

VOC REGS DOD & HEX CHROME HYBRID FLOORING SYSTEMS

# CoatingsPro™

M A G A Z I N E

## INNOVATIVE COATINGS, NAPA WINES

2011  
SPOTLIGHT  
HOT PRODUCTS  
COOL COMPANIES

PG. 54

 **NACE**  
INTERNATIONAL  
THE CORROSION SOCIETY

JULY 2011

**HIGH-TECH QC**

**CONFINED SPACE SAFETY**



**ADVANCED PROGRAM**

WWW.COATINGSFROMAG.COM



# The Wrath Of Grapes:

## Coatings Resist Winery Mold

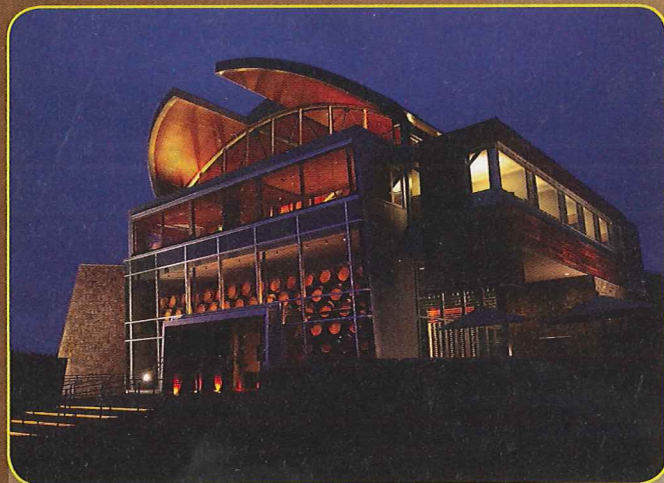
**T**iny glimpses of green break through the morning fog shrouding the rolling hills. The mist swirls—enveloping all with the smells of damp earth and salt from the Pacific Ocean just 30 miles away. This is Northern California's famed Russian River Valley, and that almost daily fog is a crucial component in some of the best wines in the world.

Unfortunately, the ever-present dampness and salt are also catalysts for mold and corrosion. And while certain types of mold are the perfect accompaniments for those wines in the form of cheese and charcuterie, other types of mold are not. And that is where protective coatings come into the picture.

At the cutting edge of California wine making since 1981, the Williams Selyem Winery recently needed to expand their operations into a state-of-the-art facility that would be able to meet increased demand for their wines.

Hidden from view from the road and nestled among the vines, the new facility is an ultra-modern structure. Walls of glass look out onto the fog-shrouded vineyards, and a curving metal roof echoes the wine barrels stacked within. But there was almost 36,000 square feet (3,344.51m<sup>2</sup>) of other substrates—just about every other type of substrate, including concrete, cinderblock, sheetrock, plywood, and steel—that needed to be protected from the rising damp and the salty fog.

"We won the bid to apply a mold- and mildew-resistant protective coating on the interior walls and ceilings of the barrel storage rooms, the chemical storage room, the mezzanine, and the walls, ceiling, and floor of the lab," says Tom Burk, president and CEO of Phoenix Coatings, the coatings company awarded the project. "That totaled approximately 33,984 square feet (3,157.22m<sup>2</sup>)."



**ABOVE ▲** In their newly expanded estate building, The Williams Selyem Winery had almost 36,000 sq. ft. (3,344.51m<sup>2</sup>) of concrete, cinderblock, sheetrock, plywood, and steel that needed to be protected from the rising damp and the salty fog common to California's northern coast.

BY JEN KRAMER

PHOTOS COURTESY OF PHOENIX COATINGS INC.







**RIGHT** ▶ Neocrete SL Polyurethane is specially formulated to resist acids and caustics—an important consideration given the floor's exposure to spilled wine.

The bid also called for the Phoenix crew to “install a ¼” (0.64cm) trowel-down polyurethane floor in the hallway and production room and a ¼” (0.64cm) chemical-resistant epoxy floor in the barrel tasting room with a ‘Salt & Pepper’ quartz finish. This part of the contract totaled approximately 10,100 square feet (938.32m<sup>2</sup>),” Burk explains.

### A CRAFTSMAN IS A CRAFTSMAN

Just as Williams Selyem is known around the world for its award-winning fine wines, the crew from Phoenix Coatings Inc. has been uniquely honored too. Well-versed in both coatings and spray polyurethane foam application, the Phoenix crew is part of a unique performance rating system.

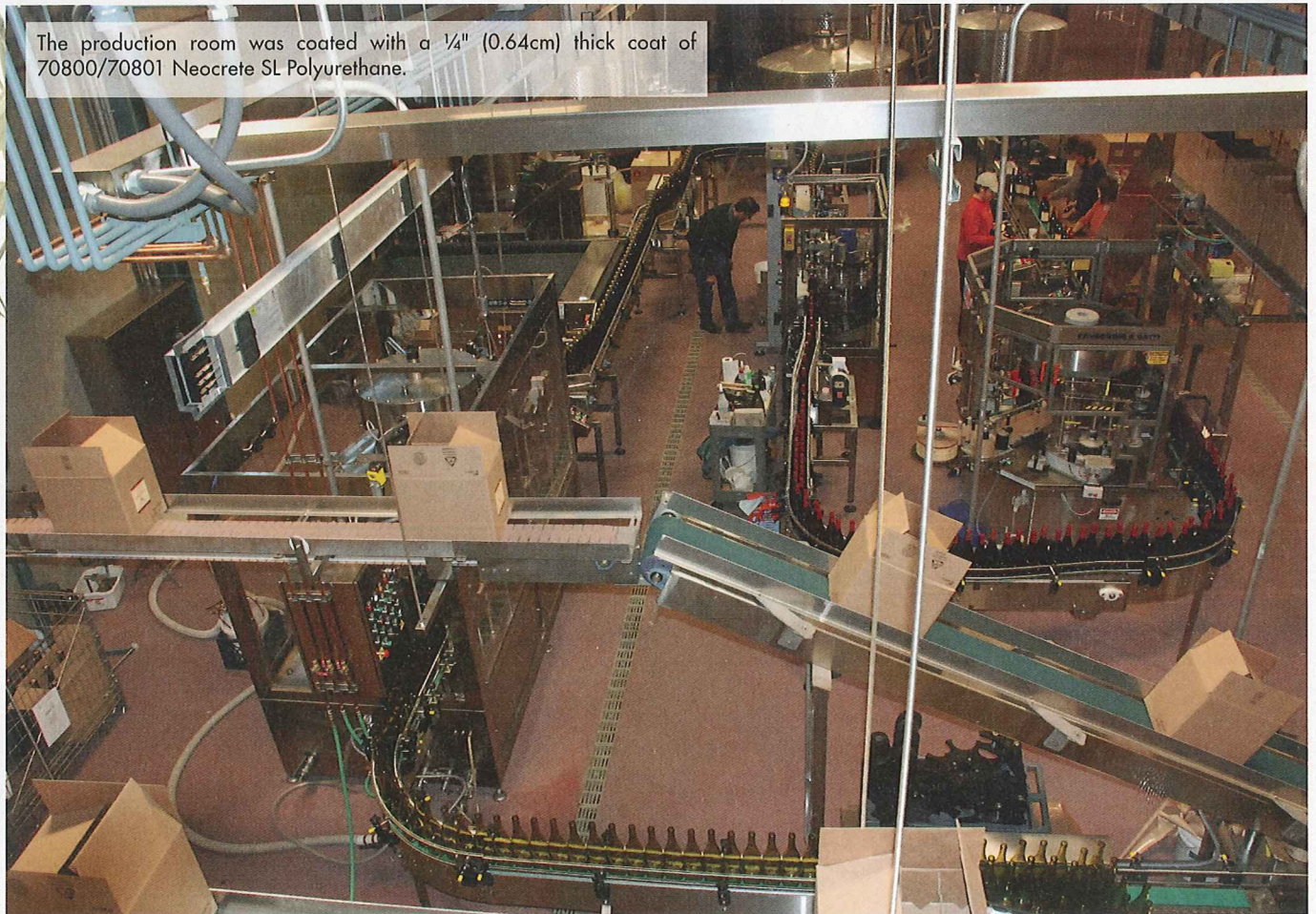
Burk explains the system: “The Performance Information Procurement System (PIPS) is a system developed by Dr. Dean Kashiwagi at Arizona State University, and it is designed to identify the best value delivery systems based on performance. Under this system, Phoenix Coatings is an ‘Alpha Contractor.’ To be consid-



ered an ‘Alpha Contractor,’ we must maintain a minimum of 98% customer satisfaction and 98% roofs that don’t leak. Phoenix Coatings is one of only 14 polyurethane foam contractors in the United States to receive an ‘Alpha Contractor’ status from Arizona State University’s Del E. Webb School of Construction College of Engineering and Applied Sciences under the Alliance for Construction Excellence (ACE).”

Burk joined the program because he wanted to see how good he and his crew really were—and it has paid off. “We’ve been

The production room was coated with a ¼” (0.64cm) thick coat of 70800/70801 Neocrete SL Polyurethane.







**ABOVE ▲** After the weep holes in the light-weight concrete and metal roof deck were caulked, the base coat of Polyshield HT 100F was applied at 40 mils (1.02mm) DFT.

involved with the program now for 14 years,” he says. “The customers do all of the evaluations of the bidding contractors—not Dr. Kashiwagi.” Although this wasn’t a PIPS roofing project, Phoenix Coatings’ outstanding work record and verifiable results spoke for themselves.

They wouldn’t be working on roofs, but they would be coating ceilings, walls, and floors. And they would be coating a wide variety of substrates in a short amount of time.

“We had four months from beginning to end to complete this project, which was more than enough time,” Burk says. “But as it turned out, those months were not concurrent.”

With this project, as with a good wine, there was an “aging process” that occurred independent of the coatings themselves. “At certain stages, the winery interrupted the work to install doors and equipment.” But that came later. First, the crew had to “plant the seeds” for their successful job by starting at the top—prepping the ceilings in the barrel storage rooms, chemical storage room, and the lab.

Suiting up in five-point safety harnesses from Miller Fall Protection, Tyvek suits, gloves, and goggles, the crew accessed the soaring metal ceilings with scissor lifts. “We used North Star 4,000 psi pressure washers and plain water to pressure-wash all of the pipes and all penetrations in those rooms,” Burk states. “Then we masked them off using plastic sheeting and duct tape. The fluted metal roof deck had lightweight concrete poured in between the fluting. We had to caulk any holes in that concrete.”

The crew used SikaFlex 1A, a premium-grade, high-performance, moisture-cured, 1-component, polyurethane-based, non-sag elastomeric sealant to fill in the weep holes. The SikaFlex 1A was trowel-applied using paint scrapers.

“Once all of the weep holes in the lightweight concrete metal roof deck had been caulked,” Burk continues, “we applied the mold- and mildew-resistant base and top coat on the ceilings.”

Before beginning to spray, the crew put on fresh Tyvek suits and air hoods from Scott Safety. They also wore respirators equipped with cool air tubes and filters from Clemco, as well as

## JOB AT A GLANCE

### PROJECT:

Apply mold- and mildew-resistant coatings to the interior walls, ceilings, and floors of California winery

### COATINGS CONTRACTOR:

Phoenix Coatings Inc.  
19893 Berenda Blvd.  
Madera, CA 93638  
(800) 464-1958  
[www.phoenixcoatings.com](http://www.phoenixcoatings.com)

### SIZE OF CONTRACTOR:

8 crew members worked this job

### PRIME CLIENT:

Williams Selyem Winery  
6675 West Side Highway  
Healdsburg, CA 95448

### SUBSTRATE:

Concrete, cinderblock, sheetrock, plywood, and steel

### SUBSTRATE CONDITION:

Varied; all needed light repairs

### SIZE:

Approximately 44,084 sq. ft. (4,095.54m<sup>2</sup>): The interior walls and ceilings of the barrel storage rooms, the chemical storage room, the mezzanine, and the walls, ceiling, and floor of the lab (33,984 sq. ft./3,157.22m<sup>2</sup>); the floors in the hallway, production rooms, and barrel tasting rooms (10,100 sq. ft./938.32m<sup>2</sup>)

### DURATION:

Four months

### UNUSUAL FACTORS:

- Job first budgeted in 2005, awarded in June of 2009
- Job interrupted on several occasions due to events at winery
- Variety of substrates meant that the crew had to use a variety of application techniques

### MATERIALS/PROCESS:

- Clean the ceilings and walls in the barrel storage rooms, chemical storage room, and lab using 4,000 psi pressure washer from North Star
- Using plastic sheeting and duct tape, mask off any pipes/penetrations on the ceilings and walls
- Caulk weep holes in light-weight concrete in metal deck ceilings using SikaFlex 1A
- Spray-apply Polyshield HT-100F base coat at 40 mils (1.02mm) DFT using Graco Reactor H-40 proportioner and Fusion gun on ceilings
- Spray-apply Hard Cap-100 top coat at 20 mils (0.51mm) DFT using Graco Reactor proportioner and Fusion gun on ceilings
- Clean all concrete and cinderblock walls using 4,000 psi pressure washer from North Star
- Spray-apply EP-100 epoxy primer at 4 mils (0.10mm) DFT using Graco Reactor proportioner and Fusion gun on all concrete and cinderblock walls



- Caulk any bug holes or cracks in concrete using SikaFlex 1A
- Spray-apply Polyshield HT-100F base coat at 80 mils (2.03mm) DFT using Graco Reactor H-40 proportioner and Fusion gun on concrete and cinderblock walls
- Spray-apply Hard Cap-100 top coat at 20 mils (0.51mm) DFT using Graco Reactor proportioner and Fusion gun on concrete and cinderblock walls
- Spray-apply Polyshield HT-100F base coat at 50 mils (1.27mm) DFT using Graco Reactor H-40 proportioner and Fusion gun on sheetrock walls
- Spray-apply Hard Cap-100 top coat at 20 mils (0.51mm) DFT using Graco Reactor proportioner and Fusion gun on sheetrock walls
- Spray-apply Polyshield HT-100F base coat at 40 mils (1.02mm) DFT using Graco Reactor H-40 proportioner and Fusion gun on mezzanine back wall and wall by front gate
- Spray-apply Hard Cap-100 top coat at 20 mils (0.51mm) DFT using Graco Reactor proportioner and Fusion gun on mezzanine back wall and wall by front gate
- Spray-apply K-5 Ultra-High Strength High Elongation Polyurea base coat at 60 mils (1.52mm) DFT using Graco Reactor proportioner and Fusion gun on mezzanine floor
- Spray-apply Hard Cap-100 top coat at 60 mils (1.52mm) DFT using Graco Reactor proportioner and Fusion gun on mezzanine floor
- Shot-blast bottling room floor using Blastrac 1-10DPS75 and steel shot
- Cut 4' (1.22m) on either side of trench drains to create slope in floor of production room and barrel aging rooms only
- Install cove in lab, hall, production rooms, and barrel tasting room
- Install Schuler Systems Ltd. stainless steel diminishing strips at end of cove in barrel tasting room
- Screed box and Hover trowel-apply 1/4" (0.64cm) thick coat of 70800/70801 Neocrete SL Polyurethane resurfacing system in hallway, lab, and production rooms
- Screed box and Hover trowel-apply 1/4" (0.64cm) thick coat of chemical-resistant 70714/70715 Neoquartz 2k High Performance Epoxy on floor in barrel tasting room
- Hand-broadcast 70714/70715 Neoquartz 2k High Performance Epoxy Broadcast in "Salt & Pepper" quartz finish to point of refusal on floor in barrel tasting room

#### SAFETY CONSIDERATIONS:

- Crew wore Scott air hoods and Tyvek suits while spraying
- Crew wore Miller 5-point safety harnesses, retractable life lines, and lanyards while working on scissor lifts

using dual oxygen and carbon monoxide monitors from Air Systems International.

First they spray-applied a 40-mil (1.02mm) DFT base coat of Polyshield HT-100F using a Graco Reactor proportioner and a Fusion gun. From SPI, the 100% solids elastomeric polyurea has no solvents—an important consideration in a winery. Also, Polyshield HT-100F is FDA/USDA compliant for incidental food contact. This coating is often specified for use in tanks, silos, and pipes because of its ability to form a monolithic membrane with excellent water- and chemical-resistance—an important consideration given the winery's location and the often damp conditions inside and out.

**RIGHT ▶** The sheetrock walls were coated with a 50 mil (1.27mm) DFT base coat of Polyshield HT 100F and 20 mils (0.51mm) DFT of Hard Cap-100. The cinderblock walls were coated with an 80 mil (2.03mm) DFT base coat and a 20 mil (0.51mm) DFT top coat of the same materials.



**ABOVE ▲** A 20-mil (0.51mm) DFT top coat of HardCap-100 spray-applied onto the ceilings using a Graco Reactor proportioner and a Fusion gun.

The base coat was followed by a 20-mil (0.51mm) DFT top coat of HardCap-100 spray-applied onto the ceilings using the same equipment—cleaned first, of course. Also from SPI, the 100% solids clear aliphatic polyurea contains no solvents and qualifies for USDA incidental food contact applications. Since it is available from the manufacturer with a microbial-resistant additive to minimize mold and mildew growth, it is often specified for use in clean rooms, hospitals, and food and beverage facilities, such as this winery.

#### HITTING THE WALLS

With the ceilings coated, it was time to focus on the walls—and to shift from a metal substrate to cinderblock, concrete, and sheetrock.

"The process for coating the walls was actually similar to the ceilings," says Burk with the nonchalance of someone at the top of his game. But that is not to imply they were any less work.

"We cleaned all of the concrete and cinderblock walls using plain water run through the 4,000 psi North Star pressure washers," he states. "Then we pulled out our paint scrapers and caulked any bug holes using the SikaFlex 1A."

The concrete and cinderblock walls were then primed with a spray-applied 4-mil (0.10mm) DFT prime coat of EP-100 epoxy





primer. From SPI, EP-100 is a two-component, 100% solids epoxy with zero volatile organic chemicals (VOCs).

This was followed by a spray-applied base coat of Polyshield HT-100F at 80 mils (2.03mm) DFT. When the base coat had cured, the crew spray-applied a 20-mil (0.51mm) DFT top coat of Hard Cap-100.

"The sheetrock walls were treated slightly differently," Burk says. "Because the sheetrock was sanded smooth, there was no primer required."

For the sheetrock walls, the crew simply spray-applied the base coat of Polyshield HT-100F at 50 mils (1.27mm) DFT using the Graco H-40 proportioner and Fusion gun. This was followed by a top coat of Hard Cap-100, spray-applied at 20 mils (0.51mm) DFT.

## GETTING FLOORED

"The coatings work on the ceiling and walls in the barrel storage room, the ceiling and walls in the hallway, the ceiling and walls in the lab, and the ceiling and walls in the chemical storage room took about a month," recounts Burk. "Then we were able to move on to the floors."

The mezzanine area features a plywood floor. "The new plywood required no prep," Burk says. "We spray-applied a 60-mil (1.52mm) DFT base coat of SPI's K5 Ultra-High Strength High Elongation Polyurea onto the floor." The durable base coat was topped by a 60-mil (1.52mm) DFT top coat of Hard Cap-100.

From the mezzanine, the crew moved into the hall, lab, and the production room/bottling room. And with that transition, the crew went back to working on concrete.

The sugars in the wines will dissolve the calcium in the concrete, so it is imperative that the floor coatings be monolithic and impervious to liquids. They must also be non-slip as winery floors are frequently wet—especially in production areas. They must also be USDA approved. And they must also be attractive—especially in areas visible to the general public. The solution was found in Neogard's polyurethane and epoxy systems.

"We used Neocrete SL Polyurethane in the hallway, lab, and bottling room. The specs called for Neoquartz Epoxy in the barrel tasting room," Burk explains.

To begin, Burk and his crew used a Blastrac 1-10DPS75 and steel shot to prep the floors. Dust and debris were vacuumed

up using a Ruwac Red Raider WS 2320 220-volt vacuum equipped with a silencer.

Next, the crew had to ensure proper drainage in the production (or bottling) room. To do so, they installed a trench drain system, cutting 4' (1.22m) on either side of the existing drains, and grinding ¼" (0.64cm) down in order to create proper slope in the floor. "We also installed this trench drainage system in the barrel aging room," Burk says.

Then it was time to install the coving, "which runs 4" (10.16cm) up the walls in the production (bottling) room, the hall, the lab, and

... does your Paint company  
know where your Paint is?



## STRENGTH IN NUMBERS

- Over 50 million miles driven annually by company owned fleet of trucks
- 145 year culture of innovation
- Manufacturing and distribution in over 20 countries

If your paint company is Sherwin-Williams it does. At Sherwin-Williams we understand that time is money and reputation. So why trust your critical projects to paint companies that outsource their logistics to third party warehouses or to freight carriers? From raw material sourcing, to state of the art manufacturing facilities, dedicated distribution centers, over 3,900 company owned points of distribution, when we say deliver, we mean it. Leave Nothing To Chance.



Ask Sherwin-Williams 800.524.5979 [sherwin-williams.com/protective](http://sherwin-williams.com/protective)

© 2011 The Sherwin-Williams Company

Write in Reader Inquiry #51





**ABOVE ▲** The crew uses a screed box to insure that the Neocrete SL Polyurethane system is applied at 1/4" (0.64cm) uniform thickness.

the barrel tasting room," he continues.

Since the hall, lab, and production room floors would see high traffic and heavy abuse, the specifications called for a heavy-duty coating system—70800/70801/70804 Neocrete SL Polyurethane resurfacing system from Neogard. Neocrete SL (70800/70801/70804) is a water-dispersed polyurethane resin that combines with powder for use as a resurfacing system. The coating is specifically formulated to provide excellent resistance to abrasion, impact, chemical attack, acids, and caustics—important given the acidic nature of spilled wine. It also provides excellent performance against thermal shock stresses, such as hot water and daily steam cleaning. Also important, Neocrete SL is USDA acceptable.

Setting up a mixing station, the crew first mixed 90 fluid ounces of 70800 with 63 fluid ounces of 70801 and one bag of 70804 powder. The three-part mixed urethane flooring was then transferred to a screed box and Hover trowel-applied to a 1/4" (0.64cm) thick coat.

Neoquartz 2k 70714/70715 High Performance Epoxy Broadcast in Salt & Pepper quartz was then hand-broadcast to the point of refusal on all of the floors.

Once the crew had finished the floors in the hall, the lab, and



## VENDOR TEAM

### AIR SYSTEMS INTERNATIONAL

*Respirators*  
829 Juniper Crescent  
Chesapeake, VA 23320  
(800) 866-8100  
www.airsystems.com

### BLASTRAC

*Surface prep equipment*  
13201 North Santa Fe Avenue  
Oklahoma City, OK 73112  
(800) 256-3440  
www.blastrac.com

### CLEMCO INDUSTRIES CORP.

*Respirators*  
One Cable Car Drive  
Washington, MO 63090  
(636) 239-0300  
www.clemcoindustries.com

### GRACO

*Spray equipment*  
88-111th Avenue NE  
Minneapolis, MN 55413  
(800) 647-4336  
www.graco.com

### HOVER TROWEL, INC.

*Trowels*  
5048 Spruce Lane  
Mohnton, PA 19540  
(610) 856-1920  
www.hovertrowel.com

### MILLER

*Fall protection*  
1345 15th Street  
PO Box 271  
Franklin, PA 16323  
(800) 873-5242  
www.millerfallprotection.com

### NEOGARD

*Coatings*  
2728 Empire Central  
PO Box 35286  
Dallas, TX 75235  
(800) 321-6588  
www.neogard.com

### RUWAC MFG.

*Vacuum*  
54 Winter Street  
Holyoke, MA 01040  
(800) 736-6288  
www.ruwac.com

### SCHULTER SYSTEMS LTD.

*Stainless steel diminishing strips*  
Units 4-6 Bardon 22  
Beveridge Lane, Coalville  
Leicestershire Le67 1TE  
www.schulter.co.uk

### SCOTT SAFETY

*Air hoods*  
4320 Goldmine Road  
Monroe, NC 28110  
(800) 247-7257  
www.scottsafety.com

### SIKA CORPORATION US

*Coatings*  
201 Polito Avenue  
Lyndhurst, NJ 07071  
(800) 933-7452  
www.usa.sika.com

### SPECIALTY PRODUCTS, INC.

*Coatings*  
2410 104th Street Ct. S. Ste. D  
Lakewood, WA 98499  
(800) 627-0773  
www.specialty-products.com

### TYVEK

*Protective clothing*  
DuPont Building  
1007 Market Street  
Wilmington, DE 19898  
(800) 441-7515  
www.tyvek.com

**LEFT ▲** Larger areas of the floor were power troweled using Hover trowels.



the production room, the last room to be coated was the barrel tasting room—the winery showpiece. But before they could start, the fast-flowing job reached the bottom of the barrel.

## LETTING IT BREATHE

"The winery asked us to take a break for a while. And that break actually turned into a couple of months," Burk explains. "They were simply busy running their operations." But the busy winery finally caught up to the point where they could again accommodate a busy construction site. So the Phoenix crew again made the trek out to Healdsburg.

Burk and his crew began work in the barrel tasting room. "We coated three walls and the ceiling in the same manner as before. We had to leave the fourth wall—the wall on which the door to the room would hang—uncoated because the winery was installing a custom-made door, and the wall would have to be coated after installation."

The barrel tasting room's floor application was slightly different, too. After surface prep with the Blastrac equipment, the Phoenix crew installed the coving as they had in the other areas, but in the barrel tasting room, which will be most frequented by the discerning public, it was given an extra finishing polish. "We topped the coving in the barrel tasting room with stainless steel diminishing strips."

Then, the crew used screed boxes and Hover trowels to apply a ¼"-thick (0.64cm) application of Neogard's 70714/70715 Neoquartz 2k High Performance Epoxy onto the floor. 70714/70715 is a two-component, 100% solids epoxy resin, specially formulated with excellent chemical and water resistance.

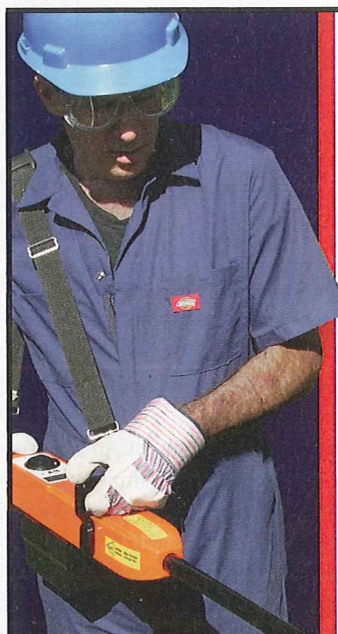
"We hand-broadcast the Salt & Pepper quartz finish to the point of refusal on this floor," says Burk. "Then it was time to leave so that the winery could install the door. That process took almost three weeks." But, by all accounts it was worth the wait. "The winery installed a huge custom door made from redwood wine vats. It is pretty spectacular. After all, this is their showroom."

So after a bit of a break, Burk and his crew returned to the Williams Selyem Winery to complete the barrel tasting room, or "harvest the project," as it were. They coated the fourth wall with Polyshield HT-100F and Hard Cap-100.

"And the barrel tasting room—and the rest of the new winery structure—was ready

for their grand opening." The new Williams Selyem estate building made quite a splash. And when things splash, as they no doubt will at a winery, the floors and walls are protected from the vinegars and sugars that attract vinophiles and molds alike.

Now when the damp rises and the fog rolls in, the winemakers at the Williams Selyem Winery have one less factor to consider. Thanks to Tom Burk and the Phoenix Coatings Crew, moisture in the Russian River Valley will only affect their grapevines—not their building itself. Hopefully, the only molds they'll see will be on the cheeses that are paired with their delicious wines. **CP**



## a SPY for every mission

### *Inspect Any Metal Surface Coating*

For pipes, tanks or any coated contoured surface in the field or inside your manufacturing facility, we simplify coating integrity testing with our full line of SPY® portable and permanent Holiday Detectors.

### *SPY® Model 780, 785 and 790 Portable Holiday Detectors*

- New ergonomic design
- Pipe coating inspections up to 60"
- Extremely durable
- Infinite voltage setting on the fly



Compact, lightweight wet sponge holiday detectors

### *SPY® Wet Sponge Portable Holiday Detectors*

- No belts, lightweight, fast set up
- Sponge roller speeds large flat surface area inspections
- Interchangeable flat or roller sponge



Reliable continuous inspections on the assembly line

### *SPY® In-Plant Holiday Detector Systems*

- Custom designed to streamline manufacturing
- From pipecoating inspections to large flat surfaces

For more details on SPY® products and our complete line of SPY® Holiday Detection Equipment visit our website @ [www.picltd.com](http://www.picltd.com).

PIPELINE INSPECTION COMPANY, LTD.  
PH: (713) 681-5837 • FAX: (713) 681-4838

**SPY®**

Write in Reader Inquiry #119