
USACE / NAVFAC / AFCEC / NASA UFGS-31 31 16.19 (August 2014)

Preparing Activity: NAVFAC Superseding
UFGS-31 31 16.19 (April 2006)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated April 2015

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08/14

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SECTION 31 31 16.19

MESH TERMITE CONTROL BARRIER SYSTEM 08/14

NOTE: This guide specification covers the requirements for termite control barrier system.

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).

NOTE: This specification consists of furnishing and installing a complete stainless steel mesh system at all penetrations, joints and perimeter foundations as a physical barrier below the concrete slabs and foundations of a structure to prevent the entry of Formosan and other ground termites into wood components of the structure, similar to laying down a chemical barrier of soil termiticide treatments. The use of this material does not preclude the use of other preventive measures such as chemical treatment, basaltic termite barrier system and pressure treated lumber for construction to provide maximum protection to the structure. In fact, it is recommended that this material be used in conjunction with chemical treatment at all vulnerable areas such as penetration areas around electrical conduits and plumbing pipes that penetrate the slab as well as the foundation perimeter and shoulder portions of the barrier.

This termite physical protection system must comply with all codes. It is also recommended that pressure treated lumber be used to provide maximum protection to the structure.

PART 1 GENERAL

NOTE: Termite infestation exists throughout the United States and overseas areas with the exception of Alaska. Mesh termite barriers can be prescribed for installation at all sites where termites are likely to establish colonies and make concealed entries to wood construction, when it is deemed appropriate and cost effective.

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.

ASTM INTERNATIONAL (ASTM)

ASTM A478	(1997; R 2013) Standard Specification for Chromium-Nickel Stainless Steel Weaving and Knitting Wire
ASTM A580/A580M	(2014) Standard Specification for Stainless Steel Wire

1.2 SYSTEM DESCRIPTION

NOTE: A complete termite control barrier system encompasses a fine steel mesh placed across all termite entry points to the building. Principal

entry points include all cracks, joints, penetrations and other termite entry points within the concrete slabs and cavities in walls. The steel mesh and fastening system physically prevents the termites from entering the building. The mesh is too fine for the termites to squeeze through, too hard to chew through, and highly corrosion resistant for future break down.

Place the stainless steel termite mesh barrier across all openings, joints, penetrations and other termite entry points to the building (including all shrinkage cracks in concrete slabs and built penetrations in slabs and walls that termites may use for access point) and as per manufacturer's recommendations. Clamp, parge adhere, bond and/or embed the termite mesh to the material surrounding the opening as per the manufacturer's recommendations. Install with no gaps, penetrations or damage to the mesh system.

1.3 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.

An "S" following a submittal item indicates that the submittal is required for the Sustainability Notebook to fulfill federally mandated sustainable requirements in accordance with Section 01 33 29 SUSTAINABILITY REPORTING.

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.][for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submittals with an "S" are for inclusion in the Sustainability Notebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Barrier Mesh

Shop drawings of the termite barrier mesh system installation at all perimeter foundations, joint and penetration conditions.
Installation[; G][; G, [_____]]

SD-03 Product Data

Barrier MeshMaterials

Accessories

System Description

Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical appearance and other characteristics of materials or equipment.

Manufacturer's Guidance; G[, [_____]]

Visual Inspection Guide; G[, [_____]]

SD-04 Samples

Barrier Mesh; G[, [_____]]

Samples of stainless steel mesh to be used in this work, 102 by 102 mm 4 by 4 inches.

SD-07 Certificates

System Installers; G[, [_____]]

Certification that installers meet the requirements specified under paragraph entitled "Qualifications of System Installers" and the effective time period of accreditation.

Materials

Statements signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements. Must be dated after award of project contract and clearly name the project.

SD-08 Manufacturer's Instructions

Manufacturer's Installation Instruction Manual.

Preprinted material describing installation of a product, system or material, including special notices and Material Safety Data sheets concerning impedances, hazards and safety precautions.

SD-09 Manufacturer's Field Reports

Site Conditions

Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.

Written verification that site conditions are as required and other site work will not disturb the installation.

SD-11 Closeout Submittals

Warranty

Written warranty required in paragraph entitled "Warranty" and signed jointly by an officer of the Contractor and the supplier.

1.4 QUALITY ASSURANCE

1.4.1 QUALIFICATIONS OF SYSTEM INSTALLERS

- a. The installer shall be trained in the behavior of termites and the installation techniques of the mesh barrier and accredited by the system supplier.
- b. The installer shall employ only workers trained and accredited at the appropriate level by the system supplier.

1.4.2 PREINSTALLATION MEETING

Convene a preinstallation meeting at least one week prior to beginning installation, to review conditions of preparation, storage and handling, installation procedures, sequencing, protection and coordination with other related work. Attendance by the project superintendent, installer, installer's crew leader, and representatives of the trades affected by this work is required. Notify the Contracting Officer at least 10 calendar days before meeting.

1.5 DELIVERY, STORAGE AND HANDLING

Deliver materials to the site in original unbroken packaging and containers, with original labels in place. Bonding cement shall be in the original sealed containers with all labels intact to include any EPA designation. Store materials in conformance with system supplier's recommendations.

1.6 WARRANTY

NOTE: Use 5 years for family housing and 3 years for other types of facilities.

Provide a minimum 1 year warranty against infestations or reinfestation by subterranean termites of existing buildings with mesh barrier system installed during repair or renovation. Furnish a 5-year written warranty against infestations or reinfestation by subterranean termites of the buildings or building additions constructed under this contract. Perform annual inspections of the building[s] or building addition[s]. If live subterranean termite infestation or subterranean termite damage is discovered during the warranty period, and building conditions have not been altered in the interim, the Contractor shall:

- a. Correct defective stainless steel mesh installation 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 calendar days after the repair.

PART 2 PRODUCTS

NOTE: Check with local agencies to determine the local building code requirements and specifications to ensure conformance where required.

2.1 MATERIALS

2.1.1 Asbestos Prohibition

No asbestos containing materials or equipment are permitted at the job site. The contractor shall ensure that materials proposed for the project are asbestos free.

2.1.2 Barrier Mesh

Stainless steel mesh shall conform to ASTM A478 and ASTM A580/A580M, Type A1AA marine grade 316 stainless steel mesh of 0.18 mm 0.007 in diameter wire with mesh openings of 0.66 by 0.45 mm 0.026 by 0.018 inches.

2.1.3 Accessories

Parging adhesives, bonding cement, high grade stainless steel clamps, ties, and other accessories as recommended by system supplier.

PART 3 EXECUTION

NOTE: The stainless steel mesh must be installed in a manner to provide maximum protection to the dwelling. The material provides a physical barrier to the termites, thus, preventing entry. A range of techniques and material widths may be required to meet site conditions. The designer is required to determine the extent of openings to be covered to provide quantity estimates for the material

installed.

3.1 SITE VERIFICATION

3.1.1 Site Preparation

Examine the substrates and conditions under which work of this section will be performed. Work related to final grades, landscape plantings, foundations, or any other alternations to finished construction that might alter the condition of the site, shall be coordinated with this specification. Do not proceed until any unsatisfactory conditions detrimental to timely and proper completion of the work have been corrected.

3.1.2 Ground Preparation

Eliminate termite food sources by removing wood debris from the clearing and grubbing operations and construction wood scraps such as ground stakes, form boards, and scrap lumber from the work area, before installing the mesh barrier.

3.1.3 Verification

Before installing the mesh barrier, verify that final grades are as indicated and smooth grading has been completed. Provide written verification that the site conditions under the proposed slab(s) are proper for the installation of termite barrier system as per manufacturer's recommendations. Perform work related to final grades, landscape plantings, foundations, or any other operations that might alter the condition of the site, in accordance with this specification. Before installation, ensure that:

- a. The ground has been cleared of wood scraps such as ground stakes, forms and other termite food sources.
- b. The work area has been filled with finely graded soil consisting of particle sizes no larger than 25 mm 1 in and compacted to eliminate soil movement. The condition of the site shall meet the manufacturer's recommendations for installing the mesh barrier.
- c. Footings and foundations, and outer forms are in place.
- d. Communications, electrical and plumbing penetrating pipes are in place.

3.2 INSTALLATION

3.2.1 Instructions

Strictly follow the manufacturer's instructions published in Manufacturer's Installation Instruction Manual.

3.2.2 Installation Sequence

- a. Install mesh barrier in accordance with the manufacturer's recommendations, fit and clamp mesh around all pipe penetrations, and terminate at perimeters as appropriate for the building construction as described in installation manual. The mesh shall be lap-jointed 1.0 to 1.5 cm 0.39 to 0.59 inch and the joint may be strengthened by using bonding cement a minimum distance of 50.8 to 101.6 cm 20 to 40 inches

inches along the joint.

- b. Install special fittings appropriate to construction as described in installation manual.
- c. Following installation of mesh and vapor barrier, install reinforcing steel and concrete specified under other sections. Penetrations and shrinkage cracks through concrete slabs shall be sealed as recommended.
- d. Where required, integrate mesh into subsequent construction as described in installation manual.

3.3 PROTECTION

Protect the installed termite mesh system, attachments and accessories before, during and after the work of all trades as required by the system supplier or directed by the Contracting Officer.

Do not place dissimilar metals in contact with the stainless steel mesh to avoid an electrolytic reaction.

3.4 VISUAL INSPECTION GUIDE

To maintain resistance to termites, the system shall be completed and not disturbed, penetrated, or damaged during the remaining contract time period. The installer shall provide Manufacturer's Guidance for performing a visual assessment of the installed mesh barrier to ensure the mesh barrier provides the designed termite physical barrier.

3.5 FIELD QUALITY CONTROL

In the event following trades on the site move or damage the mesh, clamps or parging mix, immediately contact the mesh installer, for recommendation of necessary repairs.

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