
USACE / NAVFAC / AFCEC / NASA UFGS-31 31 16 (August 2008)

Preparing Activity: USACE Superseding
UFGS-31 31 16 (April 2006)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated July 2013

SECTION TABLE OF CONTENTS

DIVISION 31 - EARTHWORK

SECTION 31 31 16

SOIL TREATMENT FOR SUBTERRANEAN TERMITE CONTROL

08/08

PART 1 GENERAL

- 1.1 REFERENCES
- 1.2 SUBMITTALS
- 1.3 QUALITY ASSURANCE
 - 1.3.1 Qualifications
 - 1.3.2 Safety Requirements
- 1.4 DELIVERY, STORAGE, AND HANDLING
 - 1.4.1 Delivery
 - 1.4.2 Inspection
 - 1.4.3 Storage
 - 1.4.4 Handling
- 1.5 SITE CONDITIONS
 - 1.5.1 Soil Moisture
 - 1.5.2 Runoff and Wind Drift
 - 1.5.2.1 Vapor Barriers and Waterproof Membranes
 - 1.5.2.2 Utilities and Vents
 - 1.5.3 Placement of Concrete
- 1.6 WARRANTY

PART 2 PRODUCTS

- 2.1 TERMITICIDES

PART 3 EXECUTION

- 3.1 VERIFICATION OF MEASUREMENT
- 3.2 TECHNICAL REPRESENTATIVE
- 3.3 SITE PREPARATION
 - 3.3.1 Ground Preparation
 - 3.3.2 Verification
 - 3.3.3 Foundation Exterior
 - 3.3.4 Utilities and Vents
 - 3.3.5 Crawl and Plenum Air Spaces
 - 3.3.6 Application Plan
- 3.4 TERMITICIDE TREATMENT

- 3.4.1 Equipment Calibration and Tank Measurement
- 3.4.2 Mixing and Application
- 3.4.3 Treatment Method
 - 3.4.3.1 Surface Application
 - 3.4.3.2 Rodding and Trenching
- 3.4.4 Sampling
- 3.5 CLEAN UP, DISPOSAL, AND PROTECTION
 - 3.5.1 Clean Up
 - 3.5.2 Disposal of Termiticide
 - 3.5.3 Protection of Treated Area
- 3.6 CONDITIONS FOR SATISFACTORY TREATMENT
 - 3.6.1 Equipment Calibrations and Measurements
 - 3.6.2 Testing
 - 3.6.3 Disturbance of Treated Soils
 - 3.6.4 Termites Found Within the Warranty Period
- 3.7 RE-TREATMENT

-- End of Section Table of Contents --

USACE / NAVFAC / AFCEC / NASA UFGS-31 31 16 (August 2008)

Preparing Activity: USACE Superseding
UFGS-31 31 16 (April 2006)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated July 2013

SECTION 31 31 16

SOIL TREATMENT FOR SUBTERRANEAN TERMITE CONTROL 08/08

NOTE: This guide specification covers the requirements for termiticide treatment measures for subterranean termite control.

Adhere to UFC 1-300-02 Unified Facilities Guide Specifications (UFGS) Format Standard when editing this guide specification or preparing new project specification sections. Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable items(s) or insert appropriate information.

Remove information and requirements not required in respective project, whether or not brackets are present.

Comments, suggestions and recommended changes for this guide specification are welcome and should be submitted as a Criteria Change Request (CCR).

PART 1 GENERAL

NOTE: Termite infestation exists throughout the United States and overseas areas with the exception of Alaska. Soil treatment will be specified for all types of construction where termites are likely to establish colonies and make concealed access to wood construction, including wood doors, windows, finish, and trim, or to wood-product, cloth, or cellulose storage in buildings. Soil treatment will also be required for structures constructed of or containing wood-preservative-treated items. However, soil treatment is not required for power plants, central-heating plants, water- or sewer-treatment plants, incinerators, pump houses, and structures of similar nature which have neither wood in their construction nor wood or cellulose items stored

within, and which have little chance of conversion to alternative uses.

Modification of this section, including materials, concentrations, or rates of application, considered necessary because of climatic conditions, porosity of soil to be treated, type of termite, or heavy infestation of termites, will be as recommended by the certified installation pest management coordinator. The modification will be in accordance with the guidance contained in the installation pest management program. Army Regulation 210-50, Housing Management, paragraph SPECIAL CONDITIONS, prohibits termiticide treatment through or under concrete slabs where HVAC ducts or vents are within or beneath the slab. Information is also available from state and local agriculture agencies and from the EPA National Pesticide Telephone Network at 1-800-858-7378.

When termites are known to be present on the project site, any crawl space on the ground level designed in a building needs to be designed for a concrete cover to be placed over the soil after treatment by a termiticide. Since the crawl space remains accessible to people and animals, it requires the concrete cover and signage.

For maximum termite protection, new structures should be designed and constructed using CCA- or borate-treated lumber, especially for foundation members. Untreated lumber in existing structures may be treated using rods of CCA or borate salts which can be inserted into non-treated wood and dissolved with water for absorption by the wood.

1.1 REFERENCES

NOTE: This paragraph is used to list the publications cited in the text of the guide specification. The publications are referred to in the text by basic designation only and listed in this paragraph by organization, designation, date, and title.

Use the Reference Wizard's Check Reference feature when you add a RID outside of the Section's Reference Article to automatically place the reference in the Reference Article. Also use the Reference Wizard's Check Reference feature to update the issue dates.

References not used in the text will automatically be deleted from this section of the project specification when you choose to reconcile references in the publish print process.

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

7 USC Section 136

Federal Insecticide, Fungicide, and
Rodenticide Act

1.2 SUBMITTALS

NOTE: Review submittal description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list to reflect only the submittals required for the project.

The Guide Specification technical editors have designated those items that require Government approval, due to their complexity or criticality, with a "G." Generally, other submittal items can be reviewed by the Contractor's Quality Control System. Only add a "G" to an item, if the submittal is sufficiently important or complex in context of the project.

For submittals requiring Government approval on Army projects, a code of up to three characters within the submittal tags may be used following the "G" designation to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office (Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for Resident Office; and "PO" for Project Office. Codes following the "G" typically are not used for Navy, Air Force, and NASA projects.

Choose the first bracketed item for Navy, Air Force and NASA projects, or choose the second bracketed item for Army projects.

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for [Contractor Quality Control approval.] [information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Termiticide Application Plan[; G][; G, [____]]
Termiticides
Foundation Exterior
Utilities and Vents
Crawl and Plenum Air Spaces

Verification of Measurement
Application Equipment
Warranty

SD-04 Samples

Termiticides

SD-06 Test Reports

Equipment Calibration and Tank Measurement
Soil Moisture
Quality Assurance

SD-07 Certificates

Qualifications

1.3 QUALITY ASSURANCE

Comply with 7 USC Section 136 for requirements on Contractor's licensing, certification, and record keeping. Maintain daily records using Pest Management Maintenance Record, DD Form 1532-1 and submit copies of records when requested by the Contracting Officer. These forms may be obtained from the main web site:

<http://www.dtic.mil/whs/directives/infomgt/forms/ddforms1500-1999.htm>

Upon completion of this work, submit Pest Management Report DD Form 1532 signed by an officer of the Contractor, identifying target pest, type of operation, brand name and manufacturer of pesticide, formulation, concentration or rate of application used.

1.3.1 Qualifications

NOTE: For projects located in North Carolina, add
the text enclosed in brackets to the end of this
paragraph.

For the application of pesticides, use the services of a subcontractor whose principal business is pest control. The subcontractor shall be licensed and certified in the state where the work is to be performed. Termiticide applicators shall also be certified in the U.S. Environmental Protection Agency (EPA) pesticide applicator category which includes structural pest control. Submit the qualifications and state license number of the termiticide applicator.

[The subcontractor shall:

- a. Have personnel with a state of North Carolina certification as required by Pesticide Law of 1971 as amended.
- b. Check in with insect vectors personnel prior to application of pesticide and herbicides for projects located at Camp Lejeune.
- c. Provide a submittal with the following information to the Contracting Officer:

- (1) Quantity of pesticide used.
- (2) Rate of dispersion.
- (3) Percent of use.
- (4) Total amount used.]

1.3.2 Safety Requirements

Formulate, treat, and dispose of termiticides and their containers in accordance with label directions. Draw water for formulating only from sites designated by the Contracting Officer, and fit the filling hose with a backflow preventer meeting local plumbing codes or standards. The filling operation shall be under the direct and continuous observation of a contractor's representative to prevent overflow. Secure pesticides and related materials under lock and key when unattended. Ensure that proper protective clothing and equipment are worn and used during all phases of termiticide application. Dispose of used pesticide containers off Government property.

1.4 DELIVERY, STORAGE, AND HANDLING

1.4.1 Delivery

Deliver termiticide material to the site in the original unopened containers bearing legible labels indicating the EPA registration number and manufacturer's registered uses. All other materials, to be used on site for the purpose of termite control, shall be delivered in new or otherwise good condition as supplied by the manufacturer or formulator.

1.4.2 Inspection

Inspect termiticides upon arrival at the job site for conformity to type and quality in accordance with paragraph TERMITICIDES. Each label shall bear evidence of registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended or under appropriate regulations of the host county. Other materials shall be inspected for conformance with specified requirements. Remove unacceptable materials from the job site.

1.4.3 Storage

Store materials in designated areas and in accordance with manufacturer's labels. Termiticides and related materials shall be kept under lock and key when unattended.

1.4.4 Handling

Observe manufacturer's warnings and precautions. Termiticides shall be handled in accordance with manufacturer's labels, preventing contamination by dirt, water, and organic material. Protect termiticides from sunlight as recommended by the manufacturer.

1.5 SITE CONDITIONS

The following conditions will determine the time of application.

1.5.1 Soil Moisture

Soils to be treated shall be tested immediately before application. Test soil moisture content to a minimum depth of 75 mm 3 inches. The soil

moisture shall be as recommended by the termiticide manufacturer. The termiticide will not be applied when soil moisture exceeds manufacturer's recommendations because termiticides do not adhere to the soil particles in saturated soils.

1.5.2 Runoff and Wind Drift

Do not apply termiticide during or immediately following heavy rains. Applications shall not be performed when conditions may cause runoff or create an environmental hazard. Applications shall not be performed when average wind speed exceeds 16 km 10 miles per hour. The termiticide shall not be allowed to enter water systems, aquifers, or endanger humans or animals.

1.5.2.1 Vapor Barriers and Waterproof Membranes

Termiticide shall be applied prior to placement of a vapor barrier or waterproof membrane.

1.5.2.2 Utilities and Vents

Prior to application, HVAC ducts and vents located in treatment area shall be turned off and blocked to protect people and animals from termiticide. Submit written verification that utilities and vents have been located and treated as specified.

1.5.3 Placement of Concrete

Place concrete covering treated soils as soon as the termiticide has reached maximum penetration into the soil. Time for maximum penetration shall be as recommended by the manufacturer.

1.6 WARRANTY

NOTE: Use 5 years in temperate regions and 3 years in tropical and subtropical regions. Warranty period and the Contractor's responsibilities during the warranty period may be modified to be consistent with prevailing state or local practices. For Navy projects, modifications must be approved by the cognizant EFD applied biologist. NAVFAC Headquarters point of contact is the Assistant for Applied Biology Policy, Code 13411, telephone (703) 325-8183.

Submit a copy of Contractor's [3] [5] [_____] -year written warranty against infestations or reinfestations by subterranean termites of the buildings or building additions constructed under this contract. Warranty shall include annual inspections of the buildings or building additions. If live subterranean termite infestation or subterranean termite damage is discovered during the warranty period, and the soil and building conditions have not been altered in the interim:

- a. Retreat the soil and perform other treatment as may be necessary for elimination of subterranean termite infestation;
- b. Repair damage caused by termite infestation; and

c. Reinspect the building approximately 180 days after the retreatment.

PART 2 PRODUCTS

2.1 TERMITICIDES

Submit manufacturer's label and Material Safety Data Sheet (MSDS) for termiticides proposed for use. Provide termiticides currently registered by the EPA or approved for such use by the appropriate agency of the host county. Select non-repellant termiticide for maximum effectiveness and duration after application. The selected termiticide shall be suitable for the soil and climatic conditions at the project site. Submit samples of the pesticides used in this work. The Contracting Officer may draw, at any time and without prior notice, from stocks at the job site; should analysis, performed by the Government, indicate such samples to contain less than the amount of active ingredient specified on the label, work performed with such products shall be repeated, with pesticides conforming to this specification, at no additional cost to the Government.

PART 3 EXECUTION

3.1 VERIFICATION OF MEASUREMENT

Once termiticide application has been completed, measure tank contents to determine the remaining volume. The total volume measurement of used contents for the application shall equal the established application rate for the project site conditions. Provide written verification that the volume of termiticide used meets the application rate.

3.2 TECHNICAL REPRESENTATIVE

The certified installation pest management coordinator shall be the technical representative, shall be present at all meetings concerning treatment measures for subterranean termites, and may be present during treatment application. The command Pest Control Coordinator shall be contacted prior to starting work.

3.3 SITE PREPARATION

Site preparation shall be in accordance with Sections 31 11 00 CLEARING AND GRUBBING, 31 00 00 EARTHWORK, 32 92 19 SEEDING, 32 92 23 SODDING, 32 92 26 SPRIGGING, and 32 93 00 EXTERIOR PLANTS. Work related to final grades, landscape plantings, foundations, or any other alterations to finished construction which might alter the condition of treated soils, shall be coordinated with this specification.

3.3.1 Ground Preparation

Food sources shall be eliminated by removing debris from clearing and grubbing and post construction wood scraps such as ground stakes, form boards, and scrap lumber from the site, before termiticide application begins.

3.3.2 Verification

Before work starts, verify that final grades are as indicated and smooth grading has been completed in accordance with Section 31 00 00 EARTHWORK. Soil particles shall be finely graded with particles no larger than 25 mm 1

inch and compacted to eliminate soil movement to the greatest degree.

3.3.3 Foundation Exterior

Provide written verification that final grading and landscape planting operations will not disturb treatment of the soil on the exterior sides of foundation walls, grade beams, and similar structures.

3.3.4 Utilities and Vents

Provide written verification that the location and identity of HVAC ducts and vents, water and sewer lines, and plumbing have been accomplished prior to the termiticide application.

3.3.5 Crawl and Plenum Air Spaces

Provide written verification that the location and identity of crawl and plenum air spaces have been accomplished prior to the termiticide application.

3.3.6 Application Plan

Submit a [Termiticide Application Plan](#) with proposed sequence of treatment work with dates and times for approval before starting the specified treatment. Include the termiticide trade name, EPA registration number, chemical composition, formulation, concentration of original and diluted material, application rate of active ingredients, method of application, area/volume treated, amount applied; and the name and state license number of the state certified applicator.

3.4 TERMITICIDE TREATMENT

3.4.1 Equipment Calibration and Tank Measurement

Submit a listing of equipment to be used. Immediately prior to commencement of termiticide application, calibration tests shall be conducted on the application equipment to be used and the application tank shall be measured to determine the volume and contents. These tests shall confirm that the [application equipment](#) is operating within the manufacturer's specifications and will meet the specified requirements. Submit written certification of the equipment calibration test results within 1 week of testing.

3.4.2 Mixing and Application

Formulating, mixing, and application shall be performed in the presence of the Contracting Officer or the technical representative. A closed system is recommended as it prevents the termiticide from coming into contact with the applicator or other persons. Water for formulating shall only come from designated locations. Filling hoses shall be fitted with a backflow preventer meeting local plumbing codes or standards. Overflow shall be prevented during the filling operation. Prior to each day of use, the equipment used for applying termiticides shall be inspected for leaks, clogging, wear, or damage. Any repairs are to be performed immediately.

3.4.3 Treatment Method

NOTE: Application shall be as a surface spray

and/or by rodding and trenching.

For areas to be treated, establish complete and unbroken vertical and/or horizontal soil poison barriers between the soil and all portions of the intended structure which may allow termite access to wood and wood related products. Application shall not be made to areas which serve as crawl spaces or for use as a plenum air space.

3.4.3.1 Surface Application

Use surface application for establishing horizontal barriers. Surface applicants shall be applied as a coarse spray and provide uniform distribution over the soil surface. Termiticide shall penetrate a minimum of 25 mm 1 inch into the soil, or as recommended by the manufacturer.

3.4.3.2 Rodding and Trenching

Use rodding and trenching for establishing vertical soil barriers. Trenching shall be to the depth of the foundation footing. Width of trench shall be as recommended by the manufacturer, or as indicated. Rodding or other approved method may be implemented for saturating the base of the trench with termiticide. Immediately after termiticide has reached maximum penetration as recommended by the manufacturer, backfilling of the trench shall commence. Backfilling shall be in 150 mm 6 inch rises or layers. Each rise shall be treated with termiticide.

3.4.4 Sampling

The Contracting Officer may draw from stocks at the job site, at any time and without prior notice, take samples of the termiticides used to determine if the amount of active ingredient specified on the label is being applied.

3.5 CLEAN UP, DISPOSAL, AND PROTECTION

Once application has been completed, proceed with clean up and protection of the site without delay.

3.5.1 Clean Up

The site shall be cleaned of all material associated with the treatment measures, according to label instructions, and as indicated. Excess and waste material shall be removed and disposed off site.

3.5.2 Disposal of Termiticide

Dispose of residual termiticides and containers off Government property, and in accordance with label instructions and EPA criteria.

3.5.3 Protection of Treated Area

Immediately after the application, the area shall be protected from other use by erecting barricades and providing signage as required or directed. Signage shall be in accordance with Section 10 14 01 EXTERIOR SIGNAGE. Signage shall be placed inside the entrances to crawl spaces and shall identify the space as treated with termiticide and not safe for children and animals.

3.6 CONDITIONS FOR SATISFACTORY TREATMENT

3.6.1 Equipment Calibrations and Measurements

Where results from the equipment calibration and tank measurements tests are unsatisfactory, re-treatment will be required.

3.6.2 Testing

Should an analysis, performed by a third party, indicate that the samples of the applied termiticide contain less than the amount of active ingredient specified on the label, and/or if soils are treated to a depth less than specified or approved, re-treatment will be required.

3.6.3 Disturbance of Treated Soils

Soil and fill material disturbed after treatment shall be re-treated before placement of slabs or other covering structures.

3.6.4 Termites Found Within the Warranty Period

If live subterranean termite infestation or termite damage is discovered during the warranty period, re-treat the site.

3.7 RE-TREATMENT

Where re-treatment is required, comply with the requirements specified in paragraph WARRANTY.

-- End of Section --