

BORA-CARE[®]

REMEDIAL PROTOCOLS



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This document contains examples of post-construction uses of Bora-Care in markets that are flush with opportunities. Bora-Care can be used in a wide variety of ways to protect wood by killing and preventing infestation of rot and other wood destroying insect species. The examples that follow are representative of markets about which our technical team receives the most calls.

WOOD-BORING BEETLES



Treat the infested and surrounding area with Bora-Care according to label directions. When practical, inject diluted Bora-Care solution into beetle emergence holes and galleries. It is important to treat the entire infested wood member.

Because wood can contain active beetle larvae with no surface evidence of infestation, the best method of control is to treat the entire area where an infestation has been found. This would include all of the wood in a crawl space, wall or attic showing any signs of damage.

Infested wood flooring can be treated with Bora-Care by spray or brush application. Any existing finish must be removed by sanding or stripping prior to application. Apply a 2:1 Bora-Care solution at a rate of approximately one gallon of solution per 500 square feet of floor surface. (Refer to the Bora-Care label section on treating flooring for detailed application rates and methods.)

Preventative Treatments: Uninfested wood can be protected from beetles with a Bora-Care treatment. For framed wood surfaces above ground, apply a 5:1 Bora-Care solution to unfinished wood for beetle control. After treatment, exterior treated wood surfaces should be coated with a water repellent finish such as paint or stain. It is important to allow the Bora-Care to completely dry before applying any protective topcoat. (Refer to the Bora-Care label section on preventative

treatment of wooden structures for detailed application rates and methods.)

Efficacy of Treatment: The time required to completely eliminate a beetle infestation with Bora-Care is influenced by several factors. These include the time of year the treatment is performed, beetle species, the degree and age of the infestation, the wood species, moisture content, wood thickness and application technique. Bora-Care is toxic to beetle eggs and young larvae; however, older larvae of species such as old house borers are more resistant and must ingest a larger quantity of the treated wood in order to be controlled.



When possible, direct spray application is recommended; however, inaccessible areas such as wall voids can be treated by foam application.

Treating the back side of ship lap wood before installation



EXAMPLES OF WOOD-BORING BEETLE DAMAGE

Because some of these older larvae can take several years to mature and eat very little wood, they may be able to pupate and emerge several months after treatment. This normally occurs only in logs or large beams. Any beetles that do emerge will not re-infest treated wood and their life cycle is broken at that point. Should isolated beetle activity continue after treatment, individual larvae may be located and eliminated using localized injection techniques.

The season when treatment is performed may also influence the time required for proper control. Applications during late fall and winter, when the beetles are dormant, will have limited immediate effect on mortality. When the larvae become active again in the spring, they will ingest the treated wood, causing death. Complete elimination of adult large beetles such as old house borers may require several months to a year; however, the large majority of active beetle larvae and eggs will be killed more quickly.



Powderpost beetle carcasses and frass in a crawlspace, New Mexico



Beetle damage on wood, New Mexico



Beetle damage in a shiplap wall, Texas

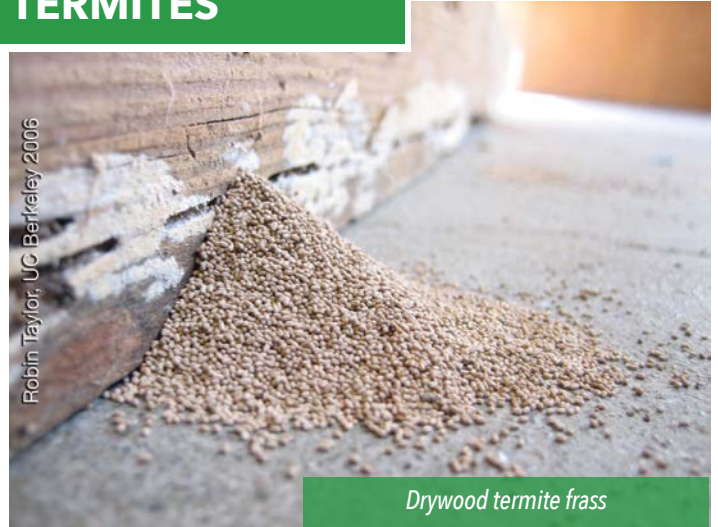


**Treating reclaimed wood is a growing market.
Wood can be treated before installation or after.**

DRYWOOD TERMITES



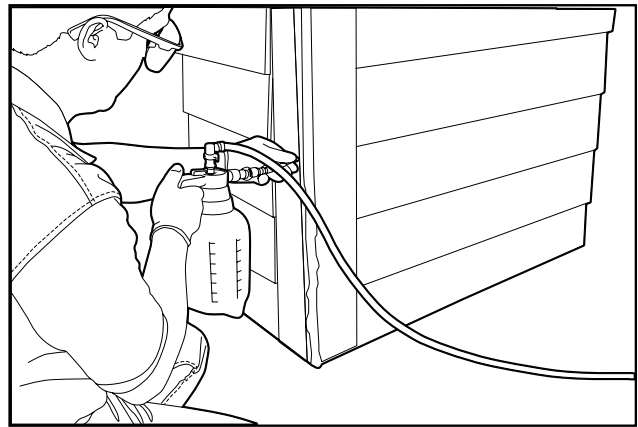
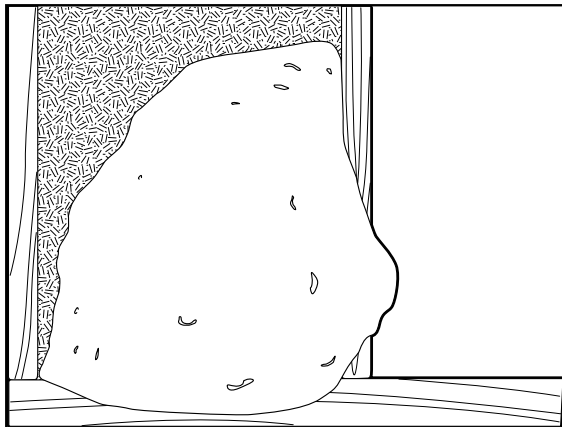
Drywood termites



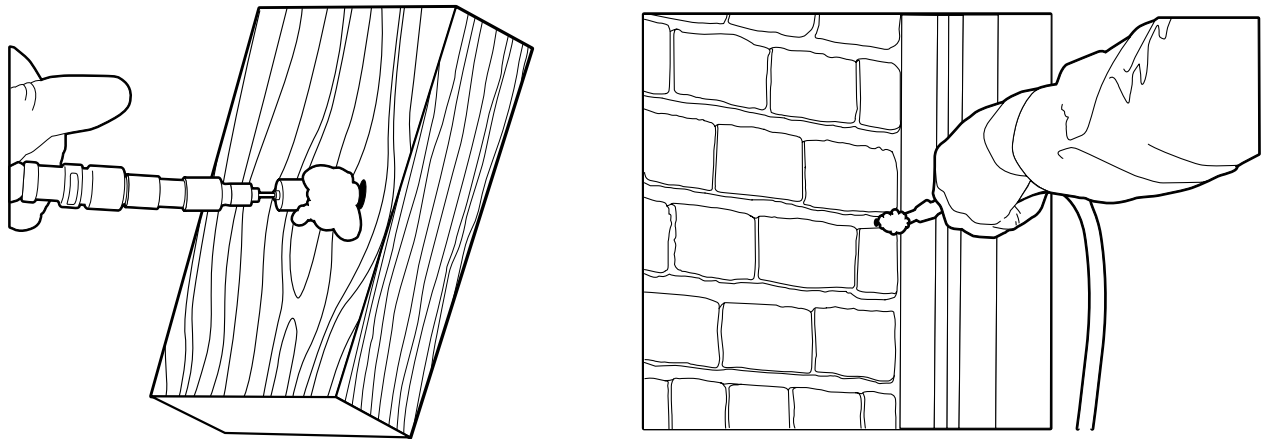
Drywood termite frass

Application Methods: The following methods listed are variations that can be used for a large assortment of drywood termite infestation scenarios.

- a) *Fan Spray:* Use to coat surface wood, larger crevice spaces, galleries and direct contact of any insect activity.
- b) *Pin Stream:* Use to treat narrow crevices.
- c) *Misting:* Voids, attics and hard-to-reach areas.
- d) *Foam:* Use 20:1 expansion ratio. Use for wall voids, galleries, direct insect contact, and any other miscellaneous voids. One liquid gallon equals 0.13 ft³. At a 20:1 expansion, one gallon will treat about 2.6 ft³. ProFoam® Platinum is recommended for Bora-Care foaming applications. Mix 7 oz. of ProFoam Platinum for 20:1 expansion.

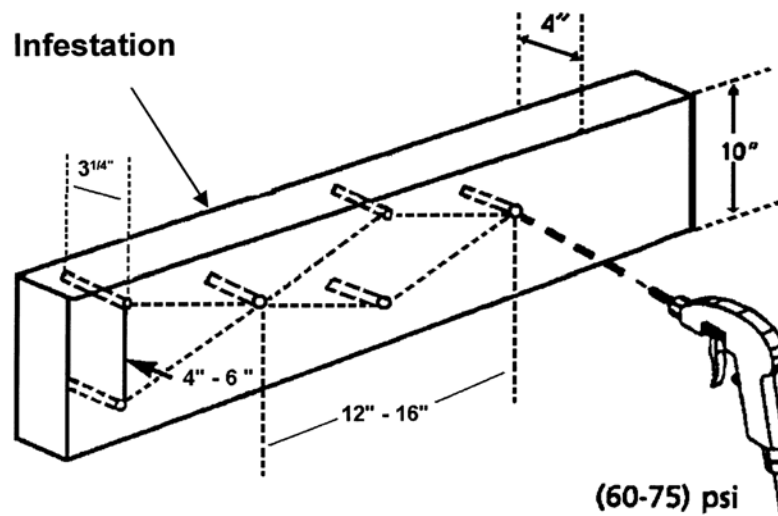


e) *Pressure Injection*: Drill into the infested wood and inject until the liquid or foam runs out of openings, damaged areas or kick-out holes. This procedure should be used in addition to spraying when structural timbers are greater than 4 inches thick and/or for active drywood termite galleries. This procedure can also be used for painted or sealed wood..



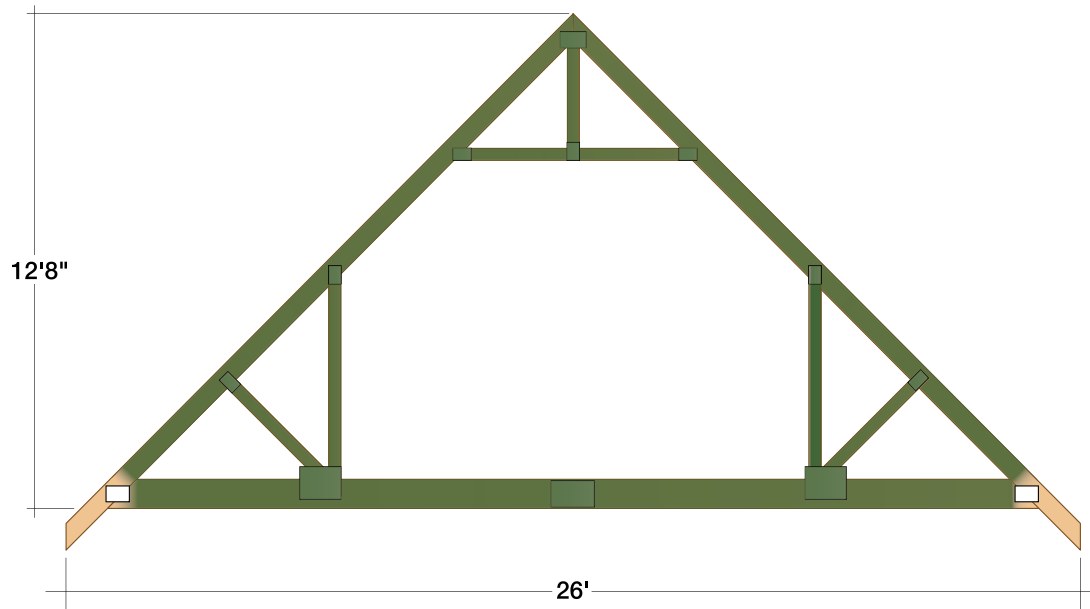
Drilling holes: We recommend drilling holes 3/4 of the depth of the wood member, spaced between 4 to 6 inches apart across the grain and 12 to 16 inches along the grain. However, there is no set standard, and the primary focus is to directly treat the colony and surrounding galleries (Figure 1).

Figure 1



Attics: Focus on the pitched walls and adjoining trusses. Use worksheet below to help determine how much material needed. If an infestation is present beneath or partially hidden by insulation, remove the insulation and directly apply product to those areas (Figure 2).

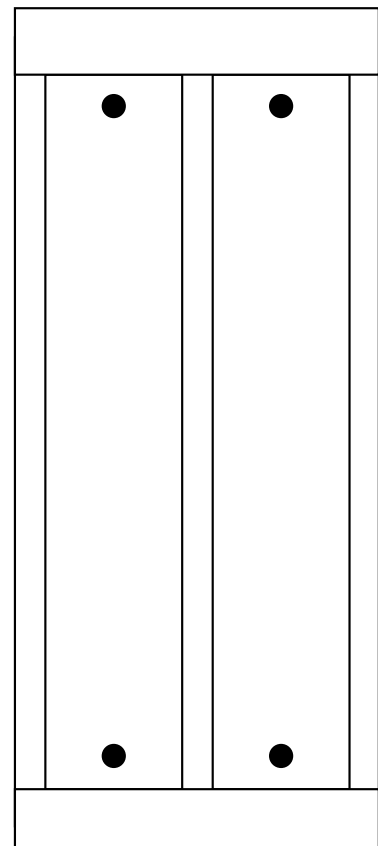
Figure 2



Wall Voids: High pressure misting is best. If possible, drill a small hole at the bottom of the wall near the baseboard and/or drill another hole near the top of the wall, between interior studs. The objective is to obtain uniform coverage of the studs, the top and bottom plates and the back of the wall board inside the void area (Figure 3). Directly apply to the nest with foam if possible. Foam applications are good for longer vertical voids or small voids that can be filled easily. If misting under insulation is possible, then apply. If there is a chance insulation will be compromised, then removal is recommended before application.

Figure 3

Use high pressure mist or dry foam to treat wall voids from either the top or the bottom.



EXTERIOR APPLICATIONS

Bora-Care can be applied to bare siding, trim or logs.

Applications can be made by spray or pressure injection techniques. Painted or sealed wood can be treated by pressure injection, or the wood can be stripped prior to a spray application. See the Dimensional Lumber or Log Home Technical Bulletins for more information on application rates for log homes, decks, siding and more.

Protect any surrounding plants and ornamentals from accidental contact with the solution.

Infested Window and Door Frames: Treat window and door frames by drilling and injecting foam or liquid in the surrounding voids or by drilling and injecting infested wood. Use a moisture meter to determine how well the foam is moving in the voids. Normally, you will only need one hole on each side of the window and one on the bottom. Window and door framing can vary. It is difficult to determine wood framing after the wallboard or sheetrock is installed. Take care not to apply excessive liquid product solution into these areas.

Misting or injecting window and door framing: Apply by mist or injection up to 1 ounce of solution per linear foot of window framing or door framing in areas of application. A 2:1 Bora-Care solution mist application or a 1:1 Bora-Care solution liquid injection is used in confirmed or suspected areas of active infestation.

Foaming into window and door framing: Direct up to 10 ounces of foam per linear foot into wall areas around window and door framing. Use a 2:1 Bora-Care solution mixed with a foam concentrate to create a 20:1 or higher foam ratio for confirmed or suspected activity.

Exterior Overhang Area or Eaves (Soffit Area): If WDOs have penetrated an exterior overhang, soffit or eave area due to direct contact to the ground or excessive moisture, spray the exposed, unfinished wood with Bora-Care 1:1 solution and drill and mist void areas. Active galleries can be injected or foamed soffit or eaves. Application may be made through the soffit vents or by drilling into the soffit/eaves void area. Apply only enough Bora-Care solution to coat the surfaces of the wood, being careful not to over-treat the area.

Decks & Gazebos: Bora-Care can be used to treat wood decks and other exterior structures. Prepare the wood by removing any dirt, debris or sealants that will interfere with the application and absorption of Bora-Care. After the deck is dry to the touch with no standing puddles, a Bora-Care 1:1 solution can be applied to the wood. Following treatment, the deck can be sealed to prolong performance.



ATTIC APPLICATION

REMEMBER, ALWAYS READ, UNDERSTAND AND COMPLY WITH THE LABEL.

This mixing instruction should be used only as a guide for predicting the best amount of Bora-Care material needed to conduct proper termite treatments in attics.

Attic Height

- If ≤ 6 ft. in height, multiply square footage by 3.5
- If >6 ft. in height, multiply square footage by 4.5

Example for Preventative Treatment (Drywood Termite Only):

1,000 square foot attic, 6' tall using a 5:1 solution:

- $1,000 \times 3.5 = 3,500$ sq. ft. wood surface area
- $3,500 \div 400 = 8.75$ gallons of Bora-Care solution needed
- 8.75 gallons of Bora-Care solution $\div 6 = 1.45$ gallons of Bora-Care concentrate

Example for Remedial Treatment (All Termite Species):

1,000 square foot attic, 6' tall using a 1:1 solution:

- $1,000 \times 3.5 = 3,500$ sq. ft. wood surface area
- $3,500 \div 200 = 17.5$ gallons of Bora-Care solution needed
- 17.5 gallons of Bora-Care solution $\div 2 = 8.75$ gallons of Bora-Care concentrate



APPLICATION RATE CHART for Subterranean and Formosan Termites

Bora-Care New Construction 2-Foot Vertical & Horizontal Treatment

For whole house wood treatment, active infestation treatment or drywood termite prevention, refer to the *BORA-CARE Termite Technical Bulletin* or the *Drywood Termite Technical Bulletin*.

The application rates and instructions on this chart are based on standard building practices and materials. All application rates are based on BORA-CARE label instructions. **Always read the BORA-CARE label before application.**

TYPE OF TREATMENT		WHEN TO USE	APPLICATION INSTRUCTIONS	COVERAGE PER 1 GALLON OF 1:1 SOLUTION
SLAB	Slab Foundation (wood & concrete)	Use as preventive treatment against termites.	Apply to sill/base plate and 24" up on studs and other wood members in contact with slab foundation. Apply second coat on sill. Spray concrete 2"-8" horizontally out from sill or base plate. Treat all pipe protrusions within stud walls or free standing in slab 24" up from slab and extending horizontally 6" out on the slab surface.	200 linear feet (Measure linear feet of stud walls to be treated)
	Sheathing (wood)		Vertically apply to both sides of exterior sheathing to point of wetness. If one side is inaccessible, apply two coats to one side at least 20 minutes apart.	400 square feet (Measure area: length X width)
	Bath Traps	To prevent entry of termites.	Apply into bath trap area and extend at least 1' out onto slab surface.	8-16 ounces of solution per square foot of bath trap area
CRAWL SPACE	Crawl Space (wood)	Use as preventive treatment against termites.	Apply to all wood in a 24" area from exterior wall (to include sill plate, header joist, floor joists and subfloor). Apply second coat on sill and header joist. Apply to all wood in contact with foundation pier out 24" from foundation pier.	100 linear feet (Measure linear feet of all foundation walls & piers to be treated)
	Up From Soil (concrete)	To complete the 2' vertical treatment requirement on interior surface of foundation walls.	Measure linear footage of concrete-masonry foundation wall <i>and also</i> around each foundation pier, and multiply by 2 to get square footage of treatment area. Apply to foundation wall and piers 24" up from soil.	400 square feet (Measure area: length X width)
	Exterior Wall Vertical Treatment (wood)	To complete the 2' vertical requirement for exterior foundation treatments.	Apply up 12" up onto structural wood components above the top of the header joist (to include the edge of the sub-floor, sill above sub-floor, stud wall and exterior sheathing).	160 linear feet (in addition to amounts listed above)
BASEMENTS	Basement	Use as preventive treatment against termites.	Apply to all wood in a 24" area from exterior wall (to include sill plate, header joist, floor joists and subfloor). Apply second coat on sill and header joist.	100 linear feet (Measure linear feet of all foundation walls & piers to be treated)
	Up From Concrete	To complete the 2' vertical treatment requirement on interior surface of foundation walls.	Measure linear footage of concrete-masonry foundation wall, and multiply by 2 to get square footage of treatment area. Apply to foundation wall 24" up from concrete.	400 square feet (Measure area: length X width)
	Exterior Wall Vertical Treatment (wood)	To complete the 2' vertical requirement for exterior foundation treatments.	Apply up 12" up onto structural wood components above the top of the header joist (to include the edge of the sub-floor, sill above sub-floor, stud wall and exterior sheathing).	160 linear feet (in addition to amounts listed above)
	Bath Traps	To prevent entry of termites.	Apply into bath trap area and extend at least 1' out onto slab surface.	8-16 ounces of solution per square foot of bath trap area
	Finished Basement	Additional treatment required for finished basement.	Walls in contact with foundation: Vertically apply to all wood including sill plate, total stud boards and all the top plate (or runner). Vertically treat all plumbing protrusions (as listed under slab construction). Spray slab 2"-8" horizontally out from sill or base plate. Interior Walls: Apply to sill/base plate and 24" up on studs and other wood members in contact with slab foundation. Apply second coat on sill. Spray concrete 2"-8" horizontally out from sill or base plate. Treat all pipe protrusions within stud walls or free standing in slab 24" up from slab and extend horizontally 6" out on the slab surface.	50 linear feet (Measure linear feet of all stud wall sills attached to solid foundation) 200 linear feet (Measure linear feet of stud walls to be treated)

BORA-CARE NEW CONSTRUCTION APPLICATION WORKSHEET

(2 ft. Barrier Treatment)

■ SLAB AREAS

LINEAR FEET OF ALL EXTERIOR WOOD STUD WALLS..... _____
 (Treat sills, slab & 24" vertical band)

LINEAR FEET OF ALL INTERIOR WOOD STUD WALLS..... + _____
 (Treat sills, slab & 24" vertical band)

= _____
(Total linear feet of stud walls)

÷ 200 = **A.** _____

NOTE: Plumbing penetrations included in calculations.

NUMBER OF BATH TRAPS..... _____
 (16 oz. / sq. ft.)

x .125 = **B.** _____

LINEAR FEET OF ALL EXTERIOR SIDING WALLS _____
 (Treat exterior plywood or OSB siding 24" vertical band; amounts same for treating both sides once or on one side twice.)

x 2 = _____

÷ 400 = **C.** _____

(Square feet of siding)

TOTAL GALLONS OF BORA-CARE 1:1 SOLUTION NEEDED (A+B+C) =

■ CRAWL SPACE OR BASEMENT AREAS

LINEAR FEET OF SILL PLATES ON FOUNDATION (wood) _____
 (Treat foundation sill plate, header, floor joists & subfloor as a 24" horizontal band.)

LINEAR FEET OF WOOD ELEMENTS AROUND PIERS (number of piers: _____ x 8) + _____
 (Treat all wood in contact with pier in 24" horizontal band.)

= _____
(Total linear feet)

÷ 100 = **A.** _____

LINEAR FEET OF EXTERIOR WOOD STUD WALLS..... _____
 (Treat exterior walls, sills, studs & sheathing 12" above box header & sills to satisfy 2' rule.)

÷ 160 = **B.** _____

LINEAR FEET OF ALL CRAWL SPACE/BASEMENT CONCRETE WALLS (wood)..... _____
 (Measure linear feet around support piers and foundation. Treat 24" vertical band.)

x 2 = _____
(Square feet)

÷ 400 = **C.** _____

LINEAR FEET OF ALL INTERIOR STUD WALLS (finished basement)..... _____
 (Treat sills, slab & 24" vertical band.)

NOTE: Plumbing penetrations included in calculations.

÷ 200 = **D.** _____

LINEAR FEET OF STUD WALLS AGAINST FOUNDATION (finished basement)..... _____
 (Within 3" of foundation, treat entire stud, slab, sill plate on slab & top plate.)

÷ 50 = **E.** _____

NUMBER OF BATH TRAPS (basement slabs only) _____
 (16 oz. / sq. ft.)

x .125 = **F.** _____

TOTAL GALLONS OF BORA-CARE 1:1 SOLUTION NEEDED (A+B+C+D+E+F) =

BORA-CARE WORKSHEET: WHOLE HOUSE PREVENTATIVE TREATMENT FOR NEW CONSTRUCTION

Whole Structural Wood Treatment (New Construction)

Calculations are based on an average of 6,500 board feet per 1,000 square feet in a crawlspace or basement framed structure. Five gallons of water should be diluted with one gallon of BORA-CARE.

One gallon of diluted solution will treat 400 board feet of structural wood. All structural wood should be treated. Calculations include attic space.

Whole Structure

Measure the linear footage of the exterior walls of each level with a measuring wheel, then calculate the square footage.

Square Footage of 1st Floor (Including garage) _____
Square Footage of 2nd Floor (living area only, if applicable) + _____
Square Footage of 3rd Floor (living area only, if applicable) + _____
Total Square Footage = _____

Convert to Board Feet Using Number from *Conversion Table* below
(enter "multiply by" number here) x _____

CONVERSION TABLE	
<i>Square Feet to Board Feet Conversion Factors</i>	
Unfinished Basement FoundationMultiply by 6.5
Crawlspace FoundationMultiply by 6.5
Slab with Exterior SheathingMultiply by 5.5
Slab without Exterior SheathingMultiply by 5.0
Slab with Concrete Block WallsMultiply by 4.5

Total Board Feet to be Treated = _____

Total Gallons of Diluted Solution (5 gal. water + 1 gal. BORA-CARE) Needed
 (One gallon of BORA-CARE solution treats 400 board feet.) ÷ 400 = _____

Total Gallons of BORA-CARE Concentrate Needed
 (5 gal. water + 1 gal. BORA-CARE = 6 total units of 5:1 solution) ÷ 6 = _____

Finished Basements

One gallon of diluted solution will treat 50 linear feet of stud wall area. To treat a finished basement, measure all basement stud walls in linear feet and divide by 50 to get the gallons of diluted BORA-CARE solution needed.

Example: Treating a New Construction Home with a Slab and No Sheathing

1. Measure the exterior walls of the footprint, including the garage, and living areas with a measuring wheel. Use the linear feet measurements to calculate the square footage of each floor as described below.
2. The footprint and garage combined measures 1400 square feet and the remaining upstairs living area measures 800 square feet
3. Footprint + upstairs living area = 2200 total square feet
4. Multiply by 5 to convert to board feet = 11,000 board feet
5. Divide by 400 to get the gallons of solution needed = 27.5 gallons
6. Divide by 6 to get the gallons of concentrate needed = 4.58 gallons





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