

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: Scheduled Inspection

N768839955

FACILITY: Dicastal North America, Inc.		SRN / ID: N7688
LOCATION: 1 and 2 Solar Parkway, GREENVILLE		DISTRICT: Grand Rapids
CITY: GREENVILLE		COUNTY: MONTCALM
CONTACT: Nate Kelly, Environmental Health & Safety Specialist		ACTIVITY DATE: 05/24/2017
STAFF: Eric Grinstern	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Compliance Inspection		
RESOLVED COMPLAINTS:		

**Dicastal North America Inc. (SRN: N7688)**

**FACILITY DESCRIPTION**

Dicastal North America Inc. is located in the city of Greenville, in Montcalm County. The facility is a low pressure permanent mold aluminum alloy wheel manufacturing operation. The facility conducts the entire wheel manufacturing processes onsite, including melting, casting, heat treating, finishing and coating.

**REGULATORY ANALYSIS**

The stationary source has as an opt-out permit (No. 78-15D) that covers all permitted processes.

At the time of the inspection the facility was casting and coating wheels, but had not installed and started operation of all of the permitted processes.

**COMPLIANCE EVALUATION**

At the facility, AQD staff consisting of Eric Grinstern met with Nate Kelly, Environmental Health & Safety Specialist. On the day of the compliance inspection, the facility was conducting performance testing to demonstrate compliance with the Subpart RRR dioxin/furan limits for the aluminum chip dryer.

Below is a compliance evaluation of processes installed and operating.

**Installed & Operating**

EU-Melt1	Yes
EU-Melt2	No
EU-Chip1	Yes
EU-Chip2	No
EU-Hold1	Yes
EU-Hold2	No
EU-LadleHood	Yes
EU-ChipDryer	Yes
EU-MoldPreHeat	Yes
EU-MoldCoatFurn	Yes
EU-MoldSonicClean	No

EU-DieCasting	Yes (16 units operating)
EU-SandBlast	Yes
EU-HeatTreat1	Yes
EU-HeatTreat2 operating)	Yes (not operating)
EU-HeatTreat3 operating)	Yes (not operating)
EU-Pretreatment	Yes
EU-PretreatOven	Yes
EU-PaintShopBlr	Yes
EU-PrimePowder	Yes
EU-PrimeOven	Yes
EU-ClearPowder	Yes
EU-ClearOven	Yes
EU-LiquidCoat	Yes
EU- BrushingBurr	Yes
EU-Gen1	Yes

### EU-ChipDryer

**DESCRIPTION:** Machining fluid removal system and thermal chip dryer. A spinner will use centrifugal force to mechanically remove excess emulsion fluid from the chips, followed by a thermal chip dryer for volatilizing remaining emulsion on the chips using natural gas combustion (6.0 MMBtu/hr) for heat.

Observations: Compliance testing was being conducted on the chip dryer at the time of the inspection. Compliance with the Subpart RRR dioxin/furan limit was the focus of the testing. Testing started on May 24<sup>th</sup>, with the first run occurring in the afternoon/evening subsequent to the testers resolving an electrical issue. Run No. 2 started at 9:21 a.m. on the morning of May 25<sup>th</sup>. Testing was suspended at 10:33 a.m. due to another electrical issue. TPU Staff, Tom Gasloli, stayed onsite until the start of Run No. 3, which was after 6:00 p.m. Observation of the filter after Run No.1 and Run No. 2 showed a heavy cake of particulate. Particulate testing is required within 180 days of trial operation. The chip feed rate was being monitored via a conveyor scale that measured tons per hour; however, the conveyor was not running a majority of the time. The scale is equipped with a total weight monitor that appeared to be able to determine the weight of chips dried during the test. The temperature of the thermal oxidizer was manually recorded throughout each test run. Facility personal stated that all of the system parameters are recoded electronically. The facility is working to access that data from China.

Under Subpart RRR, operational parameters and through put limits are established though compliance testing, which was occurring at the time of the inspection. Additionally, the facility is

required to establish operational procedures in an OM&M Plan, which is due 90 days after conducting the performance testing.

### **POLLUTION CONTROL EQUIPMENT**

High efficiency cyclone, thermal oxidizer

The cyclone and oxidizer were installed and operating during the inspection.

### **EMISSION LIMITS**

The permit limits the emission of PM, PM10, PM2.5, VOC and Dioxins and Furans. Particulate matter is limited on a pph basis, while VOC is limited on a tpy basis. Dioxins and Furans are limited under Subpart RRR on a grain per ton of charge basis.

Compliance with the Dioxins and Furans limit was being verified at the time of the inspection through compliance testing. Compliance with the particulate limits and VOC destruction efficiency will be verified in future compliance testing, as required by the permit.

The permit requires the facility to maintain records to demonstrate compliance with the tpy VOC limit. The facility provided records showing VOC emissions to be well below the 17.1 tpy limit since they have only operated the chip dryer for three months.

### **MATERIAL LIMITS**

The chip dryer is limited to processing 3.31 tons of chips per hour and 20,834 tpy.

Compliance with the material throughput limits is determined through the permit and Subpart RRR requirement that the chip dryer be equipped with a device to measure and record the weight of chips feed to the dryer. The facility is also required to monitor and record the weight of chips feed to the dryer, on a daily basis, keep a log of the hourly average throughput rate of material charged and keep monthly and 12-month rolling records of the total weight of charge materials to the dryer.

The conveyor system has a feed rate scale that shows tons per hour and a recorder that tracks total chips feed to the dryer. Facility records show that the highest tons per hour chip feed rate based on a daily average was 1.04 tons per hour. The facility has only operated the chip dryer since March, the total tons of chips processed is 356, well below the 20,834 tpy limit.

Feedstock to the chip dryer is limited to unpainted/uncoated aluminum chips. Feedstock to the chip dryer is conveyed directly from the in-plant wheel finishing operations. During the inspection only unpainted/uncoated chips were observed to be fed to the chip dryer.

### **PROCESS/OPERATIONAL RESTRICTIONS**

Requires that the thermal oxidizer maintain a minimum temperature of 700 C and a minimum retention time of 0.5 seconds. Compliance with the retention time is based on the designed capacity of the unit. Compliance with the minimum temperature is based on required that the unit be equipped with a device to monitor and records the combustion temperature of the oxidizer on a continuous basis.

The oxidizer is equipped with a device to monitor and record the temperature on a continuous basis. During the inspection the temperature was observed to be around 725 C.

### **DESIGN/EQUIPMENT PARAMETERS**

Requires a device to measure and records the weight of feed to the chip dryer. The device has been installed as previously discussed.

Requires that the capture and control equipment meet the requirements of Subpart RRR. The facility is required to certify compliance in the Notification of Compliance Status Report. Observation of the capture and control system during the inspection showed a closed system from which no fugitive emissions were observed.

### **MONITORING/RECORDKEEPING**

Requires temperature monitoring of the thermal oxidizer with 15 minute and 3 hour block averages, in accordance with Subpart RRR. This data was not observed during the inspection. However, the facility has stated that all of the monitoring data is being recorded. The facility will be required to verify compliance with all Subpart RRR requirements in the NOCSR.

### **STACK/VENT**

Requires a stack with a minimum height of 65 feet and a maximum diameter of 44 inches. Visual observation of the stack showed that it appeared to comply with the restrictions.

#### **EU-MoldPreHeat**

**DESCRIPTION:** 1.86 MMBtu/hr natural gas combustion furnace for preheating the die casting molds. Furnace has 3 burners each rated at 180 kW. Exhaust gases are vented with EU-MoldCoatFurn.

During the inspection the mold preheat furnace was observed, but was not operating at the time.

The mold preheat furnace is restricted to burn only pipeline quality natural gas and to not exceed 180 kilowatts per burner.

No other gas source except natural gas was observed during the inspection. The facility records provided as part of the inspection confirm compliance with the 180 kW heat input limit for each of the three burners.

#### **EU-MoldCoatFurn**

**DESCRIPTION:** 1.24 MMBtu/hr two-chamber natural gas combustion furnace for drying the water-based mold coating. Furnace has 2 burners each rated at 180 kW. Furnace includes two rail car bays. Exhaust gases are vented with EU-MoldPreHeat.

During the inspection the mold coat furnace was observed, but was not operating at the time.

The mold coat furnace is restricted to burn only pipeline quality natural gas and to not exceed 180 kilowatts per burner.

No other gas source except natural gas was observed during the inspection. The facility records provided as part of the inspection confirm compliance with the 180 kW heat input limit for each of the two burners.

#### **EU-MoldSonicClean**

**DESCRIPTION:** Mold sonic cleaner baths consisting of alkaline cleaner, rinse, followed by rust inhibitor used to clean the molds before casting. Vapors from the baths are vented externally out the wall.

Process not yet installed. It is scheduled to be installed around the end of June 2017.

#### **EU-DieCasting**

**DESCRIPTION:** 28 low-pressure die casting machines used to form the shape of the aluminum

wheels. There is no dedicated exhaust system for the die casting machines. Molten aluminum is transported to the electric holding furnaces of the die casting machines. A solid fluxing agent is used in the die casting machines' holding furnaces for removing impurities in the molten aluminum prior to the aluminum being injected into the molds. A cooling tower is used to cool process water. Process water is used to cool the molds in the die casting machines

The low-pressure casting machines have been installed and 16 of the units are currently operating.

### **EMISSION LIMITS**

The emission of PM from the cooling tower is limited to 0.005% drift loss. Compliance with the emission limit is verifiable via testing.

### **MATERIAL LIMITS/ RECORDKEEPING**

The permit limits the use of mold release and flux in EU-DieCasting. Compliance is based on the requirement that the facility maintains records of the daily flux usage as well as the monthly and 12-month rolling usage of flux and mold release.

The facility has not needed to use any flux in the holding furnaces, therefore they are in compliance with the 80lb/ 8-hours limit and the 92,594 lb./ year limit.

The facility is limited to using 11 tons of mold release on a 12-month rolling time period. The facility provided records documenting compliance. The facility has used 0.22 tons of mold release since start up in February 2017.

### **MONITORING/RECORDKEEPING**

In addition to records of flux and mold release usage, the facility is required to maintain records of HCL emissions. HCL emissions are associated with the use of flux in EU-DieCasting. Since the facility has not used any flux, no emissions of HCL have been calculated to be emitted.

### **EU-SandBlast**

**DESCRIPTION:** Sand Blasting Machine used to clean the molds following casting. The emissions from the sand blasting machine are controlled by a fabric filter.

### **EMISSION LIMITS**

The emission of PM is limited to 0.007 grains per dscf of gas. Compliance with the emission limit is based on proper operation of the fabric filter. To assure proper operation of the fabric filter unit the facility is required to monitor and record the pressure drop once per day.

The facility maintains a record of the pressure drop at the emission unit. The facility provided a copy of the pressure drop readings for the previous 30 days.

### **EU-Pretreatment**

**DESCRIPTION:** Wheel surface preparation consisting of degreasing tanks (3), acidic, passivation and sealant tanks, which will be spray apply acidic or alkaline solutions to degrease (remove the machining fluid) and prepare the surface for proper coating adhesion to the aluminum. During various steps in the surface preparation process, water will be used to rinse off the alkaline and acidic solutions.

### **MONITORING/RECORDKEEPING**

Requires monthly and 12-month rolling time period records of acid and degreasing solvent additions.

The facility provided copies of acid and degreasing additions from the start of the process until current.

### **EU-PretreatOven**

**DESCRIPTION:** 7.6 MMBtu/hr Natural Gas Combustion Oven for removing the surface moisture on the wheels the surfaces that have been treated.

After the wheels are processed through the pretreatment surface preparations they are conveyed through the pretreatment oven.

### **EMISSION LIMITS/DESIGN PARAMETERS**

The primary requirement for the pretreat oven is the limited heat input capacity of 7.6 MMBtu per hour and NOx emission rate guarantee from the manufacture of 75 ppmv@3% O2.

### **EU-PaintShopBlr**

**DESCRIPTION:** 11.2 MMBtu/hr Natural gas Combustion Paint Shop Boiler

The Paint Shop boiler is located adjacent to the paint line thermal oxidizer.

### **EMISSION LIMITS/MATERIAL LIMITS/DESIGN PARAMETERS**

The primary requirement for the pretreat oven is the limited heat input capacity of 11.2 MMBtu per hour and NOx emission rate guarantee from the manufacture of 75 ppmv@3% O2.

The previously observed rating plate listed 10.5 MMBtu.

The permittee shall burn only pipeline quality natural gas in EU-PaintShopBlr.

No other fuel supply was observed during the inspection, the facility supplied natural gas usage records for the boiler.

The permittee shall submit notification of the date of construction and actual startup of EU-PaintShopBlr in accordance with NSPS 40 CFR 60.7.

Submitted on November 30, 2015

### **EU-LiquidCoat**

**DESCRIPTION:** One Base liquid coating booth and one Clear liquid coating booth, each utilizing high volume low pressure (HVLP) or comparable applicators, associated flash off tunnels, and one 2.6 MMBtu/hr Natural Gas Combustion Curing Oven. The VOC emissions from this line will be controlled by Non-Fugitive Enclosure (NFE) and a recuperative thermal oxidizer (TO). The particulate emissions controlled by water spray.

### **EMISSION LIMITS**

The emissions of VOC, Heavy aromatic solvent naphtha, Mixed Xylenes, Butyl carbitol, Formaldehyde and Naphthalene are limited by the permit.

Compliance with the VOC emission limit is based on compliance testing and proper operation of the thermal oxidizer. Compliance testing was conducted in September 2016, at which time compliance with the thermal oxidizer destruction efficiency was documented. Compliance with the Heavy aromatic solvent naphtha, Mixed Xylenes and Butyl carbitol emission limit is demonstrated via the facility recording daily usage of each material.

The facility is required to install and operate a thermal oxidizer with a minimum VOC destruction efficiency of 95% and maintain a minimum temperature of 1292 degrees F (700 degrees C).

The temperature of the thermal oxidizer was 723 degrees C at the time of the inspection.

The facility is required to operate EU-LiquidCoat in non-fugitive enclosure.

The facility has installed pressure drop gages to verify and demonstrate negative pressure in the bake oven, liquid base coat and liquid clear coat booths.

The permittee shall keep the following information on a monthly basis for the EU-LiquidCoat:

- a) Gallons (with water) of each material (coatings, reducers, thinners, cleaning solvents, etc.) used and reclaimed.
- b) VOC content (with water) of each material as applied.
- c) VOC mass emission calculations determining the monthly emission rate in tons per calendar month.
- d) VOC mass emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.

The facility supplied records demonstrating compliance with the above requirements.

The permittee shall keep the following information on a daily basis for the EU-LiquidCoat:

- a) Gallons (with water) of each heavy aromatic solvent naphtha (CAS No. 64742-94-5), mixed xylene (CAS No. 1330-20-7), and butyl carbitol (CAS No. 112-34-5) containing material used.
- b) Where applicable, the gallons (with water) of each heavy aromatic solvent naphtha (CAS No. 64742-94-5), mixed xylene (CAS No. 1330-20-7), and butyl carbitol (CAS No. 112-34-5) containing material reclaimed.

The facility supplied records demonstrating compliance with the above requirements.

The permittee shall keep the following information on a monthly basis for the EU-LiquidCoat:

- a) Gallons (with water) of each formaldehyde (CAS No. 50-00-0) and naphthalene (CAS No. 91-20-3) containing material used.
- b) Where applicable, the gallons (with water) of each formaldehyde (CAS No. 50-00-0) and naphthalene (CAS No. 91-20-3) containing material reclaimed.
- c) The formaldehyde (CAS No. 50-00-0) and naphthalene (CAS No. 91-20-3) content (with water) in pounds per gallon or weight percent of each material used.
- d) Formaldehyde (CAS No. 50-00-0) and naphthalene (CAS No. 91-20-3) mass emission calculations determining the monthly emission rate in tons per calendar month.
- e) Formaldehyde (CAS No. 50-00-0) and naphthalene (CAS No. 91-20-3) mass emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.
- f) The heavy aromatic solvent naphtha (CAS No. 64742-94-5), mixed xylene (CAS No. 1330-20-7), and butyl carbitol (CAS No. 112-34-5) content (with water) in pounds per gallon or weight percent of each material used.
- g) Heavy aromatic solvent naphtha (CAS No. 64742-94-5), mixed xylene (CAS No. 1330-20-7), and butyl carbitol (CAS No. 112-34-5) mass emission calculations determining the mass emission rate in pounds per calendar day based on daily usages recorded in SC VI.4.

The facility supplied records demonstrating compliance with the above requirements.

### EU-BrushingBurr

**DESCRIPTION:** 12 Brushing Burr Machines controlled by a common fabric filter.

**EMISSION LIMITS**

The emission of PM is limited to 0.007 grains per dscf of gas. Compliance with the emission limit is based on proper operation of the fabric filter. To assure proper operation of the fabric filter unit the facility is required to monitor and record the pressure drop once per day.

The facility maintains a record of the pressure drop at the emission unit. The facility provided a copy of the pressure drop readings for the previous 30 days.

**EU-Gen1**

**DESCRIPTION:** A 1,500 kilowatt (kW) or smaller diesel-fueled emergency engine with a model year of 2006 or later, and a displacement of less than 30 liters/cylinder. This emergency engine is subject to the New Source Performance Standards Stationary for Reciprocating Internal Combustion Engines (RICE), combustion ignition, emergency RICE less than 3000 HP.

**EMISSION LIMITS/MATERIAL LIMITS**

The permit limits the emission of NOx+HC, CO , PM , NOx and PM2.5.

Compliance is based primarily on the facility installing an EPA Certified engine and maintaining the engine in accordance with the manufacture recommendations.

Opacity from the unit is limited to 15% during lugging and 20% at all other times.

The unit was not in operation during the inspection, no opacity observed.

The units is limited to burning diesel fuel with a maximum sulfur content of 15 ppm by weight and a minimum Cetane index of 40 or a maximum aromatic content of 35 volume percent.

The facility verifies compliance based on fuel delivery records.

The engine is limit to 500 hours of operation a year and 100 hours per year or maintenance checks. Compliance is based the requirement that engine be equipped with non-resettable hours meters.

The engine is equipped with an operation meter and the facility provided a record of the hours of operation demonstrating compliance with the limits. The facility also supplied records of the amount of diesel consumed on a monthly basis.

**FGFACILITY**

<b>1. Each Individual HAP</b>	<b>Less than 8.9 tpy *</b>	<b>12-month rolling time period as determined at the end of each calendar month</b>	<b>FGFACILITY</b>	<b>SC VI.2</b>	<b>R 336.1205(3)</b>
<b>2. Aggregate HAPs</b>	<b>Less than 22.5 tpy *</b>	<b>12-month rolling time period as determined at the end of each calendar month</b>	<b>FGFACILITY</b>	<b>SC VI.2</b>	<b>R 336.1205(3)</b>

The permittee shall keep the following information on a monthly basis for FGFACILITY:

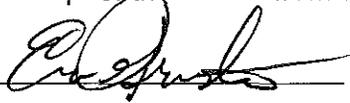
- a) Gallons or pounds of each HAP containing material used.
- b) Where applicable, gallons or pounds of each HAP containing material reclaimed.

- c) HAP content, in pounds per gallon or pounds per pound, of each HAP containing material used.
- d) Individual and aggregate HAP emission calculations using a mass balance approach and emission factors as approved by the AQD District Supervisor for determining the monthly emission rate of each in tons per calendar month.
- e) Individual and aggregate HAP emission calculations using a mass balance approach and emission factors as approved by the AQD District Supervisor for determining the annual emission rate of each in tons per 12-month rolling time period as determined at the end of each calendar month. For the first month following permit issuance, the calculations shall include the summation of emissions from the 11-month period immediately preceding the issuance date. For each month thereafter, calculations shall include the summation of emissions for the appropriate number of months prior to permit issuance plus the months following permit issuance for a total of 12 consecutive months.

The facility provided records demonstrating compliance with the emission limits and record keeping requirements for FGFACILITY.

Based on the information and observations made during this inspection, the facility is in compliance with applicable air quality rules and regulations. The facility's compliance status will be re-evaluated upon receipt of the results from the permit required stack testing.

NAME



DATE

6-13-17

SUPERVISOR

