

# EPOXY FLOORING SYSTEM FOR – POWER PLANTS & UTILITY AREAS



## Introduction

Power plants and utility areas require flooring systems that can withstand **continuous heavy mechanical loading, vibration, and exposure to oils, fuels, and process chemicals**. These environments demand long-lasting, **mechanically strong, and chemically stable epoxy floors** that ensure safety, durability, and easy maintenance under harsh operational conditions.

The Epoxy Flooring System for – Power Plants & Utility Areas is a **heavy-duty, high-build epoxy flooring system** designed to perform in environments where **mechanical stress, thermal variations, and fluid exposure** are routine. Applied at a **minimum thickness of 3000 microns**, this system provides excellent durability, surface integrity, and easy cleanability.

## Recommended Use Cases

- Power generation plants (gas, steam, or hydro)
- Electrical control rooms and turbine halls
- Utility corridors and pump stations
- Generator and transformer rooms
- Maintenance workshops and ancillary service zones

## Step-Wise System Description

### Step 1: Surface Preparation

Thorough substrate preparation is the foundation of system performance and longevity.

**All necessary surface repairs, including crack filling or substrate restoration, must be completed prior to the application of any epoxy flooring materials.** Ressichem offers a range of suitable crack fillers and repair compounds, including non-shrink cementitious grouts, specifically designed for surface preparation and repair.

• **Concrete strength evaluation** is mandatory and must be defined by the project consultant based on the operational loads and equipment used in the area.

• Conduct both **destructive testing (core sampling)** and **non-destructive evaluation (Schmidt Hammer Test)** to confirm substrate adequacy.

• For **major repairs (≥12 mm thickness)**, use Ressi NSG 710, a **high-strength, non-shrink cementitious repair grout** capable of achieving compressive strength up to 10,000 PSI.

• For **minor surface voids or imperfections**, prepare a repair blend of Ressi EPO Primer LV and Ressichem's washed, graded, and completely dried (zero moisture content) silica sand to restore surface uniformity.

• Mechanically prepare the substrate using **shot blasting or diamond grinding**, ensuring the surface is clean, dust-free, and completely free from contaminants such as oil or grease. This step is particularly critical for **older floors that have experienced oil staining or grease penetration**, as such contamination can severely affect adhesion. Deep cleaning and degreasing treatments must be performed prior to coating application.

### Step 2: Application of Ressi EPO Primer LV

Apply Ressi EPO Primer LV, a **low-viscosity, solvent-free epoxy primer** that ensures strong adhesion between concrete and the epoxy build-up layers.

- Mix resin and hardener components as specified in the product datasheet.
- Apply using a **trowel or epoxy squeegee** to achieve uniform wet film coverage.
- Allow complete curing before proceeding to subsequent layers.

### Step 3: Application of Ressi EPO Mid Coat S – GP (Optional)

Apply Ressi EPO Mid Coat S – GP, a mandatory **high-build structural layer** designed for heavy mechanical and impact loads.

- Apply using a **notched trowel or epoxy squeegee** for a dense, even build.
- Recommended **minimum thickness: 1000 microns**, with **2000 microns preferred** for improved impact and load distribution.
- This layer enhances substrate strength and provides a smooth, level base for the topcoat.
- Allow curing as per the datasheet before applying the finishing layer.

### Step 4: Application of Final Epoxy Topcoat

Apply Ressi EPO Floor Plus or Ressi EPO Floor Plus Econo, depending on project specifications:

- **Ressi EPO Floor Plus:** Ideal for customized color finishes where aesthetics and visibility are key.
- **Ressi EPO Floor Plus Econo:** Standard grey variant offering identical mechanical and chemical performance at a lower cost.
- Apply with a **trowel or epoxy squeegee** at a **minimum thickness of 2000 microns**.
- Allow **48–72 hours** before light usage and **7 days** for full chemical and mechanical cure.

### Step 5: Floor Markings (If Required)

If required, apply Ressi EPO Gloss Might or Ressi EPO Roll Coat for designated lanes or safety markings.

- Use a **roller** after the main epoxy flooring system has fully cured.
- Contrasting colors improve visibility and organization in high-traffic utility areas.

Note:

- The **total system thickness must be a minimum of 3000 microns** to meet heavy-duty performance requirements.
- Always refer to **Ressichem Technical Datasheets** for specific product handling, curing, and environmental guidelines.

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## System Advantages

- **High Mechanical Strength:** Performs under sustained heavy load and vibration.
- **Chemical Resistance:** Resists oils, fuels, and industrial cleaning agents.
- **Thermal Stability:** Withstands temperature fluctuations typical in power facilities.
- **Repair Compatible:** Accepts cementitious and epoxy-based repairs without delamination.
- **Long Service Life:** Provides durable, low-maintenance protection for industrial surfaces.
- **Non-Dusting & Seamless:** Smooth, monolithic surface prevents dust buildup and simplifies cleaning.

## Maintenance Guidelines

- Clean regularly using non-aggressive cleaning agents.
- Promptly remove oil or fuel spills to avoid surface staining.
- Reinspect high-load areas annually for signs of abrasion or coating wear.
- Maintain dry conditions and proper drainage to prevent hydrostatic stress.

## System Summary Table

Parameter	Description
<b>System Name</b>	Epoxy Flooring System for – Power Plants & Utility Areas
<b>Area Type</b>	Heavy-Duty Power Generation and Utility Environments
<b>Traffic Exposure</b>	Heavy Equipment, Vibration, Fluid Exposure
<b>Primary Requirements</b>	Strength, Chemical Resistance, Thermal Stability
<b>Primer</b>	Ressi EPO Primer LV
<b>Mid Coat (Compulsory)</b>	Ressi EPO Mid Coat S – GP (1000–2000 microns)
<b>Topcoat</b>	Ressi EPO Floor Plus / Ressi EPO Floor Plus Econo (2000 microns)
<b>Marking Coat (Optional)</b>	Ressi EPO Gloss Might / Ressi EPO Roll Coat
<b>Silica Used</b>	Washed, graded, and completely dried (zero moisture content) silica sand
<b>Total System Thickness</b>	Minimum 3000 Microns
<b>Application Method</b>	High-Build Trowel or Epoxy Squeegee (Roller Only for Markings)
<b>Finish Type</b>	Smooth, Semi-Gloss
<b>Curing Time Before Use</b>	48–72 Hours for Light Use / 7 Days for Full Cure
<b>Key Benefits</b>	Load Endurance, Chemical Resistance, Thermal Stability, Long Service Life

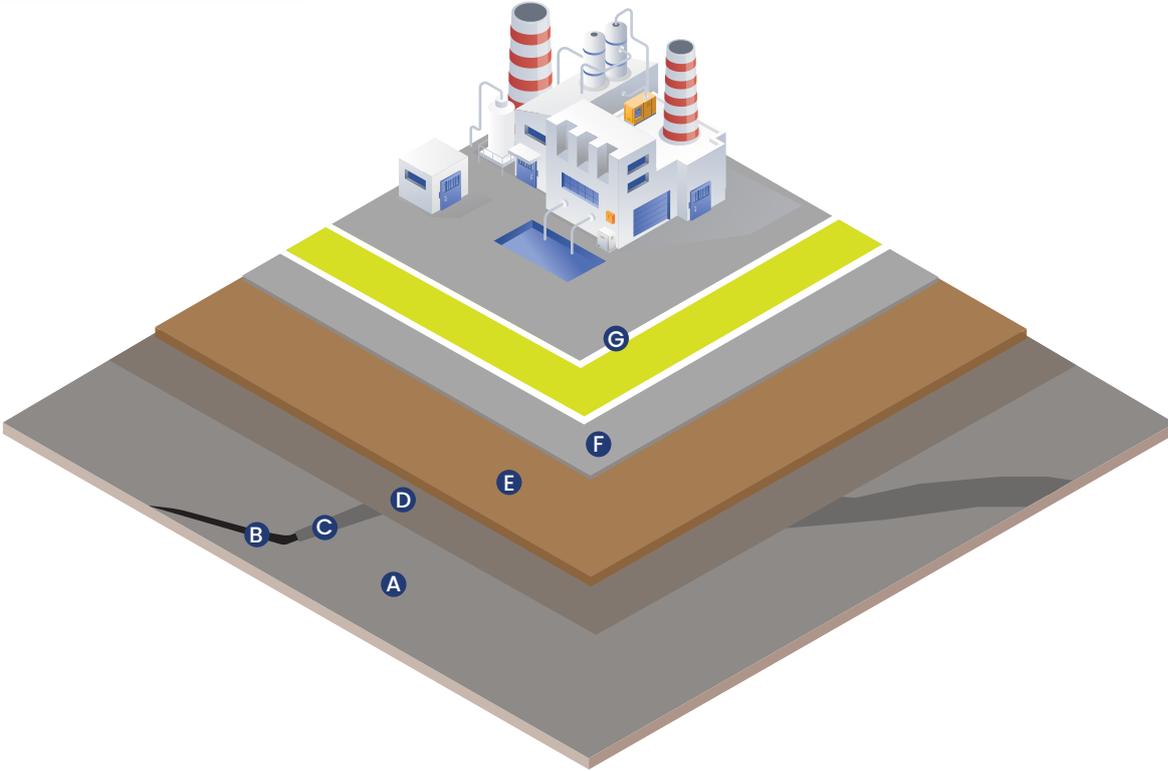
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## Conclusion

The Epoxy Flooring System for – Power Plants & Utility Areas is a durable, heavy-duty, high-build system designed for environments where long-term reliability, strength, and safety are paramount.

The application sequence — Surface Preparation, Ressi EPO Primer LV, Ressi EPO Mid Coat S – GP, Ressi EPO Floor Plus or Floor Plus Econo, (Optional) Ressi EPO Gloss Might or Roll Coat — ensures a seamless, chemically resistant, and mechanically strong flooring solution that meets the demands of critical utility operations.

## System Summary



- A) Cementitious Surface: (Concrete slab or screed)
- B) Cracks and surface damage
- C) Crack Filler and Repairing Materials
- D) Ressi EPO Primer LV
- E) Ressi EPO Mid Coat S – GP
- F) Ressi EPO Floor Plus / Ressi EPO Floor Plus Econo
- G) Ressi EPO Gloss Might / Ressi EPO Roll Coat (Marking)