

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
**ACTIVITY REPORT: On-site Inspection**

N197567194

<b>FACILITY:</b> COMPAZO INC	<b>SRN / ID:</b> N1975
<b>LOCATION:</b> 22500 HESLIP, NOVI	<b>DISTRICT:</b> Warren
<b>CITY:</b> NOVI	<b>COUNTY:</b> OAKLAND
<b>CONTACT:</b> William Diatkar , Vice President	<b>ACTIVITY DATE:</b> 01/24/2023
<b>STAFF:</b> Iranna Konanahalli	<b>COMPLIANCE STATUS:</b> Compliance
<b>SUBJECT:</b> FY2023 SM CMS inspection of Compazo, fka Marbelite Corporation ("Marbelite") located at 22500 Heslip Drive, Novi, Michigan 48375-4139.	<b>SOURCE CLASS:</b> SM OPT OUT
<b>RESOLVED COMPLAINTS:</b>	

**Compazo (N1975) fka Marbelite Corporation (N1975)**  
**22500 Heslip Drive**  
**Meadowbrook Roads)**  
**Novi, Michigan 48375-4139**

**Bill@Compazo.com**  
**248-348-1930**

**Name change (2018):** Marbelite Corporation (N1975) ➔ Compazo (N1975). About 2018, in addition, Compazo purchased its neighbor Dura-Sill Corporation (N2949), a windowsill manufacturer.

**Contact:**

**William Diatkar** (Phone: 248- 348-1900; Cell: 248-802-7634; Fax: 248-348-1934; E-mail: **Bill@Compazo.com**). Diatkar will separate from Compazo by March 31, 2023. Steve Moriatti will be responsible for recordkeeping and the MS Excel spreadsheet calculations.

**Permit-to-Install No.: 240-95D (ROP & MACT opt-out)** dated November 2, 2005

**PTI revision PTI No. 240-95C ➔ PTI No.: 240-95D:** I had asked the company to submit an application for administrative amendment of PTI No. 240-95C to correct typographical and minor errors. PTI No. 240-95C was revised to PTI No. 240-95D on November 2, 2005.

**ROP Application void:** AQD voided Renewable Operating Permit (ROP) **Application No. 200400085** dated April 19, 2004 (received by AQD on April 20, 2004); the application was submitted in compliance with April 25, 2004 deadline for ROP application. AQD voided this application on January 4, 2005, pursuant to the void request letter dated December 17, 2005, and approval of PTI No. 240-95C (a MACT and ROP synthetic minor permit).

**PTI Voids:** 639-88 (05/13/96), 240-95 (4/25/2003), 240-95A (4/12/2001), 240-95B dated April 25, 2003 (07/15/2004), 240-95C dated July 13, 2004 (11/02/2005)

**NESHAP / MACT WWW (4W):** Marbelite is **NOT** subject to 40 CFR, Part 63, Subpart WWW, National Emission Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production. NESHAP / MACT 4W applies only to HAP major sources.

Marbelite / Compazo is not subject to MACT 4W as it obtained, in a timely manner, Synthetic Minor Source conditions via PTI No. 240-95D.

On **January 24, 2023**, I conducted an annual level-2 **FY2023 SM CMS** inspection of **Compazo**, fka Marbelite Corporation ("Marbelite") located at 22500 Heslip Drive, Novi, Michigan 48375-4139. The inspection was conducted to determine compliance with the Federal Clean Air Act (CAA); Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 (PA 451); Environment, Great Lakes and Energy, Air Quality Division (EGLE-AQD) administrative rules; federal NESHAP / MACT WWWW; and Permit-to-Install No.: 240-95D (ROP & MACT Synthetic Minor).

During the FY 2023 inspection, **William (Bill) Diatikar**, Vice President, manufacturing, and owner partner, assisted me. Diatikar will be separating from the company by March 31, 2023.

About January 2018, Marbelite sold its Marbelite brand to Carstin Brands, Inc. of Arthur, IL 6911. As a result of this sale, Marbelite is prohibited to use its brand name and also forbidden make cultured marble products. Consequently, use of Alpine (Styrene content - Actual: **24** percent and PTI No. 240-95D, SC 2.2a limit: 30 percent), Biscuit (Styrene content - Actual: **30** percent and PTI No. 240-95D, SC 2.2c limit: 39 percent) and Bone (Styrene content - Actual: **37** percent in Bone and PTI No. 240-95D, SC 2.2d limit: 37 percent) have been eliminated as such products are prohibited by sale agreement. Only Clearcoat (Styrene content - Actual: **37.8** percent and PTI No. 240-95D, SC 2.2b limit: 42 percent) is used. In addition, Marbelite / Compazo purchased its neighbor Dura-Sil. New corporate name is **Compazo**.

Currently, Compazo makes mostly Dura-Sil windowsill products.

Marbelite / Compazo used to manufacture imitation marble bathroom products (vanity tops) but now manufactures mostly windowsills (Dura-Sil product). The same equipment is used to make windowsills. The process consists of gelcoat spray application to the desired molds in the gelcoat booth, baking the gelcoat and spreading on the molds the matrix. While gelcoat on a mold is cured first in a natural gas fired oven, after spreading the matrix on a mold, the matrix is cured on a mold at ambient temperatures utilizing heat of reaction (exothermic).

### **Gelcoating (EU-Gelcoat) – baked at 80 °F**

Gelcoat is sprayed in Gelcoat booth (12 ft. W \* 10 ft. D \* 10 ft. H) with a backdraft filter system (inexpensive primary flat filters and expensive secondary Andrea filters).

A mold release agent (No.2 Seal Kote) is applied to the desired mold, when the mold is used for the first time. Seal Kote is a wipe-on application; not spray application. A repaired and sanded mold needs sealing as well. The Seal Kote seals the porous surfaces and crevices of a mold and thus prevents adhesion of gelcoat. Seal Kote release agent (as a seal coat) is applied as a semi-permanent mold release agent every 50-100 (approximately) times during gel-coat application; as cost saving measure, seal application rate is reduced to every 50-100 castings (about 2010) from 30-50. About January 2018, Marbelite / Compazo changed the ratio once every 250 molds. The sealed mold is placed on a roller track to move in the process line. Gelcoat is sprayed on the mold in the gelcoat booth

equipped with HVLP gun (calibrated to 1 pound per minute). Gelcoat booth is equipped with a back-draft double-layer (primary flat pre-filter and secondary Andrea filter) dry filter system to control gelcoat over-spray particulate matter. Using two layers of filters results in cost savings by reducing particulate matter load on expensive Andrea filters. The Mold is baked to cure the gelcoat at 80 degrees Fahrenheit for about 40-45 minutes. The gelcoat curing oven is natural gas fired (0.2 million BTU per hour). Gelcoated and cured mold is transferred to the casting machine roller track.

I asked Mr. Diatkar to install and inspect the filters such that they fit, at all times, snugly without gaps and holes. I also asked him to train painters properly so that overspray can be minimized resulting in cost savings due to purchasing less gelcoat.

While Andrea filters (expensive, corrugated, secondary) are changed once per six months (1/6 months), dry filters (inexpensive, flat, primary) are changed once per week (1/week).

### **Molding windowsills using casting machine (EU-CastingResin) – Ambient curing**

The matrix is mixed in Respecta Model No. DB-22 (bought the machine in 1989) self-contained automated casting machine. The matrix consists of calcium carbonate or lime stone (≈60%, powder), inorganic filler (≈10%, powder), a resin (≈30%, liquid), a catalyst (small amount, ≈1-2 percent, liquid) and a pigment (trace to impart color, liquid). The catalyst is used to catalyze the polymerization (an exothermic chemical reaction) of the resin. The matrix is dispensed on previously gelcoated mold and spread by a skilled technician. The catalyst initiates and promotes the exothermic polymerization reaction that releases sufficient heat to maintain mold warm (135 degrees Fahrenheit). The mold is vibrated to remove air bubbles. The curing continues for one- and one-half hour under ambient conditions. Although ambient curing is sufficient, natural gas fired curing oven speeds up the curing thus increasing the fixture production rate. However, Marbelite / Compazo cures mostly windowsill cast product at ambient temperatures. It may be noted that cured gelcoat is retained on a product and not on a mold, which is reused to produce another clone (product).

While gelcoat molds are cured in natural gas oven at 80 degrees Fahrenheit for about 40 minutes, cast product (i.e. matrix is on gelcoated mold) is cured at ambient temperature utilizing heat of reaction of polymerization reaction (exothermic).

Upon ambient temperature curing, the matrix material is now set on the mold. The windowsill fixture is removed from the mold and sent to a finishing booth where it is ground and is sanded to give finishing touches. Gelcoat is affixed on the fixture and not on the mold. The fixture with shiny gelcoat is packaged and shipped.

Marbelite / Compazo is testing lower styrene content polymer (matrix) with a twin goal of reducing costs and emissions.

### **Grinding / finishing booth (Rule 285(2)(I))**

The grinding / finishing booth is equipped with a dry filter with indoor exhaust; i.e. exhaust gases are not released to outside ambient air. Pursuant to Rule 336.1285(2)(I)(vi), the booth is exempt from Rule 336.1201 (Permit-to-Install). In this booth the molds are sanded to give finishing touches. Dust laden air goes through a down-draft exhaust system. Dusty air is filtered in a cartridge filter system and cleaned air is recirculated back into the plant. Filtered air is never exhausted out, even in A/C cooling season (spring / summer).

Photohelic pressure meter monitors pressure drop across the filters (?P). 3.2 inches of water is a set point at which a pulse air cleans cartridges. Pulse-jet air cleaning is performed at least once per day to ensure proper functioning and longevity of the filters. The system is Dust Hog Dust Collection System with Supra-Clean Pulse Controller (United Air Specialists, Inc.). During the inspection, reading ?P = 1.0 inches of water upon starting the fan.

3 sets of Dust Hog Filter systems are present. Downdraft air flow is present for particulate matter due to sanding protecting the worker's breathing zone. The filters are replaced once in about five years based upon pressured drop ( $\Delta P$ ).

In all, three Dust Hog Filter systems are present. Each Dust Hog consists of 12 cartridge filters; 36 cartridge filters in all. About December 2015, Marbelite replaced the filters.

### **Clean-up (EU-Clean-up)**

Acetone is used to clean and flush the gelcoat lines and HVLP spray guns. It is also used to clean certain components (e.g., tools) in casting Dept. Most of acetone is recovered or reclaimed, stored in closed containers, and disposed of at an off-site location. Recovered acetone records are maintained via RCRA Manifests.

Acetone (CAS # 67-64-1,  $C_3H_6O = CH_3-CO-CH_3$ ) is not VOC pursuant to 336.1122 (V-definitions) (f)(xiii). However, acetone has high potential for fire and explosion due to low boiling point (BP = 133 °F), low flash point (FP = - 4 (negative) °F) and wide flammability range (Flammability range = 2.5 %v (LEL) – 12.8%v (UEL)). Density  $\rho = 0.7845 \text{ kg / L}$  at 25 °C.

Methylene chloride (HAP) is used only if a failure (e.g. power outage) occurs, which is rare. Methylene chloride is also used to clean Respecta machine when plugged. Most of the methylene chloride is recovered or reclaimed, stored in closed containers and disposed of at an off site location. Recovered Methylene chloride records are maintained via RCRA Manifests. One emergency incident occurred in CY 2007 that required use of Methylene Chloride; another emergency that required use of methylene chloride occurred in June 2011. NIL MeCl was used since 2011.

S280 Superflush cleaner is used for routine cleaning of the mixing machine. Most of the Superflush is recovered or reclaimed, stored in a closed container and disposed of at an off site location. Recovered Superflush records are maintained via RCRA Manifests. Superflush is counted towards VOC for clean-up (EU-CLEANUP).

### **One Rule 285(2)(I) Wood-cutting machine**

One wood cutting / grinding machine is present. The machine is equipped with a bag filter to collect dust. No exhaust to outside ambient air. A 55-gallon drum and a bag together are used collect saw dust. The bag and the 55-gallon drum are emptied when full; about once per week.

The machine is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1285(2) (I).

### **EU-CASTINGRESIN**

Based upon Silmar (part of BP Chemicals) Certificate of Analysis, general purpose marble resin solution (styrene monomer) contains **26.6** percent styrene (PTI No. 240-95D, SC 1.3 limit: 30 percent). Only one cast resin is used. The resin solution is also known as unsaturated polyester resin (SIL90BA-768DHS general purpose marble resin). Marbelite / Compazo keeps production information on computer file (PTI No. 240-95D, SC 1.6.a). Styrene emissions due to casting are calculated (PTI No. 240-95D, SC 1.6.f); the daily emissions are prorated from monthly data. Inventory and purchase records are kept (PTI No. 240-95D, SC 1.6.e). Styrene, VOC, cleanup VOC emissions due to casting, gelcoating, cleanup are calculated based upon 12-month rolling time period (PTI No. 240-95D, SC 1.6.g).

Predicted emissions (daily and monthly) are calculated based upon production data and the actual daily emissions are prorated from the predicted emissions using inventory data (PTI No. 240-95D, SC 1.6.h). While predicted emissions are kept on daily basis, actual emissions are kept on monthly basis.

**CY 2017:** Annual styrene emissions are **0.27** tons per year for CY2017 12-month period (PTI No. 240-95D, SC1.1.b Limit: 2.1 tons per year). Annual VOC emissions are **0.28** tons per year for CY2017 12-month period (PTI No. 240-95D, SC1.1.c Limit: 2.3 tons per year).

**CY 2022:** Annual styrene emissions are **0.24** tons per year for CY2022 12-month period (PTI No. 240-95D, SC1.1.b Limit: 2.1 tons per year). Annual VOC emissions are **0.26** tons per year for CY2022 12-month period (PTI No. 240-95D, SC1.1.c Limit: 2.3 tons per year).

## EU-GELCOAT

Likewise, styrene, MMA (methyl methacrylate CAS No. 80-62-6) and VOC emissions records for gelcoat booth are kept and the emissions calculations are performed (PTI No. 240-95D, SC 2.6, 2.7 & 2.8).

Styrene contents of gelcoat (EU-GELCOAT) are **24** percent in Alpine (PTI No. 240-95D, SC 2.2a limit: 30 percent), **30** percent in Biscuit (hardly used) (PTI No. 240-95D, SC 2.2c limit: 39 percent), **37.0** (down from 42) percent in Clearcoat (PTI No. 240-95D, SC 2.2b limit: 42 percent) and **37** percent in Bone (not used since 2012) (PTI No. 240-95D, SC 2.2d limit: 37 percent). As Marbelite brand name has been sold, only Clearcoat is used since 2018. Alpine, Biscuit, Bone information is for CY 2017.

**CY 2022:** Annual styrene emissions are **1.17** tons per year for CY 2022 12-month period (PTI No. 240-95D, SC 2.1.b Limit: 9.9 tons per year). **MMA** emissions from the gelcoating process are **4.2** pounds per day for October 12, 2022 (PTI No. 240-95D, SC 2.1.c Limit: 86.5 pounds per day) and **0.19** tons per year for CY 2022 12-month period (PTI No. 240-95D, SC 2.1.d Limit: 3.3 tons per year). Annual VOC emissions are **1.36** tons per year CY 2022 12-month period (PTI No. 240-95D, SC 2.1.e Limit: 18.4 tons per year).

Gelcoat booth is equipped with a double-layer (primary and inexpensive – flat and secondary and expensive - Andrea) dry filter system to control overspray particulate matter. During my FY2017 inspection, I found them to be operating properly.

## EU-CLEANUP

While acetone is used as a cleanup solvent under normal conditions, methylene chloride is used in an emergency, such as power failure, to stop polymerization in casting machine.

For CY 2022 12-month period, cleanup acetone, VOC and methylene chloride emissions are **0.29** tpy acetone (PTI No. 240-95D, SC 3.1.a Limit: 10 tons per year), **0.33** tpy VOC (PTI No. 240-95D, SC 3.1.b Limit: 4.1 tons per year) and **0.00** pounds of methylene chloride per year (no MeCl emergency since 2011) (PTI No. 240-95D, SC 3.2 Limit: 400 pounds per year), respectively. One incident occurred in CY2007 that required use of Methylene Chloride; next in June 2011. No MeCl clean-up since 2011.

**S-280 Superflush** Cleanup solvent, an alternative to methylene chloride is recovered and disposed of as nonhazardous solid waste (liquid with 0.19 mm Hg vapor pressure at room conditions)

Flash Point (FP) = 172 °F TCC (Tag Closed Cup). Auto Ignition = NA °F. Boiling Point (BP) = 368 °F @ 760 mm Hg. Vapor Pressure (VP) = 19 mm Hg at 68 °F. Specific Gravity (SG, Water = 1.0) = 1.064. Density (ρ) @ 68 °F = 8.86 pounds / gallon (1.064 kg /L). Flammability range = 0.9 %v (LEL) – 8%v (UEL).

## FG-FIXTURES

All wastes are handled properly. While Superflush is sent to Superior Oil, Industrial Waste is sent to US Ecology (fka Environmental Quality Company) (PTI No. 240-95D, SC 4.1). The records are kept and calculations are performed (PTI No. 240-95D, SC 4.2 and 4.3).

## FG-FACILITY (NESHAP / MACT OPT-OUT HAP LIMITS)

For CY 2022 12-month period, Styrene (any single HAP) emissions are **0.24** (casting) plus **1.17** (gelcoat) = **1.41** (FG-FACILITY) tons per year (PTI No. 240-95D SC 5.1a limit: 9.9 tpy). Styrene is only HAP emitted (**1.41tpy**).

## Federal NESHAP / MACT 4W and ROP

Pursuant to approval of Permit-to-Install No.: 240-95C (ROP & MACT Synthetic Minor) dated July 13, 2004, and subsequent PTI modification (PTI No. 240-95C to PTI No. 240-95D), Marbelite's imitation marble manufacturing process is **NOT** subject to 40 CFR, Part 63, Subpart WWWW (4W), National Emission Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production. The Final Rule was published in Federal Register / Vol. 68, No. 76 / Monday, April 21, 2003 / Rules and Regulations.

Initially (before obtaining a MACT Synthetic Minor Permit) Marbelite, an existing major MACT source as of June 2004, had to comply with the NESHAP by April 21, 2006. Because Marbelite was a major MACT source since April 25, 2003 and before July 13, 2004, it submitted an administratively complete ROP application to AQD by April 25, 2004. Marbelite mailed on August 18, 2003, the Initial Notification, which stated that Marbelite was subject to the NESHAP / MACT WWWW (4W) as a major source.

Subsequently, Marbelite modified PTI No. 240-95C, which allowed Marbelite to become a non-major (aka area) NESHAP / MACT source, to PTI No. 240-95D dated November 2, 2005. The purpose of this modification was to correct typographical errors discovered during FY 2005 inspection and to increase styrene content to 30 percent from 28 percent for Alpine gelcoat and to 39 percent from 37 percent for Biscuit gelcoat.

As a result, Renewable Operating Permit (ROP) Application No. 200400085 dated April 19, 2004 (received by AQD on April 20, 2004) was submitted in compliance with April 25, 2004

deadline for ROP application. Subsequently, AQD voided this application on January 4, 2005, pursuant to the void request letter dated December 17, 2005, and PTI No. 240-95C (a MACT and ROP synthetic minor permit).

National Emission Standards for Hazardous Air Pollutants (NESHAP) for Reinforced Plastic Composites Production were promulgated on April 21, 2003, and amended on August 25, 2005. This NESHAP applies to reinforced plastic composites production operations located at major sources of emissions of hazardous air pollutants (HAP).

Marbelite is a source with federally enforceable limits (PTI No. 240-95D, SC FG-Facility, 5.1a limit: 9.9 tpy single HAP & PTI No. 240-95D, SC FG-Facility, 5.1b limit: 24.9 aggregate HAPs) below the major source thresholds (<10 tpy single HAP & <25 aggregate HAPs) and is exempt from this MACT rule. Marbelite obtained these limits via PTI No. 240-95D dated November 2, 2005, before the first significant compliance date for this NESHAP. The compliance date is April 21, 2006 for existing sources.

### **Unified Emission Factors (UEF)**

Unified Emission Factors (UEF), as stated in Table I of NESHAP / MACT WWW, were used in the emissions calculations. UEF were incorporated into PTI No. 240-95D.

According to Lasco Bathware (800-877-2005), UEF / Table I emission factors under-predict styrene emissions as much as 30 percent for non-atomized mechanical applicators. Per Lasco's President Stuart Leigh, the NESHAP / MACT WWW rules / regulations do not take into account the operating conditions of a typical tub / shower operations. On October 30, 2006, Mr. Leigh wrote a letter to Mr. Steven Chester, Director of Michigan Dept. of Environmental Quality, complaining about competitive disadvantage Lasco is in because it installed VOC / HAP control equipment at its facilities (8). On November 1, 2006, US EPA Region VII responded to Mr. Leigh's concerns and commended Lasco's proactive approach in controlling VOC / HAP emissions. In future, US EPA may revise the NESHAP / MACT WWW standards taking into account Lasco's and American Composites Manufacturers Association's information.

Since Marbelite's styrene emissions are well below the limit of 9.9 tpy (actual: 2.84 tons of styrene per year for October 2008), it is not necessary to make an issue out of unreliability of the emission factors (UEF), which are incorporated into federal NESHAP regulations and the Permit-to-Install No. 240-95D. The MDEQ-AQD will revisit the emission factors issue when the NESHAP / MACT WWW final rule is revised. Ms. Cindy Smith of Permit Section, MDEQ-AQD, concurs with this conclusion per my conversation with her on April 9, 2007.

### **Styrene emission factor**

Per Tom Marza's memo dated September 13, 2000, a mass balance test was performed to develop styrene emission factor. The test did not involve stack emissions. AQD calculated 0.47% as average percent of styrene emissions a percentage of resin. The standard deviation of data set was 0.08%. AQD calculated 1.72% as average percent of styrene emissions as percentage of styrene content of the resin. The standard deviation of the data set was 0.30%

### **Sill finishing (sanding) booth**

As Marbelite is purchasing Dura-Sil, it brought Dura-Sil's molds and sanding machine.

The matrix material is now set on the mold. The window sill fixture is removed from the mold and sent to a finishing booth (completely enclosed) where it is sanded to give finishing touches. Gelcoat is affixed on the fixture and not on the mold.

Finishing booth consists of one Cemco 2000 sanding machine, which is equipped with almost 100 percent capture device (capture efficiency CE  $\approx$ 100%) because all sanding is enclosed. The booth dust is controlled by a baghouse (28 bags) and exhaust is recycled into work area (inside the building).

The booth dust is exhausted to a fabric filter system with indoor exhaust. The dust on the bags (28) is removed using a shaker mechanism. The bags (28) are shaken for one minute every time the baghouse is started; about three (3) times per day. The dust captured in the hopper (equivalent to four (4) 55-gallon drums) is emptied once every 3-4 weeks and the waste is disposed of according to RCRA. The finished window sill fixture is packaged and shipped. Filtered air is released to in-plant environment.

Sanding process is exempt from Rule 336.1201 (Permit-to-Install) pursuant to Rule 336.1285(2)(I).

### Conclusion

I did not find any compliance problem with Permit-to-Install No 240-95D dated November 2, 2005. Marbelite / Compazo purchased Dura-Sil (N2949). Per sales agreement with Carstin Brands, Inc., Marbelite / Compazo is prohibited to use its brand name and, also, forbidden make cultured marble products.

NAME *L. S. Marshall*

DATE April 25, 2023

SUPERVISOR *Joyce*