REGION 5
CHICAGO, IL 60604

MEMORANDUM

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Dart Casting, Alsip, Illinois

FROM: Natalie Topinka, Environmental Scientist
AECAB (IL/IN)

THRU: Nathan Frank, Section Supervisor
AECAB (IL/IN)

TO: File

BASIC INFORMATION

Facility Name: Dart Casting

Facility Location: 12400 S. Lombard Lane, Alsip, Illinois

Date of Inspection: May 29, 2025

EPA Inspector(s):
1. Natalie Topinka, Environmental Scientist

Other Attendees:
1. Harold Helinski, Maintenance Supervisor, Dart Casting

Contact Email Address: harold@dartcasting.com

Purpose of Inspection: assess applicability of secondary aluminum and IL SIP particulate matter regulations

Facility Type: Die Casting

Regulations Central to Inspection: IL SIP

Arrival Time: 10:30 am
Departure Time: 11:35 am

Inspection Type:
☒ Unannounced Inspection
☐ Announced Inspection

OPENING CONFERENCE

☒ Presented Credentials
☒ Stated authority and purpose of inspection
☒ Provided Small Business Resource Information Sheet – emailed after inspection
☒ Provided CBI warning to facility
Was any information collected during the inspection claimed as CBI?
☐ Yes ☒ No.

The following information was obtained verbally from Harold Helenski unless otherwise noted.

Process Description:
Dart Casting performs aluminum die casting. In the past they have used zinc alloys but do so now infrequently. The hydraulic die casting machines use natural gas to heat and melt aluminum alloy ingots to approximately 1200-1250°F and then the molten aluminum is poured into dies which are put under high pressure. Before the molten aluminum is poured, the dies are sprayed with a release agent. After the finished part is removed from the die it is cooled, trimmed, detailed and/or sand blasted. Chilled water is used to cool the die. The water is chilled either by a passive evaporative cooling tower or by chillers that use R-410a as a refrigerant. Each piece takes approximately 30 seconds to two minutes to be cast.

Staff Interview: Dart Casting has roughly 100 employees and operates 24 hours a day, 5 days a week. It has operated at this location for at least the past 22 years. There is no specific employee dedicated to Environmental/Health/Safety issues. Four main different standard alloys of aluminum are used at Dart Casting: A380, A413, A360 and A383. Each incoming shipment of aluminum alloy ingots is accompanied by results of metallurgical testing but Dart Casting also conducts its own testing on every batch to confirm the alloy's composition. Each pallet of ingots is spray-painted a different color to quickly identify the alloy. No fluxing, skimming or dross removal is performed. Excess release agent is captured beneath each machine and pumped into large totes for disposal.

The facility is separated into three buildings. The main building has the majority of die casting machines (10), plus detailing areas and shipping. The second building houses the CNC room and storage. The third building was acquired three years ago and has additional die casting machines (at least 4) and trimming areas. The size of the die casting machines is measured by hydraulic capacity, ranging from 400 tons to 1200 tons. A crucible can hold up to 4000 pounds of aluminum.

There are no air pollution control devices on the die casting machines or the building itself aside from a dust/debris collector at a finishing workstation. Ambient air inside the facility is vented through

exhaust fans directly to the roof or through loading doors which are kept open when weather permits. The facilities are in a primarily industrial area although there are residences approximately 0.1 miles away. Mr. Helinski was not aware of any odor or nuisance complaint

TOUR INFORMATION

EPA Toured the Facility: Yes

Data Collected and Observations:
We toured the main building's shipping and receiving area first, then observed grinding and finishing. In the die room of the main building, the ambient air was very hazy and induced coughing by the EPA inspector. In the second building, we viewed the tool room, CNC area, die storage, and finishing. We viewed the die casting machines in the third building. The ambient air in this building was also very hazy. The large loading doors were open.

Photos: were taken during the inspection and are listed in Appendix A.

Field Measurements: were not taken during this inspection.

CLOSING CONFERENCE

☒ Provided U.S. EPA point of contact to the facility

Requested documents:
1. SDS for the release agent applied to the dies
2. Spec sheets for each of the aluminum alloys used

Concerns: There were significant particulate matter emissions coming off the die casting machines. There is no emissions capture on the building and there have not been any tests or calculations to quantify the emissions.

DIGITAL SIGNATURES

Report Author: NATALIE TOPINKA Digitally signed by NATALIE TOPINKA Date: 2025.06.09 12:53:00 -05'00'

Section Supervisor: Frank, Nathan Digitally signed by Frank, Nathan Date: 2025.06.17 11:37:25 -05'00'

APPENDICES

1. Appendix A: Digital Image Log and Digital Video Log

APPENDIX A: DIGITAL IMAGE LOG AND DIGITAL VIDEO LOG

Inspector Name: Natalie Topinka **Archival Record Location:** inspection photos

Image Number	File Name	Date and Time (CST)	Description of Image
1	IMG_0933.JPG	5/29/2025 10:57	finished parts
2	IMG_0934.JPG	5/29/2025 10:58	die casting machine
3	IMG_0935.JPG	5/29/2025 10:59	die casting machine and open bay door
4	IMG_0936.JPG	5/29/2025 10:59	crucible of molten aluminum alloy
5	IMG_0937.JPG	5/29/2025 10:59	aluminum ingots marked with alloy type, die casting machines
6	IMG_0938.JPG	5/29/2025 11:00	aluminum and zinc alloy types and color codes
7	IMG_0939.JPG	5/29/2025 11:00	particulate matter emissions in the air from die casting machines
8	IMG_0940.JPG	5/29/2025 11:02	aluminum ingots spray painted with alloy type
9	IMG_0941.JPG	5/29/2025 11:04	robot arm which retrieves die from the machine, particulate matter emissions
10	IMG_0942.JPG	5/29/2025 11:04	robot arm which retrieves die from the machine, particulate matter emissions
11	IMG_0943.JPG	5/29/2025 11:07	cold crucible
12	IMG_0944.JPG	5/29/2025 11:10	water cooling tower
13	IMG_0945.JPG	5/29/2025 11:19	die casting machines and particulate matter in the facility
14	IMG_0946.JPG	5/29/2025 11:19	die casting machines and particulate matter in the facility
15	IMG_0947.JPG	5/29/2025 11:21	robot arm on die casting machine
16	IMG_0948.JPG	5/29/2025 11:24	robot ladling molten aluminum to be poured into the die
17	IMG_0949.JPG	5/29/2025 11:26	R-410a label on chiller
18	IMG_0950.JPG	5/29/2025 11:27	dust/debris collector adjacent to a finishing work station