



MOXIE SHIELD 2000

PENETRATING FLOORING SEALER

FREQUENTLY ASKED QUESTIONS

Architects · Engineers · Contractors · Producers · Owners · Specifiers



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PRODUCT OVERVIEW

Moxie Shield 2000 Penetrating Flooring

Moxie Shield 2000 is a permanent penetrating sealer and hardener engineered specifically for flooring installations and specialty applications. It penetrates up to 7 inches into the concrete matrix — the deepest in the Moxie Shield line — to stop water vapour transmission and alkali efflorescence beneath flooring systems, protecting both new and existing concrete in above-grade and below-grade environments.

Moxie Shield 2000 reacts with cement hydration byproducts to increase density and reduce capillary porosity to near zero, creating an impermeable substrate that resists hydrostatic pressure up to 100 psi. It prevents chloride intrusion, freeze-thaw deterioration, reinforcing steel corrosion, and moisture-related flooring failures. An optional 12-year labor and materials warranty — the strongest in the Moxie Shield line — is available to replace the flooring manufacturer’s warranty for moisture-related failures.

7"	100 psi	600+	12-Year
Penetration depth	Hydrostatic resistance	Freeze-thaw cycles	Optional warranty

ARCHITECTS

Questions for Architects

Flooring system compatibility, below-grade suitability, and specification-level warranty.

ARCHITECTS

What is Moxie Shield 2000 and how does it differ from the 1500 in the Moxie line?

Moxie Shield 2000 is a permanent penetrating sealer and hardener engineered specifically for the flooring industry and specialty applications. It shares the same densification chemistry as the 1500, but penetrates one inch deeper — up to 7 inches — and is formulated for the higher moisture vapor emission conditions encountered beneath flooring systems. Where the 1500 is a general-purpose deep-penetrating concrete densifier, the 2000 is purpose-built for the critical interface between concrete substrate and adhered or installed flooring. It carries a specific flooring industry warranty, documented flooring remediation protocols, and is specifically listed for efflorescence sequestration under installed floor coverings.

ARCHITECTS

What flooring systems and assembly types is it designed to protect?

Moxie Shield 2000 is documented for normal-weight and lightweight concrete substrates receiving any surface-adhered floor covering — resilient flooring, hardwood, LVT, carpet, ceramic and porcelain tile, epoxy coatings, and other impermeable surface treatments. It is specifically engineered to stop moisture vapor transmission and alkali efflorescence attack beneath flooring materials — the two primary causes of flooring adhesive failure, seam separation, warping, curling, discoloration, mold, and bubbling. It is appropriate for both new concrete and existing slabs requiring remediation before flooring installation.

ARCHITECTS

Is it suitable for below-grade flooring applications?

Yes. Moxie Shield 2000 is documented for above-grade and below-grade applications, including high subgrade moisture conditions and flooring remediation in basement and below-grade environments. It withstands hydrostatic pressure up to 100 psi — equivalent to 231 feet below grade. For architects specifying flooring over below-grade slabs, particularly in occupied spaces, it provides the substrate protection required to make flooring warranties viable in conditions where conventional moisture mitigation approaches fail.

ARCHITECTS

What warranty is available, and how does it interact with flooring manufacturer warranties?

An optional 12-year labor and materials warranty is available from Moxie International — the strongest warranty in the Moxie Shield product line and, notably, one that is specifically positioned to replace the flooring manufacturer's warranty for moisture-related failures. The 12-year registered warranty is available through Moxie International directly and is not transferable through concrete producers, dealers, or distributors. For projects where flooring manufacturer warranties are at risk due to substrate moisture conditions, the Moxie 2000 warranty represents a direct contractual alternative. Contact sales@moxieshield.com for warranty details and registration.

ENGINEERS

Questions for Engineers

Chemistry, penetration depth, hydrostatic performance, vapor emission thresholds, and ASTM compliance.

ENGINEERS

What is the mechanism of action and how deep does it penetrate?

Moxie Shield 2000 undergoes a complex chemical reaction with the byproducts of cement hydration — specifically calcium hydroxide — converting them into a higher-density cementitious material that fills all pores and reduces capillary voids to near zero, creating an impermeable substrate. Penetration depth is up to 7 inches — one inch deeper than the Moxie Shield 1500 — and is the deepest penetration documented in the Moxie Shield line. This depth ensures the densification zone extends well beyond the carbonation front and any surface contamination layer, providing durable protection that cannot be removed by surface preparation, abrasion, or wear.

ENGINEERS

What are the moisture vapor emission thresholds that determine how many coats are required?

Coverage and coat requirements are directly tied to substrate moisture vapor emission rates. For standard concrete: two coats at 150 to 200 sq ft per gallon on the first coat, with the second coat using approximately half the first coat volume. For very porous concrete or high moisture vapor emissions of 12 lbs per 1000 sq ft per 24 hours up to 26 lbs per 1000 sq ft per 24 hours or higher, three or more coats are required — with longer chemical reaction and drying times between coats. These thresholds are critical for flooring installation scheduling and must be assessed before application planning. When absorption takes 30 minutes or longer per coat, no further applications are necessary.

ENGINEERS

How does it resist marine chlorides, oil, gasoline, acids, and solvents?

The densified cementitious matrix formed by the 2000's chemistry presents near-zero capillary porosity to penetrating agents. Marine chlorides, oil, gasoline, acids, and solvents all require capillary pathways or pore pressure to penetrate concrete — the elimination of these pathways by the densification reaction is what provides resistance. This broad chemical resistance profile makes the 2000 appropriate for flooring in industrial, automotive, food processing, and marine-adjacent environments where chemical spills, cleaning solvents, or atmospheric chlorides are ongoing exposure conditions.

ENGINEERS

What is the full ASTM compliance profile?

Moxie Shield 2000 carries the same comprehensive ASTM compliance suite as the 1500: ASTM E96 (water vapor transmission), ASTM E1745 (water vapor retarders in contact with soil), ASTM F710 (preparing concrete floors for resilient flooring), ASTM F2170 Section 7.9 reference, ASTM C156 (water retention), ASTM C666 (freeze-thaw resistance — exceeds 600 cycles), ASTM C805 (surface hardness), ASTM D4263 (plastic sheet moisture test), ASTM D5084 (hydraulic conductivity), and ASTM C309 (curing compound performance criteria). It also meets CARB requirements, EPA USDA VOC = 0, and is USDA approved for food processing areas. These standards collectively cover the full performance envelope from moisture vapor transmission to freeze-thaw durability to flooring substrate readiness.

ENGINEERS

What is the efflorescence permanence risk, and how does it affect the treatment timeline?

This is a critical installation detail. Alkali salts (efflorescence), if present on the concrete surface at the time of or following treatment, will react with atmospheric carbon dioxide within 24 to 48 hours and become permanent calcium carbonates — a physical change that cannot be reversed chemically. If not removed before they harden, these salts require physical removal by wire brushing or grinding. This has direct implications for flooring installation timing: broom off any efflorescence that appears during and after the final water saturation step until none remain, confirm the surface is clean and dry, and do not install flooring until the process is complete and the slab is verified by ASTM E1907 testing.

Questions for flooring Contractors and Installers

Substrate assessment, application protocol, vapor emission management, efflorescence removal, and flooring readiness verification.

CONTRACTORS AND INSTALLERS

How do I know if a concrete slab needs Moxie Shield 2000 before flooring installation?

Look for the documented indications of moisture migration: spalling, dusting, structural joints and cracks; mats or boxes left on the floor becoming wet or damp quickly; and in slabs with prior flooring, evidence of efflorescence or alkali salts at flooring joints, chemical attack on adhesive bonds, warping, curling, cracking, seam separation, discoloration, mold or mildew, rusty nails in tack strips, bubbling, peeling, lumpy surfaces, or cracks visible through coatings. Any of these signs indicate active moisture migration that will compromise new flooring without treatment. Perform the Water Absorption Test to confirm absorptive substrate readiness before proceeding

CONTRACTORS AND INSTALLERS

What is the Water Absorption Test and why is it mandatory?

The Water Absorption Test verifies the substrate is absorptive enough for the product to penetrate and be effective. Pour two to three tablespoons of water onto the prepared concrete: if it spreads and absorbs within 15 to 20 minutes, the surface is ready. If water beads and shows no absorptive quality, the surface must be mechanically abraded before treatment. Bead blast, scarify, or grind with a diamond blade. Acid etching is neither acceptable nor effective for the 2000. It is the contractor's responsibility to provide an absorptive surface. Remove all existing flooring materials, coatings, waxes, grease, sealers, paints, and adhesives from existing slabs before testing.

CONTRACTORS AND INSTALLERS

What is the full application protocol for an existing slab?

Temperature and humidity: apply when ambient temperature is between 65 and 75 degrees F and humidity is 50% or lower — tighter tolerances than the 1500. Do not apply below 65 degrees F. Step 1: perform the Water Absorption Test. Step 2: mist surface to dampen substrate, allow to dry. Step 3: apply first coat by low-pressure sprayer or pouring and brooming evenly. Do not puddle in low areas — broom low areas first. Product must absorb and be dry to touch within 30 to 45 minutes. Step 4: apply second coat when surface is 90% dry. On very porous slabs or high moisture vapor emission conditions, three or more coats may be required. When absorption takes 30 minutes or longer, no further coats are necessary. Step 5: after final coat absorbs, mist with clean water. Step 6: 8 to 24 hours later, thoroughly saturate with clean water (equivalent to 3 mist coats), broom out puddling, and allow to cure 48 to 72 hours or longer depending on initial moisture vapor emission rate. Step 7: broom off all efflorescence until none remain. When dry and efflorescence-free, proceed to ASTM D4263 Plastic Sheet Test and ASTM E1907 Relative Humidity Test before installing flooring.

CONTRACTORS AND INSTALLERS

What is the efflorescence removal requirement and what happens if it is skipped?

After the final water saturation step, broom off any efflorescence that appears and continue until no more emerge. This is not optional. Alkali salts present on the surface will react with atmospheric carbon dioxide within 24 to 48 hours and permanently convert to calcium carbonates — hard, crystalline deposits that cannot be removed chemically and require wire brushing or grinding. If flooring is installed over calcium carbonate deposits, they will continue to expand and compromise adhesive bonds and flooring integrity over time. Complete efflorescence removal before flooring installation is a warranty requirement.

CONTRACTORS AND INSTALLERS

What moisture testing is required before flooring installation, and what is the waiting period?

Wait a minimum of 48 hours after the final water saturation step before installing flooring materials or coatings. After that waiting period, perform ASTM D4263 (Plastic Sheet Test) and ASTM E1907 (Relative Humidity Test). ASTM E1907 is the only acceptable moisture verification protocol per Moxie warranty requirements — ASTM F1869 (Calcium Chloride Test) and ASTM F2170 (electrical conductivity probe) are not acceptable as both produce erroneously high readings on treated concrete. Confirm adhesive manufacturer requirements for trowel notch depth, width, spacing, and pH levels. Ensure the adhesive specified is suitable for use over a non-porous, impermeable, nonabsorptive surface.

Questions for Flooring Producers and Distributors

Warranty positioning, market opportunity, and the case for specifying Moxie Shield 2000 at the channel level.

FLOORING PRODUCERS AND DISTRIBUTORS

How does the 12-year warranty change the business case for flooring contractors and dealers?

The optional 12-year labor and materials warranty from Moxie International is positioned as a direct replacement for the flooring manufacturer's warranty for moisture-related failures — the single most common and costly category of flooring warranty claims. For flooring contractors and dealers, specifying Moxie Shield 2000 on every concrete substrate installation shifts the moisture liability from the flooring product to the substrate treatment, where it belongs. A treated slab with a 12-year Moxie warranty means that moisture-related flooring failures — adhesive bond loss, seam separation, mold, curling — are covered by a separate, dedicated warranty backed by Moxie International directly.

FLOORING PRODUCERS AND DISTRIBUTORS

What moisture vapor emission conditions make this product particularly valuable?

Any slab with moisture vapor emissions exceeding standard flooring adhesive tolerance thresholds — typically above 3 lbs per 1000 sq ft per 24 hours for many adhesive systems — creates a warranty risk for the flooring installation. Moxie Shield 2000 is specifically documented to address moisture vapor emissions from 12 lbs per 1000 sq ft per 24 hours up to 26 lbs per 1000 sq ft per 24 hours or higher. These are the conditions where conventional moisture mitigation products fail, where flooring warranties are voided, and where remediation costs are highest. The 2000 is engineered specifically for this problem space.

FLOORING PRODUCERS AND DISTRIBUTORS

Is there a CSI specification sheet available for flooring project specifications?

Yes. A CSI Specification Sheet is available for Moxie Shield 2000, enabling flooring contractors, specifiers, and dealers to include it in project specifications and submittal packages. The product is also supported by Application Procedures, an SDS, and the warranty documentation. All are available upon request from Moxie International. Contact sales@moxieshield.com or (916) 251-0825 to request documentation or discuss project-specific supply.

FLOORING PRODUCERS AND DISTRIBUTORS

What packaging formats are available?

Moxie Shield 2000 is available in 1-gallon pails, 5-gallon pails, 55-gallon drums, and 275-gallon totes — covering projects from single-room residential remediation to large commercial flooring contracts. Contact Moxie's sales team at 844) 845-1975 or sales@moxieinternational.com to discuss volume pricing and project logistics.

Questions for Owners

Why flooring fails, what the 2000 prevents, and what a 12-year warranty means.

OWNERS

Why do flooring installations fail, and how does Moxie Shield 2000 prevent it?

The leading cause of flooring failure in concrete buildings is moisture vapor migration from below — water vapor moving upward through the concrete slab, attacking adhesive bonds, feeding mold and mildew, and eventually destroying the flooring from underneath. Flooring manufacturers know this and routinely void warranties when substrate moisture levels exceed specified limits. Moxie Shield 2000 stops this at the source: it penetrates up to 7 inches into the concrete, reacts with the concrete's own chemistry to eliminate the capillary pathways through which moisture travels, and creates a permanent, impermeable barrier between the slab and the flooring system above it.

OWNERS

What are the visible signs that a slab needs treatment before new flooring is installed?

On slabs with existing flooring: efflorescence or white mineral staining at flooring joints, failed adhesive bonds, warping, curling, cracking, seam separation, discoloration, mold or mildew growth, rusty nails in tack strips, bubbling, peeling, or lumpy surfaces visible under coatings. On bare slabs: mats or objects left on the floor becoming damp quickly, surface dusting, and spalling. Any of these are indicators of active moisture migration. Treating the slab with Moxie Shield 2000 before new flooring installation addresses the root cause rather than reinstalling over the same problem.

OWNERS

What does the 12-year warranty cover, and who backs it?

The optional 12-year labor and materials warranty is issued directly by Moxie International — not by concrete suppliers, dealers, or distributors. It is specifically positioned to replace the flooring manufacturer's warranty for moisture-related failures, covering both product performance and associated labor. Contact sales@moxieinternational.com for complete warranty terms, registration details, and project-specific eligibility.

OWNERS

Does it need to be reapplied, or is it a one-time permanent treatment?

Moxie Shield 2000 is documented as a permanent penetrating treatment. Because it reacts chemically with the concrete matrix to form a higher-density cementitious material within the pore structure — rather than coating the surface — it does not wear, peel, or degrade over time. The protection is part of the concrete itself. The 12-year warranty reflects this permanence. For new flooring installations over treated slabs, no re-treatment of the substrate is required unless the surface is mechanically abraded through demolition or renovation

OWNERS

Can it be used on existing buildings with chronic moisture problems?

Yes — flooring remediation is one of its primary documented applications. For existing buildings experiencing repeated flooring failures due to slab moisture, Moxie Shield 2000 provides a permanent solution rather than a temporary mitigation. The process requires removing the existing flooring, preparing the slab to ensure absorptivity, applying the treatment, completing the cure and efflorescence removal process, and verifying the slab is ready before reinstalling flooring. When properly applied and verified, the treatment addresses the root cause permanently.

Questions for Specifiers

The flooring industry's premium substrate treatment — specification language, warranty positioning, and documentation.

SPECIFIERS

Which CSI division and section does Moxie Shield 2000 fall under?

Moxie Shield 2000 is specified under Division 03 — Concrete, within sections covering concrete surface treatment and densification, and under Division 09 — Finishes, within sections covering flooring substrate preparation and moisture mitigation. For below-grade applications, it may also reference Division 07 — Thermal and Moisture Protection. A dedicated CSI Specification Sheet is available from Moxie International for direct inclusion in project documents.

SPECIFIERS

What performance thresholds support a specification?

Moxie Shield 2000 supports the following verifiable specification thresholds: reactive penetrating chemistry converting cement hydration byproducts to high-density cementitious material within the substrate, up to 7-inch penetration depth, hydrostatic pressure resistance to 100 psi (231 feet below grade), freeze-thaw durability exceeding 600 cycles per ASTM C666, zero VOC per ASTM D3960, surface hardness improvement per ASTM C805, moisture vapor retarder compliance per ASTM E1745, curing compound performance per ASTM C309, marine chloride and acid resistance, efflorescence sequestration, and an optional 12-year labor and materials warranty. This set of concurrent thresholds defines a performance class that surface coatings, topical moisture mitigation products, and solvent-based sealers cannot match.

SPECIFIERS

How do I specify the moisture testing protocol correctly to protect the installation warranty?

Specify ASTM E1907 (relative humidity test) as the sole acceptable post-treatment moisture verification protocol before flooring installation. Explicitly exclude ASTM F1869 (Calcium Chloride Test) and ASTM F2170 (electrical conductivity probe) — both produce erroneously high readings on Moxie Shield 2000-treated concrete due to moisture extraction and colloidal gel interference respectively. Specify a minimum 48-hour waiting period after final water saturation before testing or flooring installation. Include the requirement for ASTM D4263 (Plastic Sheet Test) as a preliminary verification step. Specifying the correct test protocol is essential to maintaining warranty validity — false failures from excluded tests will void warranty coverage.

SPECIFIERS

How does the 12-year warranty function in the project specification?

The optional 12-year labor and materials warranty is available from Moxie International and is specifically designed to replace the flooring manufacturer's warranty for moisture-related failures. It should be specified as a warranty alternative for projects where substrate moisture conditions make the flooring manufacturer's standard warranty unachievable. The warranty is registered through Moxie International directly — not through concrete suppliers or distributors. Include warranty registration requirements in the specification closeout documents. Contact sales@moxieshield.com for warranty language suitable for inclusion in project specifications.

SPECIFIERS

What documentation is available for submittals?

Available submittal documentation includes: CSI Specification Sheet, product data sheet, Safety Data Sheet (SDS), ASTM compliance documentation (E96, E1745, F710, C156, C666, C805, D4263, D5084, C309), CARB and EPA VOC = 0 certification, USDA food processing area approval, LEED credit qualification documentation, application procedures, and warranty documentation. All available upon request from Moxie's technical team.

SPECIFIERS

Are there project references available?

Yes. Moxie Shield 2000 has over 40 years of laboratory and field performance across flooring remediation, new construction, below-grade applications, food processing environments, industrial flooring, and specialty installations. References from flooring contractors, specifiers, and general contractors are available upon request. Contact Moxie's sales team at 844) 845-1975 or sales@moxieinternational.com.

Documents available on request

CSI Specification Sheet

Division 03 and 09 formatted specification

Safety Data Sheet (SDS)

Handling, pH, and compatibility warnings

12-Year Warranty Document

Labor and materials — replaces flooring manufacturer warranty

ASTM C666 Data

Freeze-thaw — exceeds 600 cycles

ASTM C805 Data

Surface hardness improvement testing

ASTM E96 / E1745 Compliance

Vapour transmission and retarder testing

ASTM F710 / D4263 Reference

Flooring substrate readiness protocols

ASTM D5084 / C309 Compliance

Hydraulic conductivity and curing criteria

USDA / CARB / VOC Documentation

EPA VOC = 0 and food processing approval

LEED Documentation

Credit qualification and calculation sheet

Application Procedures Sheet

Full multi-step protocol with MVE guidance

Project References

40+ years — flooring remediation, below-grade, industrial