

Appendix 2

T404—Wood Products Including Containers as Such

T404-a

Wood Products Including Containers as Such

Pest: *Globodera rostochiensis* (golden nematode)

Treatment: T404-a MB ("Q" label only) in 26" vacuum

Temperature	Dosage Rate (lb/1,000 ft ³)	Exposure Period
40°F or above	8 lbs	16 hrs
	10.5 lbs	12 hrs
	16 lbs	8 hrs

T404-b-1-1**Wood Products Including Containers as Such**

Five alternative treatments

Pest: Borers (wood wasps, Cerambycids, *Dinoderus*)

Treatment: T404-b-1-1 MB ("Q" label only) at NAP—tarpaulin or chamber

Temperature	Dosage Rate (lb/1,000 ft ³)	Minimum Concentration Readings (ounces) At:			
		0.5 hr	2 hrs	4 hrs	16 hrs
70°F or above	3 lbs	36	30	27	25
40-69°F	5 lbs	60	51	46	42

IMPORTANT: For termites use T404-c schedules**IMPORTANT:**

- Minimum concentration must be met in chamber fumigations of sorptive materials. (See Section I, Part 2, I for list of sorptive materials.)
- For fumigating of hardboard (Masonite), an initial dosage of 10 lb/1,000 ft³ is recommended. Inspector should be prepared to provide extra attention to maintaining minimum concentrations when fumigating this commodity.
- If both termites and borers are present at 40-69°F, use the schedule for borers with exposure extended to 20 hours. Use same minimum concentrations.
- Use an Ascarite filter (in addition to a Drierite filter) if either of the following conditions apply:
 - The wood is uncured ("green").
 - The wood is manifested as guatamba wood.
 In the two cases above, water vapor or other gases may be evolved during the fumigation, which give false (additive) readings on the T/C gas analyzer.
- If final reading occurs outside normal working hours, the fumigation may be extended to the beginning of the workday. The 16 hour concentration reading would apply.
- Resume use of fans anytime a difference of 4 ounces or more occurs between the highest and lowest reading.
- Readings more than 5 ounces below minimum at end of exposure negates treatment. For readings less than 5 ounces below minimum at the end of exposure period, add 2 oz/1,000ft³ for each ounce below minimum and extend exposure for 4 hours.
- A reduction in dosage is allowed when fumigating nonsorptive commodities such as marble, shells, metal containers, etc., which have infested crating associated with them providing the following additional conditions are met:
 - Use only new 4-mil or 6-mil tarpaulins.
 - No truck trailer, van, or railroad car fumigations are permitted unless the carrier is covered with a 6-mil tarpaulin which is then sealed to the ground.
 - Use five or more sampling leads to determine minimum concentrations.

9. When fumigating wood commodities (e.g., dunnage, crating, logs) the proper fumigation temperature may be determined by inserting the tip of a dial thermometer or other temperature probe in a hole in the wood. A hole can be made with an electric or hand-powered drill or an awl. The hole diameter should be just large enough to insert the probe shaft (to lessen the influence of surrounding air). The depth should be 2 inches or half the thickness of the wood. Different areas of the load should be probed and the lowest temperature used in determining fumigation temperature. Determine the wood temperature 5 to 10 minutes after drilling the hole to allow the heat generated during drilling to dissipate.

T404-b-1-2

Wood Products Including Containers as Such

Treatment: T404-b-1-2 MB ("Q" label only) in 26" vacuum

Temperature	Dosage Rate (lb/1,000 ft ³)	Exposure Period
70°F or above	4 lbs	4 hrs
40-69°F	4 lbs	5 hrs

T404-b-2

Wood Products Including Containers as Such

Treatment: T404-b-2 SF at NAP

Temperature	Dosage Rate (lb/1,000 ft ³)	Minimum Concentration Readings (ounces) At:						
		0.5 hr	2 hrs	4 hrs	12 hrs	16 hrs	24 hrs	32 hrs
70°F or above	4 lbs	48	45	40	—	32	—	—
60-69°F	4 lbs	48	45	40	36	—	32	—
50-59°F	5 lbs	60	56	52	48	—	40	—
40-49°F	6.5 lbs	76	71	66	60	—	52	—
	OR 5 lbs	60	57	53	49	—	44	40

IMPORTANT: Do not use a filter containing soda asbestos (Ascarite[®]) with this fumigant.

T404-b-3

Wood Products Including Containers as Such

Treatment: T404-b-3 Phosphine at NAP

Temperature	Dosage Rate (gr/1,000 ft ³)	Minimum Concentration Readings (ppm) At 72 hrs:
40°F or above	33 g	225*

* An average reading with no reading less than 50 ppm.

IMPORTANT: See Table 5.4.2 to determine the amount of phosphine liberated by various products.

T404-b-4**Wood Products Including Containers as Such**

Treatment: T404-b-4 Kiln Drying

Dry bulb temperature	Wet bulb depression	Relative humidity	Moisture content	Thickness of lumber	Exposure
140°F	7°F	82%	13.8%	1 inch 2 inches 3 inches	3 hrs 5 hrs 7 hrs
130°F	16°F	60%	9.4%	1 inch 2 inches 3 inches	10 hrs 12 hrs 14 hrs
125°F	15°F	61%	9.7%	1 inch 2 inches 3 inches	46 hrs 48 hrs 50 hrs

IMPORTANT: The source of this schedule is: Simpson, W.T. 1991. *Dry Kiln Operator's Manual*. USDA Forest Service, Forest Products Laboratory, Madison, WI, Agriculture Handbook No. 199, Table No. 7031, page 176.

T404-b-5-1**Metal, wood, concrete, or other surfaces not subject to fumigation**

Two alternative treatments

Pest: Borers (wood wasps, Cerambycids, *Dinoderus*)

Treatment: T404-b-5-1 Chlorpyrifos spray

Use Dursban 4E as a 1 percent chlorpyrifos spray using suitable hand- or power-operated ground spray equipment. To be applied only by or under the supervision of pest control operators or other trained personnel responsible for inspect control programs.

To prepare the spray, thoroughly mix 79 ml (2-2/3 fl oz) of Dursban 4E with water to make up a total of 1 gallon of mixture (equivalent to 2.1 gallons in 100 gallons of water) and spray to the point of runoff.

T404-b-5-2**Metal, wood, concrete, or other surfaces not subject to fumigation**

Treatment: T404-b-5-2 Lindane spray

Lindane spray applied to the point of runoff. Prepare material by mixing 12 pounds of 25 percent wettable powder to 100 gallons of water to achieve 3 pounds of actual insecticide per 100 gallons of mixture.

T404-c-1-1

Metal, wood, concrete, or other surfaces not subject to fumigation

Three alternative treatments

Pest: Termites

IMPORTANT: For borers, see T404-b schedules

Treatment: T404-c-1-1 MB ("Q" label only) at NAP—tarpaulin or chamber

Temperature	Dosage Rate (lb/1,000 ft ³)	Minimum Concentration Readings (ounces) At:				
		0.5 hr	2 hrs	4 hrs	16 hrs	24 hrs
40°F or above	3 lbs	36	30	27	25	24

IMPORTANT:

1. Minimum concentration must be met in NAP chamber fumigations of sorptive materials. (See page 2.15 for list of sorptive materials.)
2. If both termites and borers are present at 40°F–60°F, use the schedule for borers with exposure extended to 20 hours. Use same minimum concentrations.
3. Guatamba wood squares and green wood may emit a gas which gives a reading additive to MB on the fumiscope. Use of a filter containing soda asbestos (Ascarite®) will eliminate this contaminative gas.

T404-c-1-2

Metal, wood, concrete, or other surfaces not subject to fumigation

Treatment: T404-c-1-2 MB ("Q" label only) in 26" vacuum

Temperature	Dosage Rate (lb/1,000 ft ³)	Exposure Period
70°F or above	4 lbs	3 hrs
40-69°F	4 lbs	4 hrs

T404-c-2

Metal, wood, concrete, or other surfaces not subject to fumigation

Treatment: T404-c-2 SF at NAP

Temperature	Dosage Rate (lb/1,000 ft ³)	Minimum Concentration Readings (ounces) At:			
		0.5 hr	2 hrs	16 hrs	24 hrs
70°F or above	1 lb	12	8	8	—
60-69°F	1.5 lbs	18	12	—	8
50-59°F	2.5 lbs	32	20	—	20

IMPORTANT: Do not use filters containing soda asbestos (Ascarite®) with this fumigant.

T404-d**Wood products including containers**Pest: Borers and *Trogoderma granarium* (khapra beetle)

Treatment: T404-d MB ("Q" label only) at NAP—tarpaulin or chamber

Temperature	Dosage Rate (lb/1,000 ft ³)	Minimum Concentration Readings (ounces) At:			
		0.5 hr	2 hrs	4 hrs	16 hrs
80°F or above	3.5 lbs	36	33	30	25
70-79°F	4.5 lbs	50	45	40	25
60-69°F	6 lbs	65	55	50	42
50-59°F	7.5 lbs	80	70	60	42
40-49°F	9 lbs	85	76	70	42