APPENDIX A

Operation and Maintenance Plan

for Particulate Control

Building Materials Manufacturing Corporation dba GAF Materials Corporation

0570056-035-AF

Asphalt Mat Coater-Electrostatic Precipitator (ESP)
(EU 001)

A) Process Parameters:

1. Source Designators: Asphalt Mat Coater
2. Baghouse Manufacturer: United Air Specialists "Smog Hog"
3. Model Name and Number: #MS-20-119157-3
4. Design Flow Rate: 20,000 ACFM (one bank of cells)
5. Efficiency Rating at Design Capacity: 99.9%
6. Pressure Drop: 20 in. W.G.
7. Gas Temperatures: inlet; ≈ 125 °F ; outlet; ≈ 100 °F
8. Stack Height Above Ground: 35 ft.
9. Exit Diameter: 47.25 in.
10. Water Vapor Content: 3%
11. Process Controlled by Collection System: Asphalt Mat Coating
12. Maximum Permitted Instantaneous Product Rate: 41.0 tons/hr.
13. Operation Schedule: 24 hrs./day; 52 wk./yr.; up to 8760 hrs./yr.
14. Static Pressure: 30.03
15. Primary Voltage: 120V, 60HZ
16. Primary Current: 2 milliamps
17. Secondary Current: 10 milliamps
18. Spark Rate: 12KV
19. Secondary Voltage: 12,000 V D C
20. Spacing Between Wires: 0.906 inches
21. Field Strength: 12.7 KV per inch
22. Collection Cell Plate Area Per Stage: 314.0 sq. ft.
23. Plate Spacing: 0.0231 inches
24. Plate Voltage: 2 KV
25. Electric Power Use Rate by Auxiliary Equipment: 124 amps

B) The following observations, checks and operations apply to this source and shall be conducted on the schedule specified:

<u>Daily</u>

1. Visually inspect complete system, and monitor status of indicator lights.
2. Report and repair any non-functioning cells.
3. Replace broken ionizer wires and springs.
4. Check transformers.
5. Pump water off.
6. Monitor oil level in holding tank.

<u>Weekly</u>

1. Remove and clean stationary screens.

Monthly

1. Open up plenum chambers, clean and inspect.
2. Check gaskets on enclosures. Replace as needed.
3. Check blower fan shaft bearings, check motor, lubricate bearing.
4. Run complete electrical check on system.
5. Remove and clean one train of cells.

Annually

1. Clean the mat coater control system (including ductwork, precipitator, fan, etc.) and document the dates along with any non-routine repairs.
2. Check fan balance and clean.
3. Service and clean oil/water oil separator.

C) Maintenance Procedures to be conducted:

Weekly

1. Visually and audibly check system for normal conditions.
2. Test water - motor alarm or electric alarm.
3. Depress the drip check for possible seat leaks.
4. Check CO_2 damper release system.

Annual

1. Clean the mat coater control system (including ductwork, precipitator, fan, etc.) and document the dates along with any non-routine repairs.
2. Operate all system components.

D) Records:

Records of inspections, maintenance, and performance parameters shall be retained for a minimum of two years and shall be made available to the Environmental Protection Commission of Hillsborough County upon request. [Rule 62-296.700(6)(e), F.A.C.]

Back Surfacing System - East Baghouse (EU 002), Storage Silo No. 3 (EU 101), and Truck/Railcar Unloading (Gravity Drop) – East (EU 102)

A) Process Parameters:

1. Source Designators: Back Surfacing System, Sand Silo No. 3, and Truck/Railcar Unloading (Gravity Drop)
2. Baghouse Manufacturer: Torit
3. Model Name and Number: 324 MBWS8
4. Design Flow Rate: 8000 ACFM
5. Efficiency Rating at Design Capacity: 99.9%
6. Pressure Drop: 0-6 in W.G.
7. Air to Cloth Ratio: 1.92:1
8. Bag Material: DuraLife
9. Bag Cleaning Conditions: Pulse Jet
10. Gas Flow Rate: 8000 ACFM
11. Gas Temperatures: inlet; 90° F.; outlet; ambient
12. Stack Height Above Ground: ~25 ft.
13. Exit Diameter: 18 1/2 in.
14. Water Vapor Content: 2%
15. Process Controlled by Collection System: Sand Back Surfacing and Sand Silo No. 3 Loading (Single baghouse controls both operations)
    (Note: Truck/Railcar Unloading (Gravity Drop) is controlled by partial enclosures.)
16. Material Handling Rate: 5.4 ton/hr for Back Surfacing, 54 ton/hr for Silo No. 3
17. Operation Schedule: 24 hrs./day; 7 days/wk.; 52 wk./yr.

B) The following observations, checks and operations apply to this source and shall be conducted on the schedule specified:

<u>Daily</u>

1. Check and record pressure drop (when in operation).
2. Visually observe stack discharge, material transfer points, and rotary valve conveyor drives for audible leaks and to assure that dust is being removed from system.
3. Ensure proper operation of fans, motors and conveyor/elevator drives.
4. Check and record air pressure to pulse air system.
5. Check pulse air bag cleaning system from proper operation.
6. Check integrity of partial enclosures around truck/railcar unloading (gravity drop) area and transfer points.

<u>Weekly</u>

1. Check pickup stations for obstructions.

Monthly

1. Inspect blower fan bearings, balance, material build-up, best drive and motor.
2. Check interior of baghouse for corrosion and build-up.
3. Check all air lines and solenoids to pulse air systems.
4. Clean and check air line filters.
5. Lubricate fan shaft bearings.
6. Spot check bag tension and condition inside of collector.
7. Inspect sprockets, chain, motor, and rotary valve for wear and sealing
8. Inspect screw conveyor and flights, as applicable.

Quarterly

1. Check baghouse and all ducts for wear, leaks and build-up.
2. Check all gaskets on doors.

Annually

1. Check all air line fittings and connections.
2. Inspect interior of discharge hopper for wear.
3. Thoroughly conduct leak test on bags for wear and leaks.

C) Records:

Records of inspections, maintenance, and performance parameters shall be retained for a minimum of two years and shall be made available to the Environmental Protection Commission of Hillsborough County upon request. [Rules 62-296.700(6)(e) and 62-4.070(3), F.A.C.]

Back Surfacing System - West Baghouse
(EU 003)

A) Process Parameters:

1. Source Designators: Back Surfacing, West Baghouse
2. Baghouse Manufacturer: W.W. Sly Manufacturing Company
3. Model Name and Number: Pactecon Model P.C. 205
4. Design Flow Rate: 4440 ACFM
5. Efficiency Rating at Design Capacity: 99.9%
6. Pressure Drop: 0-6 in W.G.
7. Air to Cloth Ratio: 5:1
8. Bag Material: Polyester (10 oz.)
9. Bag Cleaning Conditions: pulse air pressure: 80 psi
10. Gas Flow Rate: 1000 ACFM
11. Gas Temperatures: inlet; 90° F.; outlet; ambient
12. Stack Height Above Ground: 20 ft.
13. Exit Diameter: 17" x 14"
14. Water Vapor Content: 3%
15. Process Controlled by Collection System: Sand Back Surfacing
16. Material Handling Rate: 5.4 tons per hour
17. Operation Schedule: 24 hrs./day; 7 days/wk.; 52 wk./yr.

B) The following observations, checks and operations apply to this source and shall be conducted on the schedule specified:

Daily

1. Check and record pressure drop (when in operation).
2. Visually observe stack discharge, audible leaks, proper fan and motor functions, rotary valve conveyor drives and assure that dust is being removed from system.
3. Check and record air pressure to pulse air system.
4. Check pulse air bag cleaning system from proper operation.

Weekly

1. Check pickup stations for obstructions.

Monthly

1. Inspect blower fan bearings, balance, material build-up, best drive and motor.
2. Check interior of baghouse for corrosion and build-up.
3. Check all air lines and solenoids to pulse air systems.
4. Clean and check air line filters.
5. Lubricate fan shaft bearings.
6. Spot check bag tension and condition inside of collector.

7. Inspect sprockets, chain, motor, and rotary valve for wear and sealing.

Quarterly

1. Check baghouse and all ducts for wear, leaks and build-up.
2. Check all gaskets on doors.

Annually

1. Check all air line fittings and connections.
2. Inspect internal of discharge hopper for wear.
3. Thoroughly conduct leak test on bags for wear and leaks ok

C) Records:

Records of inspections, maintenance, and performance parameters shall be retained for a minimum of two years and shall be made available to the Environmental Protection Commission of Hillsborough County upon request. [Rule 62-296.700(6)(e), F.A.C.]

Asphalt Oxidizing Plant (South and North Stills) - Afterburner
(EU 004 and EU 103)

A) Process Parameters:

1. Afterburner Manufacturer: Cutler Engineering Company
2. Model Name and Number: Rommco Model 1241
3. Efficiency Rating at Design Capacity: 90% minimum (destruction efficiency)
4. Outlet Gas Temperature: 900° F.
5. Maximum Heat Input: 9 MMBtu/hr.
6. Volumetric Flow Rate: 15,000 avg. ACFM while blowing
7. Control Device: Afterburner
8. Emission Point: Stack
9. Stack Height Above Ground: 25 ft.
10. Stack Diameter: 24"
11. UTM: 17-362.2 East, 2087.2 North
12. Latitude: 27° 54" 13" N
13. Longitude: 82° 23' 50" W
14. Permitted Operating Schedule: 24 hrs./day, 7 days/wk., 52 wk./yr

B) The following observations, checks and operations apply to this source and shall be conducted on the schedule specified:

Daily

1. Check and record afterburner outlet temperature.
2. Visually observe stack to verify absence of any plume.
3. Check operation of float on condensate sump pump.

Monthly

1. Test fume line fire arrestor.
2. Check zero speed switch on circulation pump.
3. Lubricate fan bearings and linkage on draft control.
4. Check circulation loop valve packing.

Semi-annually

1. Visually inspect the heater tubes.
2. Calibrate temperature sensing devices and recorders.
3. Check high temperature shutdown.
4. Check burner and draft controls.
5. Check I.D. fan blades.
6. Shutdown afterburner and inspect refractory and structural steel.

C) Records:

Records of inspections, maintenance, and performance parameters shall be retained for a minimum of twenty-four months and shall be made available to the Department or Environmental Protection Commission of Hillsborough County upon request. [Rule 62-296.700(6)(a), F.A.C.]

Limestone Filler Heater System - Baghouse
(EU 005)

A) Process Parameters:

1. Source Designators: Limestone Filler Heater with Baghouse
2. Baghouse Manufacturer: Eastern Control Systems
3. Model Name and Number: 100-C-10
4. Design Flow Rate: Nominal 7475 ACFM
5. Efficiency Rating at Design Capacity: 99.85%
6. Pressure Drop: 0-8" WG
7. Air to Cloth Ratio: 5.45 to 1
8. Bag Weave: Scrimm Supported Middle Felt
9. Bag Material: Nomex Glass
10. Bag Cleaning Conditions: Pulse pressure - 70-90 psi
11. Bag Cleaning Period: pulse cycle period of 6 sec. intervals
12. Stack Height Above Ground: 38 ft.
13. Exit Diameter: 1.5 ft. x 1.25 ft.
14. Process Controlled by Baghouse and Collection System:
    Natural Gas Heater System to Heat Limestone
15. Maximum Heat Input Rate: 0.008 MMCF/hr (natural gas)
16. Material Handling Rate: 26.9 ton/hr limestone
17. Operation Schedule: 24 hrs./day; 7 days/wk.; 52 wks./yr.

B) The following observations, checks and operations apply to this source and shall be conducted on the schedule specified:

<u>Daily</u>

1. Check and record pressure drop (when in operation).
2. Visually observe stack discharge. Driver must assure that dust is being removed from system.
3. Check for audible leaks, check proper fan and motor functions, bag cleaning, discharge hoppers, and conveyor.
4. Check blower and motor.
5. Check solenoid valves.
6. Check clean air plenum for visible leaks.

<u>Monthly</u>

1. Lube fan shaft bags and linkage.
2. Lube bearings on conveyor.
3. Check baghouse and all ducts for wear, leaks and build-up.
4. Check belt adjustment on blower.

Annually

1. Open baghouse and conduct dye test on all bags.
2. Inspect and service bag cleaning equipment.
3. Clean air filter and lines.
4. Inspect diaphragm in all valves.
5. Check and inspect timer.
6. Check all access opening gaskets.
7. Check all build up from inside plenum chambers.
8. Check all conveyors for flight and trough wear.
9. Replace and/or calibrate the thermocouple acting as the temperature sensing device

C) Records:

Records of inspections, maintenance, and performance parameters shall be retained for a minimum of two years and shall be made available to the Environmental Protection Commission of Hillsborough County upon request. [Rule 62-296.700(6)(e), F.A.C.]

West Limestone Storage Silo
(EU 006)

A) Process Parameters:

1. Source Designators: West Limestone Storage Silo
2. Baghouse Manufacturer: Donaldson Company, Inc.
3. Model Name and Number: Torit, Model 16PJD8
4. Design Flow Rate: 1500 ACFM
5. Efficiency Rating at Design Capacity: 99.9%
6. Pressure Drop: 0-6" WG
7. Air to Cloth Ratio: 11.7:1
8. Bag Material: Polyester (16 oz)
9. Bag Cleaning Conditions: Pulse air
10. Pulsing Pressure: 90 psi
11. Gas Flow Rate: 1400 SCFM
12. Gas Temperatures: inlet: 90° F.; outlet: ambient
13. Stack Height Above Ground: 35 ft.
14. Exit Diameter: ~ 6 in x 15 in
15. Water Vapor Content: 3%
16. Process Controlled by Collection System: Pneumatic Loading of Limestone Storage Silo
17. Material Handling Rate: Pneumatic Loading Pressure Limited to 12 psi
18. Operation Schedule: 24 hrs./day; 7 days/wk.; 52 wks./yr. up to 5,000 truckloads annually

B) The following observations, checks and operations apply to this source and shall be conducted on the schedule specified:

<u>Daily</u>

1. Check and record pressure drop (when in operation).
2. Visually observe vent discharge; inspect for leaks, etc.
3. Ensure proper fan and motor functions.
4. Check air pressure to pulse air system.
5. Check pulse air bag cleaning system for proper operation.

<u>Weekly</u>

1. Inspect screw conveyor, trough, flights, sprockets, chains and motor.
2. Check pickup stations for obstructions.

<u>Monthly</u>

1. Inspect blower fan bearings, balance, drive and motor and ensure no material build-up.
2. Check interior of baghouse for corrosion and build-up.
3. Check all air lines and solenoids to pulse air systems.
4. Clean and check air line filters.
5. Lubricate fan shaft bearings.

6. Spot check bag tension and condition inside of collector.
7. Inspect sprockets, chain, motor, and rotary valve for water and sealing.

Quarterly

1. Inspect screw conveyor, trough and flights for wear and leaks.
2. Check all ducts for wear, leaks and build-up.
3. Check all gaskets on doors.

Annually

1. Check all air line fittings and connections.
2. Inspect interior of discharge hopper for wear.
3. Thoroughly conduct leak test on bags for wear and leaks.

C) Records:

Records of inspections, maintenance, and performance parameters shall be retained for a minimum of two years and shall be made available to the Environmental Protection Commission of Hillsborough County upon request. [Rule 62-4.070(3), F.A.C.]

Sand Storage Silos (EU 007) and
Sand Truck Unloading (Gravity Drop) – West (EU 100)

A) Process Parameters:

1. Source Designators: Sand Silos & Truck Unloading (Gravity Drop)
2. Baghouse Manufacturer: Carter-Day
3. Model Name and Number: 9 DFB 8
4. Design Flow Rate: 1000 ACFM
5. Efficiency Rating at Design Capacity: 99.99%
6. Pressure Drop: 0-6" WG
7. Air to Cloth Ratio: 11.7:1
8. Bag Material: Dacron Felt
9. Bag Cleaning Conditions: Pulse Air
10. Gas Flow Rate: 900 SCFM
11. Gas Temperatures: inlet: 100° F.; outlet: ambient
12. Stack Height Above Ground: ~ 35 ft.
13. Exit Diameter: ~ 4.5 in x 4.5 in
14. Water Vapor Content: 0.5%
15. Process Controlled by Collection System: Pneumatic Loading of Sand Storage Silos (Note: there are 2 silos controlled by single baghouse, but only one silo can be loaded at a time. Truck Unloading (Gravity Drop) is controlled by partial enclosures.)
16. Material Handling Rate: Approximately 51 ton/hr
17. Operation Schedule: 24 hrs./day; 7 days/wk.; 52 wks./yr.

B) The following observations, checks and operations apply to this source and shall be conducted on the schedule specified:

<u>Daily</u>

1. Check and record pressure drop (when in operation).
2. Visually observe vent discharge; observe material transfer points for any leaks.
3. Ensure proper fan and motor functions, rotary valve and conveyor/elevator drives.
4. Check air pressure to pulse air system.
5. Check pulse air bag cleaning system for proper operation.
6. Check integrity of partial enclosures around truck unloading (gravity drop) area and transfer points.

<u>Weekly</u>

1. Inspect conveyor belt, trough, elevator, sprockets, chains and motor.
2. Check pickup stations for obstructions.

<u>Monthly</u>

1. Inspect blower fan bearings, balance, drive and motor and ensure no material build-up.
2. Check interior of baghouse for corrosion and build-up.

3. Check all air lines and solenoids to pulse air systems.
4. Clean and check air line filters.
5. Lubricate fan shaft bearings.
6. Spot check bag tension and condition inside of collector.
7. Inspect sprockets, chains, pulleys, belts, motors, and rotary valve for water and sealing

Quarterly

1. Inspect screw conveyor, trough and flights for wear and leaks.
2. Check all ducts for wear, leaks and build-up.
3. Check all gaskets on doors.

Annually

1. Check all air line fittings and connections.
2. Inspect interior of discharge hopper for wear.
3. Thoroughly conduct leak test on bags for wear and leaks.

C) Records:

Records of inspections, maintenance, and performance parameters shall be retained for a minimum of two years and shall be made available to the Environmental Protection Commission of Hillsborough County upon request. [Rule 62-4.070(3), F.A.C.]

East Limestone Storage Silo
(EU 008)

A) Process Parameters:

1. Source Designators: East Limestone Storage Silo
2. Baghouse Manufacturer: Donaldson Company, Inc.
3. Model Name and Number: Torit, Model 16PJD8
4. Design Flow Rate: 1500 ACFM
5. Efficiency Rating at Design Capacity: 99.9%
6. Pressure Drop: 0-6" WG
7. Air to Cloth Ratio: 11.7:1
8. Bag Material: Polyester (16 oz)
9. Bag Cleaning Conditions: Pulse air
10. Pulsing Pressure: 90 psi
11. Gas Flow Rate: 1400 SCFM
12. Gas Temperatures: inlet: 90° F.; outlet: ambient
13. Stack Height Above Ground: ~ 50 ft.
14. Exit Diameter: ~ 6 in x 15 in
15. Water Vapor Content: 3%
16. Process Controlled by Collection System: Pneumatic Loading of Limestone Storage Silo
17. Material Handling Rate: Pneumatic Loading Pressure Limited to 12 psi
18. Operation Schedule: 24 hrs./day; 7 days/wk.; 52 wks./yr. up to 5,000 truckloads annually

B) The following observations, checks and operations apply to this source and shall be conducted on the schedule specified:

<u>Daily</u>

1. Check and record pressure drop (when in operation).
2. Visually observe vent discharge; inspect for leaks, etc.
3. Ensure proper fan and motor functions.
4. Check air pressure to pulse air system.
5. Check pulse air bag cleaning system for proper operation.

<u>Weekly</u>

1. Inspect screw conveyor, trough, flights, sprockets, chains and motor.
2. Check pickup stations for obstructions.

<u>Monthly</u>

1. Inspect blower fan bearings, balance, drive and motor and ensure no material build-up.
2. Check interior of baghouse for corrosion and build-up.
3. Check all air lines and solenoids to pulse air systems.
4. Clean and check air line filters.
5. Lubricate fan shaft bearings.

6. Spot check bag tension and condition inside of collector.
7. Inspect sprockets, chain, motor, and rotary valve for water and sealing

Quarterly

1. Inspect screw conveyor, trough and flights for wear and leaks.
2. Check all ducts for wear, leaks and build-up.
3. Check all gaskets on doors.

Annually

1. Check all air line fittings and connections.
2. Inspect interior of discharge hopper for wear.
3. Thoroughly conduct leak test on bags for wear and leaks.

C) Records:

Records of inspections, maintenance, and performance parameters shall be retained for a minimum of two years and shall be made available to the Environmental Protection Commission of Hillsborough County upon request. [Rule 62-4.070(3), F.A.C.]