Courts & Recreation:
Proper Steps When Encountering Hazardous Surfaces
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  • Maple Wood Flooring, Padded Urethane Systems, Rubber, PVC Vinyl Floors
Overview & Objectives

- A discussion about the proper steps to take when encountering hazardous surfaces and environmentally contaminated surfaces.

- Identifying Hazards, Testing & Requirements.
- Removal / Abatement & Disposal IF Required.
- Substrate Evaluations & Preparation.
- Installation Options for a New Surface.
- Proper Disposal of Waste Materials.
Hazardous Surface Conditions

Some Examples Include:
- Tile Floors Containing Asbestos
- Mastic Adhesives Containing Asbestos
- Painted Slabs or Coatings
- Poured in Place Urethane Floors Containing Mercury
- Excessive Moisture in Concrete or Substrate
Asbestos Tiles
Asbestos Tiles

• Many vinyl tiles produced prior to 1982, were made with asbestos fibers.
• Vinyl Asbestos Tiles “VAT” that contains asbestos may be dark in color, including black or burgundy.
• They may measure 9, 12 or 13 inches square.
• **Asbestos is most hazardous when it is disturbed.**
  • The term "**friable**" means that the asbestos is easily crumbled, releasing fibers into the air.
  • *Asbestos-containing ceiling tiles, floor tiles, undamaged lab cabinet tops, shingles, fire doors, siding shingles, etc. will not release asbestos fibers unless they are disturbed or damaged in some way.*
  • *Sprayed on asbestos insulation is “highly friable”. Asbestos floor tiles are not.*
Mastic Adhesives

• Asbestos adhesives or mastics were often used to install wood floors, vinyl tiles and other types of flooring.

• Some cutback adhesives contained asbestos. It is commonly thought that asbestos was added to these compounds for fire-resistance.

• Many modern mastics are latex or water-based, and can be softened with water.
Mastics
Sample Test Report for Mastic Felt Subfloor

ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116

<table>
<thead>
<tr>
<th>Total Samples Submitted:</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Samples Analyzed:</td>
<td>1</td>
</tr>
<tr>
<td>Total Samples with Layer Asbestos Content &gt; 1%:</td>
<td>0</td>
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</tbody>
</table>

**Location:** 1, Mastic/Flex

<table>
<thead>
<tr>
<th>Sample Layers</th>
<th>Asbestos Content</th>
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<tbody>
<tr>
<td>Black Mastic with Felt</td>
<td>ND</td>
</tr>
<tr>
<td><strong>Composite Non-Asbestos Content:</strong></td>
<td>20% Cellulose</td>
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<td><strong>Sample Composite Homogeneity:</strong></td>
<td>Good</td>
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</table>
Coatings or Painted Slabs

- **Examples include:**
  - Industrial Epoxy, Urethane Coatings.
  - Paint
  - Acrylic Tennis Coatings

- Identify surface prep scarification requirements.

- Prep Surface & Perform a Bond Test if Necessary
Poured In Place Urethanes (PIPU)

• Mercury was a catalyst that allowed materials to harden.
• Since this catalyst is not entirely bound within the flooring matrix, some of these floors emit mercury vapors.
• Mercury vapor emitted by the floors, furnishings and equipment might be at high enough levels to be considered a health hazard.
• Well-known brands of polyurethane flooring manufactured and installed in the 1960’s and 1970’s.
• Manufacturers acknowledged that it used mercury and other heavy metals as catalysts, pigments and additives in their product.
Poured In Place Urethanes - PIPUs
Testing/Abatement/Demolition

• If the surface could contain hazardous materials such as Mercury or Asbestos, advise the client to seek testing by an independent laboratory.

• If the surface test positive, advise the client to contact a Licensed Abatement Contractor or Consultant.

• State web portals offer search tools to find Lisc. Abatement Contractors, Consultants by Discipline. These same sites also offer a search tool to look up and verify status of the Lisc.# for these same Contractors.
SUBSTRATE EVALUATION & PREP

- Moisture Testing
- Floor Levelness
- Selecting a Vapor Barrier
- *Leveling, Patching and Joint Repairs
- *Moisture Suppression Systems
- *Surface Scarifying/ Profiling

* IF Required by Job Conditions or Test Results.
Moisture Testing Methods

- Rapid RH Probe Testing
- Surface Moisture Test
- Calcium Chloride Test Kits
  - No longer recognized by many major sport surface manufacturers.
Substrate Levelness / Flatness

- 1/8” in 10’ feet. Checking flatness in various areas of the room.
- Ff /Fl numbers are not applicable to our industry.

https://www.maplefloor.org/TechnicalInfo/Position-Statements/Ff-Fl-Numbers-and-Concrete-Slab-Flatness.aspx

- Sketch results for record on a drawing.
- Submit to the GC for Concrete Contractor.
  - Use chalk to mark high, low areas.
  - Grind scarify high, skim fill low spots.
  - Topping pour required in extreme cases.
Vapor Barrier

• **Vapor Barriers**
  - 6 mil poly = Industry standard for MFMA Wood Maple Systems.
  - Felt Paper = Commonly specified, used over a plywood decking. Such as: Performing arts, raised platforms, raised crawl space gym retrofits.
Moisture Mitigation / Suppression

- Use Only Manufacturers approved & warrantied solutions.
- Rolled good Moisture Barrier.  Double sided tape and taped seams.
- Shot Blast Slab to a Required Profile for a fluid applied Suppression System.
Mobilization and Jobsite Conditions

- The Right Time to Schedule Mobilization.
- Unload and Staging of Materials in Controlled Space.
- Jobsite Conditions:
  - Measure & Record Humidity/ Temp. (HOBO Monitors)
  - Photograph Site conditions, Other Trades affecting QC
- Acclimation periods.
  - Acclimation of Rubber or Vinyl in the installed space.
  - Wood Floor Acclimation with or without HVAC.
Installation Methods

- **Glue down/Adhered**
  - Some adhesives offer upgrades to high RH%.

- **Overpour or “Face-Lift”**
  - Ensure proper preparation per the manufacturers specifications are followed.

- **Floating**
  - Moisture Barrier Slip-Sheet or Floating Subfloor.
  - Ensure conditions are suitable for a stable floating floor.
    - I.E: Flatness, Conditioned space.

- **Anchored Resilient (Maple or Wood Sub-floor Systems)**
  - Ensure substrate is suitable for anchor pins and will not fail.
    - I.E: A brittle mortar bed or topping may not be suitable for a successful anchoring.
Disposal of Materials Waste

- Dumpster Responsibility. (GC or Sports Surface Contractor).
  - Ensure dumpster is in a safe location and secured.

- Proper disposal of materials removed and or installed.
  - Proper landfill placement or recycling for demolished materials.
  - Buckets, drums (urethane, adhesives, paints).

- Proper storage of attic stock or excess materials in a conditioned space for the owner or return to WH stock.
Conclusions:

• Builder Discussion
• Share Experiences