



ESD Earthing & Grounding Integration

SYSTEM FAMILY

ESD groundwork / application methodology

TYPE

Conductive primer + copper earthing network (base)

NOMINAL BUILD

primer + earthing network

1. SCOPE & SYSTEM DESCRIPTION

This ADS describes POLYZEN's method for the **earthing & grounding groundwork** of an ESD floor — a conductive primer plus a copper earthing network that establishes the continuous ground reference on which a dissipative or conductive topcoat is built.

Delivered brand-flexibly. This is the **anti-static base** — it creates the grounding path; the finished electrical performance is a property of the completed system (dissipative or conductive) 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 ESD earthing / grounding groundwork (ZENSTAT Prime ZS-100 (conductive primer + copper earthing)) — **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.
- **Ground bonding:** bond earth points to the building earth to the designed layout and document each connection for the commissioning report.
- **Hand-over to topcoat:** the dissipative or conductive wear coat is applied over this earthed base (see the relevant ADS).

8. COVERAGE, COATS & THICKNESS

- Conductive primer and copper earthing network per the design and the selected material's data sheet.

9. CURING & RETURN TO SERVICE

- Allow the primer to cure per its data sheet before the earthing coats / topcoat; keep the base clean and continuous.

10. FINISHING, DETAILING & COMPLIANCE

- Continuous, documented grounding network with labelled earth points.
- Provides the ground reference for ZENSTAT Dissipative / Conductive (or equivalent) topcoats.
- Electrical performance measured at system level after the topcoat (per project TDS & commissioning).

11. QUALITY-CONTROL CHECKPOINTS

- Verify grid layout, continuity and bonding to building earth.
- Confirm primer coverage and adhesion.
- Record the earthing network in the commissioning documentation.
- Log ambient conditions.

12. DO'S & DON'TS

Do

- Lay the grid to the designed pattern and bond to earth.
- Document every earth connection.
- Keep the base continuous and clean for the topcoat.
- Follow the selected material's data sheet.

Don't

- Don't leave any break in earthing continuity.
- Don't apply over damp / contaminated substrate.
- Don't treat the base as a finished ESD floor on its own.
- Don't omit the ground-bonding documentation.

13. CLEANING & MAINTENANCE

- Protect the earthed base until the topcoat is applied.
- Verify continuity if the base is exposed for any period.
- Maintain earth-bond records for future audits.

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.

Disclaimer: this interim Application Data Sheet describes POLYZEN's typical application methodology for this class of system and is provided in good faith. It is a brand-flexible application guide; exact mix ratios, consumption, film thickness, electrical values and cure times are governed by the selected material's data sheet and the project specification. All parameters are typical/indicative and are confirmed in the project-specific Method Statement and commissioning report. POLYZEN reserves the right to revise this document; the latest version supersedes all previous.