SINAK VC-5 Best Practices Guide

Overview

This guide outlines best practices for the successful specification, installation, and documentation of SINAK VC-5 for moisture vapor emission control in concrete slabs. Proper execution ensures long-term performance, reduces moisture-related flooring failures, and qualifies the project for SINAK's 20-Year Warranty.

VC-5 is designed to eliminate the need for post-installation Division 9 moisture mitigation products by proactively sealing the concrete at the time of placement. However, the effectiveness of the product—and the warranty coverage—depends entirely on strict adherence to application, mix design, and documentation protocols.

Why This Matters

Moisture issues and flooring failures are among the most costly and disruptive issues in commercial construction, and the majority stem from poor coordination between specification, installation, and final flooring. When execution is unclear, or the wrong assumptions are made about moisture performance, the result is often compromised finishes, rejected warranties, and costly rework.

This document is intended to prevent that. Every requirement, timeline, and detail herein directly addresses common breakdowns observed across the construction industry. These best practices ensure proper sequencing between Division 3 and Division 9 work, confirm the correct mix design and coverage, and promote rigorous documentation for warranty protection.

Professionals who follow this guide closely will position their project to eliminate post-installation moisture mitigation, reduce risk of schedule delays, and protect the flooring installation investment.

(Refer to Appendix: Citation A for supporting industry insights and data related to common causes of moisture-related slab failures and the importance of proactive Division 3 coordination.)

Summary of Critical Success Factors

Design Coordination

- Include VC-5 in Division 3 specs, not Division 9.

- Define the type and class of concrete based on final flooring requirements.
- Specify concrete surface profile (CSP) and porosity standards appropriate for planned adhesives and finishes.
- Exclude curing compounds that meet ASTM C309 or C1315 when resilient flooring is to follow.
- Require coordination between Division 3 and Division 9 to eliminate conflicts involving admixtures or slab treatments.
- Plan for field validation testing of porosity, pH, and permeability to align with adhesive system tolerances.
- Confirm vapor retarder location using **ACI 302.1R-15 Fig 5.2.3.2**
- Ensure concrete mix includes W/C ratio ≤ 0.45 (max 0.50 at placement).

Preconstruction

- Submit VC-5 Product Data early.
- Coordinate early engagement between the concrete and flooring teams to ensure alignment on surface finish expectations.
- Schedule full system mockups if flooring adhesives require validation of set time or compatibility.
- Confirm that all specified primers and adhesives are rated for use over low-permeability concrete substrates.
- Integrate field quality control measures to verify concrete profile and surface conditions prior to flooring application.
- Schedule VC-5 training with SINAK for 1st pour crew.
- Place VC-5 order 14 days prior.
- Confirm secure, freeze-protected storage.

Equipment Prep

- Use low-pressure sprayer with **0.50 GPM fan tip**, cleaned and labeled for SINAK-only use.
- Prepare backup water-curing methods (blankets/plastic) in case of weather interruptions.

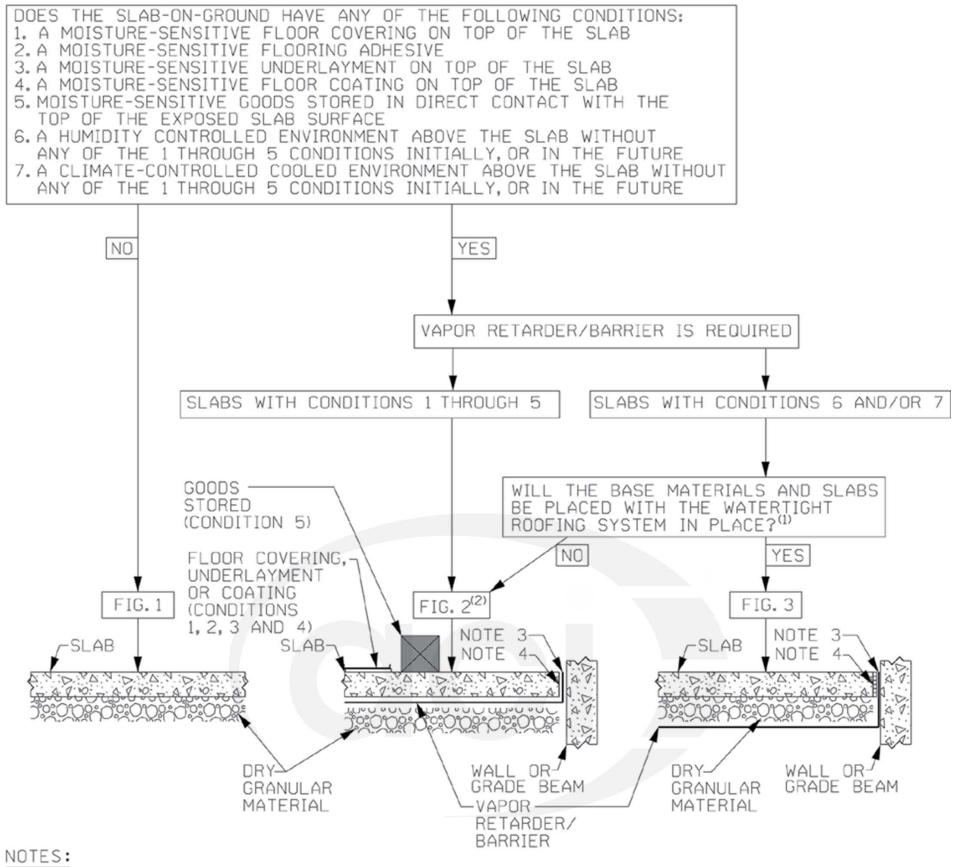
Vapor Retarder Placement Decision – ACI 302.1R-15 Fig. 5.2.3.2

Use the decision flow chart below from ACI 302.1R-15 to determine if a vapor retarder should be installed directly under the slab or below a blotter layer:

Key takeaways:

- For slabs receiving moisture-sensitive flooring (resilient, wood, etc.) → place vapor retarder **directly under slab**.
- For slabs without flooring or with breathable coverings → use **blotter layer** only if moisture risk is low.

SINAK recommends consulting this flow chart and project-specific flooring needs when determining vapor retarder placement to avoid trapped moisture or curl-related cracking.



NOTES:

(1) IF GRANULAR MATERIAL IS SUBJECT TO FUTURE MOISTURE INFILTRATION FROM WET-CURING, WASH-DOWN AREAS SLOPED TO DRAINAGE, OR OTHER LIQUIDS THAT CAN POND ON TOP OF THE SLAB AND SEEP THROUGH JOINTS, CRACKS OR OTHER OPENINGS, USE FIG. 2.

(2) IF FIGURE 2 IS USED, MEASURES TO MINIMIZE SLAB CURLING, DOMINANT JOINTS, DELAMINATIONS, BLISTERING, CRUSTING, PLASTIC SHRINKAGE CRACKING, BAR SHADOWING AND SUBSIDENCE CRACKING LONGITUDINALLY OVER THE REINFORCEMENT, REDUCTION IN SURFACE FLATNESS, AND FINISHING TIME WILL LIKELY BE REQUIRED.

(3) AT THE PERIMETER, VAPOR RETARDER/BARRIER SHOULD BE TURNED UP AND SEALED TO WALL, GRADE BEAM OR SLAB.

(4) FLEXIBLE CLOSED CELL FOAM PLANK FULL DEPTH OF SLAB (WHERE REQUIRED) WITH ELASTOMERIC JOINT SEALANT (WHERE REQUIRED) . (NOTE: FOAM PLANK IS NOT SHOWN IN FIG. 2 BUT CAN BE USED AS SHOWN IN FIG. 3)

VC-5 Installation Timeline

Timeframe	Tasks
-30 Days	Identify crew and complete SINAK online training. Confirm W/C ≤ 0.45.
-14 Days	Order VC-5. Request SINAK travel/service visit if needed. Confirm product storage.
-7 Days	Verify delivery, prepare spray equipment, and confirm pour schedule.
-1 Day	Confirm weather window, staging of materials, and backup water-cure plan.
0 Day	Do not pour if W/C > 0.50. Capture batch tickets. Apply after saw cuts. Apply in 2 coats: perpendicular passes at 300 SF/gal total.
+1 Day	Submit documentation: batch tickets, VC-5 application log, and warranty form.
+5–7 Days	Optional: Re-treat saw cuts to reduce slab curl.

Application Instructions

Surface Readiness

- Apply only after bleed water evaporates and surface can be walked on without paste transfer.
- First apply **mist test**: if VC-5 absorbs quickly, proceed; if it sits on surface, wait 30–60 mins and retest.

Application Method

- **Treat saw cuts first**, spraying directly into joints.
- Apply **first coat** uniformly @ 600 SF per gallon.
- Allow to dry to the touch.
- Apply **second coat** in a perpendicular direction (crosshatch pattern) @ 600 SF per gallon.
- Apply to exposed slab edges once forms are stripped.

- Use broom to distribute and evenly wet the surface if puddles or overapplication is observed.

Coverage

- **Target**: 300 SF per gallon total (600 SF/gal per coat for 2-coat application).
- **Log gallons applied per area.**

Documentation Requirements

To qualify for the warranty:

1. **Track mix designs**: Confirm W/C ratio per batch ticket.
2. **Complete Application Log** (included).
3. **Photograph pour and coverage staging**.
4. **Submit documentation via online warranty application**:
    - Proof of Purchase of Material
    - Applicable Batch Tickets
    - VC-5 Application Log

Designate a documentation lead on large projects.

Post-Cure Testing (Optional)

Do not allow ASTM F-2170 (Relative Humidity) Testing protocol: This testing protocol requires drilling through treated substrates and will not provide sufficient information regarding moisture vapor drive at the surface of the concrete. (Contact SINAK for additional information)

Though not required by SINAK, the following tests help verify slab readiness before flooring:

- **ASTM D-1869** (Calcium chloride): <5 lbs/1000 SF
- **ASTM D-4262** (pH test)
- **ASTM D-4263** (Moisture Test using plastic sheet)

Do's & Don'ts

✅ **DO:**

- Stage all required VC-5 material **before each pour**.
- Confirm weather window and equipment readiness.
- Perform mist test before starting.
- Maintain application logs and photo documentation.
- Reach out to SINAK rep **for any deviations or conditions**.

❌ **DON'T:**

- Apply too early (before bleed water dissipates).
- Under-apply or over-dilute.
- Use added water at site (violates warranty terms).
- Allow RH probe testing (invalid for VC-5 slabs).
- Skip warranty documentation steps.

Warranty and Technical Support

- **24/7 Emergency Support**: Jeff Mosley, 661-428-1211
- **SINAK Main Office**: 800-523-3147
- **Warranty Contact**: Submit all required documentation within 7 days of pour.
    - warranty@sinak.com for questions
    - VC-5 Warranty Application

Pour Date	Application Date	Area (Level/Zone)	Mix Design #	Mix PSI	W/C Ratio	Total SF Treated	Gallons Applied	Coverage Rate (SF/Gal)	Applicator Name	Signature