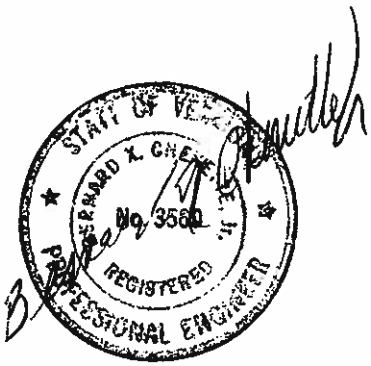
CATAMOUNT/BOLTON WATER & SEWER, LLC
REPAIR OF CONCRETE WATER STORAGE TANK
NOVEMBER 2008



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CATAMOUNT/BOLTON WATER & SEWER, LLC
REPAIR OF CONCRETE WATER STORAGE TANK
NOVEMBER 2008

A structural evaluation of the existing concrete water storage tank for the Bolton Valley Resort was completed in July 2008 by Harry J. Shepard & Associates, LLC. Results and recommendations for remedial measures are found in the Shepard Report dated July 10, 2008. Following a solicitation of contractor bids for remedial alternatives, a decision was made to repair the larger cracks with concrete and seal all cracks in the walls and floor of the tank with a black, elastomeric urethane coating by CIM Industries, Inc. In addition, following the structural design details in the Shepard Report, concrete buttress reinforcement would be constructed on the SW and NW corners of the tank.

Starting the week of October 13, 2008, a bypass valve was installed on the 8" DI tank inlet and a 21,000 gallon temporary water storage tank was set in place so that the existing tank could be drained for repairs (see Photos #10 - #12 in Attachments). Water enters and exits the existing water storage tank through the same line. After the bypass and temporary storage was ready for operation, the main valve to the tank was closed and the water level was observed for 24 hours to determine pre-repair leakage. The water level dropped approximately 2" during this period. Historical leakage from the tank was observed to be significantly more through the cracks in the SW corner. However, when the tank roof was replaced in April 2008, hydraulic cement ("waterplug") was used to temporarily seal the cracks on the upper portion of the tank from the outside. This work effectively reduced the tank leakage. The tank was drained and ready for drying and repair work on October 23, 2008. Interior measurements of the empty tank found that the inside dimensions were 12' deep x 33' wide x 48'long. The normal water depth is 10'-10" for a usable storage volume of 128,317 gallons. Prior to placing the temporary tank in service, the water in the tank was tested for coliform bacteria and Volatile Organic Compounds (VOC's). Testing for VOC's was performed because the temporary tank was new. Test results are included in the Attachments. Only by-products of chlorination were found.

Exterior work on the tank included excavation of the entire perimeter of the tank, installation of 4" PVC underdrains, addition of 2" rigid insulation on all exterior walls and buttressing of the SW and NW corners from the outside (see Photos #1 – #9). An as-built drawing of the corner buttress reinforcement dated October 2008 is included in the Attachments. Following the completion of exterior work, the tank was backfilled on all sides to within 12" of the top of the wall to minimize differential pressures against the tank walls. Previously, much of the west wall was exposed. The underdrains were installed due to the high water table observable on the east side of the access drive and tank. The concern was raised by the sealing contractor that groundwater pressure on the

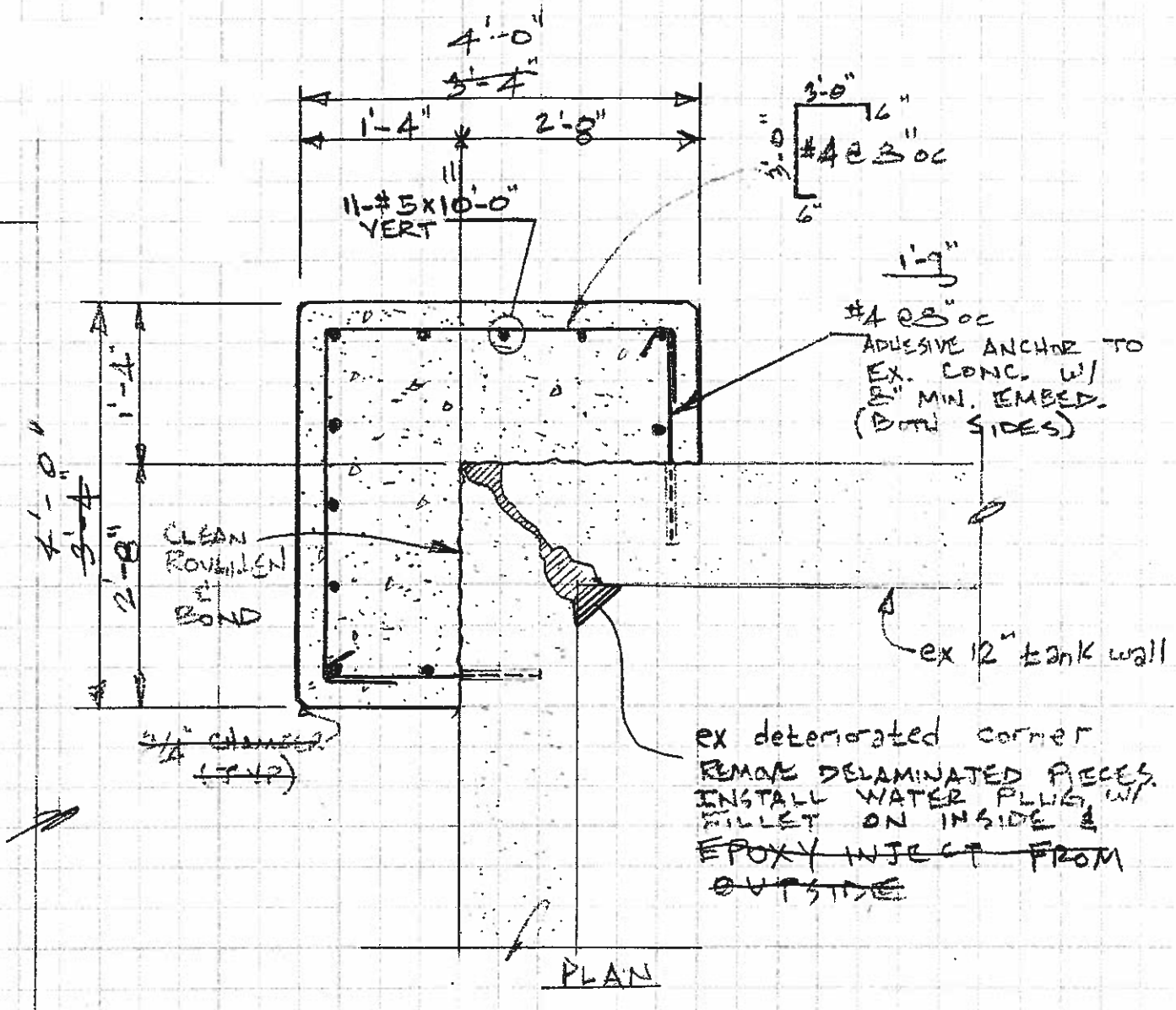
outside of the tank would prevent the drying of cracks for repair. The insulation was added to assist with prevention of ice build-up that has been a problem in the past. The excavation contractor was Gene Armstrong of Bolton, VT and the concrete subcontractor was Jerry Haskins of Waterbury, VT.

The sealing contractor was G.S. Bolton of Rochester, NH. After high pressure washing of the cracks, drying of the empty tank was accomplished by temporary heat and air circulation aided by removal of the gable end of the tank roof structure (see Photos #13 & #14). Larger cracks (>1/4") were repaired with concrete (see Photos #15-#18). The CIM sealing product was then applied to cracks in the walls and floor. Sealing of the wall cracks was accomplished by spraying followed by roller application of additional material (see Photos #20 & #21). Sealing of floor cracks was accomplished by trowelling of the product and installing strips of polyethylene fabric called "Scrim" covered by approximately 60 wet mils of self leveling black CIM over the Scrim (see Photos #22 &#23). Application and product information is included in the Attachments. Crack sealing was completed the morning of October 25, 2008. A total of more than 800 linear feet of cracks were sealed including the inside perimeter of the tank where the walls meet the floor.

After allowing a curing period of 10 days, the tank was decontaminated on November 4, 2008 with a dilute acid solution in accordance with the procedures recommended by CIM Industries (see CIM IG-10 in Attachments). After refilling the tank, a 24-hour leakage test was performed with no drop in water level during the test period. The water was tested for coliform bacteria and VOC's prior to returning the tank to service (see attached test results). Again, only chlorination by-products were detected.

Observation of the exposed walls of the tank after exterior excavation found that the tank was basically sound with the exception of the two corners and that the majority of the cracking evident on the inside was not "mirrored" on the outside of the tank. This finding helped to explain the low leakage testing results prior to crack sealing. The primary benefit of the sealing was the protection of the reinforcing steel from further deterioration within the concrete structure.

ATTACHMENTS



CORNER BUTRESS REINFORCEMENT

3/4" = 1'-0"

AS-BUILT OCT. 2008

base

HARRY J. SHEPARD & ASSOCIATES, LLC
CONSULTING ENGINEERS
285 Jenny Davis Road
WATERBURY, VT 05676
Tel/Fax 802/244-0979
www.hjshepard.com

JOB Bolton Valley Water Tank

SHEET NO. 2 OF 2

CALCULATED BY HJS DATE 7/9/09

CHECKED BY _____ DATE _____

SCALE _____

PHOTO LEGEND
BOLTON VALLEY WATER STORAGE TANK REPAIRS
OCTOBER 23 – 25, 2008

PHOTOS #1 & #2 (October 23rd) SW corner of tank being cleaned and pressure washed in preparation for buttress reinforcement.

PHOTOS #3 - #5 (October 23rd - 25th) Formwork, dowelling, reinforcing steel and completed buttress for SW corner of tank.

PHOTOS #6 - #9 (October 23rd - 25th) Installation of tank underdrain, tank insulation, formwork, dowelling, reinforcing steel and completed buttress for NW corner of tank.

PHOTOS #10 - #12 (October 23rd) Tapping sleeve and valve installed to bypass tank and 21,000 gallon temporary storage tank in service.

PHOTOS #13 & #14 (October 23rd – 24th) Propane heater and fan with gable end of building exposed to facilitate drying of empty tank.

PHOTOS #15 - #18 (October 23rd - 24th) Concrete repair of larger cracks.

PHOTO #19 (October 24th) CIM sealing product.

PHOTOS #20 - #21 (October 24th) CIM spraying of wall crack followed by roller application of additional material.

PHOTOS #22 & #23 (October 24th) CIM trowelling and installing Scrim on floor cracks.

PHOTOS #24 - #26 (October 25th) Completed sealing of wall and floor cracks.

PHOTO #1

PHOTO #2

PHOTO #3

PHOTO #4

PHOTO #5

PHOTO #6

PHOTO #7

PHOTO #8

PHOTO #9

PHOTO #10

PHOTO #11

PHOTO #12

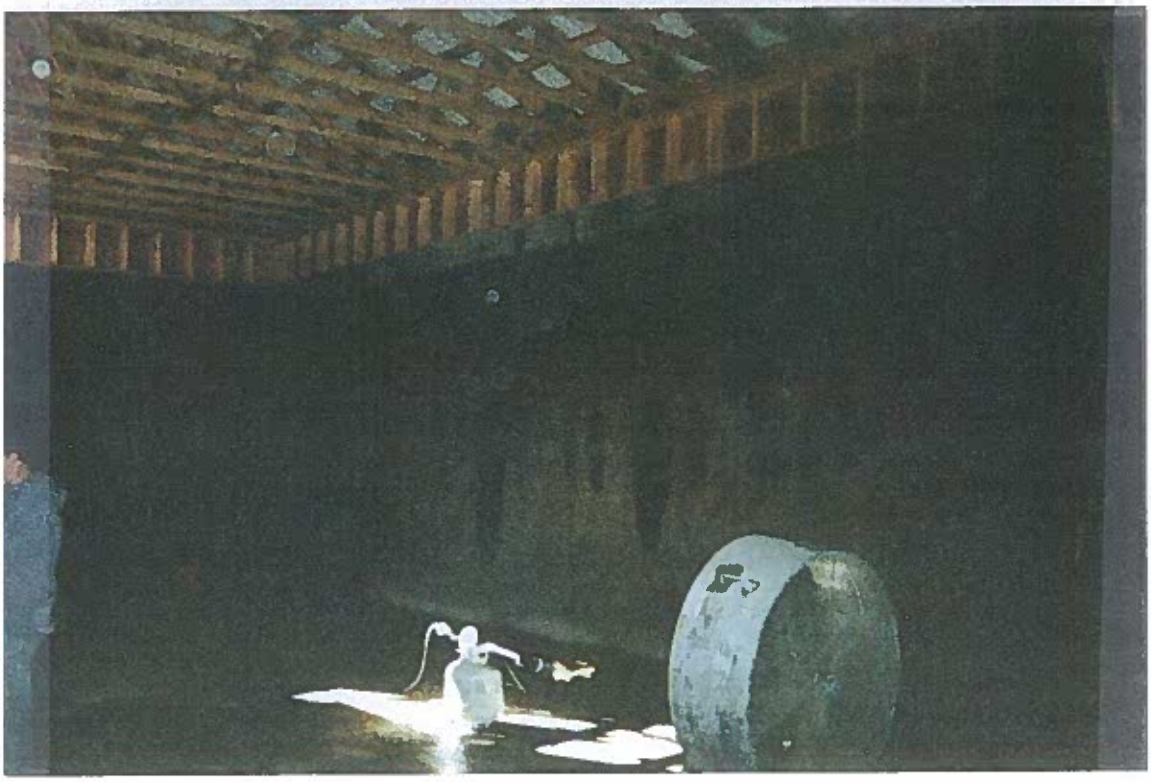


PHOTO #13

PHOTO #14

PHOTO #15

PHOTO #16

PHOTO #17

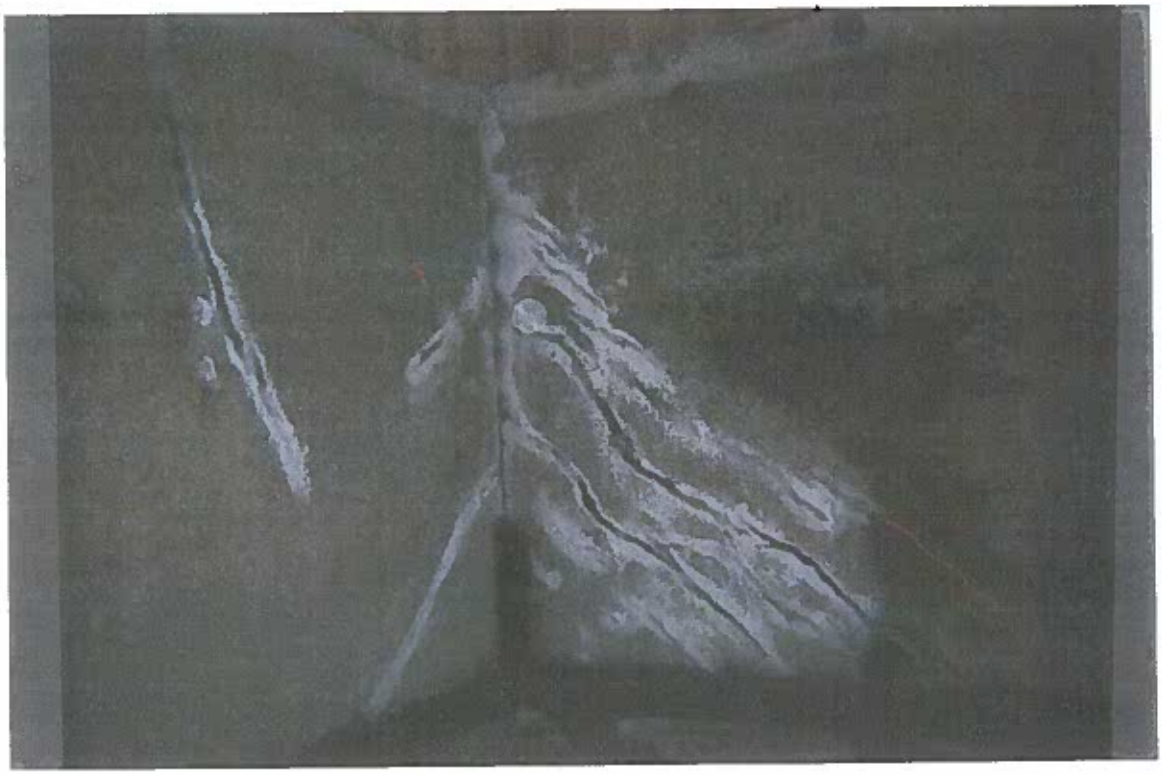


PHOTO #18

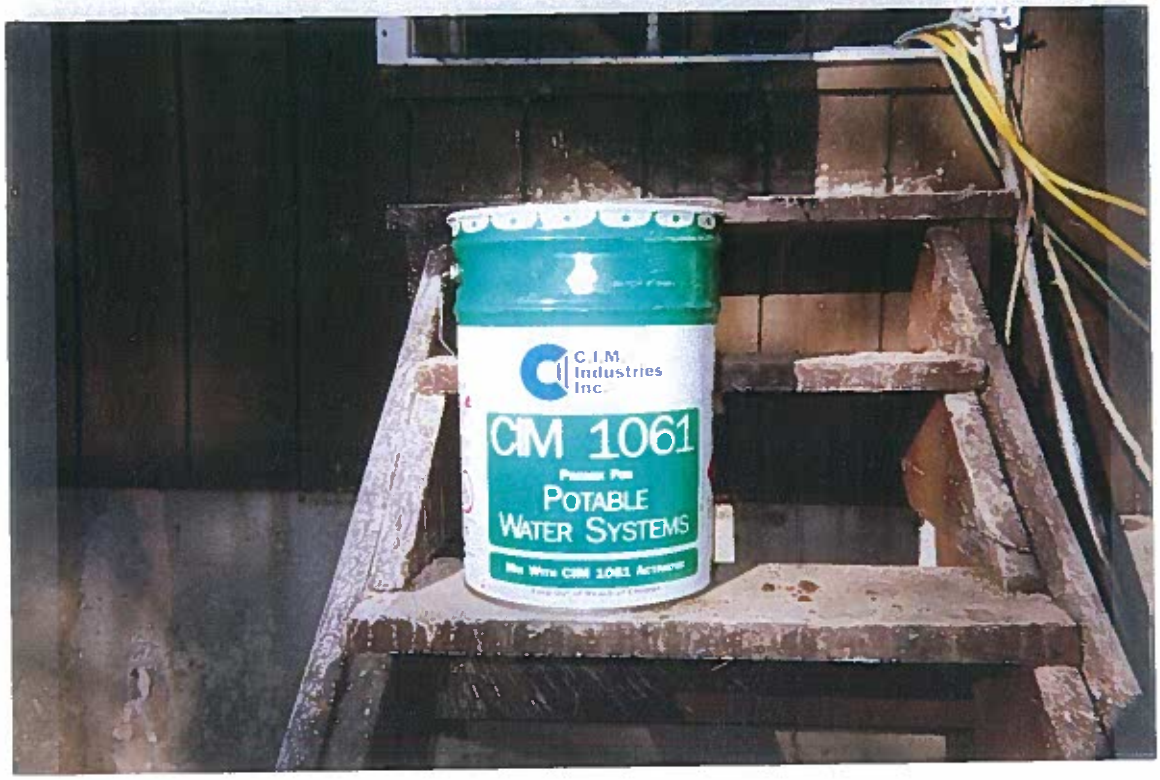


PHOTO #19

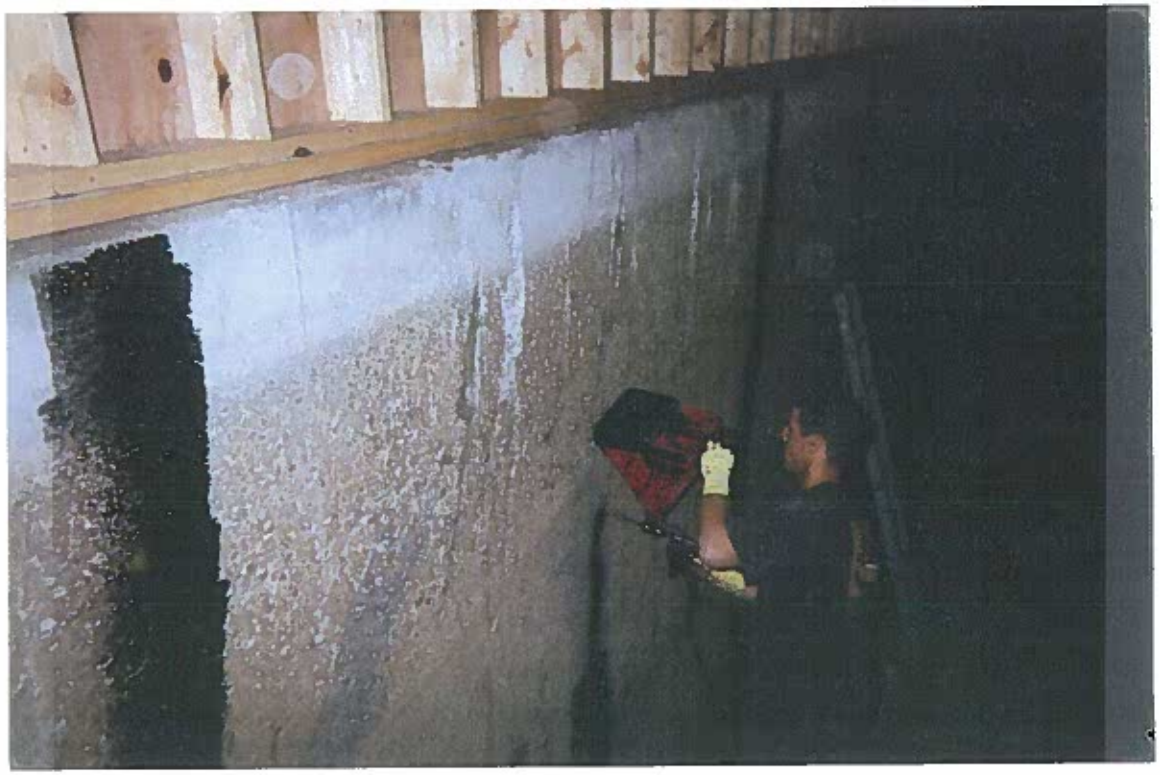


PHOTO #20

PHOTO #21

PHOTO #22

PHOTO #23

PHOTO #24

PHOTO #25

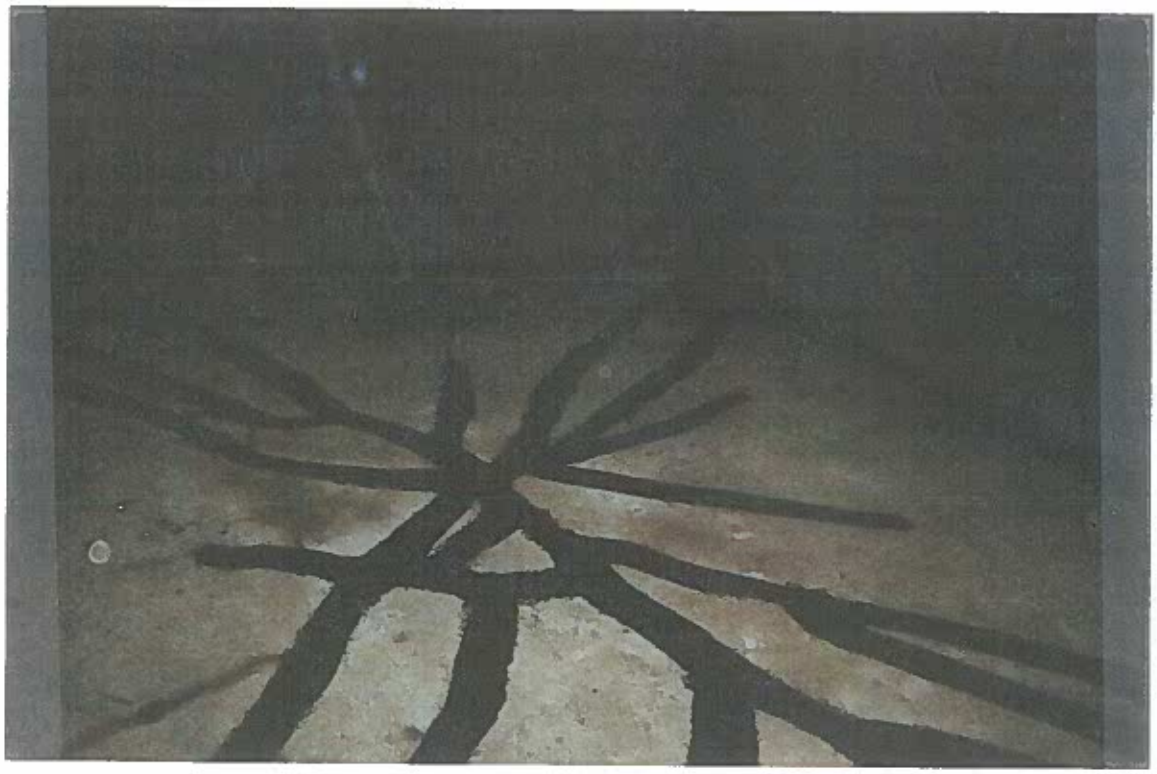
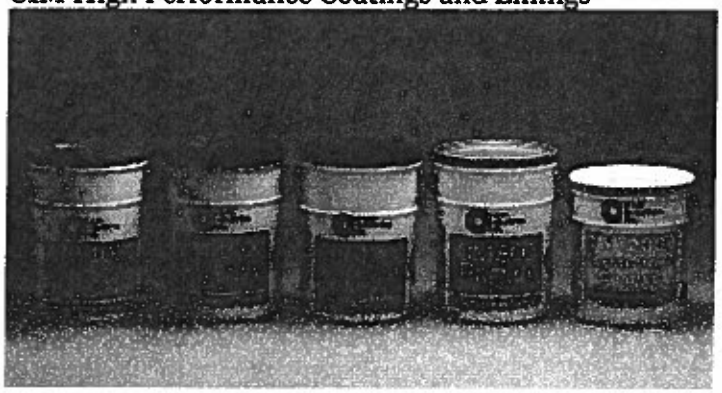


PHOTO #26

CIM High Performance Coatings and Linings



The CIM Difference:
Applies faster. Lasts longer. Adheres to nearly any surface.

CIM high performance coatings and linings form a continuous elastomeric coating able to withstand water and most chemical solutions. Two liquid components are mixed on a job site just prior to cold application by squeegee, roller, trowel or sprayer and the liquid cures quickly to form a seamless polyurethane coating with tremendous strength and flexibility. Developed by Chevron in the early 1970's, these remarkable materials are manufactured by C.I.M. Industries Inc. using the same industrial proven technology.

For more then 30 years C.I.M. Industries' protective coatings have led the liquid storage and containment industry delivering long-term solutions to virtually every containment need. Contact your Regional Manager or C.I.M. Industries Inc. directly for more information regarding your specific needs.

CIM high performance coatings and linings are used worldwide to provide a seamless, impermeable, protecitve coating that resist harsh environments, moisture, chemical attack and abrasion.

NOTES:

CONCRETE SHOULD NOT BE COATED WHILE IN DIRECT SUNLIGHT!
Concrete should be coated only while in a temperature declining mode. CIM, because it is black, is a solar absorber and can increase the surface temperature of the concrete by as much as 90°F. This, in turn, heats up the air trapped within the concrete's pores. The air expands and tries to push its way out of the concrete, creating hundreds of bubbles, otherwise known as outgassing. Therefore, if concrete is coated in direct sunlight (e.g. a temperature rising mode), outgassing will generally occur.

4.1 New Concrete
New concrete must have a minimum compressive strength of 3,000 psi, be dry, and be free of release agents or curing compounds prior to the application of black CIM coatings. Black CIM may be applied directly to concrete laitance but good adhesion is unlikely. Due to the poor tensile properties of concrete laitance, it is recommended to remove the concrete laitance and expose the tops of the underlying aggregate. This condition is typically represented by an ICRI Concrete Surface Profile of 4 to 6 to expose aggregate. In order to properly prepare the concrete, and remove any release agents or curing compounds, any one of the following can be performed:

1. Abrasive blasting (ASTM D 4259-88)
2. Water blasting (ASTM D 4259-88) (generally at 5,000 psi minimum), allow concrete to dry
3. Shot blast (ASTM D 4259-88), horizontal surfaces

4.2 Old Concrete
Old concrete must be clean and dry, and free of oil, grease and loose powder or debris. It is highly recommended to remove the existing concrete laitance on the surface and expose the tops of the underlying aggregate. This condition is typically represented by an ICRI Concrete Surface Profile of 4 to 6. In order to properly prepare the concrete, and remove contaminants, any one of the following can be performed:

1. Abrasive blasting (ASTM D 4259-88)
2. Water blasting (ASTM D 4259-88) (generally at 5,000 psi minimum), allow concrete to dry
3. Shot blast (ASTM D 4259-88), horizontal surfaces

NOTES:

5.6 Horizontal Surfaces
Black CIM coatings should be applied to concrete at a film thickness of 60 wet mils, depending on application type. This can be achieved in a single coat on horizontal surfaces.

5.7 Vertical and Sloped Surfaces
Black CIM coatings can be applied to a vertical or sloped surface with a roller, brush or spray equipment. Small walls are often coated with rollers or brushes. Large walls should be sprayed using an air assisted airless spray system or plural component spray system. See C.I.M. Industries' Instruction Guide, "Spray Application of CIM" (IG–12) or contact C.I.M. Industries for suggested equipment configuration. When working with black CIM products, vertical or sloped surfaces require a minimum of two (2) applications of approximately 30 mils each to obtain the required thickness. If a coating thickness of more than approximately 60 wet mils is specified on a vertical or sloped surface, additional coats will be required to achieve desired thickness.

5.8 Multiple Coats
Second/multiple coats can be applied as soon as the previous coat can be touched lightly without coming off on your finger. For black CIM products at 70°F, the tack free time is typically one (1) hour but no longer than four (4) hours after the previous coat has been applied. Higher temperatures speed up the curing time, and tack free time, therefore significantly shortening the 1–4 hour recoat window. Colder temperatures have the opposite effect. As soon as the coating becomes tack free, the second coat should be applied. For immersion or traffic service, apply all coats within the recoat window, except at joint lines

If it is necessary to walk on the first coat of black CIM in order to apply multiple coats, such as when coating a parking or pedestrian deck, polyethylene boots may be worn to prevent sticking to the coating.

5.9 Recoating After the Recoat Window
If second/multiple coats cannot be applied within the recoat window (1–4 hours under standard conditions), the previous coat must be abraded. Abrading shall be performed by surface grinder or other mechanical means. The black CIM must be solvent wiped (MEK or xylene) to clean up any loose debris. After the solvent flashes off, a light mist of CIM Bonding Agent must be applied. Allow the Bonding Agent to flash off and recoat within one (1) hour. See CIM Bonding Agent

NOTES:

Coating Profile for additional guidelines. For immersion or traffic service, minimize areas to be recoated outside the recoat window, severely abrade the areas to be recoated and test recoated areas for acceptable adhesion. Acceptable adhesion may only be achieved through aggressive abrading.

5.10 Overlap at Joints

Should rain or other conditions require work stoppage, prepare for joint lines. Joint lines shall be clean and straight. The overlap shall be a minimum of 6" to insure an impervious joint. All areas to be coated where more than a four (4) hour cure has taken place shall be treated per section 5.9, "Recoating After the Recoat Window."

6.0 TOPPINGS

The black CIM system may include toppings of aggregate, decorative coatings, protective coatings, or combinations of the above. See C.I.M. Industries' Instruction Guide, "Topcoats" (IG–7) for more detailed information.

7.0 GENERAL LIMITATIONS

Applying black CIM under any of the following conditions is likely to result in poor or unsatisfactory performance:

- Use of improper mixing equipment. See C.I.M. Industries' Instruction Guide "Mixing CIM Premix and Activator" (IG–8).
- Material temperature at the time of application is below 60°F.
- Use of standard application procedures when substrate temperature is below 50°F. See C.I.M. Industries' Instruction Guide "Applying CIM Coatings in Cold Weather" (IG–11).
- Substrate moisture is present or rain is imminent.
- Substrate temperature is less than 5°F above the dew point.
- Substrate is in a temperature-rising mode or exposed to direct sunlight.
- Other conditions which are obviously unsuitable.

C.I.M. Industries Inc.

CIM 1061

HIGH PERFORMANCE COATINGS AND LININGS

GENERAL APPLICATION INFORMATION

USE **FOR PROFESSIONAL USE ONLY.**

PRECAUTIONS Avoid contamination with water or moisture. Keep all pails and jugs tightly closed until ready for use. All equipment, air supplies, and application substrates must be **ABSOLUTELY DRY.** Do not apply in wet weather or when rain is imminent or when the CIM 1061 or the substrate may become wet within 4 hours after coating. Use caution when applying CIM 1061 in confined spaces. See C.I.M. Industries' Instruction Guide, "Applying CIM Within Confined Spaces" (IG–9).

TEMPERATURE Surface should be at least 50°F (10°C) and must be 5°F (3°C) above the dew point. **DO NOT APPLY WHEN THE SUBSTRATE OR AMBIENT TEMPERATURE IS RISING OR COATING IS IN DIRECT SUNLIGHT.** CIM 1061 should be at least 60°F (15°C) when mixed and applied. CIM 1061 may be preheated to facilitate application at low temperatures, but working time will be reduced. See C.I.M. Industries' Instruction Guide "Applying CIM Membranes in Cold Weather" (IG–11).

EQUIPMENT Spray equipment requires large diameter hose and air supplied mastic gun or plural component spray equipment. See "Spray Application of CIM" (IG–12) or contact C.I.M. Industries for specific recommendations. Roller, squeegee, and trowel may also be used.

POT LIFE About 30 minutes. Working time depends on temperature and method of application. Working time for spray applications will be significantly shorter.

PRIMING Porous substrates such as wood and concrete may be primed with CIM 61BG Epoxy Primer to minimize outgassing. The recoat window for CIM 61BG Epoxy Primer shall be no longer than 48 hours. See CIM 61BG Epoxy Primer Coating Profile for additional information. Perform adhesion tests to confirm adequacy of adhesion to primer.

MIXING **DO NOT THIN. DO NOT HAND MIX.** Begin mixing each pail (4.4 gal.) of CIM 1061 Premix using a power mixer (e.g. ½" drill and an eight inch mud mixer). Do not draw air into the mix. While mixing, slowly add one jug (0.6 gal.) of CIM 1061 Activator to the pail and mix thoroughly for **3 FULL MINUTES.** The proportions are premeasured; **DO NOT ESTIMATE.** Mixing Jigs and Timers from C.I.M. Industries help eliminate mixing errors and increase productivity on the job. See C.I.M. Industries' Instruction Guide, "Mixing CIM Premix and Activator" (IG–8).

APPLICATION Apply CIM 1061 directly to a clean and dry substrate. Vertical surfaces will require multiple coats. See C.I.M. Industries' specific substrate Instruction Guide for additional guidelines.

RECOATING CIM 1061 may be recoated in 1 hour and must be recoated soon after the coating no longer comes off on polyethylene (typically within 4 hours of mixing). If the coating has cured longer than this time, the surface must be severely abraded using surface grinder or other mechanical means, and be free of dust and debris. Use CIM Bonding Agent for better adhesion. For immersion conditions, all coats shall be applied within four hours of each other, except at joint lines.

SPREAD RATE **Note: Coverages are theoretical and do not account for waste, spillage, irregular surfaces, or application technique. Consult CIM 1061 Coverage Chart for additional coverage information.**

CURING TIME Before placing the coating into potable water service or similar applications, allow sufficient time for solvents to release from the coating. The required time for a 60 wet mil coating is two weeks at 60°F (15°C) and varies depending upon coating thickness and substrate temperature. For many other applications, CIM 1061 may be placed into service in 24 hours. Contact C.I.M. Industries for specific recommendations.

DISINFECTION CIM 1061 coating must be washed, rinsed, and disinfected in accordance with C.I.M. Industries Instruction Guide "Decontamination or Washing Procedures for Potable Water Tank and Fish Pond Service" (IG–10).

CLEAN-UP Use mineral spirits for clean-up of uncured material. Spray equipment must be flushed regularly during application to prevent material from setting up in the hose and pump. Cured material is very difficult to remove. Soaking in solvent will soften the material and may assist in its removal.

CONTACT C.I.M. INDUSTRIES FOR SPECIFIC RECOMMENDATIONS AND INSTRUCTION GUIDES.

C.I.M. Industries Inc.

CIM 1061

HIGH PERFORMANCE COATINGS AND LININGS

SHIPPING, STORAGE AND SAFETY DATA

WARNING **Flammable. Use only in well ventilated areas. Do not store or use near open flame, sparks or hot surfaces. Keep tightly closed. Avoid contact with moisture or water. Keep out of reach of children.**

SAFETY INFORMATION This product contains petroleum asphalt, petroleum distillates, amine compounds and/or other chemical ingredients. Adequate health and safety precautions should be observed during the storage, handling, application and curing. Refer to C.I.M. Industries' Material Safety Data Sheets for further details regarding the safe use of this product.

PACKAGING CIM 1061 is available in mixed units of **0.8** gallons and **5** gallons. Each unit consists of a container of premix and a smaller container of activator. Quantities have been premeasured to provide the proper mixing ratio, leaving sufficient room in the premix container to facilitate adequate mixing. **Do not estimate proportions.**

SHIPPING	**Premix**	**Activator**
Weights		
0.8 gallon kits	6.6 lbs. per can (26 lbs. per box of 4)	1 lb. per bottle (13 lbs. per carton of 12)
5.0 gallon units	40 lbs. per pail	6.0 lbs. per jug (36 lbs. per case of 6)
Properties		
Flash Point	101°F	>250°F
Shipping Name	Coating Solution	Not Regulated
DOT Class	Class 3, UN1139, PG III	Not Regulated
STORAGE		
Temperature	20°F to 110°F	70°F to 95°F
Shelf Life	2 years	6 months
NFPA	Class II	Non Flammable

WARRANTY & LIMITATION OF SELLER'S LIABILITY

C.I.M. Industries Inc. (C.I.M.) warrants that for a period of five (5) years from the date of shipment to the initial purchaser the products, when mixed in proper ratios for the proper length of time, (a) will not become brittle or crack and (b) will provide a water barrier. Due to application variables beyond C.I.M.'s control which may affect results, C.I.M. makes no warranty of any kind, expressed or implied, including that of merchantability, other than that the products conform to C.I.M.'s current quality control standards at time of manufacture. If breach of warranty is established, the buyer's exclusive remedy shall be repayment of the purchase price of the non-conforming CIM membrane product or, at C.I.M.'s option, resupply of conforming product to replace the non-conforming product. The buyer expressly waives any claim to additional damages, including consequential damages.

THE INFORMATION PRESENTED IN THIS PUBLICATION IS SUBJECT TO CHANGE WITHOUT NOTICE.

CONTACT C.I.M. INDUSTRIES FOR CURRENT INFORMATION.

FOR PROFESSIONAL USE ONLY.

www.cimindustries.com

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C.I.M. Industries Inc.

CIM 1061

HIGH PERFORMANCE COATINGS AND LININGS

COATING PROFILE

DESCRIPTION CIM 1061 is a tough, abrasion, corrosion and chemical resistant, liquid applied coating specifically for use in water and wastewater applications including those which require ANSI/NSF 61 potable water certification. Typical applications for this two component elastomeric urethane coating include tank and reservoir liners, joint seals, tank repairs, and chemical containment.

ADVANTAGES CIM 1061 is one of the toughest coatings available, specifically formulated to meet the demanding needs of the water/wastewater industries:

- ANSI/NSF 61 certified for potable water contact up to 180°F.
- Forms a tough elastomeric coating able to bridge cracks and joints.
- Meets the most demanding health and safety requirements for drinking water, fish hatcheries, and food processing plants.
- Adheres to and bridges between common construction materials such as concrete, steel, glass, wood, and most coatings.
- Environmentally sound, complying with the toughest VOC standards.
- Can be repaired when damaged or when new tank penetrations are installed.
- Excellent wear and abrasion service.
- UV stable.
- Liquid, two-component urethane can be applied to complex tanks with multiple penetrations, and irregular shapes.

SURFACE PREPARATION

GENERAL: Substrates must be **clean and dry** with no oils, grease or loose debris. CIM Bonding Agent is recommended on all non-porous substrates. Perform adhesion tests to confirm adequacy of surface preparation. See C.I.M. Industries' specific substrate Instruction Guide for specific guidelines.

CONCRETE: ICRI-CSP 4-6 concrete surface profile exposing aggregate. Concrete must exhibit minimum 3,000 psi compressive strength and be free of release agents and curing compounds. The substrate must be clean and dry (see CIM Instruction Guide IG-2), and free of contaminates.

STEEL: Minimum 3 mil profile.
Immersion service – SSPC-SP10 / NACE No. 2 Near White Blast.
Non-Immersion service – SSPC-SP6 / NACE No. 3 Commercial Blast.
Use CIM Bonding Agent for greater adhesion.

OTHER METALS: SSPC-SP1 solvent clean and abrasive blast to roughen and degloss the surface. Use CIM Bonding Agent for greater adhesion.

GLASS: Thoroughly clean. CIM Bonding Agent must be used for increased adhesion. For immersion service roughen the surface.

WOOD: Substrate must be clean, dry and free of surface contamination.

PREVIOUS COATINGS AND LININGS: CIM 1061 may be applied over some existing coatings and linings and achieve acceptable performance. CIM Bonding Agent is recommended for greater adhesion. Finished system results vary due to a variety of project specific factors, including the service conditions to which the system is exposed. Therefore, C.I.M. Industries does not accept responsibility for determining the suitability of an existing coating as a substrate for CIM products. Owner shall perform adhesion tests on any existing coating or lining to determine suitability.

EARTH: Use CIM Scrim.

COLOR CIM 1061 is initially shiny black, turning dull over 3 to 6 months when exposed to direct sunlight. For a colored or reflecting surface finish, see C.I.M Industries' Instruction Guide, "Topcoats" (IG-7) for further instructions.

SOLIDS BY VOLUME 88% (1416 dry mils x sq. ft./gal.)

RECOMMENDED COVERAGE Recommended minimum thickness at all points of the coating is 60 wet mils. Higher coverages may be specified, but extended time is required to insure proper solvent release prior to placing the liner in potable water service. Contact C.I.M. Industries for additional information.

VOC 90 g/l (0.75 lb./gal.). CIM 1061 complies with the toughest VOC regulations.

C.I.M. Industries Inc.

CIM 1061

HIGH PERFORMANCE COATINGS AND LININGS

All information presented in this publication is believed to be accurate, but it is not to be construed as a guarantee of minimum performance. Test performance results are obtained in a controlled laboratory environment using procedures that may not represent actual operating environments.

TYPICAL PROPERTIES

Abrasion Resistance - Wt. Loss	
Taber Abraser CS-17 Wheel 1000 gr./1000 rev. ASTM D4060	1.2 mg. Loss
Adhesion to concrete (dry) Elcometer	350 psi
Deflection Temperature ASTM D648	below -60°F
Density (Approx.)	
Premix	8.0 lbs./gal.
Activator	10.1 lbs./gal.
Mixed & Cured	8.3 lbs./gal.
Elastomeric Waterproofing	
ASTM C836	exceeds all criteria
ASTM C957	exceeds all criteria
Extension to Break, ASTM D412	300%
Hardness, Shore A ASTM D2240 @ 77°F	65
Liner Performance	
Crack Bridging	
10 cycles @ -15°F	greater than 1/8"
After heat aging	greater than 1/4"
Liner Weight (60 mils wet film thickness)	31 lbs./100 sq. ft.
Mix Ratio	
Weight	6.2:1
Volume	7.8:1
Mullen Burst Strength, ASTM D751, 50 mil	150 psi
Permeability to Water Vapor ASTM E96 Method E, 100°F, 100 mil sheet	0.03 perms
Potable Water Service ANSI/NSF 61 Approved	to 180°F
Recovery from 100% extension:	
after 5 minutes	98%
after 24 hours	100%
Service Temperature	-60°F to 220°F
Softening Point, Ring & Ball ASTM D36	>325°F
Tear Strength ASTM D624 (Die C)	180 lbs./in.
Tensile Strength, ASTM D412, 100 mil sheet	1000 psi
Weathering ASTM D822	5000 hrs.

CHEMICAL RESISTANCE

CIM 1061 is resistant to a broad range of acids and alkalis. Consult C.I.M. Industries for additional information regarding chemical resistance after reviewing CIM 1061 Chemical Resistance Chart.

THE INFORMATION PRESENTED IN THIS PUBLICATION IS SUBJECT TO CHANGE WITHOUT NOTICE.

CONTACT C.I.M. INDUSTRIES FOR CURRENT INFORMATION.

www.cimindustries.com

ONLINE CERTIFICATIONS DIRECTORY

FDNP.MH17445
Drinking Water System Components

Page Bottom

Drinking Water System Components

See General Information for Drinking Water System Components

C I M INDUSTRIES INC
23 ELM ST
PETERBOROUGH, NH 03458 USA

MH17445

ANSI/NSF STANDARD 61

Barrier Materials

Trade Dsg	Water Contact Temp (C)	Water Contact Mtl	Surface Area to Volume Ratio
CIM 1000 Trowel Grade(a)(d)(e)(n)(p)	23	Polyurethane	21.3 sq cm/L
CIM 1000 Trowel Grade(b)(d)(e)(n)(p)	82	Polyurethane	10.3 sq cm/L
CIM 1000 Trowel Grade(g)(d)(h)(n)(p)	23	Polyurethane	13.5 sq cm/L
CIM 1061(a)(c)(e)(n)(p)	23	Polyurethane	21.3 sq cm/L
CIM 1061(b)(c)(e)(n)(p)	82	Polyurethane	10.3 sq cm/L
CIM 1061(g)(c)(h)(n)(p)	23	Polyurethane	13.5 sq cm/L
CIM 2000 Trowel Grade (i)(l)(k)(n)(p)	23	Polyurethane	36.8 sq cm/L
CIM 2000(i)(j)(k)(n)(p)	23	Polyurethane	36.8 sq cm/L

Joining and Sealing Materials

Trade Dsg	Water Contact Temp (C)	Water Contact Mtl	Surface Area to Volume Ratio
CIM 1000 Trowel Grade(f)(d)(o)(n)	23	Polyurethane	21.3 sq cm/L
CIM 1061(f)(c)(o)(n)	23	Polyurethane	21.3 sq cm/L

(a) - Maximum surface area to volume ratio of 21.3 sq cm/L for tanks greater than 5,000 gal.

(b) - Maximum surface area to volume ratio of 10.3 sq cm/L for tanks greater than 50,000 gal.

(c) - CIM 1061 consists of CIM 1061 premix and CIM 1061 activator mixed in a 40 to 6 ratio by weight.

(d) - CIM 1000 Trowel Grade consists of CIM 1000TG premix and CIM 1000TG activator mixed in a 36 to 5.5 ratio by weight.

(e) - Also Classified is CIM Bonding Agent as an optional primer (minimum coverage rate of 300 ft 2/gal with a minimum drying time of 30 minutes). The following use restrictions apply: Number of coats: as many as needed to reach the Maximum Field Use Dry Film Thickness of 60 mils, Minimum Cure Temperature: 60 F, Re-coat/cure time: 3 hours/2 weeks

C.I.M. Industries Inc.
23 Elm St., Peterborough, NH 03458
Tel: (800) 543-3458 (603) 924-9481
Fax: (603) 924-9482
Web site: www.cimindustries.com

Instruction Guide
DECONTAMINATION OR WASHING PROCEDURES FOR POTABLE WATER TANK AND FISH POND SERVICE

After installation of CIM coatings in potable water applications, fish pond or similar application requiring stringent water quality, it is necessary for the CIM coating to cure and allow solvents to evaporate[1]. Once trapped solvents are reduced by evaporation to acceptable levels, the surface may be cleaned using the following procedure. After cleaning, the tank may be put into service following normal procedures that would have been used if the CIM material had not been present.

1) Thoroughly wash the CIM coating with a dilute acid solution or a mild detergent using high pressure water jet, sweeping, scrubbing or equally effective measures. All residue from the wash must be discharged or otherwise removed from the tank.

2) Rinse the CIM coating thoroughly using high pressure water jet, sweeping, scrubbing or equally effective means, and discharge or remove all rinse water from the tank.

3) The tank may now be placed in service following normal practice such as AWWA "Chlorine Shock" or other normal cleaning and decontamination procedures[2].

As an alternative to the above, the tank may be placed in service following AWWA Standard C652–92 with the exception that a double rather than single cleaning be used per section 2 of that standard.

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[1]Sufficient solvent has typically evaporated within one to two weeks for Black CIM coatings no more than 60 mils thick and at substrate temperatures of 60°F or higher. Different thicknesses and temperatures will result in different cure times. CIM 2000 contains no solvent and can be placed in service in 24 hours at 60°F. Consult C.I.M. Industries for specific cure times.

[2]For fish ponds, C.I.M. Industries recommends first placing inexpensive pet store fish (e.g. guppies) into the pond for sufficient time to determine that water quality is not an issue. Only after it is determined that water quality is not an issue should valuable fish such as Koi be introduced to the pond.

ENDYNE Inc.
Environmental Laboratories

Laboratory Report

Redstone Commercial Group 100467
5227 Bolton Valley Access Road
Bolton Valley, VT 05477

Attn: Mike Bernardine

PROJECT: WSID #5051
WORK ORDER: 0810-15778
DATE RECEIVED: October 28, 2008
DATE REPORTED: October 31, 2008
SAMPLER: MB

001 Site: Pump House Sample Tap Routine Sample ← Date Sampled: 10/28/08 Time: 9:57

Parameter	Result	Units	Method	Analysis Date/Time	LabTech	Qualifiers
Total Coliform	ABSENT	/100 mL	SM18 9223B	10/28/08 13:45	W KMB	
e. coli	ABSENT	/100 mL	SM18 9223B	10/28/08 13:45	W KMB	
Chlorine, Free per Clie	0.5	ppm	Client Data	10/28/08 9:57	ECT	

The Federal SDWA considers this water bacteriologically **Acceptable** for consumption.

Endyne will mail a copy of these results to the State Water Supply Division as a courtesy, however we cannot guarantee their receipt. We recommend that you also mail a copy to insure compliance.

Reviewed by:

Harry B. Locker Ph.D.
Laboratory Director

ENDYNE Inc.
Environmental Laboratories

Laboratory Report

Redstone Commercial Group 100467
3227 Bolton Valley Access Road
Bolton Valley, VT 05477

Atten: Mike Bernardine

PROJECT: WSID #5051
WORK ORDER: **0810-15382**
DATE RECEIVED: October 21, 2008
DATE REPORTED: October 23, 2008
SAMPLER: MB

- 001 Site: Frac Tank Temp Storage Routine Sample ← Date Sampled: 10/21/08 Time: 9:59

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	Qualifiers
Total Coliform	ABSENT	/100 mL	SM18 9223B	10/21/08 14:05	W KMB	
e. coli	ABSENT	/100 mL	SM18 9223B	10/21/08 14:05	W KMB	
Chlorine, Free per Clie	1.3	ppm	Client Data	10/21/08 9:59	ECT	

The Federal SDWA considers this water bacteriologically **Acceptable** for consumption.

Endyne will mail a copy of these results to the State Water Supply Division as a courtesy, however we cannot guarantee their receipt. We recommend that you also mail a copy to insure compliance.

Reviewed by:

Harry B. Locker Ph.D.
Laboratory Director

Laboratory Report

DATE REPORTED: 10/24/2008

CLIENT: Redstone Commercial Group
PROJECT: WSID #5051 Catamount/Bolton

WORK ORDER: 0810-15248
DATE RECEIVED 10/16/2008

001 Site: Frac Tank/Temp Storage ← Date Sampled: 10/16/08 Time: 10:35

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.
Chlorine, Free per Client	1.5	ppm	Client Data	10/16/08 10:35	JTT	U	
Total Coliform	Absent	/100 mL	SM18 9223B	10/16/08 15:40	W KMB	A	
e. coli	Absent	/100 mL	SM18 9223B	10/16/08 15:40	W KMB	A	

002 Site: Frac Tank/Temp Storage ← Date Sampled: 10/16/08 Time: 10:40

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.
VOC Potable Water							
Dichlorodifluoromethane	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Chloromethane	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Vinyl chloride	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Bromomethane	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Chloroethane	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Trichlorofluoromethane	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
1,1-Dichloroethene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Methylene chloride	< 1.0	ug/L	EPA 524.2	10/20/08	W DAW	A	
Methyl-t-butyl ether (MTBE)	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
trans-1,2-Dichloroethene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
1,1-Dichloroethane	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
2,2-Dichloropropane	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
cis-1,2-Dichloroethene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Bromochloromethane	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Chloroform	71.4	ug/L	EPA 524.2	10/20/08	W DAW	A	
1,1,1-Trichloroethane	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Carbon tetrachloride	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
1,1-Dichloropropene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Benzene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
1,2-Dichloroethane	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Trichloroethene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
1,2-Dichloropropane	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Dibromomethane	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Bromodichloromethane	1.1	ug/L	EPA 524.2	10/20/08	W DAW	A	
cis-1,3-Dichloropropene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Toluene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
trans-1,3-Dichloropropene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
1,1,2-Trichloroethane	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Tetrachloroethene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
1,3-Dichloropropane	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Dibromochloromethane	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Chlorobenzene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Ethylbenzene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
1,1,1,2-Tetrachloroethane	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	

Laboratory Report

DATE REPORTED: 10/24/2008

CLIENT: Redstone Commercial Group
PROJECT: WSID #5051 Catamount/Bolton

WORK ORDER: 0810-15248
DATE RECEIVED 10/16/2008

002 Site: Frac Tank/Temp Storage ← Date Sampled: 10/16/08 Time: 10:40

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.
Xylenes, Total	< 1.0	ug/L	EPA 524.2	10/20/08	W DAW	A	
Styrene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Bromoform	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Isopropylbenzene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
1,1,2,2-Tetrachloroethane	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Bromobenzene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
n-Propylbenzene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
1,2,3-Trichloropropane	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
2-Chlorotoluene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
1,3,5-Trimethylbenzene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
4-Chlorotoluene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
t-Butylbenzene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
1,2,4-Trimethylbenzene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
s-Butylbenzene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
4-Isopropyltoluene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
1,3-Dichlorobenzene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
1,4-Dichlorobenzene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
n-Butylbenzene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
1,2-Dichlorobenzene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
1,2,4-Trichlorobenzene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Hexachlorobutadiene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Naphthalene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
1,2,3-Trichlorobenzene	< 0.5	ug/L	EPA 524.2	10/20/08	W DAW	A	
Surr. 1 (4-Bromofluorobenzene)	97	%	EPA 524.2	10/20/08	W DAW	A	
Surr. 2 (1,2-Dichlorobenzene d4	92	%	EPA 524.2	10/20/08	W DAW	A	

003 Site: TB Not Needed Date Sampled: 10/16/08 Time: 10:35

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.

No analysis

ENDYNE Inc.
Environmental Laboratories

Laboratory Report

Redstone Commercial Group 100467
3227 Bolton Valley Access Road
Bolton Valley, VT 05477

Attn: Mike Bernardine

PROJECT: WSID #5051 Catamount/Bolton
WORK ORDER: **0811-16128**
DATE RECEIVED: November 04, 2008
DATE REPORTED: November 05, 2008
SAMPLER: MB

001 Site: Pump House Sample Tap ROutine Sample ← Date Sampled: 11/4/08 Time: 10:10

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	Qualifiers
Total Coliform	Absent	/100 mL	SM18 9223B	11/4/08 16:20	W KMB	
e. coli	Absent	/100 mL	SM18 9223B	11/4/08 16:20	W KMB	
Chlorine, Free per Clie	1.0	mg/L	Client Data	11/4/08 10:10	ECT	

The Federal SDWA considers this water bacteriologically **Acceptable** for consumption.

002 Site: Deli Sink Routine Sample ← Date Sampled: 11/4/08 Time: 10:02

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	Qualifiers
Total Coliform	Absent	/100 mL	SM18 9223B	11/4/08 16:20	W KMB	
e. coli	Absent	/100 mL	SM18 9223B	11/4/08 16:20	W KMB	
Chlorine, Free per Clie	0.8	mg/L	Client Data	11/4/08 10:10	ECT	

The Federal SDWA considers this water bacteriologically **Acceptable** for consumption.

Endyne will mail a copy of these results to the State Water Supply Division as a courtesy, however we cannot guarantee their receipt. We recommend that you also mail a copy to insure compliance.

Reviewed by:

Harry B. Locker Ph.D.
Laboratory Director

ENDYNE Inc.
Environmental Laboratories

Laboratory Report

Redstone Commercial Group 100467
3227 Bolton Valley Access Road
Bolton Valley, VT 05477

Attn: Mike Bernardine

PROJECT: WSID #5051 Catamount/Bolton
WORK ORDER: **0811-16471**
DATE RECEIVED: November 10, 2008
DATE REPORTED: November 12, 2008
SAMPLER: MB

001 Site: Pump House Sample Tap ← Date Sampled: 11/10/08 Time: 10:35

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	Qualifiers
Total Coliform	Absent	/100 mL	SM18 9223B	11/10/08 16:45	W KMB	
e. coli	Absent	/100 mL	SM18 9223B	11/10/08 16:45	W KMB	
Chlorine, Free per Cli	0.4	ppm	Client Data	11/10/08 10:35	W JTT	

The Federal SDWA considers this water bacteriologically **Acceptable** for consumption.

Endyne will mail a copy of these results to the State Water Supply Division as a courtesy, however we cannot guarantee their receipt. We recommend that you also mail a copy to insure compliance.

Reviewed by:

Harry B. Locker Ph.D.
Laboratory Director

ENDYNE Inc.
Environmental Laboratories

Laboratory Report

Redstone Commercial Group 100467
3227 Bolton Valley Access Road
Bolton Valley, VT 05477

Atten: Mike Bernardine

PROJECT: WSID #5051 Catamount/Bolton
WORK ORDER: 0811-16470
DATE RECEIVED: November 10, 2008
DATE REPORTED: November 12, 2008
SAMPLER: MB

- 001 Site: Catamount/Bolton Main Tank ← Date Sampled: 11/10/08 Time: 10:45

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	Qualifiers
Total Coliform	Absent	/100 mL	SM18 9223B	11/10/08 16:45	W KMB	
e. coli	Absent	/100 mL	SM18 9223B	11/10/08 16:45	W KMB	
Chlorine, Free per Clie	0.9	ppm	Client Data	11/10/08 10:45	W JTT	

The Federal SDWA considers this water bacteriologically **Acceptable** for consumption.

Endyne will mail a copy of these results to the State Water Supply Division as a courtesy, however we cannot guarantee their receipt. We recommend that you also mail a copy to insure compliance.

Reviewed by:

Harry B. Locker Ph.D.
Laboratory Director

Laboratory Report

CLIENT: Redstone Commercial Group
PROJECT: WSID #5051 Catamount/Bolton
REPORT DATE: 11/25/2008

WORK ORDER: 0811-16504
DATE RECEIVED: 11/11/2008

TEST METHOD: EPA 524.2

001 Site: Main Tank ←

Date Sampled: 11/11/0805:00 Analysis Date: 11/18/08 W DAV

Parameter	Result	Unit	Nelac	Qual
Dichlorodifluoromethane	< 0.5	ug/L	A	
Vinyl chloride	< 0.5	ug/L	A	
Chloroethane	< 0.5	ug/L	A	
1,1-Dichloroethene	< 0.5	ug/L	A	
Methyl-t-butyl ether (MTBE)	< 0.5	ug/L	A	
1,1-Dichloroethane	< 0.5	ug/L	A	
cis-1,2-Dichloroethene	< 0.5	ug/L	A	
Chloroform	42.4	ug/L	A	
Carbon tetrachloride	< 0.5	ug/L	A	
Benzene	< 0.5	ug/L	A	
Trichloroethene	< 0.5	ug/L	A	
Dibromomethane	< 0.5	ug/L	A	
cis-1,3-Dichloropropene	< 0.5	ug/L	A	
trans-1,3-Dichloropropene	< 0.5	ug/L	A	
Tetrachloroethene	< 0.5	ug/L	A	
Dibromochloromethane	< 0.5	ug/L	A	
Ethylbenzene	< 0.5	ug/L	A	
Xylenes, Total	< 1.0	ug/L	A	
Bromoform	< 0.5	ug/L	A	
1,1,2,2-Tetrachloroethane	< 0.5	ug/L	A	
n-Propylbenzene	< 0.5	ug/L	A	
2-Chlorotoluene	< 0.5	ug/L	A	
4-Chlorotoluene	< 0.5	ug/L	A	
1,2,4-Trimethylbenzene	< 0.5	ug/L	A	
4-Isopropyltoluene	< 0.5	ug/L	A	
1,4-Dichlorobenzene	< 0.5	ug/L	A	
1,2-Dichlorobenzene	< 0.5	ug/L	A	
Hexachlorobutadiene	< 0.5	ug/L	A	
1,2,3-Trichlorobenzene	< 0.5	ug/L	A	
Surr: 2 (1,2-Dichlorobenzene d4)	98	%	A	

Parameter	Result	Unit	Nelac	Qual
Chloromethane	< 0.5	ug/L	A	
Bromomethane	< 0.5	ug/L	A	
Trichlorofluoromethane	< 0.5	ug/L	A	
Methylene chloride	< 1.0	ug/L	A	
trans-1,2-Dichloroethene	< 0.5	ug/L	A	
2,2-Dichloropropane	< 0.5	ug/L	A	
Bromochloromethane	< 0.5	ug/L	A	
1,1,1-Trichloroethane	< 0.5	ug/L	A	
1,1-Dichloropropene	< 0.5	ug/L	A	
1,2-Dichloroethane	< 0.5	ug/L	A	
1,2-Dichloropropane	< 0.5	ug/L	A	
Bromodichloromethane	1.1	ug/L	A	
Toluene	< 0.5	ug/L	A	
1,1,2-Trichloroethane	< 0.5	ug/L	A	
1,3-Dichloropropane	< 0.5	ug/L	A	
Chlorobenzene	< 0.5	ug/L	A	
1,1,1,2-Tetrachloroethane	< 0.5	ug/L	A	
Styrene	< 0.5	ug/L	A	
Isopropylbenzene	< 0.5	ug/L	A	
Bromobenzene	< 0.5	ug/L	A	
1,2,3-Trichloropropane	< 0.5	ug/L	A	
1,3,5-Trimethylbenzene	< 0.5	ug/L	A	
t-Butylbenzene	< 0.5	ug/L	A	
s-Butylbenzene	< 0.5	ug/L	A	
1,3-Dichlorobenzene	< 0.5	ug/L	A	
n-Butylbenzene	< 0.5	ug/L	A	
1,2,4-Trichlorobenzene	< 0.5	ug/L	A	
Naphthalene	< 0.5	ug/L	A	
Surr: 1 (4-Bromofluorobenzene)	96	%	A	

Report Summary of Qualifiers and Notes

Samples were received at the laboratory with a temperature of 7.8 degrees Celsius. Samples should be received in a cooler with sufficient ice to attain a temperature of 6 degrees celsius or below. Samples should not be frozen.