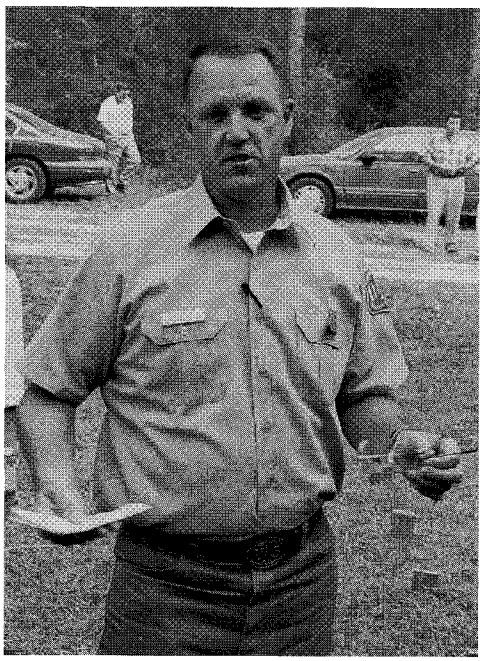
Mesh May Fit In as a Termite Barrier

Research indicates that stainless steel mesh may indeed be a viable tool for subterranean termite control.

BY BRAD KARD

Stainless steel mesh tests are currently being conducted in an effort to investigate alternatives or supplements to termiticides for control of subterranean termites. Some people are extra-sensitive to insecticides or would prefer to use non-insecticidal means to control termites, and stainless steel mesh may provide one such alternative. This article is an update on the first report published in the February 1998 *Pest Control* issue ("Stainless Steel Mesh: An Alternative Termite Barrier?" page 54).

In Australia, a high-quality stainless steel mesh has been used with success beneath wooden structures to physically exclude subterranean termites, protecting the structure from feeding damage. This mesh has been placed under thousands of new homes and commercial buildings in Australia as a pre-construction installation. Methods for post-construction application have also been developed, wherein the mesh can be "glued" to concrete, brick or other surfaces with a specially developed adhesive. Success in Australia warranted testing of this mesh in the United States.



Brad Kard shares some insights into the termiticide field tests from Gulfport, Miss.

Corrosion tests with stainless steel have been documented and conducted worldwide (M. Romanoff, National Bureau of Standards, Circular 579, April 1957, U.S. Government Printing Office). The oxide layer on T-304 stainless steel, the grade designation of the mesh used in these tests, prevents prolonged corrosion.

Tests conducted in Australia showed that T-304 stainless steel mesh placed in the most aggressive Sydney soils was not corroded after 11 years (D. Hargreaves and C.B. Rolfe, Corrosion Australiasia 8(1): 10-13, 1983). In an oceanside environment, there was no significant corrosion of T-304 stainless steel after 16 years.

Currently, T-304 stainless steel has been replaced with T-316 stainless steel for mesh production. T-316 stainless steel is the highest grade of non-corrosive stainless steel commercially available, and further improves corrosion resistance. Stainless steel mesh installed under concrete floors and inside cavity walls may have a useful life of several decades, as claimed by the owners of the product, Termi-Mesh Australia.

Stainless steel mesh tests were installed in Arizona, Florida, Mississippi and South Carolina during 1993. Three test methods were used to

test its effectiveness as a barrier to subterranean termites, including stainless steel mesh sleeve, concrete block and concrete slab. Each method was replicated 20 times in each test site, resulting in 80 replicates per test method.

In the sleeve method, an 18-inch-long, two-inch-by-four-inch pine board has a sleeve of stainless steel mesh wrapped around one end and approximately 15 inches up its length. The "sleeved" end is inserted vertically into termite-infested soil about nine inches deep.

The concrete block method consists of a 15-by-15-inch square by eight-inch-high concrete building block that is wrapped underneath one open side and halfway up around its four walls with stainless steel mesh. The block is placed horizontally on the soil, mesh side down, and capped with a square Plexiglas lid. Two pine sapwood blocks are placed inside the concrete block and on top of the mesh.

Additionally, a seven-inch-tall by four-inch-diameter PVC pipe is vertically inserted through carefully cut slits in the center of the mesh, so its open bottom contacts the soil. The mesh is tightly sealed around the PVC pipe with a stainless steel hose clamp. A pine sapwood block is placed inside the pipe and in contact with the soil, and the pipe is capped.

For the concrete slab test, a 24-by-24-inch square piece of mesh is placed on the soil and covered with standard six-mil-thick polyethylene vapor barrier. A seven-inch-tall by four-inch diameter PVC pipe is vertically held on top of the vapor barrier, and a 21-by-21-inch square concrete slab, approximately two inches thick, is poured over the vapor barrier and around the pipe. The vapor barrier has a pre-cut, four-inch-diameter hole in its center that is located directly under the PVC pipe opening. After the concrete hardens, a pine sapwood block is placed inside the PVC pipe on top of the exposed stainless steel mesh, and the pipe is capped.

Control plots were installed identical to the three test methods, but without stainless steel.

Testing Results

After five years of testing in all four test sites, stainless steel mesh remains 100 percent successful as a barrier to subterranean termites. Termites did not penetrate through the mesh, while non-protected wood in control plots was severely damaged.

Marketing of this product in the U.S. is under way, and about 200 houses, plus three fire stations, three schools and one police station, have been built in the Hawaiian Islands with stainless steel mesh pre-construction installations. Also, two recently constructed demonstration houses in St. Johns County, Fla. (St. Augustine and Jacksonville) have stainless steel pre-construction installations. Additionally, a post-construction stainless steel installation in Hawaii during 1992 has corrected a serious Formosan subterranean termite infestation without the use of termiticides.

Technicians will require training on proper installation, and comprehensive, detailed training manuals are provided to trainees. U.S. Forest Service field tests will continue for many years, and will be reported on following future evaluations. For more information concerning this product, contact Wayne Parsons or Ken Takata, Termi-Mesh Hawaii, Inc. at 808/843-1968, or fax 808/843-0100. **PC**

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