

TITLE V AIR PERMIT APPLICATION REVIEW

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| APPLICANT: CertainTeed Corporation | CITY: Oxford | COUNTY: Granville |
| TECHNICAL CONTACT: Neil Gresham | PHONE: 919-693-1141 | RESPONSIBLE OFFICIAL: Mark Heilman |
| | | TITLE: Plant Manager |
| REVIEW ENGINEER: Michael Brandon | SIGNATURE: | DATE: March 15, 2004 |
| REGIONAL CONTACT: Charles McEachern | REGIONAL OFFICE: Raleigh | SIC CODE: 2952 |
| APPLICATION NUMBER: 3900040.04A (First time TV) CDS No. 377100040 | EXISTING PERMIT NUMBER: 03663R16 | NEW PERMIT NUMBER: 03663T17 |

I. Introduction/Background

The CertainTeed Corporation was operating their asphalt roofing shingle manufacturing facility as a synthetic minor source (i.e., less than 100 tons per year potential criteria pollutant emissions and 10/25 tons per year of hazardous air pollutants) under permit 03663R15. The Permittee discovered that the revised use of ferric chloride catalyst in the blow stills would result in emission of hydrogen chloride (a HAP) greater than 10 tons per year and requested that the synthetic minor condition be removed. Permit 03663R16 was issued by the Raleigh Regional Office to remove the PSD synthetic minor condition on February 7, 2003. The permit required the submittal of a Title V permit application by February 7, 2004. This review is for the facility's first time Title V permitting.

II. Statement of Compliance

The applicant has certified that the facility complies with all applicable requirements with the exception of performance testing of line No. 1 fiberglass mat coater (ID No. ESLC1) and line No. 2 fiberglass mat coater (ID No. ESLC2) as required by NSPS for Asphalt Processing and Asphalt Roofing Manufacture (40 CFR 60, Subpart UU). These lines were replaced circa 1988 with new units and became affected facilities at that time. The applicant has also certified that the facility will comply with any applicable requirements taking effect during the term of the permit and will meet such requirements on a timely basis.

III. Summary of Emission Sources and Control Devices

The following table identifies all emission sources and associated control devices for which the Initial Title V Operating Permit is being issued.

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|------------------------|-----------------------------|-----------------------|----------------------------|
| | | | |

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|--|--|---|---|
| ESBS1 NESHAP LLLLL ESBS2 NESHAP LLLLL ESBS3 NSPS UU NESHAP LLLLL | blow still No. 1 blow still No. 2 blow still No. 3 | CDAFB | natural gas/No. 2 fuel oil-fired afterburner; 8.3 million Btu per hour heat input |
| ESLC1 NSPS UU NESHAP LLLLL ESLC2 NSPS UU NESHAP LLLLL ESMA1 ESMA2 ESMA3 NSPS UU NESHAP LLLLL G2 ESFT1 ESFT2 ESFT3 ESST1 NESHAP LLLLL G2 ESST2 NESHAP LLLLL G2 ESSDT NESHAP LLLLL G2 ESLAT2 NSPS UU NESHAP LLLLL G2 ESCT1 NESHAP LLLLL G2 ESCT2 NESHAP LLLLL G2 | line No. 1 fiberglass mat coater line No. 2 fiberglass mat coater modified asphalt batch process tank modified asphalt batch process tank modified asphalt recirculation tank; 900 gal No. 1 flux preheat tank No. 2 flux preheat tank No. 3 flux preheat tank No. 1 saturant tank; 40,000gal No. 2 saturant tank; 40,000gal sealant tank; 30,000 gal laminating adhesive tank; 27,000 gal coating tank No.1 ; 30,000 gal coating tank No. 2; 30,000 gal | CDESP <u>OR</u> CDME | electrostatic precipitator; 3,406 square feet of collecting plate area <u>OR</u> mist eliminator |

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|-------------------------------------|---|------------------------------|--|
| ESCT3 NESHAP LLLLL G2 | coating tank No. 3; 30,000 gal | | |
| ESSEA1 NESHAP LLLLL G2 | sealant day tank No. 1; 1,600gal | | |
| ESSEA2 NESHAP LLLLL G2 | sealant day tank No. 2; 1,600 gal | | |
| ESBSP1 | surfacing process No. 1 | CDDC9 | fabric filter; 2,490 square feet of filter area |
| ESBSP2 | surfacing process No. 2 | CDDC10 | fabric filter; 1,937 square feet of filter area |
| ESCS1 | line No.1 cooling section | na | na |
| ESCS2 | line No. 2 cooling section | na | na |
| ESHM1 NESHAP LLLLL | limestone/asphalt mixer No. 1 | na | na |
| ESHM2 NESHAP LLLLL | limestone/asphalt mixer No. 2 | na | na |
| ESMS2 NSPS UU NESHAP LLLLL G2 | modified sealant recirculation tank; 500 gal | na | na |
| ESLA1 NESHAP LLLLL | line No. 2 laminating adhesive applicator wheel | CDHEAF | particulate filter; 2.2 square feet of filter area |
| ESSA3 NESHAP LLLLL | line No. 2 sealant applicator gun | | |
| ESSA4 NESHAP LLLLL | line No. 2 sealant applicator pan | | |
| ESSA1 NESHAP LLLLL | line No. 1 sealant applicator pan | na | na |
| ESSA2 NESHAP LLLLL | line No. 2 sealant applicator pan | na | na |
| ESWIP1 NESHAP LLLLL | line No. 1 overlay inking pan | na | na |
| ESPSTS NSPS UU | pneumatic sand transfer system and storage silo | CDDC11 | fabric filter; 200 square feet of filter area |
| ESINK | injet package labeling | na | na |
| Talc Handling | | | |
| ESRTC2 | reclaim talc collector | CDDC6 | fabric filter; 193 square feet of filter area |
| ESPTR1 | pneumatic talc receiver No. 1 | CDDC3 | fabric filter; 64 square feet of filter area |

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|--|--|------------------------------|---|
| ESPTR2 | pneumatic talc receiver No. 2 | CDDC4 | fabric filter; 64 square feet of filter area |
| ESTSV | talc silo | CDDC8 | fabric filter; 151 square feet of filter area |
| Limestone Processing | | | |
| ESLSH NSPS 000 | railcar/truck dump pit vibrating conveyor bucket elevator belt conveyor rock silo No. 1 rock silo No. 2 | na | na |
| ESCM1 NSPS 000 | crushing mill/product cyclone No. 1 with natural gas/No. 2 fuel oil direct fired heater MH1; 3.5 million Btu per hour heat input | CDDC12 | fabric filter; 1,884 square feet of filter area |
| ESCM2 NSPS 000 | crushing mill/product cyclone No. 2 with natural gas/No. 2 fuel oil direct fired heater MH2; 3.5 million Btu per hour heat input | CDDC13 | fabric filter; 1,884 square feet of filter area |
| ESLSV1 ESLSV2 | crushed lime silo No. 1 crushed lime silo No. 2 | CDDC7 | fabric filter; 670 square feet of filter area |
| ESLUBV1 | limestone use bin | CDDC2 | fabric filter; 193 square feet of filter area |
| ESLFH | natural gas/No. 2 fuel oil direct fired limestone filler heater; 8.7 million Btu per hour heat input with 48 inch product collection cyclone | CDDC1 | fabric filter; 2000 square feet of filter area |
| Indirect Fired Combustion Sources | | | |
| ESPH1 MACT DDDDD | natural gas/No. 2 and No. 6 fuel oil-fired flux preheater No. 1; 11.3 million Btu per hour heat input | na | na |
| ESPH2 MACT DDDDD | natural gas/No. 2 and No. 6 fuel oil-fired flux preheater No. 2; 11.3 million Btu per hour heat input | na | na |
| ESSH1 MACT DDDDD | natural gas/No. 2 and No. 6 fuel oil-fired saturant heater No. 1; 11.3 million Btu per hour heat input | na | na |
| ESSH2 MACT DDDDD | natural gas/No. 2 and No. 6 fuel oil-fired saturant heater No. 2; 11.3 million Btu per hour heat input | na | na |
| ESB1 MACT DDDDD | natural gas/No. 2 and No. 6 fuel oil-fired boiler No. 1; 16.7 million Btu per | na | na |

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|-------------------------------|--|------------------------------|-----------------------------------|
| | hour heat input | | |
| ESB2 MACT DDDDD | natural gas/No. 2 and No. 6 fuel oil-fired boiler No. 2; 16.7 million Btu per hour heat input | na | na |
| ESSCH1 MACT DDDDD | natural gas/No. 2 fuel oil-fired shingle coating heater No. 1; 4.7 million Btu per hour heat input | na | na |
| ESSCH2 MACT DDDDD | natural gas/No. 2 fuel oil-fired shingle coating heater No. 2; 4.7 million Btu per hour heat input | na | na |
| ESHO2 MACT DDDDD | natural gas/No. 2 fuel oil-fired hot oil heater No. 2; 5.0 million Btu per hour heat input | na | na |

IV. Emission Source-by-Source Evaluation

A. Afterburner (ID No. CDAFB) on:

^aBlow still No. 1 (ID No. ESBS1),

^aBlow still No. 2 (ID No. ESBS2), and

^bBlow still No. 3 (ID No. ESBS3).

1. Description

Asphalt flux (refinery distillate still bottoms) is placed in these process units and air blown through to remove light ends and increase hydrocarbon molecular weight making the resulting product an asphalt with a lower melting point and greater hardness. Oil and water are generated during this exothermic process. The process is cooled by recirculating the oil and water generated.

2. Applicable Regulatory Requirements

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 |
|--------------------------------|---|------------------------------|
| PM ^a | particulate emissions shall not exceed the rate prescribed by the process weight equations: For process rates up to 30 tons per hour: $E = 4.10 \times P^{0.67}$ For process rates greater than 30 tons per hour: $E = 55.0 \times P^{0.11} - 40$ Where: E = allowable emission rate in pounds per hour, and P = process weight in tons per hour. | 15A NCAC 2D .0515 |
| visible emissions ^a | visible emissions shall not exceed 20 percent opacity | 15A NCAC 2D .0521 |

| Regulated Pollutant | Limits/Standards | Applicable Regulation |
|---|---|---|
| PM ^b visible emissions ^b | No more than 0.67 kg PM/Mg asphalt charged when catalyst added, and no more than 0.60 kg PM/Mg asphalt charged when catalyst is not added. Visible emissions shall not exceed zero percent. | 15A NCAC 2D .0524 40 CFR 60, Subpart UU NSPS for Asphalt Processing and Asphalt Roofing Manufacture |
| HAPs ^{ab} | See Section V.A. (Multiple Emission Sources-MACT for Asphalt Roofing Manufacture) | 15A NCAC 2D .1111 40 CFR 63, Subpart LLLLL |
| SO ₂ ^{ab} | See Section V.B. (Multiple Emission Sources-PSD Major Facility Avoidance Condition) | 15A NCAC 2Q .0317 |
| TAPs ^{ab} | See Section V.C.1. (Multiple Emission Sources-Control of Toxic Air Pollutants) STATE ENFORCEABLE ONLY | 15A NCAC 2D .1100 |
| TAPs ^{ab} | See Section V.D.1. (Multiple Emission Sources-Toxic Pollutant Exemption rates) STATE ENFORCEABLE ONLY | 15A NCAC 2D .0711 |
| VOC ^{ab} | See Section V.D.2. (Multiple Emission Sources-Work Practice Standards for VOC Control) | 15A NCAC 2D .0958 |
| odor ^{ab} | See Section 2V.D.3. (Multiple Emission Sources-Odor Control requirements) STATE ENFORCEABLE ONLY | 15A NCAC 2D .1806 |

a, b, c, etc denote applicable regulation and affected emission source.

a. 15A NCAC 2D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

i. Regulatory Analysis

The two blow stills (ID Nos. ESBS1 and ESBS2) each have process rates of about 10 tons per hour resulting in allowable emission of about 19 pounds per hour. The estimated emissions after control are about 1.52 pounds per hour. Compliance is indicated

ii. Monitoring and Recordkeeping Requirements

The Permittee is required to perform inspection and maintenance as recommended by the manufacturer for the afterburner (ID No. CDAFB) and, as a minimum, perform monthly visual inspections of the units structural integrity.

iii. Reporting Requirements

Semi annual reports of inspection and maintenance activity are required.

b. 15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

i. Regulatory Analysis

The blow stills are controlled by an afterburner which will prevent visible emissions by reheating the gases or by combusting visibility hampering emissions.

ii. Monitoring and Recordkeeping Requirements

The Permittee is required to perform daily visible emissions monitoring to determine if emissions are “abnormal”. If abnormal emissions are found, the Permittee must either demonstrate compliance with the opacity standard using Method 9 and/or implement corrective measures to restore visible emissions to “normal”.

- iii. Reporting Requirements
Semi annual reports of visible emissions observations and any abnormal opacities, Method 9 observations conducted and/or corrective actions are required.
- c. 15A NCAC 2D .0524: NSPS FOR ASPHALT PROCESSING AND ASPHALT ROOFING MANUFACTURE
 - i. Regulatory Analysis
Particulate matter in excess of 0.67 kg/Mg (1.34 lb/ton) of asphalt charged to the blow still (ID No. ESBS3) with catalyst, and 0.60 kg/Mg (1.2 lb/ton) of asphalt charged during blowing without catalyst is not allowed. The asphalt input rate of about 10 tons per hour yields an allowable emission rate of about 12 pounds per hour. This is well above the estimate controlled emission rate of 1.52 pounds per hour. In addition to the particulate matter standard, the Permittee is not allowed to exceed zero opacity.
 - ii. Monitoring and Recordkeeping Requirements
In order to maintain compliance with the emission standards, the temperature in the combustion zone of the afterburner shall not be less than 1,350 degrees F. Continuous recording of this temperature is required.
 - iii. Reporting Requirements
The Permittee is required to submit a summary report of periods of malfunction and periods when afterburner combustion chamber temperature was less than 1,350 degrees.

B. Electrostatic precipitator (ID No. CDESP) -OR- mist eliminator (ID No. CDME) on:

- ^c line No. 1 fiberglass mat coater (ID No. ESLC1),
- ^c line No. 2 fiberglass mat coater (ID No. ESLC2),
- ^b modified asphalt batch process tank (ID No. ESMA1),
- ^b modified asphalt batch process tank (ID No. ESMA2),
- ^c modified asphalt recirculation tank (ID No. ESMA3),
- ^b No. 1 flux preheat tank (ID No. ESFT1),
- ^b No. 2 flux preheat tank (ID No. ESFT2),
- ^b No. 3 flux preheat tank (ID No. ESFT3),
- ^a No. 1 saturant tank (ID No. ESST1),
- ^a No. 2 saturant tank (ID No. ESST2),
- ^a sealant tank (ID No. ESSDT),
- ^c laminating adhesive tank (ID No. ESLAT2),
- ^a coating tank No. 1 (ID No. ESCT1),
- ^a coating tank No. 2 (ID No. ESCT2),
- ^a coating tank No. 3 (ID No. ESCT3),
- ^a sealant day tank No. 1 (ID No. ESSEA1),
- ^a sealant day tank No. 2 (ID No. ESSEA2),

1. Description

The mat coaters are where the asphalt is applied to the shingle substrate prior to surface coating. The modified asphalt batch process tanks are where asphalt from the blow still has rubber and other ingredients mixed in to impart different desirable characteristics. The flux preheat tanks are also considered process rather than storage tanks. The remainder of the sources are storage tanks.

2. Applicable Regulatory Requirements

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 |
|---|--|---|
| PM ^{abc} | particulate emissions shall not exceed the rate prescribed by the process weight equations: For process rates up to 30 tons per hour: $E = 4.10 \times P^{0.67}$ For process rates greater than 30 tons per hour: $E = 55.0 \times P^{0.11} - 40$ Where: E = allowable emission rate in pounds per hour, and P = process weight in tons per hour. | 15A NCAC 2D .0515 |
| visible emissions ^{ab} | visible emissions shall not exceed 20 percent opacity | 15A NCAC 2D .0521 |
| PM ^c visible emissions ^c | No more than of 0.04 kg/Mg (0.08 lb/ton) of asphalt shingle produced when coater is operating. [Tanks (ID Nos. ESMA3 and ESLAT2) are subject to 15 NCAC 2D .0515 when coaters are not operating] Opacity shall not exceed 20 percent for the tanks and coater when coater is operating Opacity shall not exceed zero percent for the tanks when coater is not operating. | 15A NCAC 2D .0524 40 CFR 60, Subpart UU NSPS for Asphalt Processing and Asphalt Roofing Manufacture |
| HAPs ^{ac} | See Section 2.2 V. (Multiple Emission Sources-MACT for Asphalt Roofing Manufacture) | 15A NCAC 2D .1111 40 CFR 63, Subpart LLLLL |
| TAPs ^{abc} | See Section 2.2 V.1. (Multiple Emission Sources-Toxic Pollutant Exemption rates) STATE ENFORCEABLE ONLY | 15A NCAC 2D .0711 |
| VOC ^{abc} | See Section 2.2 V.2. (Multiple Emission Sources-Work Practice Standards for VOC Control) | 15A NCAC 2D .0958 |
| odor ^{abc} | See Section 2.2 V.3. (Multiple Emission Sources-Odor Control requirements) STATE ENFORCEABLE ONLY | 15A NCAC 2D .1806 |

a, b, c, etc denote applicable regulation and affected emission source.

a. 15A NCAC 2D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

i. Regulatory Analysis

The allowable emission rate (E) and estimated emissions (EST) for the above sources in pounds per hour are as follows;

modified asphalt batch process tank (ID No. ESMA1); E = 2.45, EST < 1

modified asphalt batch process tank (ID No. ESMA2); E= 5.58, EST < 1

No. 1 flux preheat tank (ID No. ESFT1);E = 19.3, EST < 1

No. 2 flux preheat tank (ID No. ESFT2); E= 19.3, EST < 1

No. 3 flux preheat tank (ID No. ESFT3);E= 19.3, EST < 1

No. 1 saturant tank (ID No. ESST1); E =2.04, EST < 1

No. 2 saturant tank (ID No. ESST2); E =2.04, EST < 1

sealant tank (ID No. ESSDT); E = 3.58, EST < 1

coating tank No. 1 (ID No. ESCT1); E = 18.9, EST < 1

coating tank No. 2 (ID No. ESCT2); E = 18.9, EST < 1

coating tank No. 3 (ID No. ESCT3); E = 18.9, EST < 1

sealant day tank No. 1 (ID No. ESSEA1); E = 2.03, EST < 1

sealant day tank No. 2 (ID No. ESSEA2); E = 2.45, EST < 1
Compliance is indicated.

- ii. **Monitoring and Recordkeeping Requirements**
The Permittee is required to determine and monitor and record the optimum spark over operating range for each electrical section of the electrostatic precipitator (ID No. CDESP) to ensure optimum corona power and control of particulate on a daily basis.

The Permittee is required to determine the normal pressure drop across the mist eliminator (ID No. CDME) to ensure optimum control of particulate matter and monitor and record the results daily.

- iii. **Reporting Requirements**
Semi annual summary reports of periods of malfunction and periods when the ESP spark over rate was recorded outside of normal range and when the pressure drop across the mist eliminator was recorded above its normal pressure drop, as well as inspection and maintenance activity are required.

b. **15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS**

- i. **Regulatory Analysis**
The listed emission sources are controlled by an electrostatic precipitator or a mist eliminator to prevent visible emissions by reducing visibility-hampering emissions.
- ii. **Monitoring and Recordkeeping Requirements**
The Permittee is required to perform daily visible emissions monitoring to determine if emissions are “abnormal”. If abnormal emissions are found, the Permittee must either demonstrate compliance with the opacity standard using Method 9 and/or implement corrective measures to restore visible emissions to “normal”.
- iii. **Reporting Requirements**
Semi annual reports of visible emissions observations and any abnormal opacities, Method 9 observations conducted and/or corrective actions are required.

c. **15A NCAC 2D .0524: NSPS FOR ASPHALT PROCESSING AND ASPHALT ROOFING MANUFACTURE**

- i. **Regulatory Analysis**
The Permittee shall not allow to be discharged into the atmosphere from the modified recirculation tank (ID No. ESMA3), the laminating adhesive tank (ID No. ESLAT2), line No. 1 fiberglass mat coater (ID No. ESLC1), and line No. 2 fiberglass mat coater (ID No. ESLC2):
 - (A) during periods when the coater is not operating; an opacity greater than zero percent , or
 - (B) during periods when the coater is operating; particulate matter in excess of 0.04 kg/Mg (0.08 lb/ton) of asphalt shingle produced and exhaust gases with an opacity greater than 20 percent.

The estimated PM emissions from line No. 1 fiberglass mat coater (ID No. ESLC1), line No. 2 fiberglass mat coater (ID No. ESLC2), the modified recirculation tank and the laminating adhesive tank are 5.69 pounds per hour. The asphalt application rate associated with this emissions rate is 144.6 tons per hour. This estimate includes (27.89 tph asphalt, 53.3 tph granules, 53.3 tph limestone additive, 10.1 tph sand, and excludes the weight of the

fiberglass mat and other applications such as talc. This results in a process weight rate of about 0.04 lb/ton and indicates compliance. Initial performance testing is required as part of a compliance schedule.

During period when the coater is not operating, 15A NCAC 2D .0515 apply to the modified recirculation tank and the laminating adhesive tank. The allowable emission for the modified recirculation tank at maximum production rate is 0.127 pounds per hour and estimated emissions are 0.012 pounds per hour. The allowable emission for the laminating adhesive tank at maximum production rate is 0.027 pounds per hour and estimated emissions are 0.0014 pounds per hour. Compliance is indicated.

Visible emissions will be abated by the control devices that must operate regardless of coater operation.

- ii. **Monitoring and Recordkeeping Requirements**
The Permittee is required to determine, monitor, and record the optimum spark over operating range for each electrical section of the electrostatic precipitator (ID No CDESP) to ensure optimum corona power and control of particulate on a daily basis.
The Permittee is required to determine the normal pressure drop across the mist eliminator (ID No. CDME) to ensure optimum control of particulate matter and monitor and record the results daily.
- iii. **Reporting Requirements**
Semi annual summary reports of periods of malfunction and periods when the ESP spark over rate was recorded outside of normal range and when the pressure drop across the mist eliminator was recorded above its normal pressure drop, as well as inspection and maintenance activity are required.

- C. ^a**Surfacing Process No. 1 (ID No. ESBSP1) with fabric filter (ID No. CDDC9)**
^a**Surfacing Process No. 2 (ID No. ESBSP2) with fabric filter (ID No. CDDC10)**
^a**Line No. 1 cooling section (ID No. ESCS1)**
^a**Line No. 2 cooling section (ID No. ESCS2)**
^b**Limestone/asphalt mixer No. 1 (ID No. ESHM1)**
^b**Limestone/asphalt mixer No. 2 (ID No. ESHM2)**
^c**Modified sealant recirculation tank (ID No. ESMS2)**
High energy air filter (ID No. CDHEAF) on:
 - ^b**line No. 2 laminating adhesive applicator wheel (ID No. ESLA1)**
 - ^b**line No. 2 sealant applicator gun (ID No. ESSA3)**
 - ^b**line No. 2 sealant applicator pan (ID No. ESSA4)**
^b**Line No. 1 sealant applicator pan (ID No. ESSA1)**
^b**Line No. 2 sealant applicator pan (ID No. ESSA2)**
^b**Line No. 1 overlay inking pan (ID No. ESWIP1)**
^d**Pneumatic sand transfer system and storage silo (ID No. ESPSTS) with fabric filter (ID No. CDDC11)**
^e**injet package labeling**

TALC HANDLING

- ^a**Reclaim talc collector (ID No. ESRTC2) with fabric filter (ID No. CDDC6)**
- ^a**Reclaim talc receiver No. 1 (ID No. ESPTR1) with fabric filter (ID No. CDDC3)**
- ^a**Reclaim talc receiver No. 2 (ID No. ESPTR2) with fabric filter (ID No. CDDC4)**
- ^a**Talc silo (ID No. ESTSV) with fabric filter (ID No. CDDC8)**

LIMESTONE PROCESSING

- ^f**railcar/truck dump pit, vibrating conveyor, bucket elevator, belt conveyor, rock silos No. 1 and No. 2 (ID No.**

ESLSH)

- ^gcrushing mill/product cyclone No. 1with fossil fuel fired heater (ID No. ESCM1)
- ^gcrushing mill/product cyclone No. 2with fossil fuel fired heater (ID No. ESCM2)
- ^acrushed lime silos No.1 and No. 2 (ID Nos. ESLSV1 and ESLSV2) with fabric filter (ID No. CDDC7)
- ^alimestone use bin (ID No. ESLUBV1) with fabric filter (ID No. CDDC2)
- ^hfossil fuel fired limestone filler preheater/product cyclone (ID No. ESLFH) with fabric filter (ID No. CDDC1)

1. Description

The surface coating operations place granules, sand, and talc on the shingle substrate after coating with asphalt then cooled. Sealant is applied to the coated shingle substrate after cooling and provides a sealing strip when the shingles are installed. The coating is made by adding powdered limestone to the asphalt. Sand, talc, and limestone handling systems support these operations. Inking is to label the shingle and or the packaged shingle bundle.

2. Applicable Regulatory Requirements

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 |
|--|---|---|
| PM ^{abcdfh} | particulate emissions shall not exceed the rate prescribed by the process weight equations: For process rates up to 30 tons per hour: $E = 4.10 \times P^{0.67}$ For process rates greater than 30 tons per hour: $E = 55.0 \times P^{0.11} - 40$ Where: E = allowable emission rate in pounds per hour, and P = process weight in tons per hour. | 15A NCAC 2D .0515 |
| SO ₂ ^{gh} | sulfur dioxide emission shall not exceed 2.3 pounds per million Btu heat input, including contributions from raw materials | 15A NCAC 2D .0516 |
| visible emissions ^{ab} | visible emissions shall not exceed 20 percent opacity | 15A NCAC 2D .0521 |
| visible emissions ^{cd} | Visible emissions shall not exceed zero percent for the storage and one percent for the mineral handling and storage facility | 15A NCAC 2D .0524 40 CFR 60, Subpart UU NSPS for Asphalt Processing and Asphalt Roofing Manufacture |
| PM ^g visible emissions ^{fg} | 0.022 grains/dscf -stack emission 7 percent opacity - stack emission 10 percent opacity fugitive emission | 15A NCAC 2D .0524 40 CFR 60, Subpart OOO NSPS for Nonmetallic Mineral Processing Plants |
| HAPs ^{bc} | See Section 2.2 A. (Multiple Emission Sources-MACT for Asphalt Roofing Manufacture) | 15A NCAC 2D .1111 40 CFR 63, Subpart LLLLL |
| SO ₂ ^{gh} | See Section 2.2 B. (Multiple Emission Sources-PSD Major Facility Avoidance Condition) | 15A NCAC 2Q .0317 |

| Regulated Pollutant | Limits/Standards | Applicable Regulation |
|----------------------------|--|------------------------------|
| TAPs ^{ab} | See Section 2.2 D.1. (Multiple Emission Sources-Toxic Pollutant Exemption rates) STATE ENFORCEABLE ONLY | 15A NCAC 2D .0711 |
| VOC ^{bce} | See Section 2.2 D.2. (Multiple Emission Sources-Work Practice Standards for VOC Control) | 15A NCAC 2D .0958 |
| odor ^{abc} | See Section 2.2 D.3. (Multiple Emission Sources-Odor Control requirements) STATE ENFORCEABLE ONLY | 15A NCAC 2D .1806 |

a, b, c, etc denote applicable regulation and affected emission source.

a. 15A NCAC 2D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

i. Regulatory Analysis

The allowable emission rate (E) and estimated emissions (EST) for the above sources in pounds per hour are as follows;

Surfacing Process No. 1 (ID No. ESBSP1) with fabric filter (ID No. CDDC9); E = 40.6, EST = 3.7

Surfacing Process No. 2 (ID No. ESBSP2) with fabric filter (ID No. CDDC10); E = 40.6, EST =

3.98

Line No. 1 cooling section (ID No. ESCS1); E = 24.03, EST = 4.41

Line No. 2 cooling section (ID No. ESCS2); E = 24.03, EST = 4.41

Limestone/asphalt mixer No. 1 (ID No. ESHM1); E = 42.4, fugitive

Limestone/asphalt mixer No. 2 (ID No. ESHM2); E = 42.4, fugitive

Modified sealant recirculation tank (ID No. ESMS2); E = 2.11, EST <1

High energy air filter (ID No. CDHEAF) on:

line No. 2 laminating adhesive applicator wheel (ID No. ESLA1); E = 18.79, EST <1

line No. 2 sealant applicator gun (ID No. ESSA3); E = 22.4, EST = 1.76

line No. 2 sealant applicator pan (ID No. ESSA4); E = 22.4, EST = 1.72

Line No. 1 sealant applicator pan (ID No. ESSA1); E = 27.3, EST = 2.36

Line No. 2 sealant applicator pan (ID No. ESSA2); E = 22.4, EST = 1.76

Line No. 1 overlay inking pan (ID No. ESWIP1); E = 25.56, EST = 2.15

Pneumatic sand transfer system and storage silo (ID No. ESPSTS) with fabric filter (ID No. CDDC11); E = 19.36, EST <1

TALC HANDLING

Reclaim talc collector (ID No. ESRTC2) with fabric filter (ID No. CDDC6); E = 4.7, EST <1

Reclaim talc receiver No. 1 (ID No. ESPTR1) with fabric filter (ID No. CDDC3); E = 2.98, EST <1

Reclaim talc receiver No. 2 (ID No. ESPTR2) with fabric filter (ID No. CDDC4); E = 2.98, EST <1

Talc silo (ID No. ESTSV) with fabric filter (ID No. CDDC8); E = 4.7, EST <1

LIMESTONE PROCESSING

railcar/truck dump pit, vibrating conveyor, bucket elevator, belt conveyor, rock silos No. 1 and No. 2 (ID No. ESLSH); E = 45.52, EST = 2.87

crushed lime silos No.1 and No. 2 (ID Nos. ESLSV1 and ESLSV2) with fabric filter (ID No. CDDC7); E = 37.9, EST <1 (each)

limestone use bin (ID No. ESLUBV1) with fabric filter (ID No. CDDC2); E = 45.5, EST <1

fossil fuel fired limestone filler preheater/product cyclone (ID No. ESLFH) with fabric filter (ID No. CDDC1); E = 45.5, EST = 1.37

Although the modified sealant tank ID No. ESMS2), the sand handling system and silos (ID No. ESPSTS), and the limestone receiving operation (ID No. ESLSH) are subject to

NSPS (UU and OOO), these NSPS impose opacity limits but no particulate emission limits. Therefore, 2D .0515 applies. Compliance is indicated for each emission unit.

- ii. **Monitoring and Recordkeeping Requirements**
The Permittee is required to perform inspection and maintenance as recommended by the manufacturer for each fabric filter and, as a minimum, perform monthly visual inspections of unit's structural integrity.
- iii. **Reporting Requirements**
Semi annual reports of inspection and maintenance activity are required.

b. 15A NCAC 2D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES

- i. **Regulatory Analysis**
Emissions of sulfur dioxide from each crushing mill heater and the limestone filler pre heater shall not exceed 2.3 pounds per million Btu heat input. Natural gas and No. 2 fuel oil are inherently low in sulfur and will comply with this limit.
- ii. **No Monitoring, Recordkeeping, and Reporting is required**

c. 15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

- i. **Regulatory Analysis**
Each of the following sources must have visible emissions that exceed 20 percent opacity.
 - Surfacing Process No. 1 (ID No. ESBSP1) with fabric filter (ID No. CDDC9)
 - Surfacing Process No. 2 (ID No. ESBSP2) with fabric filter (ID No. CDDC10)
 - Line No. 1 cooling section (ID No. ESCS1)
 - Line No. 2 cooling section (ID No. ESCS2)
 - Limestone/asphalt mixer No. 1 (ID No. ESHM1)
 - Limestone/asphalt mixer No. 2 (ID No. ESHM2)
 - High energy air filter (ID No. CDHEAF) on:
 - line No. 2 laminating adhesive applicator wheel (ID No. ESLA1)
 - line No. 2 sealant applicator gun (ID No. ESSA3)
 - line No. 2 sealant applicator pan (ID No. ESSA4)
 - Line No. 1 sealant applicator pan (ID No. ESSA1)
 - Line No. 2 sealant applicator pan (ID No. ESSA2)
 - Line No. 1 overlay inking pan (ID No. ESWIP1)

TALC HANDLING

Reclaim talc collector (ID No. ESRTC2) with fabric filter (ID No. CDDC6)
Reclaim talc receiver No. 1 (ID No. ESPTR1) with fabric filter (ID No. CDDC3)
Reclaim talc receiver No. 2 (ID No. ESPTR2) with fabric filter (ID No. CDDC4)
Talc silo (ID No. ESTSV) with fabric filter (ID No. CDDC8)

LIMESTONE PROCESSING

crushed lime silos No.1 and No. 2 (ID Nos. ESLSV1 and ESLSV2) with fabric filter (ID No. CDDC7)
limestone use bin (ID No. ESLUBV1) with fabric filter (ID No. CDDC2)

- ii. **Monitoring and Recordkeeping Requirements**
The Permittee is required to perform monthly visible emissions monitoring to determine if

emissions are “abnormal”. If abnormal emissions are found, the Permittee must either demonstrate compliance with the opacity standard using Method 9 and/or implement corrective measures to restore visible emissions to “normal”.

- iii. Reporting Requirements
Semi annual reports of visible emissions observations and any abnormal opacities, Method 9 observations conducted and/or corrective actions are required.

d. 15A NCAC 2D .0524: NSPS FOR ASPHALT PROCESSING AND ASPHALT ROOFING MANUFACTURE

- i. Regulatory Analysis
The Permittee shall not allow to be discharged into the atmosphere from the modified recirculation tank (ID No. ESMS2) and the pneumatic sand transfer system and storage silo (ID No. ESPSTS) exhaust gases with opacity greater than zero percent
- ii. Monitoring and Recordkeeping Requirements
The Permittee is required to perform monthly visible emissions monitoring to determine if emissions are “abnormal”. If abnormal emissions are found, the Permittee must either demonstrate compliance with the opacity standard using Method 9 and/or implement corrective measures to restore visible emissions to “normal”.
- iii. Reporting Requirements
Semi annual reports of visible emissions observations and any abnormal opacities, Method 9 observations conducted and/or corrective actions are required.

e. 15A NCAC 2D .0524: NSPS FOR NON METALLIC MINERALS PROCESSING

- i. Regulatory Analysis
The Permittee shall not allow to be discharged into the atmosphere from any transfer point on belt conveyors or from the crushing mills (ID Nos. ESCM1 and ESCM2) any stack emissions which:
 - (A) contain particulate matter in excess of 0.05 g/dscm (0.022 gr/dscf); and
 - (B) exhibit greater than 7 percent opacity, unless the stack emissions.

The Permittee shall not allow to be discharged into the atmosphere from any transfer point on belt conveyors or from limestone receiving system (ID No. ESLSH) and the crushing mills (ID Nos. ESCM1 and ESCM2) any fugitive emissions which exhibit greater than 10 percent opacity.

The limestone receiving system is not controlled and it is assumed that all the emissions are fugitive emissions subject to the 10 percent opacity limit. Compliance is anticipated due to the high moisture content of the material and the estimated low particulate emission rate. A letter from EPA region IV to the State of South Carolina states that any combination of equipment used in processing nonmetallic mineral both prior to and after the initial crusher or grinding operation is subject to the provisions of 40 CFR 60, Subpart OOO (see document control number 9800003 at <http://cfpub.epa.gov/adi>)

The crushing mills are fabric filter controlled with estimated emission of 0.02 gr/dscf. Compliance with the particulate and opacity standards are indicated with the use of fabric filter control for

ii. Monitoring

The Permittee shall perform inspections and maintenance as recommended by the manufacturer on the fabric filters. The inspections shall include a monthly visual inspection of each unit's structural integrity and collection system, at a minimum.

Once a week the Permittee shall observe the emission points of these source for any visible emissions above normal.

iii. Recordkeeping

The results of the visible emissions monitoring shall be maintained in a logbook. The logbook shall record the following:

- (A) the date and time of each recorded action;
- (B) 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
- (C) the results of any corrective actions performed.

The results of inspection and maintenance on fabric filters shall be maintained in a logbook. The logbook shall record the following:

- (A) the date and time of each recorded action;
- (B) the results of each inspection;
- (C) the results of any maintenance performed on the control devices; and
- (D) any variance from manufacturers recommendations, if any, and corrections

made.

iv. Reporting

The Permittee shall submit the results of any maintenance performed on the control devices within 30 days of a written request by the DAQ; and a summary report of the visible emissions observations and monitoring activities for fabric filters and collection systems semi annually.

- D. Natural gas, No. 2 and No. 6 fuel oil-fired flux preheater No. 1 (ID No. ESPH1)**
Natural gas, No. 2 and No. 6 fuel oil-fired flux preheater No. 2 (ID No. ESPH2)
Natural gas, No. 2 and No. 6 fuel oil-fired saturant heater No. 1 (ID No. ESSH1)
Natural gas, No. 2 and No. 6 fuel oil-fired saturant heater No. 2 (ID No. ESSH2)
Natural gas, No. 2 and No. 6 fuel oil-fired saturant heater No. 1 (ID No. ESSH1)
Natural gas, No. 2 and No. 6 fuel oil-fired boiler No. 1 (ID No. ESB1)
Natural gas, No. 2 and No. 6 fuel oil-fired boiler No. 2 (ID No. ESB2)
Natural gas, No. 2 fuel oil-fired shingle coating heater No. 1 (ID No. ESSCH1)
Natural gas, No. 2 fuel oil-fired shingle coating heater No. 2 (ID No. ESSCH2)
Natural gas, No. 2 fuel oil-fired hot oil heater No. 2 (ID No. ESHOH2)

1. Description

Self explanatory indirect fired combustion sources.

2. Applicable Regulatory Requirements

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 |
|----------------------------|--|---|
| PM | particulate emissions shall not exceed 0.3344 pounds per million Btu heat input. | 15A NCAC 2D .0503 |
| SO ₂ | sulfur dioxide emission shall not exceed 2.3 pounds per million Btu heat input, including contributions from raw materials | 15A NCAC 2D .0516 |
| visible emissions | visible emissions shall not exceed 20 percent opacity | 15A NCAC 2D .0521 |
| HAPs | No applicable requirements MACT for Industrial, Commercial, and Institutional Boilers and Process Heaters | 15A NCAC 2D .1111 40 CFR 63, Subpart DDDDD [40 CFR 63.7506(b) and (c)] |
| SO ₂ | See Section 2.2 B. (Multiple Emission Sources-PSD Major Facility Avoidance Condition) | 15A NCAC 2Q .0317 |

- a. 15A NCAC 2D .0503: PARTICULATES FROM FUEL BURNING INDIRECT HEAT EXCHANGERS
 - i. Regulatory Analysis
Emissions of particulate matter from the combustion of natural gas, No. 2 and No. 6 fuel oil that are discharged from this source into the atmosphere shall not exceed 0.3344 pounds per million Btu heat input. The worst case particulate emission is with No. 6 fuel oil firing. AP-42 emissions are estimated to be 0.15 pounds per million Btu. Compliance is indicated.
 - ii. No Monitoring, Recordkeeping, Reporting is required.

- b. 15A NCAC 2D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES
 - i. Regulatory Analysis
Emissions of sulfur dioxide from each indirect fired combustion source shall not exceed 2.3 pounds per million Btu heat input. Natural gas and No. 2 fuel oil are inherently low in sulfur and will comply with this limit. However, the sulfur content of No. 6 fuel oil must be maintain at about 2.1 percent by weight to comply with this limit
 - ii. Monitoring, Recordkeeping, and Reporting
The Permittee must monitor the sulfur content of all No. 6 fuel oil fired to ensure that its weight percentage does not exceed 2.1 percent. Te Permittee is required to verify this limitation with fuel supplier certification. Semi annual reporting of the sulfur content of fuels received is required.

V. Multiple Emission Source Limits

A. 15A NCAC 2D .1111 [40 CFR 63, Subpart LLLLL] NESHAP for Asphalt Roof manufacturing

The following emission source(s) and associated control device(s) are subject to this limit and/or standard:

| Emission Source ID No. | Emission Source Description | Control Device ID No. | Control Device Description |
|---|--|---|---|
| ESBS1 ESBS2 ESBS3 | blow still No. 1 blow still No. 2 blow still No. 3 | CDAFB | natural gas/No. 2 fuel oil-fired afterburner; 8.3 million Btu per hour heat input |
| ESLC1 ESLC2 ESMA3 ESST1 ESST2 ESSDT ESLAT2 ESCT1 ESCT2 ESCT3 ESSEA1 ESSEA2 | line No. 1 fiberglass mat coater line No. 2 fiberglass mat coater modified asphalt recirculation tank No. 1 saturant tank No. 2 saturant tank sealant tank laminating adhesive tank coating tank No.1 coating tank No. 2 coating tank No. 3 sealant day tank No. 1 sealant day tank No. 2 | CDESP <u>OR</u> CDME | electrostatic precipitator; 3,406 square feet of collecting plate area <u>OR</u> mist eliminator |
| ESHM1 | limestone/asphalt mixer No. 1 | na | na |
| ESHM2 | limestone/asphalt mixer No. 2 | na | na |
| ESMS2 | modified sealant recirculation tank | na | na |
| ESLA1 ESSA3 ESSA4 | line No. 2 laminating adhesive applicator wheel line No. 2 sealant applicator gun line No. 2 sealant applicator pan | CDHEAF | particulate filter; 2.2 square feet of filter area |
| ESSA1 | line No. 1 sealant applicator pan | na | na |
| ESSA2 | line No. 2 sealant applicator pan | na | na |
| ESWIP1 | line No. 1 overlay inking pan | na | na |

These emission sources were determined to be affected facilities pursuant to the NESHAP for Asphalt Roofing Manufacture and the information contained in the application that serves as initial notification of applicability to the NESHAP. The compliance date for the standards applicable to each affected facility is May 1, 2006. All compliance testing is required to be completed 180 after the compliance date which is October 38, 2006. The Permittee is required to submit a Title V application that includes the information pertaining to applicable emission standards for each affected facility, the chosen methods for complying with the respective limits, the results of compliance testing, and monitoring parameters for Title V permit incorporation. This permit application is due by December 28, 2006 in addition to other elements the notification of compliance status required by the regulation pursuant to 40 CFR 63.9(h).

B. FACILITY WIDE

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

In order to maintain facility wide emissions of sulfur dioxide below the major source threshold pursuant to 15A NCAC 2D .0530, the blowing of asphalt and the combustion of No. 2 and No. 6 fuel oils shall be limited such that total facility emissions discharged into the atmosphere less than 250 tons of sulfur dioxide total, per consecutive 12-month period. The condition allows for 0.94 pounds of sulfur dioxide emissions per ton of asphalt blown and requires recordkeeping of asphalt production, fuel oil use, and fuel oil sulfur content.

C. 15A NCAC 2D .1100: CONTROL of TOXIC AIR POLLUTANTS

The toxic air pollutant emissions limits for arsenic and hydrogen chloride emissions were reviewed. The impact from the blow still was the only source modeled facility wide for these TAPs as it was determined that the indirect fired sources contributed neither of these TAPs except for fuel oil contributions and were entitled to the indirect fired combustion source exemption.

ARSENIC

The impact of the blow stills at the afterburner exhaust was determined to be 17.5 micrograms per cubic meter, annual average, for an emission rate of one gram per second. This equates to 69,525 pounds per year. As this is a single source modeling demonstration, a ratio of 95 percent of the AAL of 2.3×10^{-4} micrograms per cubic meter yields an allowable emission rate of 0.91 pounds per year. The estimated arsenic emission for the proposed maximum capacity of the facility is 0.33 pounds per year. Therefore, no monitoring recordkeeping, or reporting is deemed necessary.

HYDROGEN CHLORIDE

The impact of the blow stills at the afterburner exhaust was determined to be 218.75 micrograms per cubic meter, highest hourly impact, for an emission rate of one gram per second. This equates to 7.94 pounds per hour. As this is a single source modeling demonstration, a ratio of 95 percent of the AAL of 700 micrograms per cubic meter yields an allowable emission rate of 24.1 pounds per year. The estimated hydrogen chlorid emission for the proposed maximum capacity of the facility is about 23 pounds per hour. Therefore, no monitoring recordkeeping, or reporting is deemed necessary.

D. FACILITY WIDE

STATE ENFORCEABLE ONLY

1. 15A NCAC 2Q .0711: TAP LIMITATIONS

The facility has demonstrated that there will be facility wide emissions of cadmium and methyl ethyl ketone that will be maintained below the toxic pollutant exemption rates contained within this regulation. The Permittee may not exceed these facility wide values without demonstrating that the AALs of 2D .1100 will not be exceeded at the property boundary.

2. 15A NCAC 2D .0958: WORK PRACTICES FOR SOURCES OF VOC

This regulation applies to emissions sources which emit more than 15 pounds per day of VOC. The sources may be singular or grouped emission sources if they are interdependent. The regulation imposes general house keeping practices and work practices for solvent cleaning. It is not generally applicable to process emissions even though they may be affected facilities.

STATE ENFORCEABLE ONLY

3. 15A NCAC 2D .1806: CONTROL AND PROHIBITION OF ODOROUS EMISSIONS

This regulation is requires control of odorous emissions that are subjectively determined by consensus.

VI. Permit Shield (including non-applicable requirements)

In accordance with 2Q .0512 the permit contains 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.

VII. General Conditions

The General Conditions section of the Title V Operating Permits 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.

VIII. 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.

IX. 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, Virginia, and EPA.

X. Recommendations

The first time Title V application for the CertainTeed Corporation 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 has made a preliminary determination that the facility is complying or will achieve compliance as specified in the draft 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 the EPA review.