

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

N510147535

FACILITY: USM Acquisition, LLC		SRN / ID: N5101
LOCATION: 7389 COSTABELLA RD, REMUS		DISTRICT: Grand Rapids
CITY: REMUS		COUNTY: MECOSTA
CONTACT: Pat Sak , Plant Manager		ACTIVITY DATE: 01/08/2019
STAFF: Chris Robinson	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MAJOR
SUBJECT: FY'19 on-site inspection to determine the facility's compliance status with MI-ROP-N5101-2018.		
RESOLVED COMPLAINTS:		

AQD staff, Chris Robinson (CR), arrived at USM Acquisition, LLC (USM), located at 7389 Costabella Road in Remus, Michigan on January 8, 2019 at approximately 10:00 am to conduct an unannounced scheduled inspection. CR met with several of USM's staff, which included Mr. David Mitchum, President, Mr. Rick Foster, Vice President of Operations and Mr. Pat Sak, Plant Manager, AQD identification was provided and CR announced intent to conduct an inspection of the facility in order to determine USM's current compliance status with respect to Renewable Operating Permit (ROP) No. MI-ROP-N5101-2018. Mr. Mitchum and Mr. Sak provided a tour of the facility as well as pertinent compliance information.

Weather conditions were approximately 35°F with west-southwest winds at approximately 3mph (www.weatherunderground.com). CR surveyed the perimeter of the facility, upon arrival, for odors and visible emissions. Distinct and definite styrene odors (~Level 2) were observed north of the facility from the intersection of 8 Mile Road and Costabella Road continuing west along 8mile Road for approximately 1,000-feet from the intersection. Visible emissions were observed during the inspection only and are discussed below. No recent complaints have been received by the AQD.

FACILITY DESCRIPTION

USM manufactures cultured marble and cultured onyx products, primarily kitchen and bathroom fixtures utilizing polyester gelcoats, resins and limestone to create vanity and counter tops in a large variety of colors and styles. The facility also fabricates and repairs fiberglass molds for use onsite. Processes at the facility include mold cleaning and preparation, gel coat spraying and curing, resin mixing and pouring, finished fixture sanding and polishing, and tool cleaning.

REGULATORY REQUIREMENTS

The stationary source is located in Mecosta County, which is currently designated by the U.S. Environmental Protection Agency (USEPA) as attainment/unclassified for all criteria pollutants.

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR) Part 70, because the Potential to Emit (PTE) of styrene, single Hazardous Air Pollutant (HAP), is regulated by the federal Clean Air Act, Section 112 and is greater than 10 tons per year (tpy).

Emission units EUCASTING, EUGELCOAT and EUCLEANUP are subject to the National Emission Standard for Hazardous Air Pollutants (NESHAP) for "Reinforced Plastic Composites Production" promulgated in 40 CFR Part 63, Subparts A and WWWW.

COMPLIANCE EVALUATION

A) ROP No. MI-ROP-N5101-2018

USM Operates the following emission units under ROP MI-ROP-N5101-2018:

Flexible Group FGPLASTICCOMP		
Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Install/Mod Date
EUCASTING	A Respecta resin casting machine. Resin material may also be cast manually on an as needed basis. Paste wax and/or mold release may also be used. Particulate emissions controlled by externally vented baghouse.	09/30/1992 09/08/2005 07/11/2016
EUGELCOAT	Three dry filter spray booths using airless/air assisted applicators for the gelcoat application, and a fiberglass mold fabrication operation. Paste wax and/or mold release may also be used.	09/30/1992 01/01/2009 07/11/2016
EUCLEANUP	Miscellaneous cleanup activities.	09/08/2005

Per discussions with USM staff, records are maintained for a minimum of five (5) years. Reports required pursuant to MI-ROP-N5101-2018 and 40 CFR, Part 63, Subpart WWWW have been submitted on time and complete. Two deviations were noted in the 3/15/2018 Semi-annual Report and Annual Certification. Both deviations were identified during the previous inspection conducted on 8/8/2017 and addressed by USM in a response letter received by the AQD on 1/8/2018. Exhaust stacks were not specifically measured during this inspection, however visual observations suggest that the actual stack diameters and lengths appear to meet the requirements specified in Special Condition (SC) VIII.1-3 of the ROP. Based on discussions and observations, no significant changes have occurred since the previous inspection conducted on August 8, 2017. Per discussions, USM does not reclaim or reuse any materials and waste material, including Particulate Matter (PM) collected by the baghouses which is containerized and disposed of in a proper manner.

USM is subject to the Emission and Material Limits specified in Table 1 and Table 2 below.

Pollutant	Limit	Time Period	Equipment	Max Facility Calculated Emissions for Jan. 2017 - Dec. 2018 (based on a rolling 12-month rolling time period)	At or Below Limit
VOC (including Styrene)	65.1 tpy	12-month rolling	FGPLASTICCOMP	43.9 tons (Nov 2018)	Yes
Organic HAP (Open Molding – Clear Gelcoat)	522 lbs/ton		EUGELCOAT	522 lbs/ton (Multiple Months)	Yes
Organic HAP (Open Molding – Pigmented Gelcoat)	377 lbs/ton			294 lbs/ton (All of 2017)	Yes (Note 1)
Organic HAP (Open Molding – High Performance Gelcoat)	605 lbs/ton			Not used	
Organic HAP (Open Molding – White/Off White Gelcoat)	267 lbs/ton			266 lbs/ton (Oct - Nov 2017 & Jan 2018)	Yes
Organic HAP (Open Molding – Tooling Gelcoat)	440 lbs/ton			424 lbs/ton	Yes
Organic HA (Mechanical Application – Tooling Resin)	254 lbs/ton			93.8 lbs/ton	Yes
Organic HAP (Manual Application – Tooling Resin)	157 lbs/ton			82.1 lbs/ton	Yes
Particulate	0.10 lb / 1,000 lbs of exhaust gas	Hourly	EUCASTING	See discussion in section FGPLASTICCOMP	
Styrene (CAS No. 100-42-5)	55.1 tpy	12-month rolling	FGFACILITY	35.6 tpy (Jan 2018)	Yes

Material	VOC Limit (by weight)	Time Period	Equipment	Max Facility Calculated Usages for Jan. 2017- Dec. 2018 (based on an instantaneous time period)	At or Below Limit
Clear Gelcoats	44% (minus water) as applied	Instantaneous	EUGELCOAT	44% (Multiple months)	Yes
Color (Non-white) gelcoat (Note 1)	37%			33% (All of 2017)	Yes
Kitchen Gelcoat (High performance)	47%			Not used	
White/off white Gelcoat	35%			30% (Multiple months)	Yes
Resins	37% (minus water) as applied		EUCASTING	32% (Feb. 2017; Sept. 2017 - Jan. 2018; & April 2018 - June 2018)	Yes

Note 1 –Includes Almond and Biscuit gelcoats. Discussed further in FGPLASTICCOMP below..

SOURCE-WIDE CONDITIONS

USM is subject to a source-wide styrene emission limit (SC I.1), as noted in Table 1 above and required to maintain a current listing of materials (SC VI.2). The list provided by USM (Attachment A, sheet "EFSummary") contains both the chemical composition of materials used along with most of the weight percent of each component. However, this sheet does not appear to be current. The clear coat SDS provided during the inspection was for product SIL08 LH-70 and it appears as though USM now uses product SIL08 LH-80, which includes less than 0.1% ethylbenzene and solvent naphtha, which are not included on the list. The SDS for product N-1264-LHN (Solid Biscuit Low VOC Gel Coat) does not match the product number provided on the list for the biscuit gelcoat nor do the individual compounds seem to match. Per Source-wide SC VI.2 and FGPLASTICCOMP VI.3, a complete list must be maintained using either SDS's, manufacturer's formulation data or a combination of both as deemed acceptable by the AQD District Supervisor. Per conversations with USM's consultant, Stephanie Jarret,

USM uses SDS's. However, a note on USM's records provided in **Attachment A, Sheet "ROP Special Conditions"** indicates that Manufacturers Formulation data is being used. Per phone conversation with Ms. Jarret and USM staff on 1/24/2019, USM only uses SDS's and Certificates of Analysis (COA's). COA's only report percent non-Volatile Organic Compounds (VOCs) or Haps, not the individual components and weight percent. SDS's are not required nor appear to include all components and weight percentages. Use of these documents alone are not detailed enough to use as the basis for the list. A complete and updated list will be requested.

The following records required by SC VI.3 have been provided and are included in **Attachment A**.

- Gallons or pounds of each Styrene (CAS No. 100-42-5) containing material used and reclaimed.
- Styrene (CAS No. 100-42-5) content, in lbs/gallon or lbs/lb of each material used.
- Monthly and annual Styrene (CAS No. 100-42-5) emission calculations.

Source-wide styrene emission data is summarized in Table 1 above, which is well below the permitted limit of 55.1 tpy. Special Condition IX also requires notification to the AQD if land use changes occur. Per discussions with USM Staff, no such changes have occurred.

EUCLEANUP

Consists of miscellaneous clean-up activities. Enclosed cleaning stations/containers (i.e. Marble Matics) are used for the cleaning process, and other VOC containing solvents used throughout the facility.

USM utilizes two (2) cleaning solvents, Superflush and methylene chloride. Emission unit EUCLEANUP does not have an emission limit associated with it but is subject to a material limit of no more than 440 gallons per year of dibasic ester containing cleaning solvents when used outside of the designated enclosed cleaning stations, which consist of two (2) Marble Matic. USM tracks usage of dibasic ester (**Attachment A**). From January 2017 through December 2018 the maximum amount of dibasic ester used, based on a 12-month rolling period, was 373 gallons. The cleaning solution is kept in closed containers during storage and both marble matics are equipped with an attached storage container that is kept closed at all times except for when refilling. Neither unit was operating during this inspection but were closed. Fiberglass tools are cleaned in the Marble Matics which, per observations and Mr. Sak, are kept closed at all times except for when inserting and removing tools. Applicators containing cured resin are cleaned with methylene chloride which is stored in closed containers. The containers of methylene chloride are only opened while in the enclosed cleaning stations or outside of the cleaning stations when inserting components for cleaning.

Cleaning Solvent	Usage Amount out side of designated cleaning area	Calculated Emissions
Methylene Chloride	905 gallons (2018 total)	5.03 tpy (Nov 2018)
Dibasic Ester	373 gallons rolling 12 mth from Jan 2017 thru Dec 2018	--

Both spray booths were in operation during this inspection. Filters consisted of both an external paper arrester type pre-filter and an internal accordion style Andrae filter cartridge. Per Mr. Sak, the prefilters are changed every 2-3 days and the Andrae filters are changed as needed, which is usually monthly. Only the pre-filters could be observed during this inspection, which appeared to be installed properly and in good condition. All spraying took place within the vapor zone as required per SC III.4.

All storage containers were closed as required and per Mr. Sak and a records review, are inspected monthly to determine if the covers are opening and closing appropriately and in good condition. An example of the monthly inspection log is provided in **Attachment B**. The following monthly records were provided as required in EUCLEANUP SC VI.3

- Identity and amount of each clean-up solvent used and reclaimed.
- Records of the monthly cover inspections.
- Monthly and annual usage rate of dibasic ester containing cleaning materials used outside the Marble Matic cleaning stations.

FGPLASTICCOMP

This flexible group includes emission units EUCASTING, EUGELCOAT, EUCLEANUP. Operations consist of reinforced plastic parts manufacturing processes which includes one (1) resin casting machine, three (3) open molding dry filter spray booths which utilize mechanical atomized and mechanical non-atomized applicators for gelcoat application, and miscellaneous cleanup activities. Use of paste wax and/or mold release. The open molding operations are subject to the "Reinforced Plastic Composites Production" NESHAP – 40 CFR Part 63,

Subpart WWWW. Particulate emissions from EUCASTING are controlled by a baghouse (Tower Dust Collector) and dry filters located in the two (2) gelcoat spray booths.

Emission Unit EUCASTING includes the Respecta casting machine, as well as manual pouring process equipment used for closed mold processes, which may use paste wax and/or mold release. Most colors/styles produced are done by the Respecta casting machine, however, some colors/styles are manually mixed. There are two mixing stations, one next to each of the two marble matrics. Neither unit was operating nor equipped with a sealed lid, however the station located in the fiberglass area had a cardboard lid. The size of the mixing containers used to manually mix material was verified during the last inspection to be 314 square inches, which meets the Work Practice Standard requirements provided in Table 4 of 40 CFR Part 63 Subpart WWWW, allowing for containers with a surface area of 500 square inches or less to be open while active mixing is taking place. Mr. Sak indicated that mixing time is limited once the catalyst is added, therefore batches are not mixed for long periods of time.

Flex Group FGPLASTICCOMP is subject to a VOC emission limit of 65.1 tpy and a material limit of zero haps except that styrene may be used as a cleaner in the closed systems and organic HAP cleaners may be used to clean cured resin from application equipment. As noted in USM's emissions workbook, "*Cleaning solvents do not contain HAP's, except for methylene chloride, which is used in closed containers for cleaning cured resin*". VOC emissions were below the limit noted in table 1 above.

Materials described in Special Condition III.1-3, which includes both raw and waste material (solvent(s), catalyst (s), resin(s), mold release, and gelcoat(s)) are kept in closed containers during storage and mixing. Per Mr. Sak, waste material is contained in 55-gallon drums and disposed of by a certified waste facility.

Per Mr. Sak "No" processes associated with EUCASTING are operated unless the baghouse is operating, and exhaust filters are installed and maintained in a satisfactory manner. Occasionally a slight haze was observed, which appeared to be emanating from the exit vents of the Tower Dust Collector. Collection bins were uncovered but contained a minimal amount of material. CR informed both Mr. Sak and Mr. Mitchum that covers must be utilized on the collection bins if they were to contain material. CR also requested inspection of the unit to determine the cause of the haze. This baghouse is subject to an emission limit of 0.1 lbs. of particulate matter per 1,000 pounds of exhaust gasses and compliance with this limit is demonstrated through proper operation and maintenance. Compliance with this emission limit could not be determined at this time. On-site follow-up may be conducted in the near future.

Material Usage amounts are recorded throughout the day by production staff and inputted into spreadsheets along with VOC and HAP contents for calculating and tracking emissions. As required per SC's V.1 and V.2, USM uses Certificates of Analysis for determining both VOC and HAP content for all materials used. Example Certificates are included in **Attachment C**. CR compared Safety Data Sheets for the Clear Gel Coat (SIL08LH-80) and the SOLID BISCUIT LOW VOC GEL COAT (N-1264-LHN) to the Certificate of Analysis. Only the Percent Non-Volatile Material content is provided for the Clear Gel coat and HAP content is provided for the Solid Biscuit Low VOC Gel Coat. The tracking spreadsheet's HAP input consists of either the listed HAP content or 100% minus the listed VOC content, which could lead to overestimated HAP emissions. At this time, the AQD is not requiring any additional testing for content confirmation as allowed in SC V.1 and V.2. The following monthly records were provided as required in Special Conditions FGPLASTICCOMP VI(4):

- Amount and VOC content of each material.
- Appropriate emission factors for each raw material used.
- Monthly and Annual VOC mass emission calculations.

Emission unit EUGELCOAT is subject to the Organic HAP emission limits specified in FGPLASTICCOMP SC I.2 -8 of ROP MI-ROP-N5101-2018, summarized in Table 1 above. These limits originate from Table 3 of 40 CFR Part 63, Subpart WWWW. As allowed in 40 CFR 63.5810(a) and FGPLASTICCOMP SC VI.5.a of ROP MI-ROP -N5101-2018, USM has chosen to demonstrate compliance with these limits using the equations from Table 1 in 40 CFR Part 63, Subpart WWWW to calculate emissions. The referenced NESHAP Table 1 and Table 3 are included in **Attachment D** of this report and highlights which equations USM has elected to use.

As noted in Table 1 above, USM currently considers Almond and Biscuit gelcoats to meet the definition of being "pigmented". An SDS for both the biscuit and almond gelcoats were provided along with Certificates of Analysis. According to 40 CFR, Part 63, Subpart WWWW, a pigmented gelcoat is defined as "*a gel coat that has a color but does not contain 10% or more titanium dioxide by weight*" while White/Off-White gelcoats are defined as "*a gel coat that contains 10% or more titanium dioxide by weight*". Based on the SDS's, the biscuit gelcoat (N-1264-LHN) contains less than or equal to 10% titanium dioxide and the almond gelcoat (N-1269-LHN)

contains less than 20%, which do not provide enough data to determine how to properly classify these gelcoats nor does the COA's address titanium dioxide. Although, USM has not provided enough detail to adequately determine the proper classification of these gelcoats, CR contacted the manufacturer (Interplastic Corporation) and verified, by phone, that both gelcoats contain less than 10% titanium dioxide.

USM maintains an approved Preventative Maintenance Plan (PMP) for EUCASTING. Per Mr. Sak, there have been no revisions or amendments made to the PMP.

(C) Rule 201 Permit Exemptions

USM utilizes Rule 201 permit exemptions for the following equipment/processes, which were identified in the most recent ROP renewal.

- Two 184,000 BTU natural gas fired only boilers (EU-HEATERBOIL1, EU-HEATERBOIL2). Each boiler operates a curing tunnel, which is used to dry gel coat. Each boiler appears to meet the definition of a hot water heater, therefore exempt per Rule 282(2)(b)(i).

- One (1) 40,000-gallon above ground resin storage tank with secondary containment located outside just east of the "Dust Room" which appears exempt per Rule 286(2)(a).

- USM operates equipment for cutting, grinding, buffing and sanding operations which either vent to one of the two externally vented baghouses, exempt per Rule 285(2)(l)(vi)(B), or internally to either a Torit and AER dust collector, exempt per Rule 285(2)(l)(vi)(B).

- As indicated in USM's most recent ROP renewal application, emission unit EU-CUTTING is operated under Rule 201 exemption R285(2)(l)(vi)(C). EU-CUTTING consists of equipment used to carve, cut and sand resin casts. Particulate matter emissions are controlled by an externally vented baghouse, known as the "Dust Room", which is located in a small attached building (**Picture 1**). The Dust Room consists of a small cyclone and fabric tube filters with collection bin (**Picture 2**). Larger material separated out by the cyclone is contained in a 55-gallon drum while the smaller material is collected in the collection bin and eventually transferred to large bulk poly bags for disposal. Approximately five (5) full and uncovered bags were present with significant PM deposition on the ground (**Picture 1**). Mr. Sak indicated that wet weather conditions has prevented proper cleanup. The fabric filters didn't appear to be well maintained nor effective (**Picture 2**) and Mr. Sak was unsure of the last time, if any, they were replaced. The entire surface inside surface of the Dust Room was covered with significant PM, including the control equipment and fabric filters (**Pictures 2-4**). PM was observed on the outside of the building near the edges of the doors and the collection bin door seals were either damaged or missing entirely (**Picture 3**). This is considered improper collection and disposal of an air contaminant, which is a Rule 370 violation and improper operation and maintenance of a control device, which is a Rule 910 violation. A violation Notice will be issued. CR discussed the condition of the Dust Room, including the fabric filters during a visit on 1/8/2019 while following up on the previous violation Notice, which included Rule 370 for the same baghouse.

- USM operates the following Miscellaneous Emission Units as identified in the most recent ROP Renewal: EU-HEATERIR1, EU-HEATERIR2, EU-HEATERIR3, EU-HEATERIR4, EU-HEATERIR5, EU-HEATERIR6, EU-HEATERIR7, EU-HEATERIR8, EU-HEATERIR9, EU-HEATERIR10, EU-HEATERIR11, EU-HEATERIR12, EU-HEATERIR13, EU-HEATERIR14, EU-HEATERIR15, EU-HEATERIR16, EU-HEATERIR17, EU-HEATERIR18, EU-HEATERIR19, EU-HEATERIR20, EU-HEATERIR21, EU-HEATERIR22, EU-HEATERIR23, EU-HEATERIR24, EU-HEATERIR25, EU-HEATERWAXLINE, EU-HEATERSETUP, EU-HEATERCAST, EU-HEATERBACK, EU-HEATERCURE, EU-HEATERMOLD, EU-AIRMAKEUP1, EU-AIRMAKEUP2, EU-RESINTANK and EU-ADHESIVE.

D) MAERS

Emissions data for 2018 was not available for audit prior to this inspection. However, 2017 emission data was submitted to MAERS on time and complete, by the facility. Data provided during this inspection indicated that 2017 VOC emissions were approximately 40.07 tons, which is consistent with the 40.15 tons reported for the 2017 MAERS. A copy of USM's 2017 MAERS report is included in **Attachment E** and summarized below.

Pollutant	Amount
VOC	80,292.98 lbs (40.15 tons)

COMPLIANCE DETERMINATION

Based on observations, discussions and a records review, USM does not appear to be in compliance with Rules 370 and 910 of the administrative rules promulgated under Act 451 and ROP MI-ROP-N5101-2018 General Conditions No. 9 and 10. Additionally, USM is operating EU-CUTTING under Rule 201 permitting exemption Rule 285(2)(l)(vi)(C), which requires externally vented emissions to be controlled by an appropriately designed and operated fabric filter collector. The lack of proper operation of the fabric filter collector does not allow the use of the Rule 285(2)(l)(vi)(C) exemption, resulting in a Rule 201 violation. A violation notice will be issued.

Attachments

- A - Emissions Workbook
- B - Example of Monthly Inspection Logs
- C - Example of Certificates of Analysis and Safety Data Sheets
- D - NESHAP Subpart WWWW Tables 1, 3 & 4
- E - 2017 MAERS Report

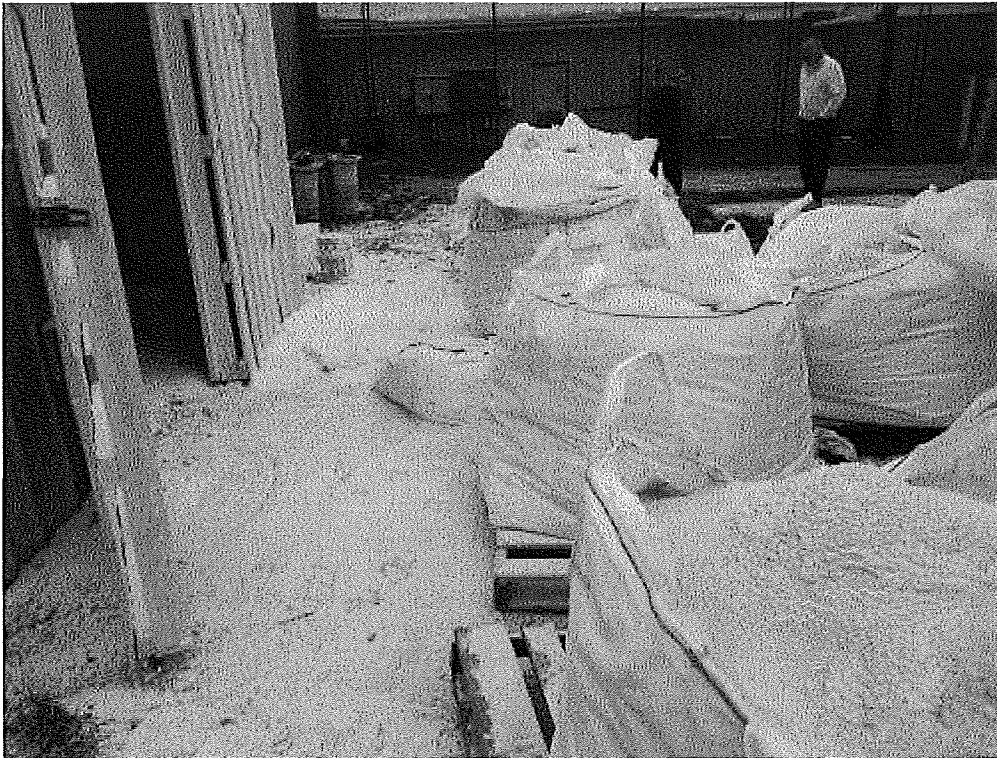


Image 1(Dust Room) : Outside looking north.



Image 2(Dust Room) : Looking to the south inside the Dust Room.

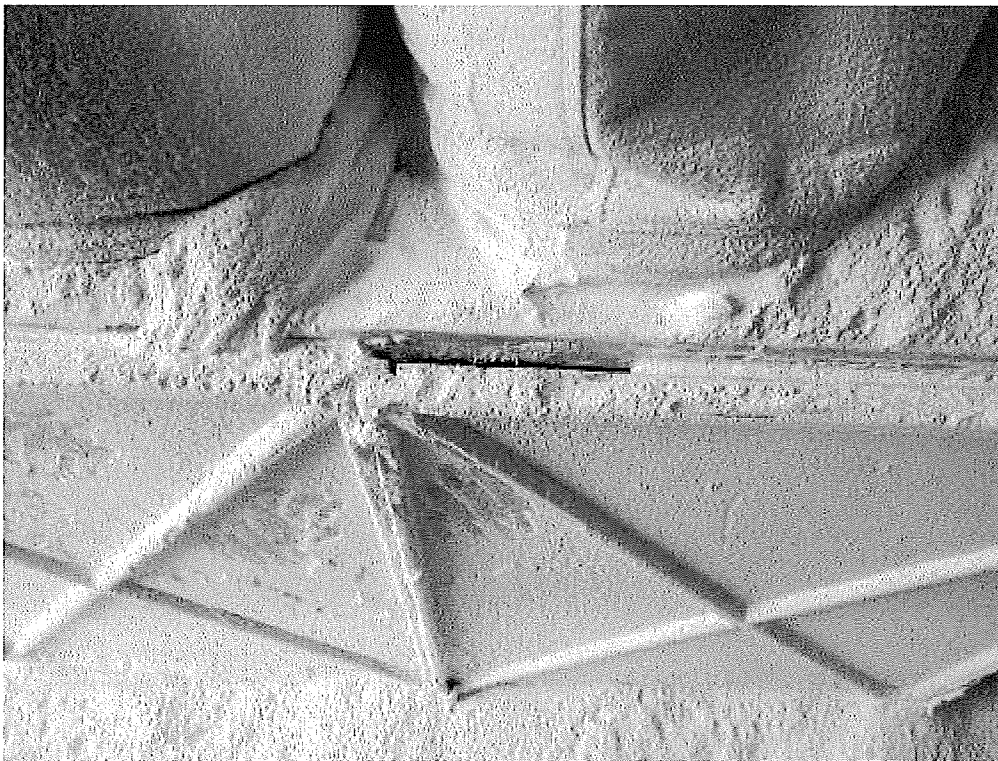


Image 3(Dust Room) : Collection Bin Seal



Image 4(Dust Room) : Looking to the north inside the Dust Room.

NAME *Chris Robinson*

DATE *2/6/2019*

SUPERVISOR *[Signature]*