Spray Foam Insulation and Subterranean Termite Inspection Issues - April 2021

The Georgia Structural Pest Control Commission (GASPCC) appreciates the opportunity to provide the Energy, Residential and Building Amendments Subcommittee, additional information pertaining to our proposed building code changes.

First and foremost, we strongly reiterate that the application of Spray Polyurethane Foam (SPF) to the framing foundation interface (FFI), ***should not*** be allowed under any situation or circumstances in order to protect Georgians from unnecessary liability, potentially severe structural damage, home resale concerns and expense.

Termites will use spray foam as a bridge to bypass mechanical obstacles and treated wood to gain access to untreated wood in a structure. Spray foam hides, provides protection, and enables termites to move undetected to find and exploit food sources.

Georgia Building codes require treated wood when installed in certain areas of a structure and we strongly support the use of treated wood in areas that are likely to be in contact with soil and/or moisture.

Treated wood is regulated under U.S. EPA pesticide laws and regulations for protecting the wood from wood destroying organisms. That being said, treated lumber ***does not*** offer structural protection from wood-destroying organisms. To make claims of structural protection against termites, the pesticide product (termiticide) must meet strict efficacy standards set by U.S. EPA to be registered for use and be applied by a Georgia Department of Agriculture licensed pest management professional.

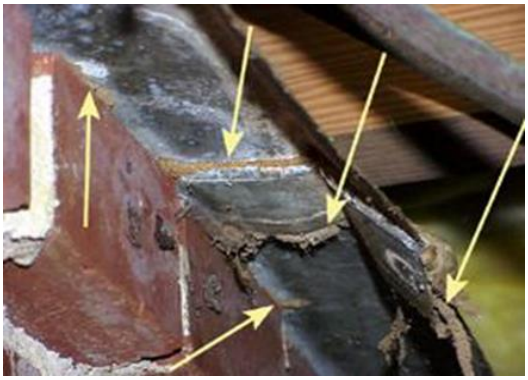
While our focus with this proposed change has been around termite infestations and the application of SPF in the Framing Foundation Interface (FFI), we feel it is also important to inform the committee that under the Georgia Structural Pest Control Regulations, specifically the Wood Destroying Organism (WDO) section, pest management professionals are required by regulation to complete ***visible*** inspections for multiple wood destroying organisms. These include application of all measures for the purpose of controlling termites, powder post beetles, wood boring beetles, wood destroying fungi and any other wood destroying organism in structures and/or adjacent outside areas. Most of these pests infest directly into the wood and do not provide signs like termite tubes and once the wood is covered with SPF detection is virtually impossible.

All these wood destroying organisms are found in Georgia. When untreated or conditions are created, like the application of SPF that hinder the ability to inspect for these organisms, Georgia homeowners will be placed unnecessarily in harm's way with little to no solutions for appropriate early detection and remediation.

The spray foam industry presented some interesting solutions on the admitted concern with inspections in the FFI that has been covered with SPF, and we would like to address some of them.

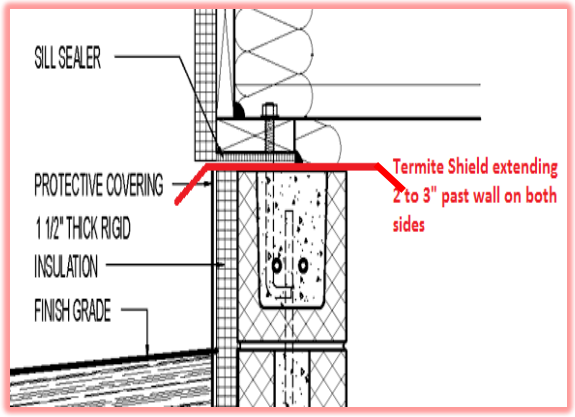
Termite shields:

The SPF proposal is putting an enormous amount of stock in the ability of termite shields to prevent termites from getting into a structure so they can cover the FFI with SPF. With modern day termite control products and treatments, you rarely see termite shields today, unless you are looking at a structure-built decades ago. Metal termite shields were first recommended half a century ago and are no longer recommended by the USDA as the following decades have demonstrated, such devices, ***do not stop*** termite movement along foundation walls and piers to the wooden parts of the structure. The shields are rarely installed in modern construction because they are difficult to install properly (i.e., not soldered/sealed properly), can be damaged while finishing new construction or deteriorate over time, causing cracks or gaps thereby allowing termites to reach wooden construction features. Additionally, because it is required to secure the sill plate to the foundation, the shields need to accommodate a bolt or sill plate straps to pass through further compromising their effectiveness in stopping or revealing termite infestations.



As a reminder, termites can access a structure through a 1/64" gap.

Metal termite shielding, should extend at least **two inches out** and **two inches down** at a **45° angle** from the foundation wall. As shown in the drawing to the right, this means the termite shield must extend out over the outside foundation wall 2 – 3 inches, being visible beyond the outer most building components on the exterior of the structure (i.e., siding, brick and stone veneers, etc.).



This requirement presents a less than appealing aesthetic look on the exterior of the home and requires additional craftsmanship, labor, equipment, and product cost to builders, making homes less affordable to hundreds of consumers. Most importantly, such shields are compromised and ***not visible*** if the structure has porches, sidewalks, or patios adjacent to the structure. These inaccessible areas are highly termite vulnerable places on a structure and conducive to hidden termite infestation.

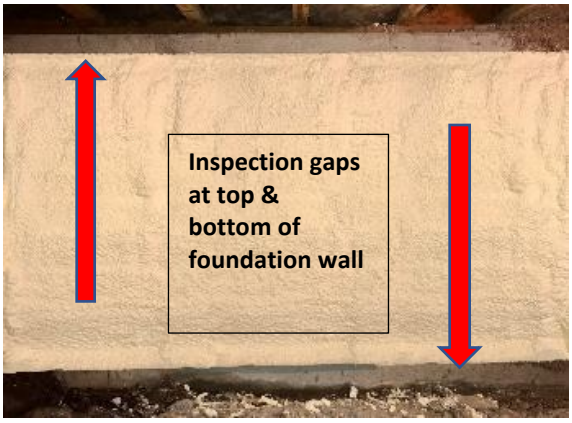
In the picture to the right, you can see that the termite shield extends over the ***inside*** and outside of the foundation wall. You can also see that the ***outside*** foundation wall will be completely hidden behind added brick or stone veneer sitting on the ledge below (arrow), providing hidden access for termite entry on the exterior foundation walls. In this situation, SPF's proposal would allow the FFI to be covered with spray foam and the homeowner will pay the price of having an invisible infestation persist for years before detection.

There are many ways to secure the sill plate to the foundation. The picture ***above*** shows anchor bolts (circled) being used to secure the sill plate to the foundation. The bolts must pass through a termite shield creating the need to seal each bolt. In this situation, given that even a 1/64th inch gap would compromise the "shield". The attention required as to the details of a sealing application and maintaining the integrity of the "shield" are obvious reasons why this methodology is no longer recommended after decades of less-than-satisfactory experience.

As I mentioned the sill plate can also be secured to the foundation by using a variety of types of foundation straps. The picture to the right shows one type of sill plate straps / anchors in use, yet there are many varieties and designs in the marketplace. These straps / anchors are imbedded into the foundation making it extremely difficult, if not impossible to install a termite shield and be able to seal it as required around each strap.

Foundation Inspection Gaps

Current Georgia Building codes require termite ***inspection gaps (no foam)*** at the top and bottom of the foundation walls, and that code leads the country for acknowledging that conducting an inspection to determine termite activity coming up the ***inside*** crawl space or basement foundation walls is paramount to protecting Georgia homeowners. The proposed changes from SPF proponents seems to eliminate these important inspection gaps by striking section R402.2.11 and this would be a giant step backwards.



Moisture

Moisture has been continuously stated by SPF proponents as a major concern with the GASPCC proposal, but they have provided no information on how SPF interacts with moisture. The same properties that permit SPF to exclude moisture from external sources, would hold moisture against wood components if there is a leak or faulty construction, consistent with the problems identified with a similar product and problem in the 90's, "Rigid Board Insulation or *DRYVIT*". This has already been experienced, as the UGA SPF Demonstration Project showed higher wood moisture content in wood that was behind or under spray foam after the foam was removed. Wood decay fungus grows and damages wood when the wood moisture exceeds 22%.

In the two pictures below, you can see common moisture situations that occur at the FFI when drainage on the exterior of the home is not moving water way from the structure.

How much unseen damage will occur and how long will it take for it to be visible if this area is covered with spray foam?

One thing is the homeowner will be the one stuck with any remediation problem!

Inspections

It is important to remember that wood destroying organism inspections are defined in the GASPCC rules as a visual inspection that includes sounding and probing of structural members for subterranean termites that eat wood undetected from the inside out. The structural integrity of wood members must be sounded and probed to determine the extent of activity or damage. Additionally, the industry utilizes multiple technologies to aid in the detection and identifying the extent of activity or damage in a structure. This is contrary to SPF proponents' outrageous comments that these technologies are not used by the pest management industry, and practitioners are either completely unaware or refuse to admit the potential of utilizing these tools.

SPF proponents also continue to put forward a narrative about termites ***"posing significant concerns with or without spray foam and inspections for termites being only 33% effective because of hidden pathways that exist in structure".*** The pest management industry fully understands the limitations we have with the amount of a structure that is visible, but unlike SPF proponents the pest management industry continuously adapts and offers consumers in Georgia termite protection with highly effective treatments and inspections by skilled, knowledgeable and state licensed individuals. In addition, homeowners are protected by licensed and regulated pest management companies who offer warranties on the work provided, and protection against future infestations. SPF proponent's narrative on the state of the pest management industry is disingenuous and misinformed as they propose to cover, without assuming any responsibility, the ***most important area*** for WDO inspections afforded within a structure, the framing foundation interface.

Conclusion

Spray foam proponents continue to state that the pest management industry should get with modern times and technology, while recommending ineffective, arcane, decades old technology such as termite shields and, deflecting the issue to home builders in their latest proposal.

The pest management industry has been patient, professional and accommodating throughout this code recommendation process, but the approaches being taken by the SPF proponents is unabashedly self-centric and does nothing to resolve the concerns raised.

The latest SPF proponent's proposal is another attempt in their consistent approach taken throughout this entire process, which deflects responsibility and liability so they can simply continue to do what they have been doing with no recourse or concern for Georgia homeowners.

Proposed change

The proposal the SPCC has put forward is not new, it is one of the accepted practices for air sealing and insulating the framing and foundation interface, currently being taught by SOUTHFACE INSTITUTE. Additionally, the GA Energy Code in the Residential Field Guide (page 17) states, ***"the band area of a conditioned crawlspace must be air sealed and insulated. It is strongly recommended that the band area be insulated with a removable insulation product to provide access for pest control inspection".***

We respectfully reiterate that the code's wording be modified as follows:

"The band area (framing and foundation interface) of a conditioned crawlspace must be air sealed and insulated. It is required to air seal with caulk or foam at the joints connecting the floor sheathing above and the top of the foundation and be insulated with a removable insulation product to provide access for pest control inspections."