

Issue: DS 2021-015: The petitioner Paul Danforth, P.E., is seeking clarifications on certain sections of the 7th Edition (2020) Florida Building Code, Residential concerning treatment of building components and surroundings which are intended to prevent decay and termite infestation/damage.

Petitioner seeks clarification of the following questions:

Question 1: As it pertains to the modular home described in Project #1, do the locations set forth in R317.1.1 through R317.1.7 ("Required Locations") encompass all locations requiring wood treatment as contemplated by Section R318.1.8?

Question 2: As it pertains to the modular home described in Project #1, if the wood in locations set forth in R317.1.1 through R317.1.7 ("Required Locations") is treated in accordance with Section R318.1.8, is soil applied pesticides OR baiting systems in accordance with R318.1.1 through R318.1.7 required?

Question 3: R317 requires protection of wood and wood-based products from decay in the locations specified in R317.1.1 to R317.1.7 by the use of naturally durable wood or wood that is preservative-treated in accordance with AWPA U1 for the species, product, preservative, and end use. Wood which is preservative-treated in accordance with AWPA U1 provides termite protection labeled for use as a preventative treatment. Is the use of preservative treated wood in accordance with the provisions of Section R317.1 an approved method of subterranean termite control?

Background:

GFA International, Inc. is a full-service engineering firm providing engineering services including private provider plan review and inspection services pursuant to FS 553.791. GFA's private provider services include plan review and inspections of the installation of on-frame modular homes ("modular homes") pursuant to FBC Section 458 and Chapter 1 of the FBC as it relates to Section 458. Additionally, since the manufactured home is being used as a residential occupancy, it is classified as a one-two family dwelling. Therefore, the installation of the manufactured buildings and construction activities conducted at the site of the installation shall be conducted pursuant to the Florida Building Code, Residential.

More specifically, GFA regularly reviews plans for modular homes throughout Florida. These modular homes are fabricated off-site at the manufacturer's facility under the requirements of FBC 458. The modular homes are transported to a site and supported by various foundation systems consisting of concrete, masonry, and wood. The frames are typically specified to be a minimum of 18" above the ground surface.

GFA believes the Code requirements are ambiguous and is seeking clarifications on certain sections of the FBC-R concerning treatment of building components and surroundings which are intended to prevent decay and termite infestation/damage.

Project/situation:

The following is a manufactured home project #1 that GFA International, Inc. is expected to review for compliance with the 2020 Florida Building Code – Residential:

A 26' by 48' modular home will be transported to a prepared site and supported on CMU Blocks which will be supported on ABS Pads. The frame of the modular home is specified to be a minimum of 18" above ground surface. A 10"x16" perimeter footing is specified around the perimeter of the modular homes to act as the ground anchor for the unit tie-downs. A perimeter wall skirt is specified to be attached to the perimeter footing and the underside of the modular home frame. All wood shims, skirt wall framing, and sheathing in the required locations are naturally durable or preservative treated (P.T.) wood (See Figure 1.)

7th Edition (2020) Florida Building Code, Residential

CHAPTER 2 DEFINITIONS

REGISTERED TERMITICIDE. Product listed **as registered for use as a preventative treatment for termites for new construction by the Florida Department of Agriculture and Consumer Services under authority of Chapter 487, Florida Statutes.**

SECTION R317 PROTECTION OF WOOD AND WOOD-BASED PRODUCTS AGAINST DECAY

R317.1 Location required.

Protection of wood and wood-based products from decay shall be provided in the following locations by the use of naturally durable wood or wood that is preservative-treated in accordance with AWPA U1 for the species, product, preservative and end use. Preservatives shall be listed in Section 4 of AWPA U1.

1. Wood joists or the bottom of a wood structural floor when closer than 18 inches (457 mm) or wood girders when closer than 12 inches (305 mm) to the exposed ground in crawl spaces or unexcavated area located within the periphery of the building foundation.
2. Wood framing members that rest on concrete or masonry exterior foundation walls and are less than 8 inches (203 mm) from the exposed ground.
3. Sills and sleepers on a concrete or masonry slab that is in direct contact with the ground unless separated from such slab by an impervious moisture barrier.
4. The ends of wood girders entering exterior masonry or concrete walls having clearances of less than 1/2 inch (12.7 mm) on tops, sides and ends.
5. Wood siding, sheathing and wall framing on the exterior of a building having a clearance of less than 6 inches (152 mm) from the ground or less than 2 inches (51 mm) measured vertically from concrete steps, porch slabs, patio slabs and similar horizontal surfaces exposed to the weather.

6. Wood structural members supporting moisture-permeable floors or roofs that are exposed to the weather, such as concrete or masonry slabs, unless separated from such floors or roofs by an impervious moisture barrier.

7. Wood furring strips or other wood framing members attached directly to the interior of exterior masonry walls or concrete walls below *grade* except where an *approved* vapor retarder is applied between the wall and the furring strips or framing members.

R317.1.1 Field treatment.

Field-cut ends, notches and drilled holes of preservative-treated wood shall be treated in the field in accordance with AWPA M4.

R317.1.2 Ground contact.

All wood in contact with the ground, embedded in concrete in direct contact with the ground or embedded in concrete exposed to the weather that supports permanent structures intended for human occupancy shall be approved pressure-preservative-treated wood suitable for ground contact use, except that untreated wood used entirely below groundwater level or continuously submerged in fresh water shall not be required to be pressure-preservative treated.

R317.1.3 Geographical areas. In geographical areas where experience has demonstrated a specific need, *approved* naturally durable or pressure-preservative treated wood shall be used for those portions of wood members that form the structural supports of buildings, balconies, porches or similar permanent building appurtenances when those members are exposed to the weather without adequate protection from a roof, eave, overhang or other covering that would prevent moisture or water accumulation on the surface or at joints between members.

Depending on local experience, such members may include:

1. Horizontal members such as girders, joists and decking.
2. Vertical members such as posts, poles and columns.
3. Both horizontal and vertical members.

R317.1.4 Wood columns. Wood columns shall be *approved* wood of natural decay resistance or *approved* pressure-preservative-treated wood.

Exceptions:

1. Columns exposed to the weather or in *basements* where supported by concrete piers or metal pedestals projecting 1 inch (25 mm) above a concrete floor or 6 inches (152 mm) above exposed earth and the earth is covered by an *approved* impervious moisture barrier.
2. Columns in enclosed crawl spaces or unexcavated areas located within the periphery of the building when supported by a concrete pier or metal pedestal at a height more than 8 inches (203 mm) from exposed earth and the earth is covered by an impervious moisture barrier.
3. Deck posts supported by concrete piers or metal pedestals projecting not less than 1 inch (25 mm) above a concrete floor or 6 inches (152 mm) above exposed earth.

R317.1.5 Exposed glued-laminated timbers. The portions of glued-laminated timbers that form the structural supports of a building or other structure and are exposed to weather and not properly protected by a roof, eave or similar covering shall be pressure treated with preservative, or be manufactured from naturally durable or preservative treated wood.

R317.2 Quality mark. Lumber and plywood required to be pressure-preservative treated in accordance with Section R317.1 shall bear the quality *mark* of an *approved* inspection agency that maintains continuing supervision, testing and inspection over the quality of the product and that has been *approved* by an accreditation body that complies with the requirements of the American Lumber Standard Committee treated wood program.

SECTION R318 PROTECTION AGAINST TERMITES

R318.1 Termite protection.

Termite protection shall be provided by registered termiticides, including soil applied pesticides, baiting systems, and pesticides applied to wood, or other approved methods of termite protection labeled for use as a preventative treatment to new construction. See Section 202, "Registered termiticide." Upon completion of the application of the termite protective treatment, a Certificate of Compliance shall be issued to the building department by the licensed pest control company that contains the following statement: "The building has received a complete treatment for the prevention of subterranean termites. Treatment is in accordance with rules and laws established by the Florida Department of Agriculture and Consumer Services."

R318.1.1

If soil treatment is used for subterranean termite prevention, the initial chemical soil treatment inside the foundation perimeter shall be done after all excavation, backfilling and compaction is complete.

R318.1.2

If soil treatment is used for subterranean termite prevention, soil area disturbed after initial chemical soil treatment shall be retreated with a chemical soil treatment, including spaces boxed or formed.

R318.1.3

If soil treatment is used for subterranean termite prevention, space in concrete floors boxed out or formed for the subsequent installation of plumbing traps, drains or any other purpose shall be created by using plastic or metal permanently placed forms of sufficient depth to eliminate any planned soil disturbance after initial chemical soil treatment.

R318.1.4

If soil treatment is used for subterranean termite prevention, chemically treated soil shall be protected with a minimum 6 mil vapor retarder to protect against rainfall dilution. If rainfall occurs before vapor retarder placement, retreatment is required. Any work, including placement of reinforcing steel, done after chemical treatment until the concrete floor is poured, shall be done in such manner as to avoid penetrating or disturbing treated soil.

R318.1.5

If soil treatment is used for subterranean termite prevention, concrete overpour or mortar accumulated along the exterior foundation perimeter shall be removed prior to exterior chemical soil treatment, to enhance vertical penetration of the chemicals.

R318.1.6

If soil treatment is used for subterranean termite prevention, chemical soil treatments shall also be applied under all exterior concrete or grade within 1 foot (305 mm) of the primary structure sidewalls. Also, a vertical chemical barrier shall be applied promptly after construction is completed, including initial landscaping and irrigation/sprinkler installation. Any soil disturbed after the chemical vertical barrier is applied shall be promptly retreated.

R318.1.7

If a registered termiticide formulated and registered as a bait system is used for subterranean termite prevention, Sections R318.1.1 through R318.1.6 do not apply; however, a signed contract assuring the installation, maintenance and monitoring of the baiting system that is in compliance with the requirements of Chapter 482, Florida Statutes shall be provided to the building official prior to the pouring of the slab, and the system must be installed prior to final building approval.

If the baiting system directions for use require a monitoring phase prior to installation of the pesticide active ingredient, the installation of the monitoring phase components shall be deemed to constitute installation of the system.

R318.1.8

If a registered termiticide formulated and registered as a wood treatment is used for subterranean termite prevention, Sections R318.1.1 through R318.1.6 do not apply. Application of the wood treatment termiticide shall be as required by label directions for use, and must be completed prior to final building approval.

Staff Analysis

Question 1: As it pertains to the modular home described in Project #1, do the locations set forth in R317.1.1 through R317.1.7 (“Required Locations”) encompass all locations requiring wood treatment as contemplated by Section R318.1.8?

Answer:

Option #1/Petitioner: It is GFA’s position that the code is vague and ambiguous regarding the locations to which the wood treatment is to be applied. It is GFA’s position that if a registered termiticide formulated and registered as a wood treatment is selected as the method for subterranean termite prevention in accordance with R318.1.8, then only the wood located in areas required by Section R317.1.1 through R317.1.7 must be treated (“Required Locations”)

Option #2/Staff: As per the definition of the term “Registered Termiticide” of Chapter 2 Definition and Section R318.1.8 of the 7th Edition (2020) Florida Building Code, Residential, the application/required locations and specification of wood treatment termiticide as contemplated by Section R318.1.8 must be

as required by label direction for use and as listed by the Florida Department of Agriculture and Consumer Services.

Question 2: As it pertains to the modular home described in Project #1, if the wood in locations set forth in R317.1.1 through R317.1.7 (“Required Locations”) is treated in accordance with Section R318.1.8, is soil applied pesticides OR baiting systems in accordance with R318.1.1 through R318.1.7 required?

Answer:

Option #1/Petitioner: It is GFA’s position that R318.1.8 is very clear in that if a registered termiticide formulated and registered as wood treatment is used for subterranean termite prevention, the Sections R318.1.1 through R318.1.6 Do Not Apply. In other words, soil applied pesticides or baiting systems in accordance with R318.1.1 through R318.1.7 are not required. In other words, wood treatment is an approved stand-alone method of subterranean termite prevention. This is further supported by the Florida Department of Agriculture and Consumers Services.

Option #2/Staff: As per the definition of the term “Registered Termiticide” of Chapter 2 Definition and Section R318.1.8 of the 7th Edition (2020) Florida Building Code, Residential, the application/required locations and specification of wood treatment termiticide as contemplated by Section R 318.1.8 must be as required by label direction for use and as listed by the Florida Department of Agriculture and Consumer Services. In addition, as per Section R318.1.8, if a registered wood treatment termiticide is used for subterranean termite prevention, Section R318.1.1 through R318.1.6 of the 7th Edition (2020) Florida Building Code, Residential do not apply.

Question 3: R317 requires protection of wood and wood-based products from decay in the locations specified in R317.1.1 to R317.1.7 by the use of naturally durable wood or wood that is preservative-treated in accordance with AWPA U1 for the species, product, preservative, and end use. Wood which is preservative-treated in accordance with AWPA U1 provides termite protection labeled for use as a preventative treatment. Is the use of preservative treated wood in accordance with the provisions of Section R317.1 an approved method of subterranean termite control?

Answer:

Option #1/Petitioner: R317 requires protection of wood and wood-based products from decay in locations specified in R317.1.1 to R317.1.7 by use of naturally durable wood or wood that is preservative-treated in accordance with AWPA U1 for the species, product, preservative, and end use. It is GFA’s position that wood that is preservative-treated in accordance with AWPA U1 not only provides protection against decay but also provides protection against subterranean termite protection (Attachment 3)

Option #2/Staff:

The answer to the Petitioner's question is no. As per the current listing of approved termiticides (see attached letter and listing from Florida Department of Agriculture and Consumer Services) AWPA U1 is not an approved wood treatment termiticide.