DESCRIPTION:
Smith's Epoxy MAC125 is a fast cure, solvent free, 2-component 100% solids Osmotic Moisture Vapor / Alkalinity Control primer with high capillary penetration capabilities for absorption into porous substrates at all recommended application temperatures. Epoxy MAC125 reduces Osmotic moisture vapor transmission levels to an acceptable level (i.e. below 3 lbs. at tested rates up to 25 lbs./14 pH per ASTM F1869 or 100% RH ASTM F2170) to receive subsequent systems.

Smith’s Epoxy MAC125 is also suitable for direct adhesion to a variety of substrates, including but not limited to concrete, properly prepared, well bonded and solid Ceramic/Porcelain/ Quarry Tiles, and metal substrates (i.e. Aluminum, Copper, Steel, Zinc, etc.).

May be used as a primer beneath resinous coatings systems, decorative concrete overlays/resurfacers and self-leveling cementitious underlayments in all common flooring and floor coating application interior environments.

RECOMMENDED USES:
- Treats New or Existing Concrete
- Up to 100% Relative Humidity (ASTM F2170)
- Up to 25 lbs. (ASTM F1869)
- As a primer for:
  - Resinous Floor Coating Systems
  - Terrazzo
  - Resilient Floor Coverings
  - Ceramic Tile
  - Decorative Concrete Overlay systems
- Bonds to:
  - Concrete
  - Metal (Steel, Copper, Aluminum, Zinc)
  - Ceramic/Quarry/Porcelain Tile

HIGHLIGHTS:
- Exceeds all ASTM-F3010-13 requirements
- Remediate High pH levels
- Acts as a vapor barrier to allow the installation of moisture sensitive floor coverings and floor coating systems
- Allows same day recoating
- Ideal for cool installation temperatures
- Solvent and water free
- Low odor and VOC's – Available in all regions

STORAGE:
Indoors between 50°F - 90°F

INSTALLATION TEMPERATURE RANGE:
40°F to 75°F and between 30% to 80% humidity

SHELF LIFE:
1 Year in original, unopened containers

AVAILABLE KIT SIZES:
2.5 gallon kit – SCS-MAC125-2.5gal

COLORS:
Transparent Yellowish Clear with all Smith’s EC Epoxy Color Packs sold separately

POTLIFE & CURE TIMES (72°F / 50% Relative Humidity):

<table>
<thead>
<tr>
<th>Property</th>
<th>Test Method</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressive Strength, psi (MPa)</td>
<td>ASTM D695</td>
<td>17,984 psi (124 MPa)</td>
</tr>
<tr>
<td>Flexural Strength - psi (MPa)</td>
<td>ASTM D790</td>
<td>10,152 psi (70 MPa)</td>
</tr>
<tr>
<td>Tensile Strength, psi (MPa)</td>
<td>ASTM D2370</td>
<td>5,801 psi (40 MPa)</td>
</tr>
<tr>
<td>Percent Elongation</td>
<td>ASTM D2370</td>
<td>7%</td>
</tr>
<tr>
<td>Shore D Hardness</td>
<td>ASTM D2240</td>
<td>&gt;80</td>
</tr>
<tr>
<td>Hardness (Pencil)</td>
<td>ASTM D3362</td>
<td>2H</td>
</tr>
<tr>
<td>VOC’s-Volatile Organic Compounds</td>
<td>ASTM D3960</td>
<td>0 g/L</td>
</tr>
<tr>
<td>Viscosity – Mixed</td>
<td>ASTM 2196</td>
<td>1,400 cPs</td>
</tr>
<tr>
<td>Adhesion to Concrete</td>
<td>ASTM D4541</td>
<td>Concrete Fails</td>
</tr>
<tr>
<td>Permanence*</td>
<td>ASTM E96 / DIN EN 7783-2</td>
<td>0.014 grams / 24h*m² * mmHg</td>
</tr>
</tbody>
</table>

* 2 coat tinted primer neat at 23 mils average total DFT. All 3 recommended application thicknesses meet ASTM E96 requirements

CURED COATING PROPERTIES (DRY FILM):

<table>
<thead>
<tr>
<th>Property</th>
<th>Test Method</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moisture Vapor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤18 lbs. or 97% RH</td>
<td></td>
<td>325 sq.ft. per kit  (12 lbs = 133 sq.ft. per mixed gallon yield)</td>
</tr>
<tr>
<td>≤25 lbs. or 100% RH</td>
<td></td>
<td>325 sq.ft. per kit  (20 lbs = 80 sq.ft. per mixed gallon yield)</td>
</tr>
</tbody>
</table>

| 2 coat primer for Resurfacing, Broadcast or Metallic Coating Systems ≤25 lbs. or 100% RH | FIRST COAT = 265-325 sq.ft. per kit (12-15 mils = 106-133 sq.ft. per mixed gallon yield) |
|                                                                           | SECOND COAT = 400 sq.ft. per kit (10 mils = 160 sq.ft. per mixed gallon yield) |

APPROXIMATE COVERAGE:
Coverage varies due to application thickness, floor profile and absorbency of concrete.
Epoxy MAC125 coverage per kit as follows (gals = sq.ft. per gallon):
Coverage Equation: 1604 ÷ milage = Dry Film Thickness
INSPECT THE SUBSTRATE: Ensure the concrete is structurally sound and solid as free of any contaminants that may act as a bond breaker, such as oil, paint, densifier/sealers, curing compounds, wax, silicone, etc.

CHECK FOR MOISTURE: Testing concrete moisture via both the Calcium chloride (ASTM F1869) and In-situ Relative Humidity (ASTM F2170) methods is highly recommended to accurately determine both the Moisture Vapor Emission Rate (ASTM F1869) and the available Moisture Content (ASTM F2170) at the time of testing. Using only one test method will only give all of the necessary information and may not indicate other potential risks such as contaminates, etc. that may pose a risk for delamination, chemical attack, etc. which are not caused by moisture vapor emissions or high alkalinity.

Smith’s Epoxy MAC125, in conjunction with proper testing and mechanical preparation, will reduce the moisture vapor emission rate to a level within the tolerance of subsequent coatings and traditional floor covering needs.

Follow the testing manufacturer’s instructions precisely or visit www.astm.org, see ASTM F1869 or F2170, to purchase the test methods. Testing MUST occur within an acclimated, interior environment for the results to be valid and conclusive. In cases where environmental conditions cannot be made to achieve acceptable moisture vapor readings or for exterior applications, only a 1 year standard product defect warranty shall be extended for those applications, no moisture vapor suppression warranty shall exist in these circumstances.

Smith Paint Products is strictly a product manufacturer and does NOT offer any testing or analysis service but may provide references for testing labs. When in doubt, hire a qualified third party testing firm.

CONTAMINATION OF SUBSTRATE: Concrete is porous and can become contaminated with oils, chemical from spills, etc. which act as a bond breaker. Determine if a potential bond breaker exists and a proper course of remediation. Core sample Petrographic Analysis is the best method for testing of concrete for contaminant type and depth as well as for documenting and determining if other risks exist prior to proceeding with quoting and application of a flooring system. It is the contractors’ responsibility to determine the substrate suitability and the course of action for remediation. Smith Paints is a product manufacturer, NOT a testing or analysis service but can provide references for testing labs. When in doubt, hire a third party inspector with appropriate certifications and credentials.

Delamination and/or breakdown due to the following causes which would have been detected via Petrography are exclusions to Moisture Vapor Warranty:

- **AAR (Alkali Aggregate Reaction)**
  - ACR (Alkali-Carbonate Reaction)
  - ASR (Alkali-Silica Reaction)
- Hydrostatic Pressure
- Near Surface ASR (may occur in certain environments which have been topically treated with Sodium Silicates or Potassium Metasilicates)
- Substrate contamination (i.e. Oils, Solvents, PERT, PCB’s, Silicone, etc.)

CHEMICAL CONTAMINATION: Chemical contamination should be determined and may require additional testing. Once the type of contaminant is determined, contact Smith Paint Products for recommendations while following local regulations regarding contaminant and disposal.

OIL CONTAMINATION: Smith’s Oil Clean may be used to remove oils, such as petroleum, synthetic, and food oils, from concrete & other mineral based substrates prior to mechanical preparation.

SILICATE CONTAMINATION: Substrates which may have been previously treated with silicates (Potassium or Sodium Silicates) such as polished or burnished concrete as well as certain surface hardeners such as Ashford Formula or similar may skew moisture testing results.

A good indication of potential silicate contamination may be seen during traditional moisture testing with abnormally high pH (above 11.5 to 14 pH) but relatively low CaCl reading (less than 6 lbs.) and RH readings above 85%. pH testing in conjunction with both CaCl and RH testing is a very inexpensive, easy way of identifying a potential risk and whether more in-depth testing should occur. Should further testing be necessary, concrete cores samples and Petrographic Analysis may offer the most in-depth analysis of the situation.

Concrete contaminated with silicate densifiers/hardeners of these types must be mechanically prepared followed by cleaning Smith’s Green Clean Pro 24 hours prior to moisture vapor and pH testing in order to obtain accurate readings. Otherwise, all testing and subsequent moisture vapor emission warranties are null and void.

NOTE: DO NOT USE MURIATIC/HYDROCLORIC ACID TO PREPARE CONCRETE AS CHLORIDE CONTAMINATION MAY OCCUR
- When etching, ensure all Green Clean Pro has been thoroughly removed with potable water with no remaining soapy residue or cement slurry
- DO NOT USE Green Clean Pro on “Green” concrete (less than 30 days old), Hard Trowel Finished concrete or previously sealed/coated/painted concrete to including any type of curing compound

NECESSARY TOOLS and EQUIPMENT:
- Plastic Sheet or Ram Board to cover floor for mix station
- 3-Blade or Bird Cage flat ring bottom style mixing paddle
- Low speed ½” drill (Variable Speed 400 rpm or less)
- Gauging tool:
  - V-Notch Squeegee for 10 - 12 mil applications
  - V-Notch Squeegee for 15 – 20 mil applications
- Premium, Non-Shed Solvent Resistant 3/8” Nap Paint Roller Covers (i.e. Foam, Mohair, Microfiber, etc.)
- Paint Roller Frame with Extension Pole
- Spiked shoes or Soccer Cleats
- Cleaning solvent (Acetone, Xylene)
- Cloth Rags for cleaning
- 2” Wide Masking Tape and Stucco or Duct Tape
- 2-4” Wide Chip Paint Brushes for cutting in edges
- 2-6” Wide 3/8” nap trim roller with frame and long handle for cutting in and tight areas
- Auto-scrubber or Orbital Floor Machine when degreasing or for silicate contamination removal
TEMPERATURE and HUMIDITY: Substrate temperature and materials must be maintained between 50°F (10°C) and 90°F (32°C) with less than 80% Ambient Humidity for 48 hours prior to an 24 hours after installation. Do not install coatings when the Dew point is within 5°F of the temperature.

Epoxy MAC 125 becomes fast curing at installation temperatures above 70°F. Care must be taken to account for a shorter pot life and working time. Epoxy MAC125 may be refrigerated overnight to have the liquid product maintained between 50°F to 60°F during mixing in order to obtain a longer, more ideal working time when applying Epoxy MAC125 in normal application temperatures ranging between 70°F to 85°F (Ambient and/or Substrate temperature).

SUBSTRATE PREPARATION: Achieve a CSP 3 to 6 (Concrete Surface Profile in accordance with ICRI Guideline 310.2R2013, as published by the International Concrete Repair Institute) yielding a surface texture similar to 80 grit sand paper or more course in order to maintain long term adhesion to the substrate.

NOTE: Should verification of proper adhesion be desired or when applying Smith’s Epoxy MAC125 primer over an existing coating, follow ASTM D 4541 using an Elcometer to determine a direct tensile pull-off strength greater than 250 psi (1.7 MPa) to pass the test. It is highly recommended that a 10 foot by 10 foot test area be applied of the entire desired coating system and allowed to cure for no less than 1 month prior to performing an in-situ direct tensile bond test to determine adhesion strength values.

Recommended preparation methods below:

- **Steel Shot Blast** (Shot size S-230 to S-330 grit recommended): PREFERRED PREPARATION METHOD - Uniformly profile and clean concrete substrates overlapping each pass until white, clean concrete exists. Use magnetic broom to remove excess shot, sweep to remove large debris and vacuum to remove fine dust. Avoid stationary blasting as micro-cracking the concrete surface may potentially causing future coating delamination. Use a vacuumized edge grinder with a diamond cup wheel to preparehard to reach areas, against transitions, etc.

- **Diamond Grind**: Use 16 to 25 grit metal bond diamonds with an appropriate industrial, weighted head planetary floor grinder to thoroughly profile and remove the substrates surface until uniformly dull. This method is only recommended for installations over solid, well-bonded existing coatings or ceramic tile systems over concrete.

- **Scarity**: Sweep to remove large debris and vacuum to remove fine dust. Scarify to uniformly remove the concrete surface until white. Thoroughly vacuum all dust and debris. Ideal preparation method for weak concrete surfaces, previously coated floors, adhesive residues or thick build applications greater than 125 mils (entire system thickness).

- **Silicate Contaminate Removal**: Smith’s Green Clean Pro buffered etching compound may be used ONLY as follows:
  - Remediation method for removing densifiers/silicates after one of the above mentioned mechanical preparation methods

  *Key in all termination points using a diamond cutting blade prior to any above preparation method.

JOINTS: Cut all joints open with a Diamond cutting blade and fill with an appropriate semi-rigid epoxy joint filler prior to priming the substrate with Smith’s Epoxy MAC125. As an alternative, Epoxy MAC125 may be mixed with silica fume (Cab-O-Sil or similar) to make a paste for filling joints and patching voids prior to priming. Please contact Smith Paints for more recommendations for crack repairs, joint wall rebuilding, etc.

MIXTURE: Open the side latch to relieve the pressure in the can between the 2 components. Use a long flat head screw drive to puncture the black gasket/seal in the center of the lid and allow the top to drain into the lower chamber for about 2 minutes. Once the top is completely drained, remove the top section. Use a low speed 1/2” drill (<400 RPM) with a clean mixing paddle mixing for approximately 2-3 minute making sure to move the mixing paddle fully to the bottom of the container and around the bottom edges while mixing. Mix the entire kit.

For Solid Color Epoxy MAC100:
Add 1 unit of Smith’s EC Color Pack to each kit of Smith’s Epoxy MAC125 after mixing as stated above and blend until color is uniformly dispersed with no streaks (About 1 minute).

- 2.5 gallon Kit = 1 EC Color Pack

Part Mixing by Volume:
- NOT RECOMMENDED – MIX THE ENTIRE KIT

DO NOT ATTEMPT to mix multiple kits in a single mixing vessel at the same time. Only mix one unit at a time to ensure thorough mixing of the resin.

APPLICATION: Once mixed, immediately pour out Epoxy MAC125 in a straight bead onto the area to be coated. Spread the primer with the appropriate gauge/squeegee to meter the depth at the desired thickness and evenly cover the area.

Pour out a ribbon of freshly mixed Epoxy MAC125 into the edge of the previously spread mix and continue to spread/gauge while walking in the mixture with spiked/cleated shoes. Break the surface tension and bubbles using a 3/8” Non-shed roller cover attached to an extension pole attached to an extension pole immediately following the gauging step.

Ideally, the mixing, delivery and pouring of mixed Epoxy MAC125, gauging, back rolling steps should each have a single, dedicated person performing these activities. Larger projects with multiple batches being mixed concurrently will require more laborers and mixers.

NOTE: Do NOT Mix more Epoxy MAC125 than can be mixed, placed, finished and tied into with the next batches within a 10 minute window at 72°F and 50% Humidity. Higher temperatures will reduce this time frame.

COVERAGE: *See chart on page 1 of this document.
2 COAT PRIMING: Allow the first coat of Epoxy MAC125 to cure before applying any optional preceding layers. Cooler temperatures will extend the cure time.

Within 24 hours, apply the second coat of Epoxy MAC125 directly over the previous coat using the same method previously used. If the subsequent layer is to be a higher build system, such as an Epoxy Mortar (i.e. Smith’s Epoxy HD-100), aggregate broadcast system (i.e. Double Broadcast Quartz, solid color Shop Floor, etc.), Vinyl Chip, CPR (Cementitious Urethane Resurfacer), Epoxy SLS100 Slurry, Decorative Concrete Overlay or Cement Leveling Compound; broadcast the surface of the second coat of primer immediately with Smith’s Wedron Sand or Smith’s Quartz (use Smith’s Vinyl Chip for those applications) to rejection into the fresh Epoxy MAC 125 and allow to harden before proceeding with the subsequent layer.

Smith’s Epoxy MAC125 does not require sanding of the surface (for adhesion) between coats within the first 24 hours after Epoxy MAC125 application at temperatures below 85°F. However, sanding will ensure the best possible end result for aesthetics and is REQUIRED for adhesion if Epoxy MAC125 cures for more than 24 hours. If sanding, wait at least 14 hours after the application of Epoxy MAC 125 at 72°F otherwise damage to the surface may occur. Hard to reach areas or any depressions should be made uniformly dull using an orbital palm sander and 60 to 100 grit sandpaper. For larger more open areas, use 80 grit metal screens with an orbital Low Speed Swing Buffer to abrade the surface then cleaned prior to the next layer. The surface should be uniformly dull with no scratches easily identified.

Once uniformly dull and properly abraded, vacuum the entire surface followed by either a thorough Acetone solvent tack rag wipe or use an auto-scrubber with white, soft nylon bristle brushes and a very mild neutral detergent and then a clean water rinse. Once dry, check the surface to ensure all dust has been removed before proceeding with the next layer.

LIMITED LIABILITY: *See separate Moisture Vapor Remediation Warranty for special warranty details

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