
USACE / NAVFAC / AFCEA UFGS-02362 (August 2004)

Preparing Activity: NAVFAC
Superseding
UFGS-02362N (February 2003)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated 22 December 2004

Latest change indicated by CHG tags

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08/04

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SECTION 02362

BASALTIC TERMITE BARRIER 08/04

NOTE: This guide specification covers the requirements for a basaltic termite barrier.

Comments and suggestions on this guide specification are welcome and should be directed to the technical proponent of the specification. A listing of technical proponents, including their organization designation and telephone number, is on the Internet.

Recommended changes to a UFGS should be submitted as a Criteria Change Request (CCR).

Use of electronic communication is encouraged.

Brackets are used in the text to indicate designer choices or locations where text must be supplied by the designer.

NOTE: This specification consists of furnishing and placing of graded basaltic sand as a physical barrier, below the concrete slab or foundation of a structure to prevent the entry of Formosan ground termites into wood components of the structure, similar to laying down a chemical barrier of soil termiticide treatments. The use of this preventive measure does not preclude the use of other preventive measures such as chemical treatment, physical termite mesh control barrier system and 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 treatments of vulnerable areas such as around electrical conduits, plumbing pipes that penetrate the slab, and the shoulder portions of the barrier and with pressure treated lumber to provide maximum protection to the structure.

NOTE: INSTRUCTIONS TO VIEW/PRINT GRAPHICS

FROM CCB DISKS OR WEBSITE:

1. Put in Disk A and go to CCB Program, or go to www.ccb.org and sign in.
2. Choose Browse CCB Libraries.
3. Choose Specifications Library.
4. Choose NAVFAC Specifications.
5. Choose NAVFAC Specifications graphics.
6. Choose Navy Graphics Table of Contents and then go to the specified Guide Spec and click on the needed graphic/table.

PART 1 GENERAL

1.1 REFERENCES

NOTE: Issue (date) of references included in project specifications need not be more current than provided by the latest guide specification. Use of SpecsIntact automated reference checking is recommended for projects based on older guide specifications.

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 C 128 | (2004) Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate |
| ASTM C 131 | (2003) Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine |
| ASTM C 136 | (2004) Sieve Analysis of Fine and Coarse Aggregates |
| ASTM C 28/C 28M9 | (1994) Potential Alkali-Silica Reactivity of Aggregates (Chemical Method) |

1.2 SUBMITTALS

NOTE: Submittals must be limited to those necessary for adequate quality control. The importance of an item in the project should be one of the primary factors in determining if a submittal for the item should be required.

A "G" following a submittal item indicates that the submittal requires Government approval. Some submittals are already marked with a "G". Only delete an existing "G" if the submittal item is not complex and can be reviewed through the Contractor's Quality Control system. Only add a "G" 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 projects.

Submittal items not designated with a "G" are considered as being for information only for Army projects and for Contractor Quality Control approval for Navy 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.] The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-06 Test Reports

Basalt Sand

1.3 STORAGE AND HANDLING

Store and handle the material so as to prevent contamination by dirt, water, and organic material.

PART 2 PRODUCTS

2.1 BASALT SAND

Clean, dry sand material manufactured from crushed basalt rock meeting the following requirements.

- a. Material gradation, ASTM C 136.

| <u>Sieve Size</u> | <u>Percent Passing</u> |
|-----------------------|----------------------------|
| 4.75 mm | 100 |
| 2.36 mm | 95 - 100 |
| 2.00 mm | 75 - 95 |

| <u>Sieve Size</u> | <u>Percent Passing</u> |
|-----------------------|----------------------------|
| 1.70 mm | 35 - 50 |
| 1.18 mm | 0 - 10 |

| <u>Sieve Size</u> | <u>Percent Passing</u> |
|-----------------------|----------------------------|
| No. 4 | 100 |
| No. 8 | 95 - 100 |
| No. 10 | 75 - 95 |
| No. 12 | 35 - 50 |
| No. 16 | 0 - 10 |

- b. Specific gravity, ASTM C 128, 2.80.
- c. Silica (S102) content, ASTM C 28/C 28M9, 45 percent.
- d. Abrasion loss, after 500 revolutions, 20 percent, when tested in accordance with ASTM C 131.

PART 3 EXECUTION

3.1 PREPARATION

Prior to placing material, remove visible plant roots and standing water from the excavated area. Inspect utility trenches to ensure they are sufficiently wide to permit adequate cover under, around, and over pipes and conduit that will be encapsulated with the basaltic termite barrier (BTB). Also inspect the foundation perimeter to ensure that there is sufficient room between the sides of excavations and edges of foundations to provide the required barrier depth and width.

3.2 PLACEMENT

- a. General. Place material in one lift for thicknesses of 150 mm 6 inches or less and in successive lifts of 100 to 150 mm 4 to 6 inches where the indicated thickness is greater than 150 mm 6 inches. Compact each lift prior to placing successive lifts. Use power driven, vibrating-plate type tampers for large areas and rod-and-plate type hand tampers for small areas such as utility trenches and foundation and walk edges.

3.2.1 Slab-on-Grade

NOTE: Show the required depths on the drawings.
100 mm Four inch depth is the minimum required. For
areas where capillary action is a problem, consult a
soils engineer if the depth should be increased or
other capillary prevention measures are required.

Provide a barrier of the depth indicated. Rake smooth and machine tamp, giving at least three passes over the entire area. Hand tamp around pipe and conduit risers.

3.2.1.1 Utility Trenches

Place the required depth of material for bedding in trenches prior to placing pipes and conduits. Hand tamp. For pipes 75 mm 3 inches and larger in diameter: After placing pipe, bring material up to the top of the pipe and carefully hand tamp the material. Then, bring material up to the top of the trench and tamp. For pipes smaller than 75 mm 3 inches in diameter and for conduit: Bring material up to the top of the trench and tamp.

3.2.1.2 Edges

After concrete placement and form removal, remove dirt, loose concrete, and other debris and hand place and tamp additional material to existing grade.

3.2.2 CMU Block Walls

Place the material in ungrouted cells at a height of at least one course above grade of the wall.

3.2.3 Fence Posts and Utility Poles

- a. Line the designated hole with a geotextile or similar material before proceeding with the work.
- b. Once the geotextile is in place, put a 100 to 150 mm 4 to 6 inch layer of the BTB at the bottom of the hole. Hand tamp. After positioning the fence post or utility pole in the middle of the hole, fill around the sides, compacting the material after successive lifts of 150 to 300 mm 6 to 12 inches until the hole is completely filled. Ensure that a 100 to 150 mm 4 to 6 inch BTB barrier exists around the perimeter of the post or pole.

3.2.4 Retaining Walls

Place the required amount of material below the footing and up to the grade level of the wall. Place lifts of 100 to 150 mm 4 to 6 inches with compaction of each lift prior to placing successive lifts.

-- End of Section --