SLOPESHIELD® PLUS SELF-ADHERED

Air Barrier and Permeable Vapor Retarder Membrane

VAPROSHIELD®
Breathable Membrane Systems for Roofs & Walls

Project Case Study

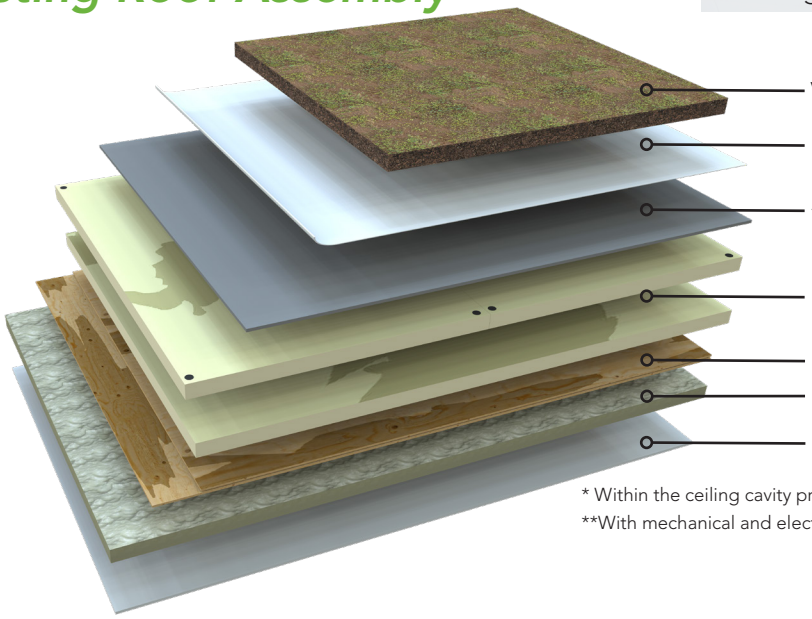
Three Story Condo | Portland, OR

Could moisture vapor diffusion allow wetted substrates to dry and allow residents to remain in their condos?

In Portland, Oregon, this concept was proven, using SlopeShield Plus SA air barrier and permeable vapor retarder with Self-Drying Technology, in an attempt to dry a wetted plywood substrate. Thereby salvaging the existing substrate materials, including the spray polyurethane foam, interior gypsum ceiling.

Overburdened roofing, consisting of a combination of 4-5" of growing medium, roof top decks and railings.

Existing Roof Assembly



- Vegetative green roof
- TPO single ply membrane
- ¼ inch gypsum coverboard
- Polyisocyanurate insulation
- Two layers of 19/32 plywood
- 4" closed cell spray polyurethane foam (SPF)*
- Interior gypsum ceiling and finishes**

* Within the ceiling cavity providing thermal protection, an air barrier, and a vapor barrier

**With mechanical and electrical ducts and conduit through the ceiling cavity, embedded in the SPF

The Issue

Residents experienced interior water intrusion as a result of leakage through membrane laps and punctures, plus improperly sealed penetration flashings.

Membrane removal exposed wet coverboard, insulation, and plywood substrate materials.

The initial moisture meter readings, in the top plywood layer, indicated a moisture content exceeding 40%.

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The Problem

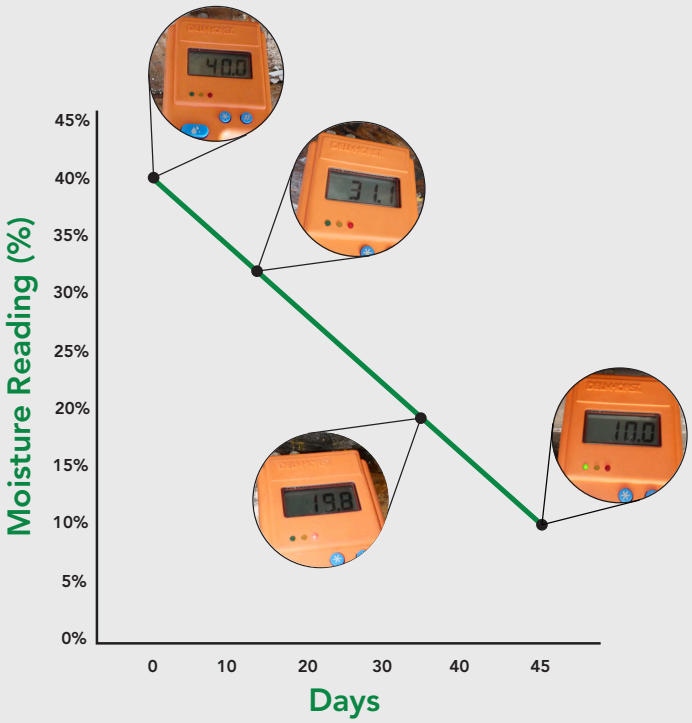
Remediating leaks through rooftop amenity spaces is an expensive process that requires total removal of the overburdened roofing, membrane, and saturated materials, including coverboard, insulation, roof deck, cavity insulation, and interior ceiling.

This work is costly (high disposal fees, complete material replacement) and results in **temporary resident displacement** and revenue loss for the property owner.

Remedy and Findings

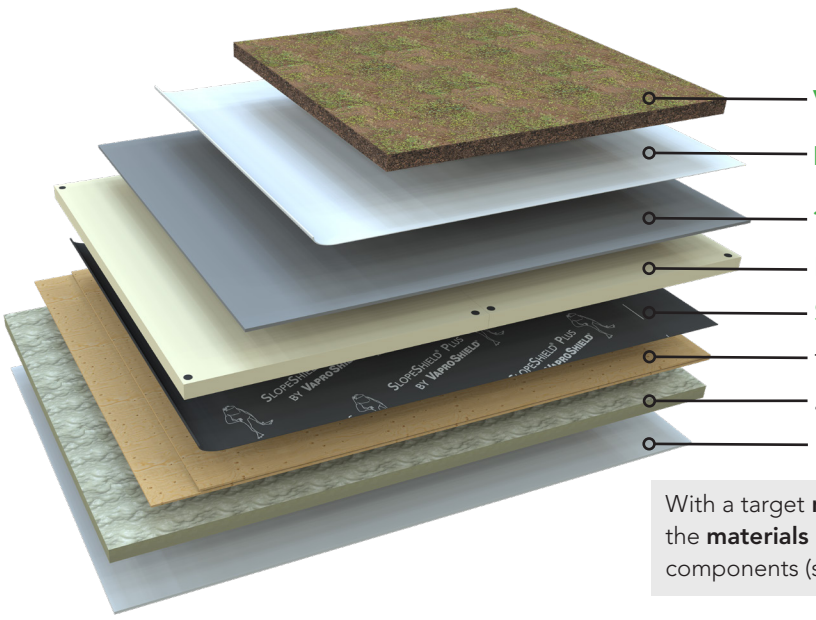
The existing materials were removed down to the plywood. The entire deck was covered in SlopeShield Plus SA, allowing the damp substrates to dry through upward moisture vapor diffusion.

The Solution: SlopeShield Plus SA



SlopeShield Plus SA allowed the double plywood roof deck to dry out over a period of approx. 45 days. Using a Delmhorst BD-2100 moisture meter, measurements taken at regular intervals, documented downward moisture levels in the decking material. The closed cell foam acted as a vapor barrier, negating any downward drying. **Only upward moisture movement through SlopeShield SA Plus could take place.**

The Results: Minimal Impact to Occupants and a New Roof



- Vegetative green roof
- PVC roofing membrane
- ¼ inch gypsum coverboard
- Polyisocyanurate insulation
- SlopeShield Plus SA
- Two layers of 19/32 plywood
- 4" closed cell spray polyurethane foam (SPF)*
- Interior gypsum ceiling and finishes**

● = New material
● = Reused Material

With a target **moisture content at or below 15%** it was determined the **materials could be reused** and the subsequent new roofing components (see above) could be installed.

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