Epoxy Flooring System for – High Moisture Substrates (Epoxy Moisture Barrier System)

By Ressichem Private Limited

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Why use an **Epoxy Moisture Barrier System**

Concrete substrates often contain residual moisture due to environmental humidity, incomplete curing, or the absence of proper damp proofing. High moisture levels can lead to **epoxy delamination, blistering, and adhesion failure** if not properly treated.

The **Epoxy Flooring System for High Moisture Substrates** provides a **moisture-tolerant, epoxy-based moisture barrier primer system** designed to **seal damp concrete and allow controlled vapor transmission** before the application of standard epoxy flooring systems. This ensures long-term adhesion and prevents moisture-related flooring defects.

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This system is ideal for

- Basements and sub-grade structures
- Industrial floors in humid zones
- Water treatment plants and pump rooms
- Food and beverage facilities with wet processing areas
- Parking basements or coastal environments
- Warehouses and manufacturing units with newly cast concrete floors

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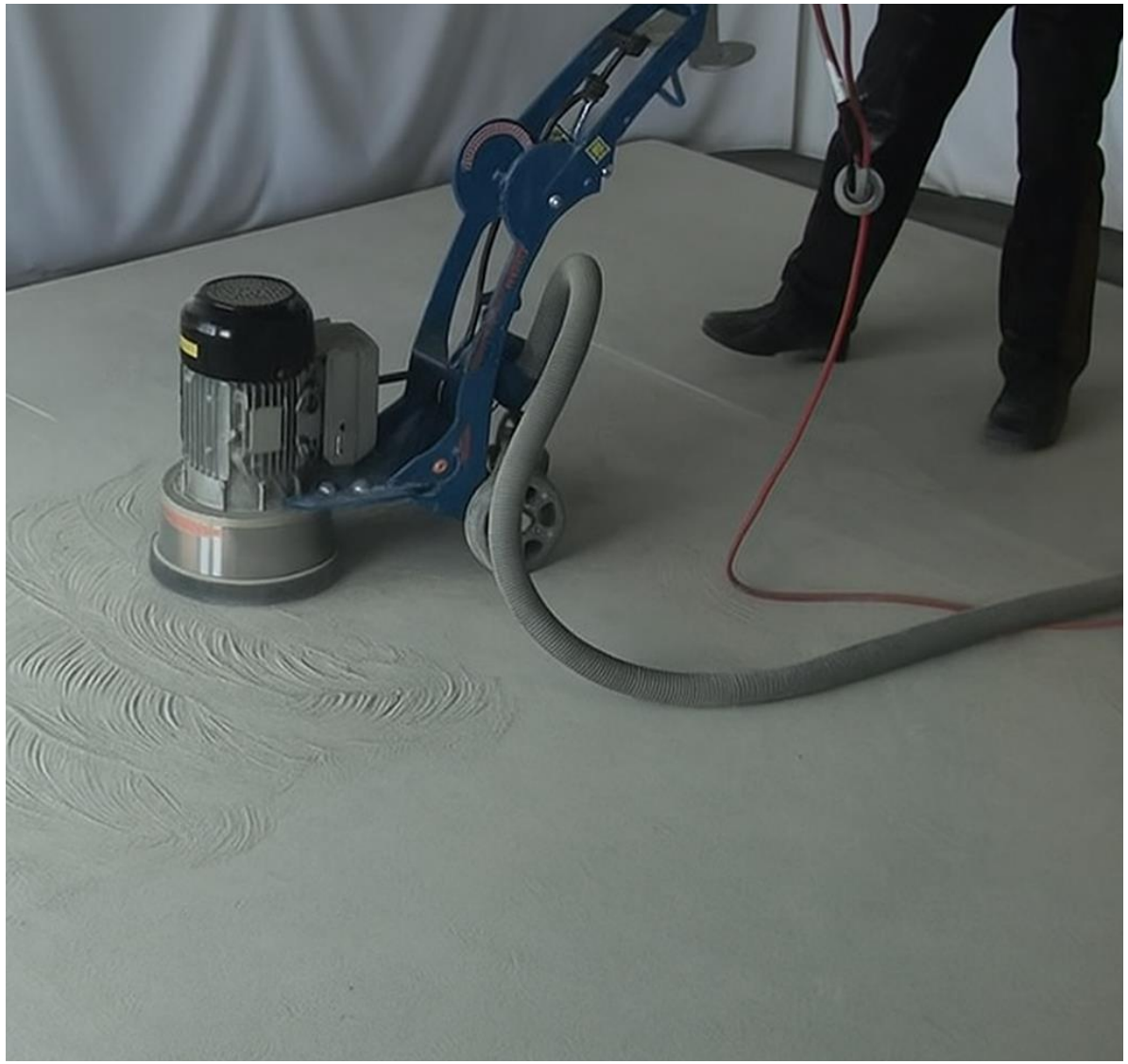
Step 1: Surface Preparation (1 of 3)

All necessary surface repairs, including crack filling or substrate restoration, must be completed prior to the application of any epoxy flooring materials.

- **Moisture Testing:** Measure concrete moisture content using a **calibrated concrete moisture meter**.
  - For **sensitive areas**, acceptable moisture content is **below 2 %**.
  - For **general-purpose flooring**, up to **5 %** is acceptable.
  - For **high-moisture substrates**, the system can tolerate up to **20 % moisture** provided proper priming is carried out.
- Always apply a **primer test patch** to evaluate **compatibility and adhesion** on site.



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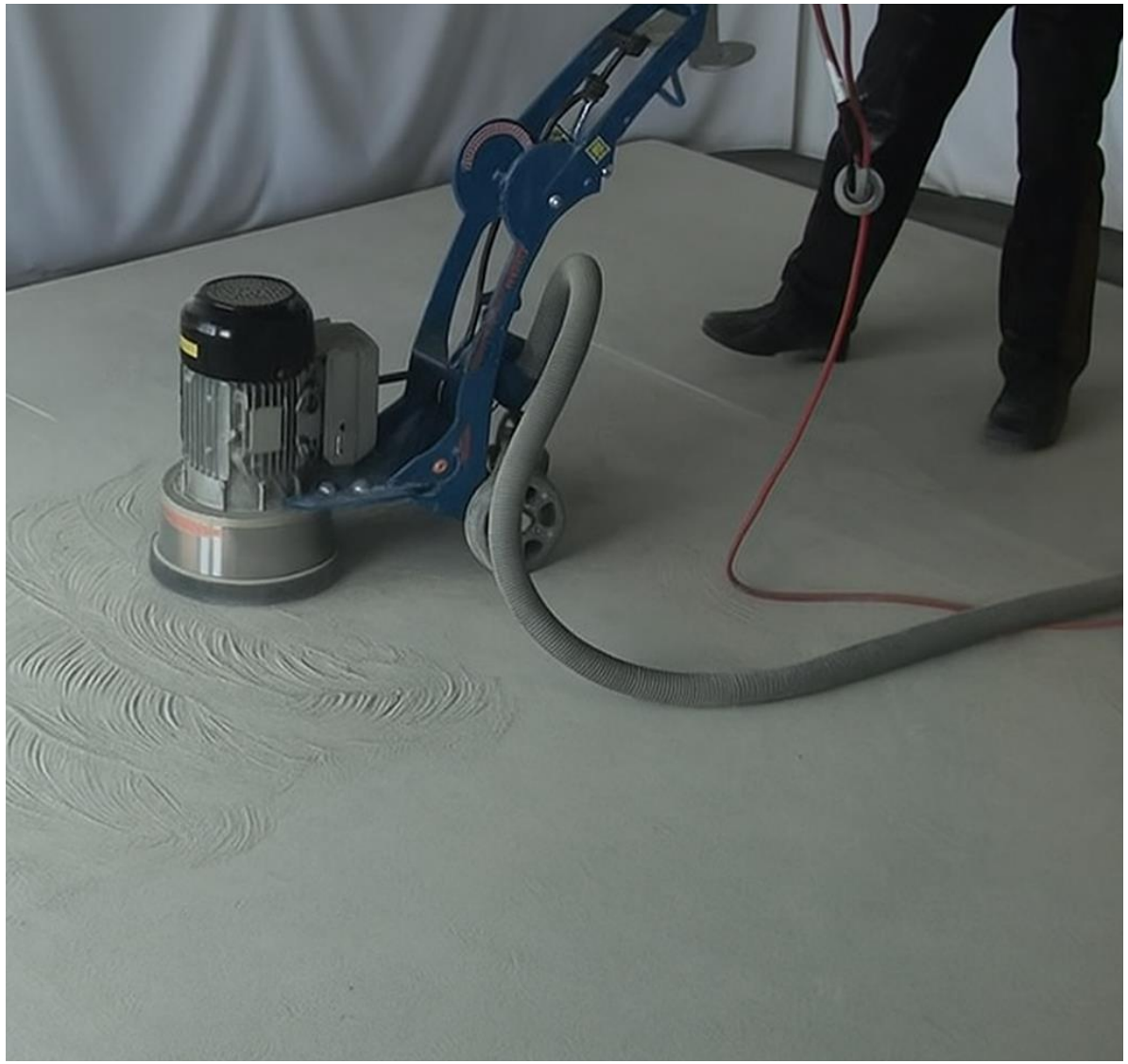
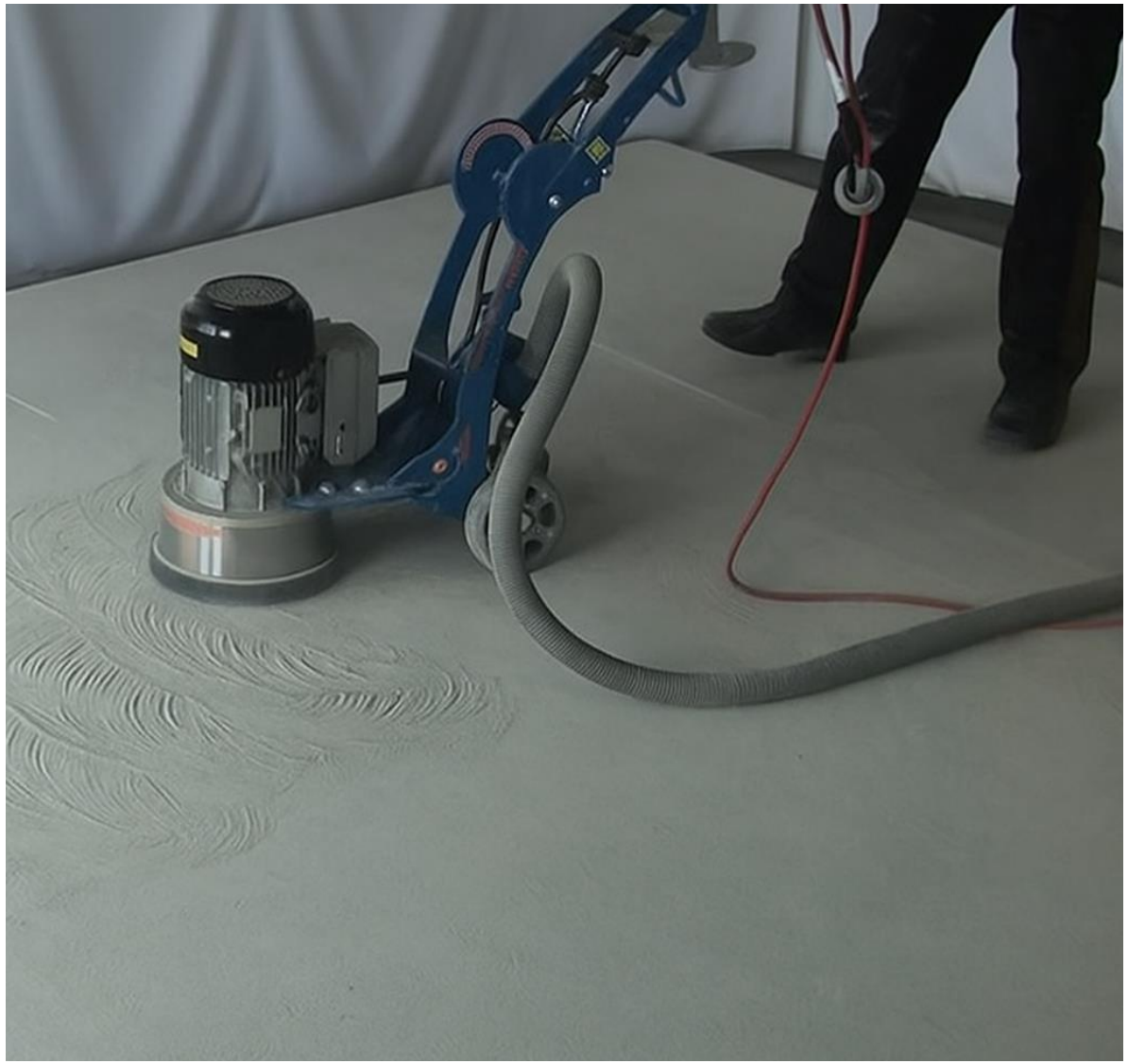
Step 1: Surface Preparation (2 of 3)

- If **standing or puddled water** persists after repeated drying attempts, **no epoxy system** should be applied until a **permanent waterproofing solution** is implemented.
- Ressichem has a variety of waterproofing solutions available. To achieve a moisture-free substrate or a reasonably dry surface prior to the application of epoxy floors, the **Ressichem technical team** may be contacted.
- Mechanically prepare the substrate using **shot blasting or diamond grinding**, ensuring a **clean, oil-free, and dust-free** surface.
- In high-moisture zones, surface preparation is even more critical for achieving penetration and bond strength.



Step 1: Surface Preparation (3 of 3)

- For **minor voids and repairs**, mix **Ressi EPO Primer WR** with **Ressichem's washed, graded, and completely dried (zero-moisture) silica sand** to create a dense repair mortar.
- For **crack filling**, use **Ressi EPO Crack Fill WR**, a moisture-resistant, high-strength epoxy filler



Step 2: Application of Ressi EPO Primer WR – Water-Resistant Epoxy Primer

Apply **Ressi EPO Primer WR**, a **moisture-tolerant, solvent-free primer** formulated for use on damp concrete surfaces. It functions as both a **primer** and an **effective moisture barrier**.

- Mix resin and hardener thoroughly according to datasheet instructions.
- Apply evenly using a **trowel or epoxy squeegee** to ensure full surface coverage.
- Allow curing before proceeding with subsequent coats.

Step 3: Application of Ressi EPO Mid Coat S – CR

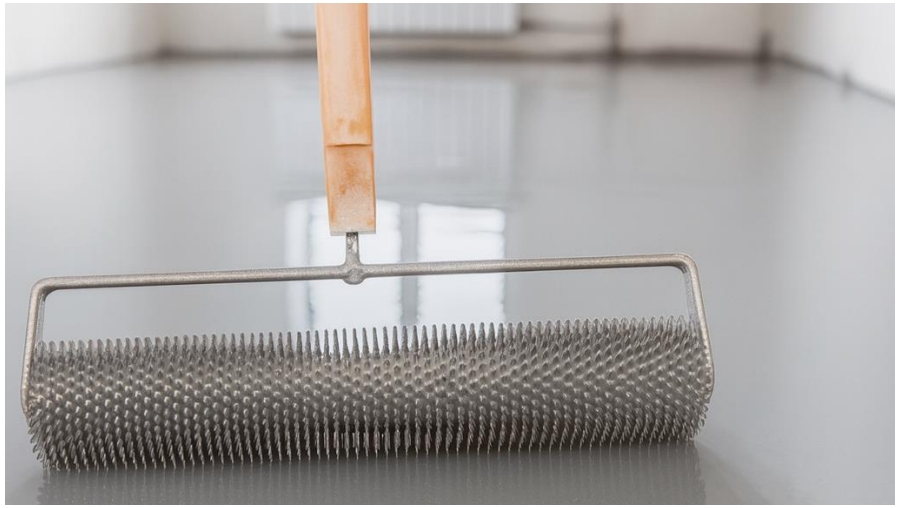
Apply **Ressi EPO Mid Coat S – CR**, a **chemical- and moisture-resistant, high-build, solvent-free mid coat** providing the structural body of the flooring system.

- Apply using a **notched trowel or epoxy squeegee**.
- Minimum recommended **thickness – 1000 microns** for light-duty floors.
- For **medium-duty applications**, apply at **2000 microns**.
- For **heavy-duty applications**, apply at a **minimum of 3000 microns or above** for enhanced mechanical and chemical performance.
- Allow full curing before applying the final top layer.

Step 4: Application of Desired Topcoat and Marking

Select the appropriate topcoat depending on duty level and environmental exposure.

- **Light-Duty Floors (≤ 1000 µm total system):** Use any **two-component epoxy topcoat** from Ressichem's range.
- **Medium-Duty Floors (≈ 2000 µm):** Apply **two- or three-component topcoats** as required.
- **Heavy-Duty Floors (≥ 3000 µm):** Use only **solvent-free, high-build epoxy topcoats** at a minimum **2000 µm thickness**.
- Where markings are required, use compatible **Ressi EPO Roll Coat** or other approved epoxy marking materials in contrasting colors.



Special Note

- In all cases, **application of a mid-coat is mandatory**.
- Only **approved sample areas** should be applied before full-scale execution to ensure compatibility with substrate conditions.
- **Do not apply** epoxy coatings over surfaces with active water movement or continuous water ingress.
- Always refer to the **Ressichem Technical Datasheet (TDS)** for detailed product, mixing, and curing information.

System Summary Table

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Parameter	Description
System Name	Epoxy Flooring System for – High Moisture Substrates (Epoxy Moisture Barrier System)
Area Type	Specialized / High-Performance – Moisture-Affected Concrete Floors
Traffic Exposure	Light to Heavy (Depending on Topcoat Selection)
Primary Requirement	Moisture Resistance and Adhesion Strength
Primer	Ressi EPO Primer WR – Moisture-Tolerant Primer
Crack Filler	Ressi EPO Crack Fill WR
Mid Coat (Compulsory)	Ressi EPO Mid Coat S – CR (1000 µm Light / 2000 µm Medium / 3000 µm+ Heavy)
Topcoat (Varies by Duty)	2K / 3K Epoxy Topcoat / Solvent-Free High-Build Epoxy
Silica Used	Washed, graded, and completely dried (zero-moisture) silica sand
Total System Thickness	1000–3000+ Microns (Based on Duty Classification)
Application Method	High-Build Trowel or Epoxy Squeegee (Roller Only for Markings)
Finish Type	Smooth, Gloss / Semi-Gloss
Curing Time Before Use	48–72 Hours (Light Use) / 7 Days (Full Cure)
Key Benefits	Moisture Tolerance, Adhesion Strength, Durability, Seamless Finish

System Summary Diagram

A) Cementitious Surface: (Concrete slab or screed)

B) Cracks and surface damage

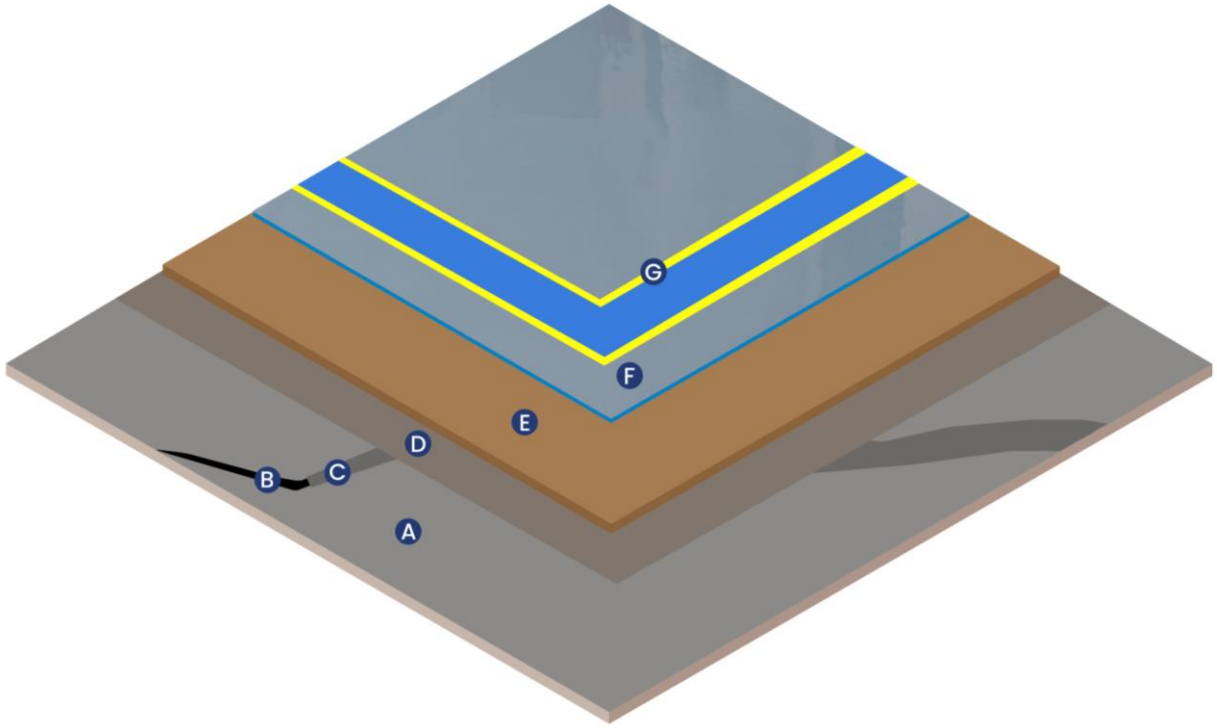
C) Crack Filler and Repairing Materials

D) Ressi EPO Primer WR

E) Ressi EPO Mid Coat S – CR

F) Two or Three Component Required Topcoat (As recommended)

G) Marking Coat (As recommended)



Thank You

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