


PCB Encapsulation & Decontamination Methods of Building Material

NEWMOA PCB in Building Materials Presentation 3/23/22

Presented By:
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Who We Are

Our Mission
 To provide safe and compliant solutions to protect human health and the environment.

Our Vision
 To be the premier provider of comprehensive environmental services.

Shared Values

Permission to Play

- Protecting the Environment
- Safety and Compliance
- Doing the Right Thing, the Right Way
- Living the Humble, Hungry, and Smart Virtues


How We Win

- Service Excellence
- Being a Trusted Partner
- Innovative Solutions
- Being "One Team"




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PCB Decontamination Methods
761.79




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**Decontamination
Methods for Building
Materials**

**Real Simple, only way to know if decontamination
will work for a substrate is to perform a pilot study in
the field with actual site conditions!**



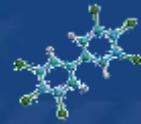
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PCBs In Building Materials

Likely affected areas?

- Window and door frames
- Masonry joints
- Expansion joints
- Painted surfaces
- Porous Surfaces
- Electrical Equipment
 - Transformers
 - Light Ballasts
- Non-porous Surfaces
- Roofs
- HVAC equipment
- Flooring and Ceilings
- Elevator shafts

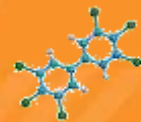


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Migration Pathways

Where do PCBs Leach/Spread?

- Abutting surfaces
- Underlying/surrounding soils
- Porous surfaces and substrates (wood, concrete, pavement)
- Dust



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Regulations originally intended for Electrical equipment decontamination

Decontamination Methods/Approach may require a submittal to the EPA Regional Administrator for review and approval.

Commonly used products for Porous & Non-Porous Surfaces:

- CAPSUR®
- DeconGel™
- Chemical Solvents*

*The use of solvents can also increase the mobility of PCBs in a substrate which may allow further migration into porous surfaces/substrates.

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Decontamination Methods 761.79

Application for Porous & Non-Porous Substrates/Surfaces:

- Remove all surface debris
- Apply decon product per manufacturers specifications. CAPSUR® can be applied as a foam with an applicator which can be useful on ceilings and vertical surfaces.

Decontamination Objective:

Non-Porous Surfaces: PCBs $\leq 10\mu\text{g}/100\text{cm}^2$ as measured by a standard wipe test. Also for concrete if decon is commenced within 72 hours of the initial spill of PCBs.

Porous Substrates: PCBs $< 1\text{ppm}$ without encapsulants or a restriction of property and monitoring.

- Again, pilot testing of surfaces prior to performing a full decontamination is warranted based upon many factors (See Below from Integrated Chemistries and Capsule Laboratories, Inc.)

The use of solvents can also increase the mobility of PCBs in a substrate which may allow further migration into porous surfaces/substrates.

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Water Blasting Scarification Decontamination of Paint



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Grinding Scarification Decontamination of Painted Surfaces


- Either performed in Full Containment
 - Level C (Respirators or Supplied Air)
 - Best with HEPA Vacuum Attachments
 - Many options for types of grinders
 - Walk behind and Hand-Held Grinders
 - Capable of Removing Multiple Layer of Paint
 - Capable of Removing Concrete evenly in Depth
 - Depths vary depending upon concrete and rebar



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PCBs In Building Materials



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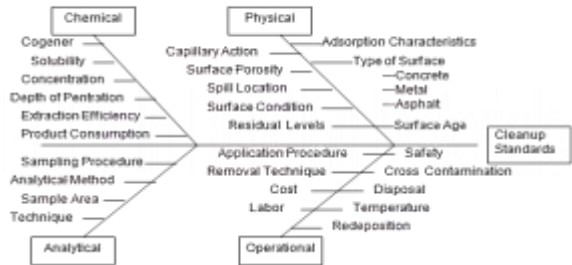
Application for Porous & Non-Porous Surfaces:


- Remove all surface debris
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Again, pilot testing of surfaces prior to performing a full decontamination is warranted based upon many factors (See Below from Integrated Chemistries and Capsule Laboratories, Inc.)

Also, please be aware that the age of a spill or PCB contamination will impact the results of decontamination.

**PCB SPILL CLEANUP
CAUSE AND EFFECT DIAGRAM**



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PCBs In Building Materials Decon by Scarification



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PCBs In Building Materials Demolition and Encapsulation



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PCBs In Building Materials Demolition and Encapsulation



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Confidential Town- Elementary School PCB Contaminated Caulking Removal

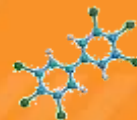
Project Obstacles:

- Time sensitive schedule
- Dry time of multiple coats and climate
- Surfaces that would not allow epoxy paint to adhere

Alternate Encapsulation Solution:

Rigid metal panels vs. epoxy coating

- Alternate solution prevents exposure and contact to adjacent wall surfaces
- Rigid system would protect young children against contact into the exposed cracked joints
- Reduce maintenance from graffiti scratches
- Can be removed for demo



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Case Study-Confidential Town Elementary School

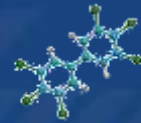
PCB Contaminated Caulking Removal and Encapsulation

Contracted to remove and encapsulate PCB-containing caulk found at the Elementary School that was discovered during a hazardous materials review conducted in August of 2012.

Contract awarded in mid-August with the new school year set to begin at the end of August, the timeframe was extremely tight, approximately one week to complete the abatement and encapsulation. Successfully expedited the required EPA submittal and review process due to the diligent efforts of experienced personnel and a team approach.

Provided a value-engineered solution, improving the original plans that included an epoxy paint encapsulant with an alternate rigid metal over the remaining PCB containing material to encapsulate it after the abatement.

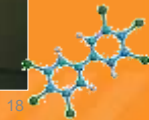
In order to prevent an unacceptable delay in the start of the school year, we worked closely with the Town's engineer/consultant and the EPA to accomplish the project on-time through an innovative alternative solution.



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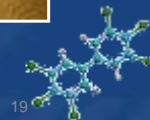
Confidential Town- Elementary School

PCB Contaminated Caulking Removal-Before



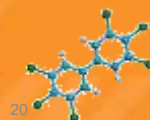
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Alternate Solution- Rigid metal panels



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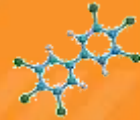
Confidential Town- Elementary School PCB Contaminated Caulking Removal with Alternate Solution Remedy



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Summary

- A well developed PCB Work Plan is one of the most important steps for EPA acceptance and execution of the abatement/remediation.
- Highly Trained and Experienced Remediation Contractor is Key to Success.
- A Teaming Relationship with the Engineer, Consultant, Client and Remediation Contractor is extremely beneficial for Successful Project Execution.



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Disposal Options for PCB Waste

Bulk Product Waste:

- TSCA Landfill
- Subtitle D landfills approved and willing to accept PCB Bulk Product Waste.

Remediation Waste:

- Greater than 50ppm – TSCA Landfills or Incineration
- Less than 50ppm - Subtitle D Landfills approved and willing to accept PCBs less than 50 ppm with an EPA Approved Self Implementing Plan

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Conclusion

Questions and Answers

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