

DIY Epoxy Floors

A three-track plan for garages, basements, and other concrete floors.

Optional topcoat / traction layer

Epoxy color coat

Prepared concrete profile

Sound concrete slab

THE CORE IDEA

A durable floor is a system, not just a bucket of coating. The slab, prep, mix, application, and cure all have to work together.



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Epoxy Outpost

For planning and education. The exact product label, technical data sheet, and safety data sheet control every application.

Choose the track that matches the space

VERSION 1

Garage floor

Best when oil, tire traffic, wet shoes, and a wide-open work area are the main concerns.

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VERSION 2

Basement or interior

Best when moisture, ventilation, occupied rooms, and indoor cleanup drive the plan.

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VERSION 3

Other concrete floors

Use for workshops, utility rooms, porches, patios, and mixed-use slabs.

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One rule beats every shortcut: buy a complete, compatible system approved for the exact slab location and exposure. Do not mix components from unrelated systems unless both manufacturers approve it in writing.

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05	Measure, buy, and stage the system	Plan
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First-timer strategy: Choose a small, empty, mechanically sound room for your first project. Large garages and occupied basements are less forgiving when a batch clock is running.

Do not coat until the slab passes all six checks

1 Sound

Concrete is not crumbling, scaling, or moving at active cracks. Repairs have cured as required by their manufacturer.

2 Clean

No oil, grease, wax, adhesive, curing compound, efflorescence, dust, or loose coating remains.

3 Dry

The slab passes the coating manufacturer's moisture requirements. A damp-looking slab or recurring efflorescence is a stop sign.

4 Porous

Water darkens and absorbs into bare concrete rather than beading. Dense or sealed slabs usually need a different prep path.

5 Compatible

Any old coating is firmly bonded and approved as a substrate by the new system. When uncertain, remove it.

6 In range

Air, slab, material temperature, humidity, and dew-point margin all fit the exact product sheet for the entire application and early cure.

STOP AND SOLVE FIRST

STOP Water appears under plastic, the slab darkens, or moisture keeps returning.

STOP Oil reappears after cleaning, or a degreased area still rejects water.

STOP Old paint peels in a tape/score test or lifts during grinding.

STOP The slab has active movement, hydrostatic pressure, standing water, or major spalling.

STOP The selected product is not approved for the location, traffic, sunlight, or moisture condition.

Moisture note: A taped plastic-sheet check can reveal an obvious problem, but it is only a screening step unless the product manufacturer explicitly accepts it. When a system specifies a quantitative concrete-moisture test, use that method or hire a flooring professional.

Go decision: Proceed only when every box is supported by the product's current instructions. The floor should be boring before the coating goes down: clean, dry, stable, and evenly profiled.

Control dust, skin contact, fumes, and the work zone

CONCRETE PREP

Silica dust is not ordinary dust

Grinding, cutting, or abrading concrete can release respirable crystalline silica. Use a shrouded tool and a dust-collection setup that follows the tool and vacuum manufacturers' instructions. Avoid dry sweeping or compressed-air cleanup.

COATING CHEMICALS

Read both the label and safety data sheet

Wear the eye, skin, and respiratory protection specified for the exact resin, hardener, cleaner, and solvent. Ventilate as directed. Keep sparks, flames, children, pets, and bystanders out of the work area.

Minimum job setup

PROTECT

- ☐ Safety eyewear
- ☐ Chemical-resistant gloves listed by the SDS
- ☐ Long sleeves and closed footwear
- ☐ Hearing protection for grinding

CONTROL

- ☐ Shrouded grinder / approved dust collection
- ☐ Cross-ventilation as allowed by product directions
- ☐ Plastic barriers where dust could migrate
- ☐ Clean entry and exit path

PREPARE

- ☐ Spill materials and clean rags
- ☐ Good lighting and power plan
- ☐ Emergency contacts and running water
- ☐ Local disposal instructions

Respirators need the right program

A random mask is not a substitute for dust control. If this work is part of a business and employees are required to wear tight-fitting respirators, applicable workplace rules may require medical evaluation, fit testing, training, and a written respiratory-protection program. Check federal, state, and local requirements before work begins.

Disposal: Do not pour leftover coating, solvent, cleaner, or rinse water onto the ground, into a drain, or into a storm sewer. Follow the product label and local household or commercial hazardous-waste rules; business-generated waste can follow different requirements.

Measure once, then stage a complete matched system

Square-foot formula

Length x width = floor area

Split an irregular floor into rectangles, calculate each one, then add them. Subtract only large openings that truly will not be coated.

Coverage formula

Area ÷ label coverage = kits

Round up to whole kits. Add a sensible allowance for rough texture, edges, repairs, and unavoidable waste. The label's stated range controls.

Build the shopping list by system layer

Layer / task	What to confirm	Common items
Cleaning	Approved cleaner; residue-free rinse	Degreaser, stiff brush, squeegee
Repairs	Compatible; cured before coating	Crack filler, patch, scraper
Profiling	Method allowed by system	Grinder, shroud, dust extractor
Base coat	Location, coverage, pot life	Resin/hardener, pails, mixer
Decoration	Broadcast rate and timing	Color flakes, spiked shoes if approved
Topcoat	Compatibility and recoat window	Clear coat, traction additive
Application	Exact roller / squeegee spec	Frames, covers, brushes, trays

Do not guess the roller: Nap length and roller material affect film build and trapped air. Match the product sheet. Buy extras so a shedding or cured roller does not stop the job.

Stage the room before opening Part A or Part B

Map Mark batches and sections on a sketch.	Route Choose a start point and an exit.	Group Keep each kit's parts together.	Time Post mix, induction, pot-life, and recoat limits.	Assign Mixer, roller, cut-in, and flake roles.
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Multiple kits

Color can vary between batches. Follow the manufacturer's instructions for boxing or blending components when more than one kit is used. Never combine A and B components until the work area and team are ready.

Preparation is the job; rolling is the finish

1 Empty Remove everything.	2 Inspect Find moisture and damage.	3 Clean Degrease and rinse.	4 Repair Fill approved defects.	5 Profile Open the surface.	6 Vacuum Leave no dust.
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Cleaning sequence

1. Scrape gum, adhesive, paint drips, and loose material.
2. Degrease oil spots with a product approved for the coating system.
3. Scrub, extract, and rinse until no cleaner residue remains.
4. Let the floor dry completely under the product's rules.

Repair sequence

1. Mark cracks, spalls, pop-outs, and joints.
2. Determine whether a crack is stable or still moving.
3. Use a compatible repair material; keep movement joints functional unless the system designer says otherwise.
4. Grind repairs flush only after the repair has cured.

Profile sequence

1. Choose the prep method required by the product sheet.
2. Use dust control and work in overlapping passes.
3. Detail edges and corners so the profile is consistent.
4. Vacuum slowly in two directions; wipe only if the system calls for it.

Never coat over

- STOP** Dust or grinding slurry
- STOP** Soap or degreaser film
- STOP** Loose old coating
- STOP** Wet repairs
- STOP** Active moisture

Uniform coating film
Even, open profile
Clean, sound concrete

A simple quality check: The entire slab should have a consistent appearance and feel. Glossy sealed patches, dark oil areas, white dust, or smooth edge bands mean the prep is not finished.

Acid etching is product-specific: Some consumer garage systems include an etch; other systems require mechanical preparation, and some instructions specifically say not to etch basement floors. Follow the exact system rather than a generic rule.

Build for contamination, vehicle traffic, and wet traction

BIGGEST RISK

Oil in the slab

Repeatedly clean suspect spots. If oil resurfaces or water still beads, do not hide it under coating.

FINISH CHOICE

Traction

A smooth coated floor can become slippery when wet. Use a compatible anti-slip additive where needed.

LAYOUT

Work toward the door

Start at the back wall. Keep the final wet edge facing the open garage door and your exit.

Garage workflow

1 Empty and protect

Remove vehicles, shelves, mats, stored liquids, and movable equipment. Protect walls and the driveway transition without creating a trip hazard.

2 Degrease and inspect again

Pay special attention to parking bays, tire paths, the apron, and areas under stored lawn equipment. Cleaning may reveal repairs or contamination you could not see before.

3 Prepare the slab exactly as the kit specifies

Consumer garage kits may include a cleaning/etching step; professional systems may require grinding or blasting. Do not substitute one method for another.

4 Plan sections across the short dimension

Cut in only as far as the roller can catch while wet. Roll a manageable section, broadcast flakes if used, then advance with a live wet edge.

5 Cure before loading

Keep foot traffic, tires, water, shelves, and rubber mats off until each is allowed by the label. "Dry to touch" is not the same as ready for a car.

Garage-specific product checks: hot-tire pickup resistance, chemical and abrasion exposure, wet traction, clear-coat compatibility, and the actual vehicle return-to-service time.

Door line detail: Decide where the coating stops when the door is closed. Mask a straight termination line on sound concrete, not across a joint that moves.

Moisture and ventilation decide whether this job works

BASEMENT STOP SIGNS

STOP Recurring dampness or water intrusion

STOP White mineral deposits returning after cleaning

STOP Musty conditions without a solved source

STOP A system labeled only for garages or exterior use

INTERIOR PRIORITIES

- ☐ System approved for occupied interiors
- ☐ Ventilation path that does not spread fumes
- ☐ Dust containment from the rest of the home
- ☐ Access to exits throughout the job
- ☐ Humidity and temperature control through cure

Basement workflow

PHASE 1

Diagnose

Find the cause of dampness before choosing a coating. A coating is not a fix for active water entry.

PHASE 2

Contain

Seal the work zone, isolate HVAC returns if appropriate, and protect stairs and finished rooms from dust.

PHASE 3

Prepare

Use the exact interior-safe cleaning and profiling method. One Rust-Oleum garage-floor sheet, for example, says not to etch a basement floor and instead names a cleaner.

PHASE 4

Apply

Maintain required ventilation, temperature, and humidity without blowing debris across the wet film.

Occupied-home rule

If you cannot keep residents, children, pets, and ignition sources safely separated for preparation, application, and cure, postpone the job or hire a qualified installer. “Low odor” does not mean no ventilation or no protective equipment.

Basement finish decisions

Need	Question to ask	Plan
Cleanability	What cleaners are allowed?	Match maintenance guide
Traction	Could the floor get wet?	Add approved texture
Comfort	Will rugs or mats be used?	Wait for full cure
Appearance	Does sunlight reach the room?	Check color/UV limits

Match the system to sunlight, water, traffic, and use

“Concrete floor” is not one exposure class. A workshop, utility room, porch, and patio can need different products even when the slabs look identical.

Space	Main exposure	System questions
Workshop	Tools, abrasion, spills	Impact, chemical, and slip resistance?
Utility room	Leaks, appliances	Interior approval and wet traction?
Porch / patio	Sun, rain, temperature swings	Exterior and ultraviolet approval?
Laundry	Water, detergent, vibration	Moisture, cleaning, and cure limits?
Storage room	Shelves, rolling loads	Point-load and return-to-service time?

Use this selection sequence

- 1

Define the environment. Interior or exterior? Direct sun? Freeze/thaw? Water exposure?
- 2

Define the load. Foot traffic, carts, vehicles, dropped tools, chemicals, or hot objects?
- 3

Define the slab. New or old, bare or coated, dry or questionable, smooth or porous?
- 4

Select the full system. Primer, body coat, decorative layer, topcoat, and traction additive must be compatible.

EXTERIOR CAUTION

Do not assume indoor epoxy belongs outside

Use only a system explicitly approved for the actual exterior exposure. Ask about ultraviolet stability, weather, standing water, freeze/thaw conditions, and required slip resistance. If the product sheet does not cover the location, choose another system.

Optional approved topcoat
Decorative / body coat
Primer if specified
Prepared slab

Every layer has a job.

Primer manages substrate interaction. The body coat supplies color and build. A topcoat may add wear, chemical, UV, or traction performance. Use only the layers the system specifies.

New concrete: Do not assume “new” means ready. Concrete must cure for the period required by the coating manufacturer and then pass its surface and moisture requirements.

The batch clock starts when the components meet

- 1

Condition and confirm
Bring materials into the allowed temperature range. Recheck slab temperature, air temperature, humidity, and dew-point requirements.
- 2

Mix one full unit
Use the specified ratio, mixer, speed, and time. Scrape sides and bottom only as directed. Do not split a kit unless the manufacturer permits exact proportioning.
- 3

Respect induction and pot life
If induction time is required, wait exactly. Start the pot-life timer immediately and never “extend” material with extra solvent.
- 4

Cut in a short lead
Brush only the perimeter the roller can reach before it begins to set. Avoid a cured picture frame around the room.
- 5

Place, spread, back-roll
Work in planned sections. Maintain the specified film build and a wet edge. Make final passes in one direction for a consistent appearance.
- 6

Broadcast and advance
Toss flakes upward so they fall flat, if the system uses them. Keep a clean overlap zone for the next section.

Heat shortens working time
Reactive material can warm quickly in a deep mixing pail. Follow the instructions for when to pour it into a tray or distribute it on the floor. Never keep using material after its stated working time or when it thickens, strings, or rolls unevenly.

Team rhythm for a larger floor

Mixer Measures time and prepares the next batch.	Cut-in Stays just ahead of the roller.	Roller Controls spread and wet edge.	Broadcast Adds flake / texture on schedule.	Spotter Checks coverage, drips, and exit.
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No improvising mid-batch: Stop the job before mixing if weather moves out of range, helpers leave, equipment fails, or the exit route is blocked.

A finished-looking floor may still be chemically curing

STAGE 1

Dust-free

Protect the surface from debris and insects. This is not a traffic milestone.

STAGE 2

Foot traffic

Wait for the exact label window; cooler conditions can slow cure.

STAGE 3

Heavy / vehicle traffic

Return loads only when the system allows them.

STAGE 4

Full service

Delay water, chemicals, rugs, and washing until permitted.

Troubleshooting map

What you see	Likely category	Next safe move
Peeling / flaking	Moisture, contamination, weak profile, old coating failure	Stop loading; document and contact system maker
Bubbles / pinholes	Air release, porous slab, heat, rolling technique	Do not puncture blindly; check repair procedure
Soft / tacky areas	Mix ratio, poor mixing, temperature, cure time	Isolate; do not topcoat until diagnosed
Roller lines / shade change	Lost wet edge, uneven film, batch variation	Check recoat window and approved correction
Fish-eyes / craters	Oil, silicone, wax, or other contamination	Stop and identify contaminant before repair
Premature wear	Thin film, early traffic, wrong exposure class	Review spread rate, use, and maintenance

Routine care

- ☐ Dry-mop grit before it scratches
- ☐ Clean spills promptly with approved products
- ☐ Use non-staining mats only after full cure
- ☐ Protect against sharp point loads
- ☐ Inspect high-traffic zones periodically

Repair rule

Do not coat over a mystery failure. Record the product, batch, temperatures, dates, photos, spread rate, and prep method. Ask the system manufacturer for the approved repair path before sanding or recoating.

Keep the records: label, technical data sheet, safety data sheet, receipts, batch numbers, color code, leftover flakes, and before/after photos. A professional-looking job includes a professional record.

Print these checks before the work begins

DAY BEFORE

- ☐ Floor empty and accessible
- ☐ Moisture decision documented
- ☐ Cleaning and repairs complete
- ☐ Profile uniform edge to edge
- ☐ Dust removed; room protected
- ☐ Materials and backups on site
- ☐ Weather / indoor conditions acceptable
- ☐ Label, TDS, and SDS printed

BEFORE MIXING

- ☐ Temperatures and humidity recorded
- ☐ Dew-point requirement checked
- ☐ Batch plan and exit route marked
- ☐ Timers, mixer, rollers ready
- ☐ Protective equipment on
- ☐ Ventilation / dust control active
- ☐ Helpers understand their roles
- ☐ No children, pets, or bystanders inside

DURING APPLICATION

- ☐ Mix time and batch number logged
- ☐ Induction time followed if required
- ☐ Pot-life timer running
- ☐ Coverage checked per section
- ☐ Wet edge maintained
- ☐ Flakes / texture applied on schedule
- ☐ No puddles, misses, or roller debris
- ☐ Conditions remain in range

AFTER APPLICATION

- ☐ Area blocked off and labeled
- ☐ Recoat window posted
- ☐ Foot and vehicle times posted
- ☐ Ventilation maintained as directed
- ☐ Waste contained and labeled
- ☐ Tools cleaned as directed
- ☐ Photos and batch records saved
- ☐ Maintenance instructions retained

Job record

Project / room: _____
 Floor area: _____
 System: _____
 Color / flake: _____

Application date: _____
 Batch numbers: _____
 Conditions: _____
 Return-to-service: _____

Publisher note: Epoxy Outpost prepared this field guide to help a beginner plan the work. It does not replace project-specific professional advice, code requirements, or the controlling instructions for the exact products used.

REFERENCES

Use the exact product documents at the job site

This guide uses official safety and manufacturer references to establish the workflow. Product limits vary. Before starting, download the current label, technical data sheet (TDS), and safety data sheet (SDS) for every cleaner, repair material, coating, additive, and topcoat actually used.

Primary manufacturer references

Rust-Oleum EpoxyShield Water-Based Epoxy Garage Floor Coating Pouch Kits - Technical Data. Surface preparation, environmental limits, mixing, application, slip warning, and cure guidance. [Open source](#)

Rust-Oleum EpoxyShield Garage Floor Universal Tint Base - Technical Data. Includes distinct basement preparation language, temperature requirements, mixing, and application instructions. [Open source](#)

Rust-Oleum Concrete Saver AS6500 System Anti-Slip 100% Solids Epoxy - Technical Data. New-concrete cure, moisture screening, porosity, preparation, and environmental requirements for a professional system. [Open source](#)

Safety and disposal references

Occupational Safety and Health Administration - Small Entity Compliance Guide for the Respirable Crystalline Silica Standard for Construction. Dust-control practices for concrete and masonry work, including shrouds, collection systems, housekeeping, and respiratory-protection context. [Open source](#)

OSHA - Silica, Crystalline: Construction. Scope, exposure concepts, and control information for construction work involving silica-containing materials. [Open source](#)

U.S. Environmental Protection Agency - Household Hazardous Waste. Paints and similar household products may require special handling; EPA advises against pouring household hazardous waste down drains, on the ground, or into storm sewers and points readers to local programs. [Open source](#)

Limit of this guide

The cited examples do not endorse one brand or prove that a product is suitable for your slab. Local code, environmental rules, workplace rules, and product revisions may change. Confirm the current documents and local requirements immediately before work.

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