



Epoxy Flooring Installation Process

A complete technical decision and field guide for facility owners, procurement teams, consultants and applicators in Nigeria

FROM SUBSTRATE ASSESSMENT TO DOCUMENTED HANDOVER

Includes: moisture-test selection, preparation hold points, layer controls, cure planning, failure diagnosis, handover records and RFQ checklists. Photography is illustrative training imagery.

How to use this guide

This guide explains what must be decided, inspected and recorded at each stage of an industrial or commercial epoxy flooring project. It does not replace a project specification, structural assessment, current technical data sheet, safety data sheet or a competent applicator's method statement.

The controlling rule

The selected manufacturer's current product documents and the approved project method control mixing ratio, coverage, recoat window, temperature, relative humidity, dew-point margin, cure and return-to-service limits.

The seven-stage process

Stage	Decision	Output
1	Define duty	Traffic, chemicals, hygiene, drainage, finish and shutdown.
2	Assess and test	Slab condition, moisture, contamination and ambient conditions.
3	Select the system	Compatible preparation, primer, build layer, texture and topcoat.
4	Prepare and repair	Mechanically expose sound concrete and correct agreed defects.
5	Apply and control	Record materials, mixing, coverage, conditions and recoat timing.
6	Protect the cure	Prevent traffic, water, dust and premature chemical exposure.
7	Inspect and hand over	Close defects and issue quality, maintenance and release records.

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1. Define service conditions and procurement inputs
 2. Assess the substrate and map risk
 3. Test concrete moisture and the application environment
 4. Mechanically prepare, repair and clean
 5. Apply primer, body coat, texture and topcoat
 6. Protect curing and control return to service
 7. Inspect, diagnose defects and document handover
- Field quality-control plan, buyer RFQ checklist and technical references

1

Define service conditions and procurement inputs

For facility owners, buyers, consultants and project managers

"Epoxy flooring" is a category, not a complete specification. A warehouse, food-processing room, workshop, laboratory and office corridor can require different preparation, build, texture, coving, topcoat and shutdown arrangements.

Input	Questions to answer	Evidence to request
Facility and area	Location, measured area, access, zoning and fixed equipment.	Survey plan and phased-work assumptions.
Traffic and loads	Pedestrians, forklifts, pallet trucks, wheel type, impact and point loads.	System recommendation tied to actual duty.
Exposure	Chemicals, concentration, contact time, oils, hot water, cleaning agents and process temperatures.	Current product resistance evidence.
Wet process	Drainage, falls, wash-down, slip risk, coving and cleanability.	Detail drawings and approved texture sample.
Finish	Colour, gloss, aggregate, markings, zones and UV exposure.	Mock-up or signed sample.
Programme	Shutdown, shifts, access, cure protection and required reopening date.	Stage programme with hold points.
Documents	HSE, permits, SDS/TDS, QA records, maintenance and warranty needs.	Required submittal register.

Buyer warning

Do not compare quotations by price per square metre until the preparation assumptions, repair allowance, system layers, material consumption, cure programme and exclusions are comparable.

Minimum site-survey information

- [] Facility location, use and measured floor area.
- [] Photographs or drawings showing zones, drains, joints and equipment.
- [] Known slab age, history, vapour barrier and previous coating.
- [] Traffic, loads, chemicals, wash-down and cleaning regime.
- [] Required colour, texture, coving, line marking and finish.
- [] Available shutdown and the operational return-to-service deadline.

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Assess the substrate and map risk

A coating cannot compensate for unsound or moving concrete



Illustrative training image: mechanical grinding with connected dust extraction. Preparation must produce the specified result, not merely operate a machine.

The survey must identify structural or moving cracks, laitance, weak concrete, spalling, hollow areas, oil contamination, curing compounds, sealers, previous coatings, damp zones, drains, construction joints, floor flatness and areas exposed to heat or wash-down.

Substrate inspection sequence

- Identify: slab type, approximate age, level, construction zones and known vapour barrier.
- Map: cracks, joints, spalls, drains, ramps, edges, penetrations, damp areas and fixed equipment.
- Classify: dormant cracks, moving joints and possible structural defects. Do not treat them as the same detail.
- Investigate: oil, grease, curing compounds, sealers and old coatings. Deep contamination may reappear after initial cleaning.
- Trial: use a representative preparation area, pull-off testing or other agreed check where adhesion or concrete strength is uncertain.
- Record: photographs, defect map, proposed repairs, exclusions and the locations selected for moisture testing.

Hold point 1 - substrate survey

Do not finalise the system or fixed price until substrate assumptions and repair responsibilities are written. Unknown conditions should be identified as provisional items, not hidden.

3

Test concrete moisture and the application environment

Choose the method and limit for the selected flooring system



Illustrative training image: in-situ slab moisture testing and ambient-condition measurement before coating. Test representative risk locations, not only a convenient dry corner.

Method	Information produced	Decision rule
ASTM F2170	Quantitative in-situ relative humidity within the slab at specified locations.	Compare with the proposed system's written maximum.
ASTM F1869	Moisture vapour emission rate from a prepared surface under the test conditions.	Use only where applicable and specified.
ASTM D4263	Indicates capillary moisture beneath a sealed plastic sheet.	An indication; not a substitute for required quantitative testing.
Electronic meter	Screens and maps comparative wet and dry areas.	Survey tool unless the specification accepts it for the decision.
Ambient checks	Air temperature, slab temperature, RH, dew point and ventilation.	Record before and during work; follow the current data sheet.

Test-location plan

- Include perimeters, cracks, drains, below-grade areas, known damp zones and separate pours or elevations.
- Record test ID, location, slab thickness if known, preparation, installation time, reading time, instrument and result.
- Understand the limitation: a result describes the tested location and conditions at that time. It does not predict every future moisture condition.
- If the result is unacceptable or unresolved, stop. Investigate drainage, drying, mitigation, another system or postponement.

Dew-point control

Do not coat a condensing surface. Maintain the product manufacturer's specified surface-temperature margin above dew point and keep measuring as conditions change.

4 Select the system, prepare and repair

Turn the duty and test results into a complete compatible build-up

Service condition	Resolve before award	Do not assume
Warehouse or workshop	Wheel loads, turning, impact, oil and abrasion.	"Heavy duty" without a defined build and duty.
Food or pharmaceutical area	Hygiene, wash-down, drainage, coving, slip risk and documentation.	Gloss alone establishes suitability or compliance.
Chemical-processing area	Chemical, concentration, temperature, contact time and cleaning response.	All epoxies have universal chemical resistance.
Wet or slip-risk area	Texture, cleanability, drainage, footwear and contamination.	More aggregate always produces a safer total outcome.
Sunlight exposure	Colour stability and compatible UV-resistant finish.	Every epoxy colour will remain unchanged outdoors.

Mechanical preparation sequence

- Isolate: protect adjoining rooms, process equipment, air intakes and traffic routes.
- Remove: weak laitance, incompatible old coating, sealer, curing compound and contamination to sound concrete.
- Profile: use diamond grinding, shot blasting, scarifying or another approved method to achieve the required concrete surface profile.
- Detail: treat corners, columns, drains, upstands, thresholds and machine edges separately.
- Repair: correct agreed cracks, spalls, holes and irregularities with materials compatible with the system and schedule.
- Clean: industrial-vacuum dust and remove residues. Do not leave slurry, detergent, acid salts or loose debris.
- Accept: inspect profile, soundness, cleanliness, repairs and moisture decision before primer is mixed.

Hold point 2 - prepared substrate

Buyer representative and applicator should accept and photograph the prepared floor before it disappears beneath the primer.

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Apply primer, body coat, texture and topcoat

Control the process through records, not memory



Illustrative training image: coordinated pouring, gauged spreading and rolling maintain coverage and wet edges. PPE and tool selection must match the approved method and SDS.

Layer	Primary function	Minimum control
Primer	Promotes bond, wets the profile and may control outgassing.	Batch, ratio, coverage, puddles, dry areas and overcoat window.
Body/build coat	Provides resin build and receives aggregate where specified.	Mixing, working time, consumption, even spread and wet edge.
Broadcast/texture	Builds thickness or changes slip and cleaning characteristics.	Aggregate identity, rate, consistency and removal of loose excess.
Topcoat	Provides the selected service-facing finish.	Compatibility, colour, coverage, pinholes, edges and recoat timing.
Details/markings	Completes coving, drains, penetrations, joints and traffic zones.	Approved detail, line accuracy, colour and protection.

Mixing and placement controls

- Verify product, component, colour, batch, shelf life, storage and temperature before opening.
- Mix complete units at the stated ratio and sequence with clean equipment. Do not guess partial proportions.
- Record mix start, crew, batch and area. Transfer promptly and do not extend working time with unauthorised solvent.
- Coordinate mixing, spreading and back-rolling to maintain wet edges and expected consumption.
- Confirm the previous coat is ready and the next application remains within the permitted recoat window.
- If the window is missed, follow the manufacturer's written preparation instructions before overcoating.

No generic 24-hour rule

Working time, recoat time and cure depend on the product, film build, slab temperature and ambient conditions. Use the current technical data sheet for every layer.

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Protect curing and control return to service

Dry to touch is not the same as ready for full operation

Cure protection is an installation activity. Barricade the zone against pedestrians, forklifts, water, cleaning, dust, welding debris and equipment placement. Maintain permitted ventilation and environmental conditions without directing contaminants onto the surface.

Milestone	Meaning	Release evidence
Ready for recoat	Previous layer can receive the next system component.	Recoat window and required preparation verified.
Light foot traffic	Limited controlled access may begin.	Product milestone reached at recorded site temperature.
Vehicle traffic	Forklifts, pallet trucks or vehicles may operate.	Relevant load milestone reached and punch list closed.
Full chemical service	Floor can receive its specified process or chemical exposure.	Full chemical cure confirmed for actual temperature and product.

Return-to-service release checklist

- ☐ Specified product cure milestone is identified.
- ☐ Recorded slab and ambient temperatures support the stated cure period.
- ☐ No prohibited water, dust, traffic or chemical exposure occurred during cure.
- ☐ Visual inspection and specified tests are complete.
- ☐ Punch-list repairs are complete and have received their own cure time.
- ☐ The responsible person has issued written reopening authorisation.
- ☐ Operations understand temporary restrictions, cleaning and spill response.

Programme contingency

Cooler conditions commonly extend cure while higher temperatures may shorten working time. Build contingency into the shutdown plan rather than promising a universal number of days.

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Inspect, close defects and document handover

The record must show what was installed, where and under which conditions

Stage	Record	Release question
Materials	Product, component, colour, batch, quantity, shelf life and storage.	All materials current, compatible and sufficient?
Substrate	Area, profile, repairs, contamination, cleanliness and photographs.	Prepared concrete accepted before priming?
Moisture	Method, test map, date, instrument, result and written criterion.	Results meet the proposed system limit?
Environment	Air/slab temperature, RH, dew point and ventilation intervals.	Conditions stayed within product limits?
Mixing	Ratio, time, crew, batch and mix start.	Full units correctly mixed without alteration?
Application	Area, quantity, coverage, equipment, layer and start/finish.	Coat uniform and consumption credible?
Final	Colour, texture, defects, details, tests and punch-list closure.	Ready for controlled release?

Minimum handover pack

- [] Approved system build-up, colours, area and as-installed zone record.
- [] Current technical data sheets and safety data sheets.
- [] Batch, mixing and material-consumption records.
- [] Moisture, environmental and quality-control results.
- [] Photographs of preparation, repairs, layers and completed details.
- [] Inspection record and signed punch-list closure.
- [] Return-to-service authorisation and any restrictions.
- [] Cleaning, maintenance, spill-response and repair guidance.
- [] Warranty scope and exclusions where a warranty is included.

Failure signals and investigation priorities

A visible defect is a symptom, not a complete diagnosis. Record its location, timing, extent, layer of separation and operating history before selecting a repair.

Symptom	Possible contributors	First investigation step
Peeling or delamination	Weak concrete, contamination, inadequate profile, moisture, incompatible layers or missed recoat window.	Map the failure and determine where separation occurred.
Bubbles, pinholes or craters	Outgassing, moisture, air entrainment, poor priming, contamination or application conditions.	Identify cause and timing before covering defects.
Soft or tacky areas	Incorrect ratio, incomplete mixing, contamination, cold conditions or mishandled product.	Isolate; review batch and mix records; obtain a corrective method.
Uneven colour or gloss	Batch variation, mixing, coverage, roller technique, temperature or timing.	Compare records and sample; decide local versus full-coat repair.
Premature wear	Wrong system for duty, low build, early opening, abrasive dirt or maintenance mismatch.	Confirm traffic and cleaning; inspect the layer condition.
Reflective cracking	Unresolved movement, wrong crack detail or structural change.	Determine if movement is active; do not make a cosmetic repair first.

Repair principle

Do not promise that another coat will solve an unknown failure. Diagnose the substrate, moisture, adhesion, compatibility, mixing, environment and service conditions before approving a repair system.

Installer stop conditions

- Moisture exceeds the selected system limit or remains unresolved.
- The slab is at or too close to dew point under the product requirement.
- Rain, leaks, wash-down, condensation or uncontrolled dust can contaminate the work.
- Concrete remains weak, dirty, contaminated or under-profiled.
- Required components, documents, calibrated instruments or crew capacity are missing.
- The planned area cannot be completed inside working and recoat limits.

Buyer RFQ and contractor-comparison checklist

Send the same scope information to every bidder, then compare exclusions and evidence rather than headline price alone.

Comparison field	What a complete quotation should show
Scope	Area, zones, access, fixed equipment, details and exclusions stated.
Substrate	Survey assumptions, preparation method, profile and repair allowance defined.
Moisture	Test method, locations, acceptance limit and response to failure stated.
System	Manufacturer, product layers, colours, aggregate, coving and markings identified.
Consumption	Expected material usage or coverage by layer is shown.
Programme	Preparation, coats, cure, inspection and reopening milestones are separated.
Quality	Hold points, records, mock-up and specified tests are listed.
HSE	Isolation, ventilation, PPE, dust, waste, permits and SDS controls are addressed.
Handover	As-installed record, maintenance, release and warranty documents are defined.

Information to attach to the enquiry

- [] Facility type and location.
- [] Approximate measured area and drawings.
- [] Current floor photographs and known history.
- [] Traffic, wheel loads and impact.
- [] Chemical, temperature and cleaning exposure.
- [] Wet areas, drains, coving and texture requirement.
- [] Colour, markings and visual standard.
- [] Shutdown window and required reopening date.
- [] HSE, documentation, testing and warranty requirements.

Technical references and project support

Standards should be read in their current full editions and applied through the project specification. Product-specific limits come from the selected manufacturer, not from this guide.

Reference	Project use
ASTM F2170	Determining relative humidity in concrete floor slabs using in-situ probes.
ASTM F1869	Measuring moisture vapour emission rate using anhydrous calcium chloride.
ASTM D4263	Indicating moisture in concrete by the plastic-sheet method.
ICRI 310.2R	Selecting and specifying concrete surface preparation for coatings and overlays.

Plan the floor from the substrate upwards

Epoxy Oilserv Nigeria Limited supports industrial and commercial flooring projects with site assessment, system selection, surface preparation, installation planning and documented handover.

Request an epoxy flooring assessment at epoxyoil.com

Online guide: epoxyoil.com/understanding-the-epoxy-flooring-installation-process/

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Disclaimer: This document supports planning and training. It does not replace a site-specific engineering decision, project specification, risk assessment, safety data sheet, technical data sheet or competent supervision.