

# BOURBON BARN TECHNICAL BULLETIN

## **BORA-CARE<sup>®</sup>**

For Wood Preservation and the Prevention & Control of  
Wood Destroying Organisms in Bourbon Barns



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# BORA-CARE® TECHNICAL BULLETIN: BOURBON BARNS

## Preservation of wood frame buildings and prevention of wood destroying organisms (including powderpost beetle attack) in warehouses for aging bourbon.

(ALWAYS READ AND UNDERSTAND LABEL DIRECTIONS COMPLETELY BEFORE ANY APPLICATION.)

**Introduction:** Bora-Care will help prevent powderpost beetles as well as other listed wood boring beetles, subterranean termites, carpenter ants and wood decay fungi from infesting wood. Bora-Care is an exceptional wood preservative and helps prevent wood rot. Bora-Care may be used on all cellulosic materials including wood, plywood, particle board, paper, oriented strand board (OSB), cardboard and wood composite structural components. It also can be applied to concrete block, metals, PVC plumbing pipes, and other non-cellulosic materials.

**Bora-Care Characteristics:** Bora-Care is packaged as a water-soluble, liquid concentrate that contains 40% Disodium Octaborate Tetrahydrate (DOT) active ingredient and proprietary penetrants that enhance penetration and absorption into wood. Once applied to the wood, Bora-Care will not degrade or volatilize.

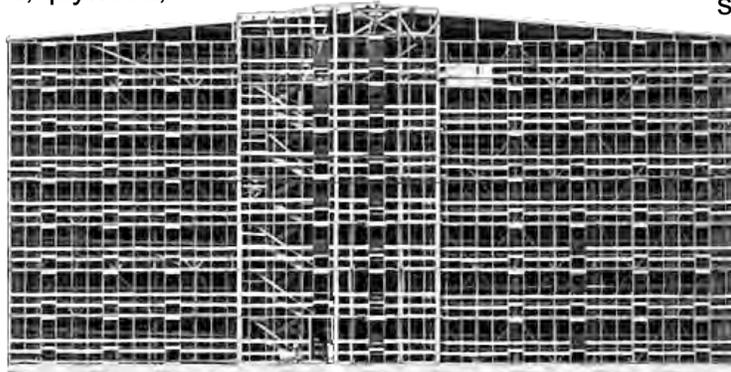
**General Statement:** Bora-Care may be applied as a primary treatment during the construction process of new barns or to existing barns. Treat all beams with a Bora-Care 1:1 solution for prevention of wood destroying organisms, including termites and powderpost beetles, among others. Treat all sides of wood, interior and exterior wall sill plates, joists, barrel roller shafts, rafters, sub-flooring, cement footers, all studs, floor decking and appropriate siding. If three or more sides of the wood are not available, then apply two applications to available sides. Refer to the architect's blueprint to determine total board feet of the structure and apply the Bora-Care 1:1 solution at the rate of 1 gallon

per 400 board feet of wood or 400 square feet of surface area.

### BOURBON BARN TREATMENTS

**Amount needed:** The quantity of Bora-Care needed remains the same whether applying one application to all sides of the wood or applying two applications to two sides. Use

square feet or board feet to determine how much product is needed for proper application. Measure the square footage of all sides of the timber to be treated (not the square footage of the



barn itself), then divide the total square footage of all surfaces by 400. This will tell you how many finished gallons of solution are needed to treat the barn. If you are using the total board feet, divide that by 400 also.

**Mixing Bora-Care:** Bora-Care concentrate must be mixed with water as a 1:1 solution. To mix any solution, add 3/4 of the amount of the water into pail/tank and begin mechanical agitation while gradually adding the required amount of Bora-Care. Use remaining water to triple-rinse the Bora-Care container(s), and add final rinse solution into a pail/tank. Mix until a smooth one-phase solution is created. Only mix enough Bora-Care 1:1 solution needed for each day's application. Do not store the 1:1 solution in the spray tank or other container for more than 12 hours. Use the TrueTech® 2000 PowerCart sprayer or a mechanical pump spraying unit with good agitation. We recommend using an 8002 spray tip.

**Cement Footers and Concrete-Masonry Foundations:** Treat all cement footers and all wood or cement in contact with foundation

slab. This includes both internal and external walls, sill plates, wall studs, protrusions, abutting slabs and joints. Treat any observable cracks and expansion joints in the slab at the time of application. Treat all interior concrete-masonry wall surfaces twice. Horizontally treat slab surfaces. Spray any sill plates that are half exposed twice. Create a continuous vertical barrier from the furthest ground foundation to the top treated tier.

**Concrete-Masonry Foundation Support Piers:** Treat all concrete/masonry support piers. This includes the subfloor, floor joists and any other wood in contact with the support pier.

**Sub-Floor Exterior Vertical Treatments:** Treat subfloors with one coat of Bora-Care solution on all sides of wood and sheathing or two coats on wood with two or fewer faces available. Wait 20 minutes between double applications.

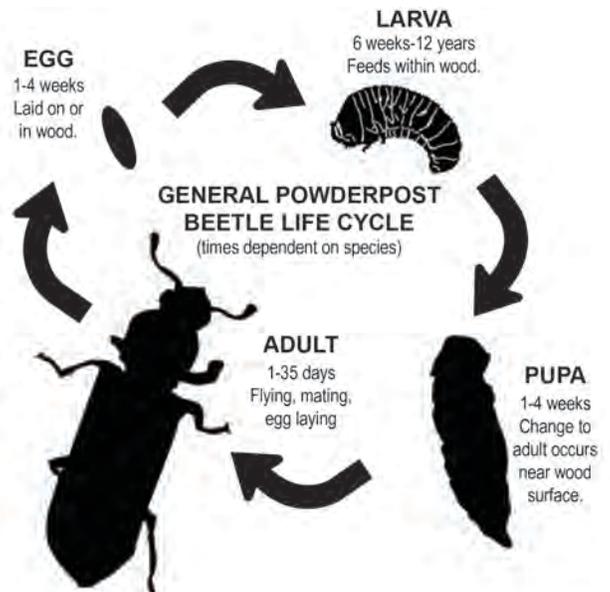
### TREATING WOOD WITH ORGANIC BUILD-UP

Existing barns tend to have accumulated organic build-up on the wood. Bora-Care may be applied to the surface build-up. Bora-Care will not kill surface mold, but will penetrate enough for powderpost beetle prevention and remediation. If desired, surface organic material including fungi stains can be removed with Nisus Corporation's Mold-Clean® product. Any barrels in the barn need to be protected with a poly vapor barrier. We recommend Raven 8 mil poly with the white side of the poly touching the barrels and the black side facing up. These tarps may be folded and reused. Cover all barrels in the barn below treatment level. Treat the barn from the top tier down. To kill and help prevent surface fungi, Bora-Care with Mold-Care® may be used.

### POWDERPOST BEETLE OVERVIEW

Wood boring beetles are a major cause of structural damage. Some attack softwoods, others hardwoods and some both. Due to their ability to turn wood into powder, many different kinds of wood beetles are referred to

as "powderpost" beetles. Lycidae ("true" powderpost beetles), Ptinidae (formerly Anobiidae), Bostrichidae ("false" powderpost beetles) and old house borers are responsible for much of the beetle damage to structural wood. If an active infestation is found in a building, all wood should be carefully inspected for further signs of infestation. Exit holes indicate that adult beetles have emerged and will continue to reinfest unless treated. Wood boring beetles have varying life cycles that include egg, larva, pupa and adult stages. Eggs are laid on bare, unfinished wood, either on the surface, in cracks or in constructed tunnels.



**Lycidae:** "True" powderpost beetles usually infest only hardwoods. Their short life span, large initial populations and high survival rate mean overlapping generations that reinfest, resulting in rapid and expensive damage. The larvae are responsible for all damage and feed entirely within the wood; however, most infestations are not discovered until adult beetles emerge through the wood surface.

**Ptinidae:** Ptinidae beetles attack both hardwoods and softwoods but are generally found in softwoods. They prefer wood of slightly higher moisture content. The cycle of reinfestation can occur within one to two years.

**Bostrichidae:** Originally a tropical pest, false powderpost beetles are now found throughout North America, especially in the mid-Atlantic region and Florida. They mainly attack seasoned hardwood, but will also infest softwood with high levels of moisture and starch. Both adults and larvae feed on the infested wood.

**Old House Borers:** These beetles are generally found east of the Mississippi River. Typically infesting newer structures, they prefer

recently seasoned softwood. borers feed only in pine, spruce, and other coniferous woods. Depending on conditions, damage may not be detected until adults emerge four to twelve years after the initial infestation. Older larvae can often be heard feeding, frequently the first alert of their presence. The majority of borers will be present in the thicker timbers of a bridge and are usually localized. They are rarely found in wood members less than one inch thick.

BEETLE TYPE	TUNNEL/ EXIT HOLE SIZE & SHAPE	DESTRUCTIVE STAGE	TYPICAL LIFE CYCLE	FRASS / PREFERRED WOOD TYPE
Lyctidae (True Powderpost Beetles)	• • • Round 1/32"-1/16"	Larva	3-12 months	Loosely packed with very fine, talc-like powder. Hardwoods.
Ptinidae (Deathwatch Beetles)	• • • Round 1/16"-1/8"	Larva	1-3 years	Loosely packed with fine to coarse powder with oval, gritty pellets. Mostly softwoods.
Bostrichidae (False Powderpost Beetles)	• • • Round 1/8"-3/8"	Larva and adult	~1 year	Fine to coarse and tightly packed. Tends to stick together. Mostly hardwoods.
Old House Borers	• • • Oval 1/4"-3/8"	Larva	1-32 years (normally 3-10 years)	Tightly packed with coarse powder often formed into small pellets. Softwoods.

**NOTE:** Illustrations of holes are actual size.



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**Remember, always read, understand and comply with the label.**