STANDARD SPECIFICATION

266ESD HD Conductive Antistatic Floor System

The Hychem 266ESD HD system: a complete, Australian made conductive antistatic floor for areas requiring a low, controlled resistance to earth. Advanced carbon nanotube conductive technology carries static to earth through the coating itself, reducing the copper tape and gridding conventional ESD floors depend on, over a dedicated conductive primer plane. Primer, conductive plane, topping and seal coat are matched layer by layer under one specification.

DOCUMENT TYPE	ISSUED BY	NOMINATED SYSTEM	REVISION
Standard Specification	**Hychem International**	**266ESD HD · 2 mm · 2 L/m²**	**Rev. A · 04/10/26**
Generic system reference document	Flooring Division	$R_g \leq 10^6$ Ω · conductive	First issue

TESTED AND SUPPORTED, THE COMPLETE SYSTEM

- IEC 61340-4-1
- IEC 61340-5-1
- DIN EN 1081
- DIN ISO 4624 adhesion
- DIN EN ISO 5470-1 abrasion
- AS/NZS 4586 slip resistance
- ISO 9001 manufacture
- Australian made · 30+ years
- Tested between coats

WHY SPECIFY THE 266ESD SYSTEM

01 Conductivity built in, not taped on

Advanced carbon nanotube technology reduces the requirement for copper tape and gridding. Simpler to install, and far easier to achieve a uniform, compliant result across the area.

02 Supplier support is built in

An ESD floor is only as good as its testing. On every job, resistance to earth is verified between coats, not just at handover, with a local Hychem technical rep on site and ITPs for sign-off.

03 Australian made, locally stocked

Manufactured at Smeaton Grange NSW with full local testing and technical support. No import lead times or offshore stock risk on programme critical pours.

04 One system, single accountability

Primer, conductive plane, topping and seal coat are chemically matched slab to surface, supplied by a single manufacturer under a single specification.

How to use this document. Sections 01 to 03 set out the nominated build, the application sequence and the system components. Section 04 is the earthing point installation guide, which should be passed to the electrical engineer or builder at the earliest opportunity, since earth point positions must be nominated and marked up before coating works commence on site. Sections 05 and 06 cover technical data, testing and support information.

LAYER CROSS-SECTION

Four layers, slab to surface

266ESD TC seal coat

6 m²/L · aluminium oxide grit as required

266ESD SL, conductive topping

Self-levelling epoxy · 2 mm · 2 L/m² · nanotube conductive network

Primer EC, conductive plane

Black conductive layer · 8 m²/L · connected to earth points

EARTH POINTS INSTALLED ONCE THE PRIMER HAS CURED

Hychem GP Epoxy Primer

Seals and keys the substrate · 6 m²/L

Concrete substrate

Ground or shot blasted to CSP 2 · 25 MPa min, 1.5 MPa surface tensile

Layer diagram is indicative and not to scale.

Each layer earns its place. The GP Primer seals the slab; Primer EC lays a continuous black conductive plane connected to the earth points; and the 266ESD SL topping carries charge from the surface down through its carbon nanotube network to that plane. Because the conductive path is in the material itself, the copper tape and gridding a conventional ESD floor depends on is largely eliminated, and with it the most common cause of failed conductivity readings.

Total build	Approximately 2.2 mm above the primer: 2 mm 266ESD SL plus the 266ESD TC seal coat.
Conductivity	$R_g \leq 10^6$ Ω to IEC 61340-4-1 and DIN EN 1081, verified between coats on every project.
Earthing	One point per 100 m² maximum and one per slab, joint to joint. One per 50 m² is recommended. See Section 04.
Levelling	Formulated for perfect levelling in Australian conditions, self-smoothing to a seamless, hygienic surface.
Finish	Seamless smooth gloss, or customisable anti-slip texture via aluminium oxide grit broadcast into the TC coat.

NOMINATED SYSTEM

STANDARD · VEHICULAR TRAFFIC

HD System 2 mm

Build-up	GP Primer + Primer EC + 266ESD SL + 266ESD TC
Rated for	Vehicular traffic. Suited to electronics manufacturing, data centres, defence, solvent stores and trafficked production areas
Areas	To be confirmed against the drawings. Send through the final schedule of areas and this specification will be reissued with zones, areas and colours named

Where a dissipative rather than conductive floor is required ($R_g \leq 10^9$ Ω), the Hychem 177ESD system should be specified instead. It is not included in this standard nomination unless separately specified.

STANDARD SPECIFICATION · HD SYSTEM

The build, step by step

#	LAYER / OPERATION	METHOD	RATE / SPEC
01	**Prepare substrate** Remove laitance, coatings and contaminants	Diamond grind	**To CSP 2** NACE 02203 / ICRI 03732
02	**Hychem GP Epoxy Primer** Seals and keys the substrate	Roller	**6 m²/L** Overcoat within 24 h
03	**Install earth points** Once the primer has cured · see Section 04	Applicator	**1 per 100 m² max · 1 per slab** 40–100 mm off wall
04	**Hychem Primer EC** Black conductive plane	Squeegee and back roll	**8 m²/L** Cure min 16 h · overcoat within 24 h
05	**Verify resistance to earth** Between-coat conductivity test, documented	DIN EN 1081	**$R_g \leq 10^6$ Ω** ITP hold point
06	**Hychem 266ESD SL** Self-levelling conductive topping	Gauge rake and spike roll	**2 mm · 2 L/m²** Following coat within 24 h
07	**Hychem 266ESD TC** Conductive seal coat, sets colour and slip rating	Roller	**6 m²/L** Al2O3 grit as required
08	**Final conductivity verification** Hychem rep on site · ITP sign-off for handover	IEC 61340-4-1	**$R_g \leq 10^6$ Ω** Confirms compliance for handover
09	**Connect to building earth** Each terminal tied back and certified	Electrical contractor	**AS/NZS 3000** Continuity confirmed and certified

Substrate requirements

Concrete must be a minimum 25 MPa compressive strength with 1.5 MPa surface tensile strength, cured a minimum of 28 days, firm, clean and dry. Prepare by grinding or shot blasting to the appropriate CSP in accordance with NACE 02203 or ICRI Technical Guideline No. 03732. Do not apply over damp surfaces or where rising moisture is present.

Environmental conditions

Apply between 10 and 30 °C with the substrate at least 3 °C above dew point. Observe 21 °C at less than 85 % RH, or 10 °C at less than 75 % RH, to avoid amine bloom. Primer EC applies between 15 and 25 °C at less than 80 % RH, a narrower window than the other layers, so plan pours accordingly.

Records and documentation

Substrate and air temperature, humidity, dew point, batch numbers and consumption rates are to be recorded through application and cure. These records, together with the between-coat and final conductivity results, form part of the completed project documentation.

Do not substitute the build-up. Conductivity is a system property. Consumption rates, layer sequence and earthing layout are set together to achieve the specified resistance to earth. Substituting a layer, a product or a rate compromises the specified performance of the system.

LAYER BY LAYER

Every product, one job

Hychem GP Epoxy Primer	A general purpose, solvent free epoxy primer that seals the prepared slab and anchors the system. Applied at 6 m²/L. Also used as an epoxy mortar for patching, re-levelling and forming falls where required. Earth points are installed once it has cured, before the conductive plane goes down. VOC content 14 g/L.
Hychem Primer EC	A two component, solvent free black conductive layer, the conductive plane beneath Hychem ESD coatings. No odour, with excellent adhesion to concrete and masonry, and recommended for cleanrooms, electronics production, hospitals and pharmaceutical facilities. Applied at 8 m²/L and overcoated within 24 hours.
Hychem 266ESD SL	A coloured, gloss, conductive, solvent free self-levelling epoxy topping laid at 2 mm (2 L/m²), carrying an advanced carbon nanotube conductive network. Hard wearing and impervious, resistant to fuels, lubricants, most solvents and many chemicals, and rated for vehicular traffic. Textured finishes available to meet slip resistance requirements.
Hychem 266ESD TC	The coloured, gloss conductive epoxy coating that seals the system, applied at 6 m²/L with aluminium oxide grit broadcast as required for slip resistance.

Finish and colour

Seamless self-smoothing gloss, with slip resistance fully customisable through the aluminium oxide grit broadcast into the TC coat, set zone by zone to whatever rating the area demands and rated to AS/NZS 4586. Slip resistance testing of the actual finish can be arranged on request.

Light Grey N35 is the standard colour and is available for any size of area. The full range at hychemcolours.com.au is available subject to colour minimum order quantity. Conductive materials can subtly affect the finished colour, most evident in lighter shades, so confirm with a sample panel before the colour is locked in.

Static where it matters

A conductive floor carries charge to earth faster than a dissipative one. Beyond protecting sensitive electronics, it prevents electrostatic charge accumulating in areas subject to fire and explosion risk, including solvent stores, munitions and hazardous goods handling.

Chemical resistance

The cured system is impervious and resistant to fuels and lubricants as well as most solvents and many chemicals. Contact Hychem technical for exposure specific advice and immersion cases.

WHERE IT WORKS

- Electronics manufacturing & SMT
- Data centres
- Cleanrooms & pharmaceutical
- Defence & aerospace
- Fire & explosion risk areas
- Munitions & solvent stores
- Hospitals & laboratories
- AGV warehousing

Specification support. Where an imported or alternative ESD system has been nominated elsewhere in the documents, Hychem prepares like for like substitution documentation including matched test standards, build-up drawings and a technical performance comparison.

EARTHING POINT INSTALLATION GUIDE

How many points, and where they go

Earth point locations are to be nominated by the electrical engineer or the builder and marked up on the floor plan before coating works begin. Once the topping is down the position is fixed, and adding a point later means cutting into a finished floor.

Quantity	One earth point per 100 m² is the maximum permitted spacing. Hychem recommends one point per 50 m² as best practice, particularly in larger open areas and where the floor will carry heavier or wheeled traffic.
Per slab	Each slab requires its own earth point, joint to joint, regardless of area. A 50 m² slab still takes one point. The conductive plane does not carry across a joint, so each side of a joint needs its own connection.
Redundancy	In high traffic areas, allow a spare point in case the first is damaged over the life of the floor. The cost at installation is negligible against retrofitting one later.
Position	Point centres sit between 40 mm and 100 mm from the wall, with 100 mm being the typical Hychem position. Locate them out of the way, where they will not be built over by fixed plant, racking or partitions, and where the connection stays accessible for future testing.
Marking up	Positions are to be marked on the floor plan by the electrical engineer or builder and confirmed on site before the GP Primer goes down. The setout is to be issued to the applicator ahead of the works so the points can be installed at the correct stage.
No grid required	A conventional ESD floor relies on a copper tape grid bonded to the primed slab, typically run out at around 5 m by 5 m centres, to carry charge back to the earth points. The 266ESD SL topping carries the conductive network within the material itself, so copper tape is used only at the earth point, to bond the conductive plane to the grounding plate.

Flooring applicator

Installs the earth point hardware within the floor build-up: the fixing into the slab, the copper tape connection, the stainless steel grounding plate and the terminal. This is done once the GP Primer has cured and before the Primer EC conductive plane is applied, so the point is encapsulated by the system.

Also responsible for protecting the terminal through the remaining coats, and for cleaning it down once the system has cured.

Electrical engineer or licensed electrical contractor

- Nominates the number and position of earth points for each area, in line with the minimums above and any project or client ESD control programme requirements.
- Connects each earth point terminal back to the building's electrical earth once the floor is fully cured.
- Confirms continuity of that connection and compliance with AS/NZS 3000 and relevant site electrical requirements.
- Certifies the earthing installation.

The floor cannot conduct charge to earth until the final connection is made. Connection to building earth is a hold point at the end of the works, not something to be picked up after handover. Confirm the electrical contractor has this in their scope and programme before the floor is poured.

BY-PRODUCT PERFORMANCE

Every layer, tested

Values from the current Hychem technical data sheets. Refer to each TDS for full application guidance.

PRIMER EC, CONDUCTIVE PLANE		266ESD SL, TOPPING		266ESD TC, SEAL COAT	
Colour	**Black**	Finish	**Coloured gloss**	Finish	**Coloured gloss**
Mixing ratio (A:B)	**8.0 L : 4.0 L**	Mixing ratio (by vol)	**2 : 1**	Mixing ratio (by vol)	**3 : 1**
Working time	**30–40 min**	Working time (25 °C)	**~25 min**	Working time (25 °C)	**~25 min**
Application temp	**15–25 °C**	Application temp	**10–30 °C**	Application temp	**10–30 °C**
Relative humidity	**< 80 %**	Dew point margin	**≥ 3 °C**	Dew point margin	**≥ 3 °C**
Consumption	**0.10–0.15 L/m²**	Consumption	**1.5–3.0 L/m²**	Consumption	**0.3–0.6 L/m²**
Foot traffic (25 °C)	**8–12 h**	Following coat	**Within 24 h**	Following coat	**Within 24 h**
Overcoat	**16–24 h**	Adhesion (DIN ISO 4624)	**> 1.5 N/mm²**	Adhesion (DIN ISO 4624)	**> 1.5 N/mm²**
Adhesion (DIN ISO 4624)	**> 1.5 N/mm²**	Conductivity (EN 1081)	**$R_g \leq 10^6$ Ω**	Conductivity (EN 1081)	**$R_g \leq 10^6$ Ω**
Resistance to earth	**$R_g \leq 10^6$ Ω**	Abrasion (ISO 5470-1)	**< 60 mg/1000 cyc**	Abrasion (ISO 5470-1)	**< 60 mg/1000 cyc**
Shelf life	**12 months**	Shelf life	**24 months**	Shelf life	**24 months**
Clean up	**Water**	Clean up	**Solvent X / IPA**	Clean up	**Solvent X / IPA**

CERTIFICATION REGISTER

PRODUCT	PROPERTY	STANDARD / METHOD	RESULT
266ESD system	Resistance to earth	IEC 61340-4-1 · DIN EN 1081	**$R_g \leq 10^6$ Ω** Verified between coats, every project
266ESD system	Electrostatic control	IEC 61340-5-1	**$R_g \leq 10^6$ Ω** Within the conductive range
266ESD SL & TC	Adhesion and abrasion	DIN ISO 4624 · DIN EN ISO 5470-1	**> 1.5 N/mm²** < 60 mg / 1000 cycles
GP Epoxy Primer	VOC content	ASTM D3960 · Green Star V3 IEQ-13	**14 g/L** Limit 140 g/L
266ESD TC finish	Slip resistance	AS/NZS 4586	**Set by grit broadcast** Zone by zone · testing of the actual finish on request
All products	Manufacture and batch control	ISO 9001 quality management system	**Smeaton Grange NSW** Australian made, locally stocked

The 266ESD coatings are industrial flooring finishes and may discolour under sustained ultraviolet exposure. This has no effect on performance and internal areas present no meaningful exposure. Store under shelter at 23 °C in original unopened containers. Full technical and safety data sheets are issued with this specification package.

BACKED, LOCALLY

Local support, from sample to sign-off

A conductive floor is a critical system. It either meets its resistance targets or it does not, and that depends on supplier support and thorough testing as much as on the material. Hychem manufactures at Smeaton Grange NSW, with over 30 years of manufacturing experience in Australia, a local technical rep on every job and ITPs for sign-off at every hold point.

30+ yrs

Manufacturing experience in Australia

100 %

Australian made and locally stocked, Smeaton Grange NSW

2 wks

Notice for an on-site sample or prototype panel, and for manufacture

Through the installation

- Resistance to earth testing between coats on all projects, documented for complete approvals
- A local Hychem technical rep on every job, with thorough ITPs for hold point sign-off
- Full local technical support before and after handover
- Samples or prototype panels supplied on request
- Test results issued as part of the handover package

Quality assurance requirements

Consistent results depend on the complete nominated build-up being installed to specification, subject to:

- Application by a Hychem approved applicator, to the build-up, sequence and consumption rates specified
- Substrate meeting the stated strength, cure and moisture requirements, prepared to the nominated CSP and verified prior to priming
- Environmental conditions observed and recorded through application and cure
- Batch numbers and consumption rates recorded for every coat
- Hychem hold point inspections attended and the ITP signed off at each stage
- No substitution of any product, layer or rate within the system

Substrate movement, structural cracking, rising moisture, and damage from misuse or impact remain outside Hychem's control and are the responsibility of the applicator and the builder.

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Technical and safety data sheets

This product is manufactured to conform to the technical specifications published in the product literature. The quality and fitness of the product is dependent upon the proper use and application of the product by the applicator. Field support, where provided, does not constitute supervisory responsibility. The technical information and application advice given in this publication is based on the best information available at the time of print; the owner, their representative or the contractor is responsible for checking the suitability of products for their intended use. Refer to the current product technical data sheets and safety data sheets before use.