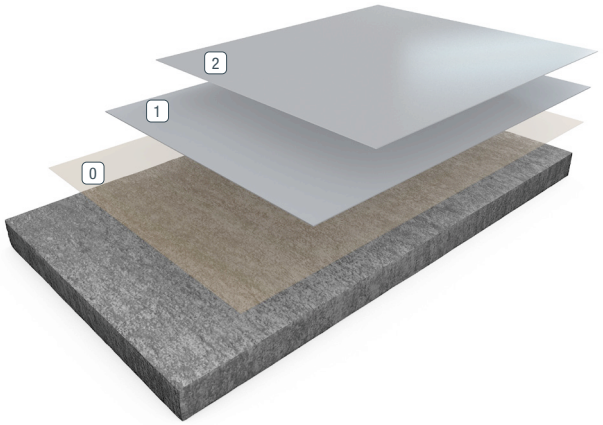
RESUFLOR™ NMP PERFORMANCE EV

7-DAY NMP RESISTANT FLOORING SYSTEM

Sherwin-Williams Resuflor NMP Performance EV is a high-traffic surface that offers industry-leading durability in the face of EV battery facility conditions, such as exposure to a splash-and-spill NMP chemical attack. The fine-textured, slip-resistant surface improves safety yet allows easy cleaning in the presence of carbon black. The system consists of a moisture vapor barrier coat, epoxy build coat and slip-resistant, high-wear urethane in satin.



0 **Moisture Vapor Barrier Coat**

2 **Slip Resistant/NMP Resistant Topcoat**

1 **Basecoat**

BENEFITS

- Chemically resistant to NMP exposure for up to seven days when tested according to ASTM D1308
- Fine slip-resistant finish for improved safety in presence of carbon black
- Easy-to-clean seamless surface
- Topcoat lasts twice as long as standard urethanes
- Light stable over the expected life of the coating
- Available in a variety of colors
- Low odor installation
- May be applied to green concrete
- LEED® v4 – Green Building credits available

USES

- EV battery manufacturing facilities
- Formation, cell assembly and anode operating areas

TYPICAL PHYSICAL PROPERTIES

Abrasion Resistance ASTM D 4060, CS-17 Wheel, 1,000 cycles	11.7 mg/loss Result based on independent lab testing of Resutile™ HTS
Adhesion to Concrete ASTM D7234	350 psi Result based on lab testing of Resuprime™ MVB
Flammability ASTM 4366	182 mm/min
Dynamic Coefficient of Friction (DCOF) ANSI A326.3 -2017	0.72
Shore D Hardness ASTM D 2240	80-85 @ 0 sec | 75-80 @ 15 sec
Chemical Resistance ASTM D1308 Method B	NE; 7 days

INSTALLATION

The following information is to be used as a guideline for the installation of the Resuflor NMP Performance EV. Contact the Sherwin-Williams Technical Service Department for assistance prior to application.

SURFACE PREPARATION — GENERAL

Sherwin-Williams systems can be applied to a variety of substrates if the substrate is properly prepared. Preparation of surfaces other than concrete will depend on the type of substrate, such as wood, concrete block, quarry tile, etc. Should there be any questions regarding a specific substrate or condition, please contact the Sherwin-Williams Technical Service Department prior to starting the project. Refer to Surface Preparation Form G-1.

SURFACE PREPARATION — CONCRETE

Concrete surfaces shall be abrasive blasted to remove all surface contaminants and laitance. The prepared concrete shall have a surface profile equal to CSP 1-3. Refer to Form G-1.

After initial preparation has occurred, inspect the concrete for bug holes, voids, fins and other imperfections. Excessive surface profile may require a body coat prior to system application. Protrusions shall be ground smooth while voids shall be filled with a Sherwin-Williams system filler. For recommendations, consult the Sherwin-Williams Technical Service Department.

TEMPERATURE

Throughout the application process, substrate temperature should be 50°F-95°F. Substrate temperature must be at least 5°F above the dew point. Applications on concrete substrate should occur while temperature is falling to lessen offgassing. The materials should not be applied in direct sunlight, if possible.

APPLICATION INFORMATION — SURFACE PREP PROFILE CSP 1-3

VOC MIXED	APPLICATION STEP	MATERIAL	MIXED RATIO	THEORETICAL COVERAGE	PACKAGING
<100 g/L	Moisture Vapor Barrier Coat	MVB	1:1	72 sq ft/gal	2, 10 or 110 gal
<50 g/L	Basecoat	MPE	2:1	106 sq ft/gal	3, 15, 165 or 750 gal
<100 g/L	Slip- and NMP-Resistant Topcoat	HTS 100	Pre-measured kit	500 sq ft/gal	1.09 or 5.5 gal

GENERAL PRODUCT INFORMATION

RESUPRIME MVB

Do not apply to new concrete slabs until at least seven days old.

Colorants CANNOT be used in Resuprime MVB.

Resuprime MVB is not a wear surface or topping, it must be topcoated.

Do not apply over a slab while experiencing hydraulic pressure.

Warranty will not apply to Resuprime MVB installed over concrete with ASR (Alkali Silica reaction).

MVER may fluctuate within slab areas and can have significant seasonal variations.

Do not apply over existing coatings, sealer or floor coverings.

Do not apply to concrete slabs with less than 3,500 psi compressive strength. (Consult Sherwin-Williams Technical Services.)

Protect the area to be treated from strong sunlight, wind or drafts during application.

Acid etching and diamond grinding should not be used as a method of preparation.

Cannot be sprayed.

OPTIONS

Colors in Resuflor MPE: Use colorants at a rate of one unit per 3-gallon mix. Standard colorants — White, Yellow and Light Gray will not impart total hide. Use these colorants at a rate of two units per 3-gallon mix. Similar colorants also may not hide as well. Refer to Color Selection Guide.

Colors in Resutile HPS 100 and Resutile HTS 100: Use colorants at a rate of one unit per 1-gallon mix. Standard colorants — White, Yellow and Sandy Beige will not impart total hide. Similar colorants also may not hide as well. Refer to Color Selection Guide.

LIMITATIONS

Contamination (fisheyes): Product may fisheye if oil, silicones, mold release agents or other contaminants are present. Chemical Resistance/Staining: Reduced chemical resistance and staining is possible in pigmented versions of the system.

MOISTURE VAPOR BARRIER COAT — RESUPRIME MVB

SURFACE PREPARATION

CHECK THE CONCRETE: Concrete must be structurally sound. Concrete can be less than 28 days old.

CHECK FOR MOISTURE: For 22-mil application — readings can be up to 100 percent relative internal concrete humidity. Test methods can be purchased at www.astm.org or follow instructions from the suppliers of this test.

NOTE: Although moisture testing is critical, it is not a guarantee against future problems. This is especially true if there is no vapor barrier or the vapor barrier is not functioning properly and/or you suspect you may have concrete contamination from oils, chemical spills or excessive salts. Functioning vapor barrier is required for use.

CHECK THE TEMPERATURE AND HUMIDITY: The ambient and surface temperature must be between 60°F (15.6°C) and 90°F (32.2°C) at the time of application, and temperatures should not rise above this range during application or while the material is curing. Ambient relative humidity percentage should not exceed 80 percent at the time of application.

CONCRETE: Repair and leveling layers containing latex or other components generally prevent absorption and proper bond and should be removed. Surface must be shot blasted to achieve a surface pro fi le of ICRI CSP 3-5 (Int. Concrete Repair Inst.). Grinding or acid etching is not permitted, nor chemical remediation of any adhesive residues.

ENSURE POROSITY: Surface must be clean, completely free of dust, dirt, paint, sealer or any contaminant that might interfere with penetration or bond. Do not apply to fl oors which have sealers or bond breakers applied unless completely removed. Quick tests to help determine clean, open and absorptive concrete uses water drops. This easy test is particularly important if cores were not pulled and tested. If dime-size water drops placed at several locations on prepared floor do not readily absorb into concrete within 30 seconds or beads up, surface is not sufficiently absorptive. In all cases, thorough vacuuming (with dust containment filter) is needed before application. Cleaning with pressure washer may be advisable in some cases. Leveling should be done on top of Resuprime MVB with suitable repair materials.

JOINTS: Expansion (cold or construction) joints should be left intact. Resuprime MVB is not warranted against structural movement at expansion joints. To help reduce moisture emissions through expansion joints, coat the walls and bottom of the cleaned joint with Resuprime MVB. Once allowed to dry, an expansion joint cover or an elastomeric sealant may be used. For concrete slabs over six months old, sawcut (control) joints and cracks should be filled by pouring Resuprime MVB full depth or to 3/4 of joint depth. If filling to 3/4 depth pour silica quartz into Resuprime MVB to create a mortar. Sweep away excess sand and proceed with Resuprime MVB installation.

APPLICATION: COVERAGE RATES — Apply the balance of Resuprime MVB needed to achieve the desired total thickness. It is important that the coverage rates are consistent. Very rough or porous concrete may require a heavier application. Adjust the rate as needed.

One gallon (3.78 litres) of Resuprime MVB will cover 72 square feet (6.7 m^2) at 22 mils (0.56 mm) wet/dry film

PART A: For larger unit sizes, pour out 2 gallons (7.56 litres) Part A into a measuring container. Then, pour this measured Part A into a 5-gallon mixing pail.

ADD RESUPRIME MVB PART B TO PART A (1:1 VOLUME RATIO). For larger unit sizes, pour out 2 gallons (7.56 litres) Part B into a measuring container that is separate from the one used with the Part A. Then, add the measured Part B to the Part A already in the mixing pail.

MIX FOR FOUR MINUTES using a Jiffy® mixer blade and slow-speed drill to produce a streak-free, homogenous product. Care must be taken to mix all the product and avoid any action that might entrap air such as high-speed drill mixing. DO NOT THIN the product.

APPROXIMATE WORK TIME (minutes): °F (°C)

65 (18.3)	70 (21.1)	75 (23.9)	80 (26.7)	90 (32.2)
45 min	32 min	20 min	16 min	12 min

IMMEDIATELY POUR ALL OF THE MIXED MATERIAL onto the floor in a single bead.

PUSH THE SQUEEGEE at an even speed and down pressure. The squeegee should be pushed to apply the targeted amount. **NOTE:** Use of a notched squeegee will make it easier to apply a thicker coat. Immediately after the Resuprime MVB is applied and there is room to roll, a second person will **BACKROLL THE MATERIAL** with a short nap roller to a smooth and uniform appearance. **NOTE:** Finish backrolling as soon as possible.

BEFORE PROCEEDING WITH SUBSEQUENT COATS: First, thoroughly check Resuprime MVB for any fisheyes or pinholes which would be a weak point in the membrane. Grind these areas and clean off residue. Make sure the surface is dry. Then, reapply Resuprime MVB to these areas.

APPROXIMATE CURE TIME (hours): °F (°C)

65 (18.3)	70 (21.1)	75 (23.9)	80 (26.7)	90 (32.2)
11 hrs	9 hrs	7 hrs	6 hrs	4 hrs

Sherwin-Williams epoxies bond to Resuprime MVB if coated within 24 hours. Resuprime MVB must be cured (hard) enough so spikes worn to apply epoxy or other recoat activities do not damage Resuprime MVB.

BASECOAT — RESUFLOR MPE

COVERAGE RATE: One gallon of Resuflor MPE will cover 106 square feet at 15 mils wet/dry film

PREMIX PART A using a Jiffy mixer blade and slow-speed drill. (This is required for both 3-gallon and full-filled 5-gallon units.) For full-filled 5-gallon pails, pour out 2 gallons into a measuring container. Then, pour the measured Part A into a mixing pail. **ADD RESUFLOR MPE PART B TO PART A (THREE GALLONS TOTAL MIX).** For full-filled 5-gallon pails, pour out 1 gallon Part B into a measuring container that is separate from the one used with the Part A. Then, add the measured Part B to the Part A already in the mixing pail.

COLORS: Premix colorants to ensure uniform color. Colorant is added at the rate of 1 unit per 3-gallons mix.

NOTE: When using colorant in the bulk units, add the colorant to the Part A that has been measured into the "mixing pail."

POTLIFE: Mix only enough material that can be applied within the work time (time between the addition of Part B to Part A and the completion of all application actions). Check the following chart for work times at various temperatures. For smaller quantities, use two parts PART A to one part PART B by volume.

MIX FOR TWO MINUTES using a Jiffy mixer blade and slow-speed drill. (Failure to do so could result in lower/diminished coating properties.)

IMMEDIATELY POUR ALL OF THE MIXED MATERIAL onto the floor in a single bead.

PUSH THE FLAT SQUEEGEE at an even speed with sufficient down pressure to apply the thinnest coat. **NOTE:** The use of spiked shoes will allow freedom of movement on the wet floor.

CAUTION: The surface will be slippery.

START THE SECOND AND REMAINING PASSES by pushing material parallel to the first stroke. Hold the bead of material near the center of the bar. **NOTE:** Resuflor MPE applied thin may "bridge" holes and cracks momentarily before soaking in — make sure the previously squeegeed area is overlapped (halfway).

BACKROLL THE MATERIAL with a 3/8-inch nap roller for a smooth uniformed appearance. Backrolling is required to remove the puddles and squeegee lap marks in order to obtain uniform texture and a consistent mil thickness. NOTE: Get off the Resuflor MPE as soon as possible. If Resuflor MPE is topcoated with Resutile HTS 100 at floor temperatures of 65°F-90°F, it does not need to be sanded if applied within 24 hours. If epoxy is not coated within 24 hours, it must be sanded with 80-grit paper. The use of more aggressive paper will introduce deep grooves that will not be covered by a single, thin coat of urethane; swirl marks will be particularly evident in a topcoat that is glossy. We recommend thorough sanding with a swing-type buffer so that multiple scratch marks cause an obvious gloss loss on all areas (depressions will remain shiny), and the floor is uniformly dulled. The ability to see individual scratch marks is an indication that sanding is not adequate. Scrub with detergent and rinse with clean water before coating and tack rag to remove fine dust.

SLIP- AND NMP-RESISTANT TOPCOAT — RESUTILE HTS 100

PREMIX PART A FOR THREE MINUTES USING A JIFFY MIXER BLADE with slow-speed drill. **POTLIFE:** Mix only enough that can be used in a two-hour period. **NOTE:** Once opened, this material cannot be resealed for later use.

COLORS: Premix colorant before adding to Resutile HTS 100 to ensure uniform color. Add colorant to Resutile HTS 100 Part A and mix using a Jiffy mixer blade and slow-speed drill. Use colorants at a rate of one unit per 1-gallon unit of Resutile HTS 100.

POUR PART C INTO PART A while mixing.

CONTINUE TO MIX AND ADD PART B. MIX FOR THREE MINUTES using a Jiffy® mixer blade and slow-speed drill. Pour into application tray.

APPLY RESUTILE HTS 100 at the rate of 500 square feet/gallon with a 3/8-inch nap roller. For proper appearance and development of physical properties, it is crucial that material is not applied above or below this rate. Dip the roller in the coating and lightly roll out excess in the application tray. Apply two 8- to 10-foot long paths on the concrete, making one stroke left to right and one right to left. Rewet the roller and apply two more paths adjacent to the first pair. Rewet roller and apply a third pair adjacent to the second.

SPREAD THE MATERIAL evenly with V-shaped cross passes.

MAKE SURE THE FLOOR HAS JUST ENOUGH COATING TO COVER EVENLY. Excess material could cause the floor to blister, especially in high humidity. Insufficient material will cause the floor to look non-uniform.

LEVEL THE AREA with straight passes that cross the initial material paths. These final strokes will reduce roller marks. If the appearance is not satisfactory, reroll the area.

REMIX THE MATERIAL in the tray occasionally (with the roller) to prevent settling of the Part C (filler).

NOTE: When multiple applicators are used to apply material, inconsistencies between areas may result. To ensure a more uniform finish, an individual outfitted with spiked shoes may finish by pushing or pulling a roller across all applicator areas.

ALLOW COATING TO DRY 24 HOURS at 75°F, 50 percent relative humidity before opening to light traffic. Allow more time at low temperatures, low humidity or for heavier traffic. Full coating properties take 14 days to develop.

CLEANUP

Clean up mixing and application equipment immediately after use. Use toluene or xylene. Observe all fire and health precautions when handling or storing solvents.

SAFETY PRECAUTIONS

Refer to the SDS before use. All applicable federal, state, local and particular plant safety guidelines must be followed during the handling and installation and cure of these materials. Safe and proper disposal of excess materials shall be done in accordance with applicable federal, state, and local codes.

MATERIAL STORAGE

Store materials in a temperature controlled environment between 50°F-95°F and out of direct sunlight. Keep resins, hardeners and solvents separated from each other and away from sources of ignition.

MAINTENANCE

Occasional inspection of the installed material and spot repair can prolong system life. For specific information, contact the Sherwin-Williams Technical Service Department.

DISCLAIMER

The information and recommendations set forth in this document are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication.

Consult www.sherwin-williams.com/resin-flooring to obtain the most recent Product Data information and Application instructions.

WARRANTY

The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams.

NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

THE SHERWIN-WILLIAMS DIFFERENCE

Sherwin-Williams High Performance Flooring delivers world-class industry subject matter expertise, unparalleled technical and specification service, and unmatched regional commercial team support to our customers around the globe.

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