

June 2007

Tek-talk

"hot off the roof"



E-las-tek develops high-performance coating

By Rick Ulrich

The company is pleased to announce that E-las-tek #127 Solar One-6083 has passed extensive independent laboratory testing for performance over foam, BUR, and galvanized roof surfaces.

Solar One is the coating of choice when an architect, foam manufacturer, government entity, or contractor specifically requires proof of ASTM 6083 compliance. It will **not** replace our current coatings as they already set the standard for performance in desert and Sunbelt areas.

The universal standard test for waterborne 100% acrylic elastomeric roof coatings is ASTM D-6083 (American Society of Testing and Materials). '6083' is an omnibus standard combining numerous performance tests of significant coating qualities. Tests include viscosity, weight, volume solids, elongation and

strength (dry film), adhesion, low temperature flexibility after extended weathering, tear-resistance, permeance, water swelling, and fungi-resistance. Performance over new foam and the ability to be flexible at -15°F are major properties of Solar One.

Our 6083 testing was done according to Dade County (Florida) requirements, meaning all testing was video-taped, observed, and certified by a licensed engineer. Solar One also meets the California Title 24 requirements—reflectivity and emittance are not included in 6083 certification, but are required in California.

Solar One is the result of some three years of company effort in formulating, building, testing, and fine-tuning numerous batches of coating. If you would like additional product information contact your sales/service rep or call our office.



Solar Tek Extreme™ approved for EPDM roofs

By Rick Ulrich

E-las-tek's exclusive formulation for Solar Tek Extreme has been approved by a prominent resin manufacturer for use on EPDM (*ethylene propylene diene monomer rubber*) single-ply roofs. We are currently the only company in the country approved by the manufacturer to offer this unique resin product for EPDM roofs.

Approval came after extensive laboratory tests confirmed the superior performance of Solar Tek Extreme under standing-water conditions. Contact us for details.

Production doubles up

By Steve Mink

To streamline productivity with existing manpower, E-las-tek has purchased a new and much larger 60-horsepower high-speed disperser to work alongside our 40-hp machine. This addition to our equipment will vastly improve production performance.

The new disperser will yield 640 gallons of coating per batch compared to 325 gallons from the 40-hp machine. This means in the course of a day we will now double our gallonage output with the same amount of labor. The added capacity will keep production ahead of increasing demands — a must for continued smooth deliveries and customer service.

Stay tuned for further production upgrades and enhancements in the coming months.



This new high-speed disperser will double production volume.

Complex control panel of new disperser unit requires special wiring and operation.



Using E • las • tek to prep for new HVAC unit

By Rick Ulrich

Adding or changing roof-mounted HVAC units provides an opportunity to add additional roof protection for the area to be covered by the unit and ductwork. In many cases the handling of wood sleepers that support the unit will affect roof drainage by trapping or impeding the flow of water. Drainage and flow problems could be more difficult to fix later.

Let's focus on an air-conditioning replacement here. At least one local contractor will pressure wash and coat the placement area with E-las-tek Solar Tek Extreme as a regular part of the job. Customers wanting to do the work can also request that the old unit be moved aside and several days allowed for the application of coating and a fabric membrane in the area before the new machine is delivered. Be sure to ask the contractor to mark the new machine location on the roof surface as it may be positioned differently than the original unit.

The old sleepers are typically replaced, and this can be a ticklish job if the unit caused them to sink into the asphalt roof surface. Ask the contractor where the new sleepers will be located. If long narrow troughs have been created in the roof and the sleepers will be positioned in a new location, you could fill the troughs with E-las-tek Puddle Plaster or Crack & Joint Sealant and fabric. Both will require three or more days for the coating to harden.

If the through-the-roof ducts are to be reused, these can be sealed with a heavy coat of Crack & Joint Sealant. Be sure the areas just below the duct openings are well-coated and slope away from the duct. An area several feet larger than the new AC footprint can be coated with Solar Tek Extreme or Solar Mastic. For even greater protection, the area can be covered with 40-inch fabric membrane.

Request redwood or cedar timbers as wood sleepers, they weather well over time. Ask to have the bottom of each sleeper notched at least half-an-inch deep at several points to allow drainage. Contractors feel wood sleepers last longer if *not* roof coated, as they need to breathe.

Finally, if new duct work was added, apply two coats of roof coating (allow new galvanized to age for a month or two first) to seal and cool the duct. [Thanks to Mark Sunderman at Air Conditioning Associates, Inc. for the advice.]



The above photo shows how the roof has deteriorated under the removed HVAC unit.



At least one local contractor will pressure wash and coat the placement area with Solar Tek Extreme as a regular part of the job. Above you can see the dramatic difference.

Cleaning roof can improve adhesion, restore reflectivity, and prolong its life

By Rick Ulrich

In the *March 2007 TekTalk* we focused on testing for good coating adhesion. Now let's review cleaning the roof as a way to improve adhesion or to restore reflectivity and energy efficiency.

Cleaning for better adhesion

In most cases, we don't know much about the roofs we coat. While some may have surfaces in fine condition, others may have coatings that were cheap and quickly degraded to powder. Perhaps they have been exposed too long and the coating had been applied too thin or over contaminated surfaces. When diagnosing roof coating failures, we often find a previous coating is failing, not the most recently applied coating.

The vast majority of roof coatings and materials found on low-slope roofs will become chalky due to solar damage. Chalk, a surface powder, can interfere with proper wetting by the new coating. This can be a major problem when coating over old aluminum coatings. An easy chalk test is to rub a dark-colored cloth on the roof and look for powder residue.

Dirt, contaminants, and caulk can prevent a new roof coating from fully wetting the roof surface. A weak bond might be established that could cause loss of adhesion and blistering later. Tri-sodium phosphate (TSP) and various TSP substitutes do a good job of removing dirt and accumulated caulk from roofs, and have been used for many years to prepare surfaces for repainting. They are easy to use in powder and liquid form. Always read and follow package instructions for safety and environmental directions.

The dirt stains in ponding areas will be harder to remove as standing water opens coating pores that trap dirt when they dry. We do NOT recommend household cleaners, dishwashing and laundry cleaning products. After washing with TSP or TSP Substitute, rinse away all cleaner from roof surfaces, building walls, and plants that may be affected. The low concentration of TSP will act as a fertilizer but can leave spots or streaks if not rinsed.

Coat only after the roof is dry.

Cleaning to restore reflectivity

Two well-know government labs have looked at cleaning roofs to make them more energy



Regularly cleaning a roof during its lifetime will maximize energy savings from reflectivity.

efficient: Berkeley National Laboratory (BNL) and Oak Ridge National Laboratory (ORNL). They found that all white roofs lose reflectivity over time. This includes roof coatings and single-ply roof membranes.

Reflectance loss is significant, ranging between 20% and 50% over time, and this reduces energy savings. Losses are greatest in industrial areas or areas with high levels of airborne dirt. Reflectivity loss is greatest in the first year. Regularly cleaning a roof during its lifetime will maximize energy savings from reflectivity.

Another issue is that reflective roofs lower the temperature of roofing materials. In many cases, heat is a factor in drying out or damaging roofing materials. Lowering roof temperatures may slow the deterioration of roof membranes leading to longer service life.

High-pressure cleaning can damage roofs but allows faster cleaning than low-pressure cleaning.

ORNL studies indicated that cleaning a reflective roof *every three years* is "the most economically viable solution."

Beware that more frequent cleaning may be cost prohibitive and could shorten coating life if strong cleansers such as TSP or strong water pressure are used. Little reflectivity is lost after the third year. Roofs that lose less than 25% of their reflectance may never be economical to clean.

E•las•tek #120 Solar Tek Extreme contains chemistry that cross-links coating polymers making them more resistant to dirt pickup and remains whiter than standard coatings over time.

The lab studies assume that a contractor does the cleaning and charges for the work. In fact, it seems likely that formal roof cleaning services will become more prominent in the Sunbelt over time; possibly as a service option sold when the roof is coated.

3-Rs of waste — Do you know them?

By Leilani Rothrock

Reduce; Re-use; Recycle. In waste reduction there are three Rs and the order is not arbitrary. These are the three most basic ways to reduce waste, conserve natural resources and decrease our impact on the natural world. *Recycling is the last step!*

Reducing is the most efficient way to conserve resources.

Tucsonrecycles.org publishes a list of suggestions.

- Buy only what you need—prevent waste.
- Purchase products you regularly use in the largest packages.
- Purchase products in less packaging.
- Purchase concentrates and bulk goods.
- Buy products in refillable packaging.
- Borrow, loan, rent, lease, or share when possible (books, tools, etc.).
- Use both sides of paper.
- Take action to get your name deleted from mailing lists.
- Repair instead of replacing items that are broken or worn.
- Buy good quality, durable products so they can be repaired.
- Take good care of your things so that they last.

Reusing is second in efficiency

- Choose reusable rather than disposable goods (napkins, mugs, razors, sponges).
- Purchase used goods (furniture, books, music, toys, clothes, etc.)
- Sell or give away items you no longer want

or need.

- Use the back of used paper as scratch paper—you will never run out!
- Use glass jars, plastic tubs, water bottles, lunch bags — again and again.
- Use leftover materials to make something different (example: use scrap lumber to build a bat house or doll house).

What ideas can you think of? Here are some ways we recycle and reuse at E-las-tek and personally:

- We collect and reuse the dust particles that become airborne during coating manufacturing. (This will be explained in a future *TekTalk* article).
- Soon we will reuse every drop of the wastewater that is a by-product of our production (another upcoming *TekTalk* report).
- We print on both sides of paper when possible, and the good side of used paper is used for notes, scratch paper, and internal reports.
- We have real dishes and silverware in our lunchroom.
- We bundle the rubber bands that come on our mail and put them back in the mailbox for the carrier to reuse.
- Some of our employees ride bikes or walk to work, classes, and errands.
- Our extra packing materials are taken to other businesses that reuse them.
- The plastic bags from the newspaper are used for pet waste collection.
- We receive and pay bills electronically.

E-las-tek receives Worksite Wellness Award

By Bonnie Lewis

April 26, 2007— E-las-tek received the Process, Progress, and Leadership in Worksite Health Promotion award from the Wellness Council of Arizona at its annual meeting.

Dan Johnson, executive director of the Wellness Council said, "E-las-tek's efforts parallel the focus of the mission of the Wellness Council and National Partnership, encouraging increased physical activity, better nutritional consumption, stress management, and elevating self-care. Your programs, which have created awareness, offered educational opportunities, and encouraged behavioral change, are the foundation for advancing an improved healthy status for America."

E-las-tek considers it a great honor to be among prestigious previous winners in this



WELLNESS CORNER

By Leilani Rothrock

This fat is a lifesaver

The Omega-3 fat in fish is more than a well-known tonic for the heart. It's the one fat you should make sure you are eating!

Blocks cancer

A 10-year study found the group that ate adequate quantities of fatty fish were 74% less apt to have kidney cancer. Fatty fish (salmon, herring, tuna, sardines and mackerel) has up to 30 times more omega-3 than lean fish. Omega-3, like aspirin, is an anti-inflammatory.

Fights pain

Taking fish oil supplements reduces the pain of rheumatoid arthritis and inflammatory bowel disease according to a Canadian analysis of 17 studies.

Lifts mood

Fish oil is a natural anti-depressant, says the National Institute of Health.

Builds bones

In young men, higher blood levels of omega-3 predicted greater bone mineral density, an eight-year Swedish study found. The implication is that strong bones in adolescence help prevent fractures in later life. Other evidence suggests fish oil may keep bones strong in the elderly.

Spurs weight loss

Researchers believe that omega-3 increases fat-burning ability by improving blood flow to muscles. Taking fish oil and exercising can get rid of pounds without cutting calories according to an Australian study. Take advantage of these benefits—eat fatty fish 2-to-3 times a week and consider adding a fish oil supplement every day.

category that include Raytheon Missile Systems (2005) and University Medical Center (2006).

In 2006, E-las-tek opened a well-equipped company gym on the premises for its employees, banned donuts in the break room and replaced them with quantities of fresh fruits. Employees were challenged to attain healthy BMI levels and have been supported in those efforts. As a result several E-las-tek employees have lost weight, found time for regular work outs, and have quit smoking. The incentive is for E-las-tek to continue to fund a major portion of the employees' health-care premiums in the coming year.



Dan Johnson (left), executive director of the Wellness Council of Arizona, presents Worksite Wellness Award to Janice and Rick Ulrich, Bonnie Lewis, and Leilani Rothrock.

Spring Super Sale a super success

By John Richard

This past April we held the fourth edition of the E-las-tek Spring Super Sale. Promotion of the event included the Ace Hardware direct-mail flyers as well as a steady barrage of radio and television commercials. In outlying areas, coupons appeared in local newspapers and advertising mailers. All advertising directed do-it-yourselfers to the E-las-tek website to print out a copy of the coupon or rebate form.

Based on the pre-sale buzz and overall sales results, it's safe to say that the E-las-tek Super Sale is becoming a fixture on the calendar of Arizona do-it-yourselfers. This year, 29 established E-las-tek retailers participated. For an additional 15 new dealers, 2007 marked their first spring with E-las-tek.

Previous spring sales have been successful, but this year's event was especially notable. Among established dealers, April orders in 2007 were up an average of 45.2%, compared to increases of 9.4% in 2006, and 3.9% in 2005. That's simply phenomenal!

The success of the event was widespread, with nearly all repeat retailers showing increased sales over 2006. E-las-tek would like to thank our dealers for their support, enthusiasm and, of course, all that heavy lifting!

While the Spring Super Sale is a certain success, there's always room for improvement. This year we're conducting a follow-up personalized URL survey for participating dealers. This is a 4-question multiple-choice survey that will be completed online. Those who provide feedback will be entered into a drawing for a chance to win six 5-gallon pails of E-las-tek Solar Tek Extreme—to sell in the store, donate to a local benefactor, or use for their own roof!

New employee on board

By Todd Myers

Antonio Granillo is Elastek's newest employee in the Delivery/Warehouse Department.

Antonio started with us in March—our busiest

season—and not a moment too soon.

Antonio has a delivery background and was a quick-study mastering forklift operation and becoming a valuable member of the team..



ARCA bowling for real dollars

ARCA sponsors bowling tournament for Youth On Their Own

By Harless Oscislawski

In the past three years, the Arizona Roofing Contractors Association has contributed over \$51,000 directly to Youth On Their Own, a local non-profit organization that helps homeless youth stay in school through graduation.

This year, on Saturday, June 16, ARCA hosted its fourth annual Raising the Roof for Youth On Their Own bowling tournament at the Golden Pin Lanes, 1010 West Miracle Mile. We have the highly ambitious goal to top last year's tally of \$23,000 for this highly effective community-based program.

At the heart of this event you'll find an incredible ARCA planning committee, chaired by Sam Brush of Allied Products and co-chaired by Scott Ekstrom of Ralph Hays Roofing and myself. The committee also consists of Frank Ortiz, Sun Roofing; Cindy Ashenbrener, Rincon Roofing; Rene Lujan, APOC; Scott Aguilar, Westile; Jim Viberg, JEV Roofing; Kevin Huggins, Monier Lifetile; Steve Mink, E-las-tek; Sandy Oscislawski, E-las-tek; Martin Headlee, Headlee roofing; Karen & JR, ARCA; and Joe Sims, JBS Enterprises/Tovar Roofing. Pete Tountas of Golden Pin Lanes and Gina Babunovic of Youth On Their Own also participate in the planning.

I am so proud to be a driving force in this exceptional experience. Over the tournament's four-year history, my entire family has 'raised the roof' with their outrageous costumes (winning this category all four years), cracker-jack bowling, and heartfelt generosity. My role has included helping to gather an impressive list of donations and door prizes for participants, as well as financially supporting YOTO.

What drove me to this worthy cause was finding out that these kids really want to succeed. They blame no one; they want to graduate from high school and become a positive force in society. There are over 2,000 homeless teens in Tucson who do not have a place to live and who are at risk of dropping out of school

today. Here are a couple of YOTO students' stories I've been told.

Carla, came to YOTO in her sophomore year because her drug-addicted mother forced her out of the house on a regular basis. Now a senior, honor student Carla credits YOTO's Strategies for Success program with helping her work toward her goals to attend Pima Community College and The University of Arizona.

Thanks to YOTO, Jose, a senior at Luz

Guerrero Early College, has thrived despite an emotionally abusive home life, and is able to balance school, work, and other activities—drama, hip hop dancing, painting, sculpting, acrylic drawing, and soccer.

Last year YOTO was able to assist a total of 615 students like Carla and Jose who found themselves without an appropriate home environment and parental support. Studies indicate that over half of youth who become homeless never earn their high school diploma. YOTO's mission is to reverse that trend and ARCA's donations go a long way in helping the organization achieve this goal.

E-las-tek was a Gold Sponsor of the event too, and the E-las-tek Extremes bowling team turned in quite a performance in the Sports' Team Bowling competition. Mostly they just had fun.



The Extremes bowlers represented E-las-tek in the ARCA YOTO fundraiser this year. (Back row: Robert, Jerry, Jason; Front: Pat & Linda; Bonnie, Michael.)

Cool chicks

By Rick Ulrich

Jim Leonard of ER Systems, a reflective roof-coating manufacturer in Minnesota, now claims that white coatings are good for chickens. In 2005, ER Systems, North Carolina State University, and Duke Power set about to test the effect of reflective roof coatings on chicken production. Two adjacent 17,000-



square-foot chicken houses were selected for the test. Both houses had minimally insulated agricultural roofs but one received a white reflective coating.

The goal was to keep the chicken house temperatures no higher than 85° as bird mortality, food consumption, and weight can be affected. Evaporative coolers in the houses are activated whenever temperatures exceed 85°, but they often fail to provide sufficient cooling. A two-month trial, fully instrumented and documented, involved nearly 40,000 chickens.

After the test it was determined that the white-coated chicken house chicks were kept cooler, gained more weight, had lower mortality rate, and the coating eliminated the need for coolers. This offered the farmer a payback on the coating cost of 2.75 years.

In a similar but less-documented adventure many years ago, E-las•tek coatings were applied to pig farm roofs in southern Sonora. This was a promising business venture until a drought killed the project.



Field testing for research study

By Jerry Rockwell

E-las•tek was selected by RRCI (Reflective Roof Coating Institute) as one of three national testing sites for a research study they are conducting to determine the effect, if any, that a roof substrate can have on reflectivity. This is a three-year study of exposure to atmospheric weather conditions in three parts of the country.

The test consists of four varieties of coatings (none are E-las•tek) and 11 substrates. Each panel is measured for total solar reflectance (the complete spectrum of light including non-visible light such as infrared and ultraviolet). The display area was designed and set up in our outdoor testing area according to RRCI guidelines that specified angle of slope and southward exposure.



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