

BY KRISTEN HAMPSHIRE

BARRIER TO ENTRY

Polyguard introduces sustainable termite control tools PMPs can add to their IPM toolbox.

Every building envelope develops cracks and crevices over time — there's no foolproof construction or perfect environment.

“Over the life of a structure, Mother Nature moves the building around, creating new ways for insects to get in,” says John Muncaster, CEO of Polyguard, an Ennis, Texas-based innovator of products that protect surfaces and structures from moisture, water and undesirables — like termites, ants and other pests.

Wind, heat, soil settlement and other naturally-occurring factors create opportunities for pests to enter structures. “That movement sometimes opens those crevices and cracks up. You create more ways for the pests to get in as that building ages,” Muncaster says, painting a picture that pest management professionals (PMPs) know very well.

A NEW APPROACH. Traditionally, PMPs and their customers have relied on liquid termiticides, baits or fumigants to control

termites. Yet there is a small, but growing subset of the U.S. population interested in pursuing a more holistic approach to termite control, embracing various IPM techniques to control these destructive pests.

While IPM is a continued focus for insect and termite control — the reality is, accessing common entry points is not so easy: bath traps, plumbing penetrations, building foundations.

But what if PMPs could “block” pests by sealing those entry points and establish true pest barriers designed to complement an IPM program? An innovator in the barriers industry, Polyguard has done just that, expanding its product offerings to include technology developed specifically for the pest management industry, including sealants, particle barriers and mesh screens. Polyguard's TERM product line features:

- **TERM Sealant Barrier**, a proprietary blend of polymers, asphalts, additives and solvents applied with a caulking gun or smoothing tool that excludes insects from

structures. It can be used to seal slab penetrations above slab against termite entry.

- **TERM Full Bath Trap Barrier** is installed after the concrete slab is poured and rough plumbing is complete. A non-chemical barrier installed by a Polyguard-authorized pest management professional, it blocks termites, fire ants, rodents and other pests from entry through bath traps.

- **TERM Mesh Barrier**, available in a variety of sizes, installs easily to prevent termites and other pests from entering structures.

- **TERM Particle Barrier** is a sustainable non-pesticide termite treatment for existing structures. The product was developed by Bryan Springer, owner of Bevis Pest Control, Texas City, Texas.

Springer, like many PMPs, was looking for a solution — something outside of his usual pest control toolbox. So, he set out to develop a barrier that would block the *Coptotermes formosanus* and *Reticulitermes flavipes* species of termites in Texas.

Springer has been using aggregate barriers for a decade now. “In Australia and Hawaii, there is extensive use of particle barriers,” he says. “It’s a technology that has been proven effective.”

Springer collaborated with Texas A&M University more than a decade ago to conduct some of the early field research on particle barriers. “I’ve embraced the use of stone granules as a termite deterrent,” he says, adding that he was one of the first PMPs to adopt the technology.

Polyguard’s particle barriers enhance PMPs’ existing pest control toolbox with a sustainable option that works in concert with an IPM program. Meanwhile, innovation with an environmental bent is just part of the culture at Polyguard, a 100-percent ESOP-owned company that attributes its product quality to the care its people put into their work.

The company’s tagline is “Innovation based. Employee owned. Expect more.” And that’s what their asking PMPs to do — raise the bar in how they treat termites and other pests at a barrier level. It’s a natural progression of what the \$50-million company has been doing for 60-plus years.

“First, Polyguard started protecting structures from water and the environment,” Muncaster says. “Next, we created barriers for preventing energy leaks in buildings. This new phase is adding a pest barrier capability so PCOs need to return less often to the structure to control insects.”

FOUNDED ON SUSTAINABILITY. Polyguard started as a family company in 1953 in Oklahoma, founded by Robert Nee and Frank McNulty. The owners moved the business to Ennis, Texas, in 1978, and Muncaster and wife Kathy purchased it in 1986.

The next year, the Muncasters decided that employees should directly benefit from the hard work they put into products at Polyguard. That was the basis for their decision to form an Employee Stock Ownership Plan (ESOP). In December 2014, the company became 100-percent ESOP-owned.

“We believe in our future as a company,” says Muncaster, a serial entrepreneur with an independent streak. “I like to start things.” Muncaster is a believer in sustain-

able technology — he pedals a solar bike to work, and he gives his people opportunities to make a difference. That’s what employee ownership does. “We really attribute the company’s success to the quality of our products and our ESOP. Employees care a little bit more than the average employee. They have a little more stake in the game.”

Today, Polyguard has 114 employees at its 200,000-square-foot facility, which will undergo a 100,000 square-foot expansion in the near future to accommodate its growth. The company has doubled in size in the last four years, continuing a 22-year trend of topline sales growth, even through recessions.

At Polyguard, sustainability runs deeper than a “green” product. It’s about longevity and truly living that triple bottom line approach of people, planet and profit. “As a private company, we take a long-term view of business,” says Shawn Eastham, president of Polyguard, which is debt-free. “We’re not worried about quarter-to-quarter financial performance; we can take a longer view. It’s one of the benefits of being an ESOP.”

Josh Weeks, an industry consultant retained by the company to raise the com-

pany’s profile in the pest management industry, adds that Polyguard’s growth is tied to its new exclusion products. “We believe we are tapping into a sustainability trend that is going to result in greater customer demand for these types of innovative technologies as time evolves,” he says, adding that PMPs are looking for more options to control pests. “We know that the technology works, and over time there will be a broad appeal for these types of products.”

Springer is an example of that demand. “A typical termite job may use 150 gallons of termiticide,” he says. “If I have a customer who is concerned about chemical use in and around their home, I can offer them an alternative treatment regimen featuring particle barriers, sealants and mesh screens.” Such a termite treatment program appeals to a small, but potentially lucrative, segment of the industry’s customer base committed to sustainability and low-impact treatment options.

Dr. Roger Gold, the recently retired endowed chair of urban and structural entomology at Texas A&M University, has conducted research on Polyguard’s TERM particle barriers, specifically, and particle barriers, in general, for many years. He became acquainted with Muncaster as the high-energy entrepreneur began to ex-



BOLSTERING THE PMP’S TOOLBOX



Polyguard’s TERM product line can be used in three key areas serviced by PMPs. TERM Particle Barrier is applied in a small trench around the perimeter of the structure and TERM Bath Trap Barrier is applied around plumbing penetrations and bath traps to prevent pest access.

ploring how Polyguard's expertise in sealant technology and particle barriers could be transferred to the professional pest management industry. Muncaster asked Gold if PMPs could adapt its various technologies to prevent termites and other pests from entering structures.

"I didn't know, but I said we could certainly find out," Gold shares. "I have worked with chemicals for 45 years, but I think there are additional ways to protect structures from termites and other arthropods. Anything we can do to enhance the sustainability of our pest control practices is a good thing."

Polyguard is an innovator because it is taking a time-tested sealant technology initially used for waterproofing and modifying it to create barrier solutions for PMPs. "It takes someone with vision to make that connection," Gold comments.

HOW PARTICLE BARRIERS WORK. So, how exactly do particle barriers like Polyguard TERM function? Gold explains that there are three factors that determine the efficacy of aggregate barriers: particle size, interstitial space where granules fit together, and angularity (shape) of the material so it is densely packed. (See "A Sustainable Alternative" at right to learn how Gold's research explored these concepts.)

Why choose a barrier for structural pest protection? Consider the origin of infestations, Gold points out. Polyguard identifies three reasons pests enter a building: 1) gaps as small as 0.02 inches are large enough for termites to access; 2) built-in entry points like slab penetrations, joints, bath traps and below-grade foundation joints are "open doors" for pests; and 3) wind, soil settling and moisture create new, enlarged pest entries.

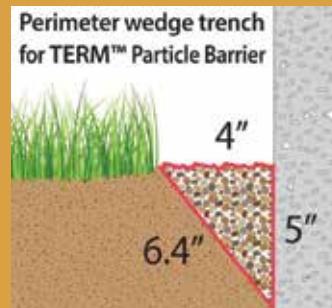
Particle barriers can block pests at common, problematic entry points. "One of the challenges PCOs have is coordinating with the various building trades when performing pre-treatment," Gold says. "The timing of these treatments can be a challenge during the construction process, but with this particle barrier and sealant technology, you can still get into that structure during the early stages of the building process when traps and plumbing penetrations are accessible. It gives you a lot more options."

Weeks notes that Polyguard's product line consisting of sealants, mesh screens

A SUSTAINABLE ALTERNATIVE

Research reveals three key concepts that contribute to the success of particle barriers.

An interest in sustainable building protection from termites began percolating almost two decades ago in Texas, when Dr. Roger Gold spoke to a group of "green builders" about non-chemical options for insect control. The now retired Texas A&M entomologist started conducting research on particles — originally looking at sandblaster sand, which had shown some efficacy, as a possible barrier to keep termites out of structures.



TERM Particle Barrier is an easy-to-apply, environmentally-sensitive post-construction termite treatment, requiring just a 4-inch trench around structures to apply.

Then Bryan Springer came into the picture, owner of Bevis Pest Control, Texas City, Texas. He had some Galveston-area clients who were concerned about chemical use, but needed termite protection. "He started using some (various size) granules, and he began to determine that they did actually create a barrier," Gold says.

The particles were applied by digging a trench around the perimeter of structures, then pouring in the aggregate materials. Springer joined Gold with his findings, and the team began screening those granules to separate different particle sizes. "We came up with this specific particle size range that created a physical barrier to termites," Gold says.

Size was a factor in the particles' ability to block insect entry. Then, Gold and Springer began studying the space between the granules, called interstitial space. "We made the determination that you had to not only have a particle size that termites could not pick up and move, that the particles had to sit closely together," Gold says. Finally, they realized that irregularly-shaped granules would pack together more securely and create a stronger barrier against termites. Angularity was key — "oddball shapes" that result from crushing otherwise uniform granules. "The more facets you get on [the granule surface], the better it fits together and forms a greater barrier," Gold says.

After discovering these three concepts — size, interstitial space, angularity — John Muncaster of Polyguard entered the picture, ultimately developing the company's TERM Particle Barrier for the professional pest management industry.

TERM Particle Barrier is an insect exclusion product providing a physical barrier for subterranean termites. A naturally-occurring, environmentally-friendly stone product that is safe to use around children and pets, it is not intended to provide stand-alone protection for the entire structure, according to Tre Bischof, director of marketing and communications, Polyguard Products. "It eliminates the need for termiticides in the areas where it is applied," he said, "but where parts of the structure's perimeter will not allow proper application of the particle barrier, a limited termiticide treatment is warranted."

Gold calls Muncaster an innovator — "a guy with a vision." The timing of Polyguard's interest in particle barriers and Gold's ongoing research was coincidental, and fruitful. "I look at this as a positive development for our industry," he says. "It's something PMPs would not have had in their toolbox before, but it gives them another option in controlling termites."



(Left to right) John Muncaster, Dr. Roger Gold, Carlos Montoya, Shawn Eastham, Mel Kyle, Tre Bischof, Bryan Springer, and Josh Weeks (front) have worked in various capacities to launch the TERM product line.



To view a slide show of photos featuring the TERM product line from Polyguard Products, visit the Online Extras section of PCT Online.

and particle barriers is “another option for customers interested in green/sustainable technology. We’re positioning Polyguard as a provider of sustainable pest control products for PMPs,” he said. “We know the technology works and over time there will be broad appeal for these types of products.” The barrier products are best suited for pre-construction termite jobs, according to Weeks, while TERM Particle Barrier is best suited for post-construction termite jobs.

The ultimate purpose of Polyguard’s TERM line for PMPs, according to Muncaster, is to protect the treated structure “permanently” by preserving the building envelope so it can keep insects out.

“Our goal is to create a permanent pest-resistant building envelope by combining all of these materials,” Muncaster says. “And we prefer the PMP to do it.” **PCT**

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3 REASONS PESTS ENTER STRUCTURES

As every pest management professional knows, no residential or commercial structure is immune to pest entry. Pests are able to enter structures in a variety of ways, according to the experts at Polyguard Products, which manufactures a number of barrier products designed to prevent termites, rodents, ants, silverfish, and other pests from gaining access to buildings. Tre Bischof, director of marketing and communications, Polyguard Products, says the three most common routes of entry for pests are:

1 Gaps in the building foundation. “Entomologists tell us that termite can get through a 0.0022” gap in a building,” Bischoff says, while mice only require a ¼-inch gap.

2 Building entry points. “A number of built-in entry points provide ready access to buildings by pests,” he adds, including slab penetrations, bath traps, weep holes, window/door gaps, concrete cold joints, and gaps in the roof.

3 Environmental factors. “Wind, heat and cold, and soil conditions all play a role in creating pest entry points in structures,” Bischof observes. For instance, settlement cracks occur when the ground under concrete moves, while heat and cold can expand/contract building components, creating gaps for insects and rodents to enter. “By sealing off these areas with Polyguard’s TERM barrier products, however, you can prevent pest access to structures,” he says. “It’s a simple, cost effective, environmentally-sound way to manage pests, and it appeals to a new generation of pest control customers.”