POLYZEN
WHERE SOVEREIGN SURFACES RULE

APPLICATION DATA SHEET
INTERIM

Conductive ESD Flooring

SYSTEM FAMILY
ESD resin flooring / application methodology

TYPE
Conductive floor (≤10^6 Ω band)

NOMINAL BUILD
~2 mm system + earthing

1. SCOPE & SYSTEM DESCRIPTION

This ADS describes POLYZEN's method for installing a **conductive ESD floor** — the lowest resistance-to-ground band for the fastest, most positive charge decay, for environments needing strict static control or explosive-atmosphere safety.

Delivered brand-flexibly. Per ANSI/ESD STM7.1 the conductive band is **≤1.0×10⁶ Ω**; the installed value depends on the complete, earthed floor + footwear + grounding + maintenance and is verified at commissioning.

2. SUBSTRATE REQUIREMENTS

- New concrete cured a minimum of 28 days; sound and structurally stable.
- Compressive strength typically ≥25 N/mm² and surface tensile (pull-off) ≥1.5 N/mm² (indicative; per project).
- Substrate dry and free of oil, grease, curing compounds and previous coatings.

3. SURFACE PREPARATION

- New concrete cured a minimum of 28 days; sound and structurally stable.
- Mechanically prepare by grinding / shot-blasting to a clean, open profile; remove laitance and contamination.
- Assess substrate moisture per **ASTM F2170**; treat where readings exceed limits.
- **Install the copper earthing grid / strips** to the designed pattern and bond to the building earth before the conductive coats.
- Vacuum before priming.

4. ENVIRONMENTAL CONDITIONS

- Substrate & ambient temperature 10–35 °C; substrate ≥3 °C above dew point throughout application and cure.
- Relative humidity within the selected material's limits; do not apply in falling temperatures.
- Protect the area from dust, water, direct sunlight and traffic during application and cure.

5. MATERIALS

Materials: POLYZEN conductive ESD flooring system (ZENSTAT Conductive ZS-300 over ZENSTAT Prime ZS-100 base) — **or a client-approved equivalent** of the specified type meeting the project specification and standards. Exact mix ratios, consumption, film thickness and cure times are per the **selected material's data sheet**.

6. MIXING

- Pre-condition components to 15–25 °C.
- Power-mix resin and hardener to a homogeneous, lump-free consistency; add graded filler/aggregate where used.
- Mix full kits only, exactly as supplied — no site additions of solvent or water. Respect the material's pot life.

7. APPLICATION PROCEDURE

- **Conductive primer:** Carbon-loaded conductive epoxy primer sealing the substrate and forming the base of the earthing network.
- **Earthing grid:** Copper strips / grid laid to a designed pattern and bonded to building earth for a continuous ground reference. A denser earthing pattern is used to achieve the conductive band.
- **Conductive wear coat:** apply the conductive coat to the specified build over the primed, earthed base.
- **Commission:** measure resistance-to-ground (ANSI/ESD STM7.1) — target ≤1.0×10^{6} Ω — and body voltage (STM97.2, typically <100 V); document results.

8. COVERAGE, COATS & THICKNESS

- Conductive primer, earthing network and conductive coat system-based per specification (indicative). Per the selected material's data sheet.

9. CURING & RETURN TO SERVICE

- Light foot traffic typically ~24 h at 25 °C (indicative).
- Return to service typically ~48–72 h at 25 °C (indicative).
- Full cure typically ~7 days at 25 °C (indicative); cure extends at lower temperatures — per the selected material's data sheet.

10. FINISHING, DETAILING & COMPLIANCE

- Earth points labelled and included in the commissioning report.
- Electrical target: resistance-to-ground ≤1.0×10^{6} Ω per ANSI/ESD S20.20 / IEC 61340-5-1 (installed value depends on footwear, grounding & maintenance).
- Suited to explosive-atmosphere / high-sensitivity areas needing fast charge decay.

11. QUALITY-CONTROL CHECKPOINTS

- Verify earthing-grid continuity and bonding.
- Check coat build and coverage.
- Commission resistance-to-ground and body voltage; record against the ≤10^{6} Ω target.
- Log ambient conditions through cure.

12. DO'S & DON'TS

Do

- Use the denser earthing pattern for the conductive band.
- Commission and document electrical results.
- Advise conductive footwear & maintenance.
- Follow the selected material's data sheet.

Don't

- Don't break earthing continuity.
- Don't apply over damp / contaminated substrate.
- Don't rely on the coat alone.
- Don't wax / polish (raises resistance).

13. CLEANING & MAINTENANCE

- Clean with ESD-approved, non-insulating cleaners.
- Periodically re-verify resistance-to-ground.
- Enforce conductive footwear & grounding discipline.

14. HEALTH, SAFETY & ENVIRONMENT

- Uncured epoxy resins and amine hardeners can cause skin/eye irritation and sensitisation — wear chemical-resistant gloves, goggles and protective clothing.
- Ensure adequate ventilation during mixing and application; control spills and prevent uncured material entering drains.
- Refer to the selected material's Safety Data Sheet (SDS) for full handling, first-aid, spill and disposal information.
- For explosive / flammable atmospheres, follow the facility's ATEX / area-classification and earthing procedures.

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