requires adequate ductwork and properly designed collectors on woodworking processes. The woodworking operations all exhaust to seven bagfilters (ID Nos. BH1 through BH7). The applicant estimates that the bagfilters remove 99.5% of the particulate matter. Analysis of the bagfilters indicates this control efficiency should reasonably be expected (ref. Bagfilter spreadsheet attached). Compliance with this regulation is indicated.
- b. Testing requirement
Stack testing is not required to demonstrate compliance as there is not a numerical emission standard.
- c. Monitoring requirement
The Permittee shall perform inspections of the bagfilters and ductwork as recommended by the manufacturer. As a minimum, the inspections will include monthly external inspection on the bagfilters and ductwork noting the structural integrity, and an annual internal inspection of the bagfilters noting structural integrity and condition of the bagfilters
- d. Recordkeeping requirement
The results of inspection and maintenance for the woodworking operations shall be maintained in a log (written or electronic format) on-site and made available to DAQ personnel upon request. The log shall record the date and time of each recorded action, the results of each inspection, and the results of maintenance performed on the bagfilters.
- e. Reporting requirement
No reporting is required.

ii. 15A NCAC 2D .0521: “Control of Visible Emissions”

- a. These sources were manufactured after July 1, 1971 and are therefore subject to 2D .0521(d). Visible emissions from these sources shall not exceed 20 percent when averaged over a six-minute period.
- b. Monitoring requirement
The Permittee shall establish “normal” visible emissions for these sources in the first 30 days following the permit effective date. Once a week, the Permittee shall observe the emission points for visible emissions above normal.
- c. Recordkeeping requirement
The results of the monitoring shall be maintained in a log on-site and made available to DAQ personnel upon request. The log shall record the date and time of each recorded action; the results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with corrective actions taken to reduce visible emissions.
- d. Reporting requirement
The Permittee shall submit a summary report of the observations every six months.

C. Roll coater (ID No. ES23) with associated IR bake oven (ID No. ES24), and laminator (ID No. ES3-D) with associated roll coater

The following table provides a summary of limits and/or standards for the emission sources described above

Regulated Pollutant	Limits/Standards	Applicable Regulation
Hazardous air pollutants	40 CFR Part 63, Subpart JJ (See Section 8)	15A NCAC 2D .1111
Odororous emissions	State-enforceable only – odororous emissions must be controlled (See Section 8)	15A NCAC 2D .1806

D. Drying operations (ID No. ES-DO) including six (6) natural gas-fired drying ovens

The following table provides a summary of limits and standards for the emission sources described above

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter including PM ₁₀	Adequate ductwork and properly designed collectors	15A NCAC 2D .0512
Sulfur dioxide	2.3 pounds per million Btu heat input	15A NCAC 2D .0516
Visible emissions	20 percent opacity	15A NCAC 2D .0521(d)
Hazardous air pollutants	40 CFR Part 63, Subpart JJ (See Section 8)	15A NCAC 2D .1111
Odororous emissions	State enforceable only – odororous emissions must be controlled (See Section 8)	15A NCAC 2D .1806

These drying ovens were listed as insignificant activities since criteria pollutant emissions are less than 5 tons per year. As they are MACT sources whose HAP emissions are subject to 40 CFR 63, Subpart JJ, they are now also listed as significant sources of HAP.

i. 15A NCAC 2D .0512 “Particulates from Miscellaneous Wood Products Finishing Operations”

No numerical standard for particulate emissions, therefore no monitoring, recordkeeping, or reporting required.

ii. 15A NCAC 2D .0516 “Sulfur Dioxide Emissions from Combustion Sources”

Compliance this regulation is assumed when firing natural gas. No monitoring, recordkeeping, or reporting is required.

iii. 15A NCAC 2D .0521 “Control of Visible Emissions”

Compliance with this regulation is assumed when firing natural gas. No monitoring, recordkeeping, or reporting is required.

7. Multiple Emission Source Limits

A. Finishing operations (ID Nos. ES-CF1 and ES-CF2)

The following table provides a summary of limits and standards for the emission sources described above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	Less than 25 tons per consecutive 12-month period	15A NCAC 2Q .0317

PM ₁₀	Less than 15 tons per consecutive 12-month period	15A NCAC 2Q .0317
VOC	Less than 620 tons per consecutive 12-month period	15A NCAC 2D .0530

i. 15A NCAC 2Q .0317: AVOIDANCE CONDITIONS for 15A NCAC 2D .0530: PREVENTION OF SIGNIFICANT DETERIORATION

- a. In order to avoid applicability of 15A NCAC 2D .0530(g), the above emission sources shall discharge into the atmosphere less than 25 tons of particulate matter per consecutive 12-month period and less than 15 tons of PM₁₀ per consecutive 12-month period.

Testing

- b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ found in Section 3.

Monitoring/Recordkeeping

- c. The Permittee shall keep monthly records in a log (written or electronic format) of the total volume of solids applied in each cabinet finishing line.
- d. To assure compliance with the limits given above, the following limits shall apply:
- i. The total weight of solids applied in cabinet finishing operations (**ID Nos. ES-CF1 and ES-CF2**) shall not exceed 514,846 pounds per consecutive 12-month period.

Reporting

- e. The Permittee shall submit a semi-annual summary report, acceptable to the Regional Air Quality Supervisor, of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December, and July 30 of each calendar year for the preceding six-month period between January and June. The report shall contain the following:
- i. The monthly particulate emissions and PM₁₀ emissions for the previous 17 months. The emissions must be calculated for each of the 12-month periods over the previous 17 months;
- ii. The monthly weight of solids applied for each cabinet finishing operation for the previous 17 months; and
- iii. All instances of deviations from the requirements of this permit must be clearly identified.

ii. 15A NCAC 2D .0530: PREVENTION OF SIGNIFICANT DETERIORATION

- a. Volatile organic compound (VOC) emissions from the cabinet finishing operations (**ID Nos. ES CF1 and ES-CF2**) shall be less than 620 tons per consecutive 12-month period. The following BACT limits apply:

Affected Sources	BACT Limit
Toner spray booths (ID Nos. ES1-B through ES4-B)	7.17 pounds of VOC per gallon of coating applied
Stain spray booths (ID Nos. ES5-B through ES8-B)	6.39 pounds of VOC per gallon of coating applied
Pre-Seal spray booths (ID Nos. ES9-B through ES12-B)	5.73 pounds of VOC per gallon of coating applied
Sealer spray booths (ID Nos. ES13-B through ES16-B)	5.73 pounds VOC per gallon of coating applied
Topcoat spray booths (ID Nos. ES17-B through ES-20-B)	5.73 pounds VOC per gallon of coating applied

Testing

- b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ found in Section 3. If the results of this test are above the limit given above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530.

Monitoring/Recordkeeping

- c. At no time shall any coating exceed the values given above.
- d. Calculations of VOC emissions per month shall be made at the end of each month. VOC emissions shall be determined by multiplying the total amount of each type of VOC-containing material consumed during the month by the VOC content of the material. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if the amounts of VOC containing materials or the VOC emissions are not monitored and recorded.
- e. Calculations and the total amount of VOC emissions shall be recorded monthly in a log (written or electronic format). The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if the VOC emissions exceed this limit.

Reporting

- f. The Permittee shall submit a summary report of monitoring and recordkeeping activities on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. The report shall contain the following:
 - i. the monthly VOC emissions from the cabinet finishing operations (**ID Nos. ES-CF1 and ES-CF2**) for the previous 17 months. The emissions must be calculated for each of the consecutive 12-month periods over the previous 17 months.
 - ii. the highest VOC content of coatings per gallon applied over the calendar year for each of the spray booths

8. MACT Applicability and Requirements

40 CFR 63, Subpart JJ applies to the wood furniture finishing operations, including the conventional cabinet finishing operations (**ID No. ES-CF1**), High volume cabinet finishing operations (**ID No. ES-CF2**), laminator with roll coater station (**ID No. ES3-D**), and drying operations (**ID No. ES-DO**). The Permittee has opted to use facility averaging to demonstrate compliance. Standard MACT, Subpart JJ language is included in this 1st time Title V Operating Permit.

9. Compliance Assurance Monitoring (CAM) Requirements

A CAM determination is not required at this time. The emission sources that are potentially subject to CAM are furniture finishing operations and the woodworking equipment. The following exemptions apply:

Wood products finishing operations (**ID Nos. CF1 and CF2**) are exempt because they are subject to 40 CFR Part 63, Subpart JJ, which is a Section 112 standard promulgated after 11/15/90.

Pursuant to 40 CFR 64.5(b), for all “other pollutant specific emissions units,” the owner or operator shall submit a CAM determination as part of an application for renewal of the Part 70 Permit. According to recent air emissions inventories, potential facility-wide PM₁₀ emissions taking into account control devices are much less than 100 tpy. Since potential after control emissions are less than the 100 tpy threshold, the woodworking equipment is considered “other pollutant specific emission units.”

10. Permit Shield (including non-applicable requirements)

In accordance with 2Q .0512, the permit will contain a provision stating that compliance with the terms, conditions, and limitations of the Title V permit shall be deemed in compliance with applicable requirements specifically identified in the permit, as of the date of permit issuance. If the permit does not expressly state that a permit shield exists, then it shall be presumed not to provide such a shield.

11. Other Applicable Requirements

A. All emission sources

The following table provides a summary of limits and standards for the emission source(s) describe above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
odors	odorous emissions must be controlled; State-enforceable only	15A NCAC 2D .1806

STATE-ONLY REQUIREMENT: ODOR REQUIREMENTS

1. 15A NCAC 2D .1806: CONTROL AND PROHIBITION OF ODOROUS EMISSIONS

- a. the Permittee shall not operate the facility without implementing management practices or installing and operating odor control equipment sufficient to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility's boundary.

12. General Conditions

The General Conditions section of the Title V Operating Permit lists additional applicable rule requirements that the Permittee must adhere to, as with any other permit condition. These requirements in general are common to all Title V facilities. The general conditions include provisions such as annual fee payment, permit renewal and expiration, transfer of ownership or operation, property rights, submission of documents, inspections and entry procedures, reopen for cause, and severability.

13. Insignificant Activities

The insignificant activities listed in the application have been reviewed and verified. Because an emission source or activity is insignificant does not mean that the emission source or activity is exempted from any applicable requirement or that the owner or operator of the source is exempted from demonstrating compliance with any applicable requirement.

14. Public Notice

Pursuant to 15A NCAC 2Q .0521, a notice of the draft Title V Operating Permit shall be placed in a newspaper of general circulation in the area where the facility is located. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA.

15. Recommendations

The 1st time Title V application for MasterBrand Cabinets, Inc., Kinston - Plant No. 9 has been reviewed by the DAQ to determine compliance with all procedures and requirements under 15A NCAC 2Q .0500 and 40 CFR Part 70. The DAQ had made a preliminary determination that the facility is complying or will achieve compliance as specified in the permit with all applicable requirements. Therefore, the DAQ is proposing to issue the Title V Operating Permit upon completion of the public comment period and EPA review.