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INTERNATIONAL STANDARDS FOR PHYTOSANITARY MEASURES

GUIDELINES FOR REGULATING NON-MANUFACTURED WOOD PACKING USED IN THE TRANSPORT OF COMMODITIES



**Secretariat of the International Plant Protection Convention
Food and Agriculture Organization
of the United Nations
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INTRODUCTION

SCOPE

This standard describes phytosanitary measures to reduce the risk of introduction and/or spread of quarantine pests associated with non-manufactured wood packing materials in use for the transport of commodities in international trade.

REFERENCES

- Agreement on the Application of Sanitary and Phytosanitary Measures*, 1994. World Trade Organization, Geneva.
- Glossary of phytosanitary terms*, 1999. ISPM Pub. No. 5, FAO, Rome.
- International Plant Protection Convention*, 1992. FAO, Rome.
- New Revised Text of the International Plant Protection Convention*, 1997. FAO, Rome.
- Principles of plant quarantine as related to international trade*, 1995. ISPM Pub. No. 1, FAO, Rome.
- Export certification system*, 1997. ISPM Pub. No. 7, FAO, Rome
- Guidelines for phytosanitary certificates*, 2001. ISPM No. 12, FAO, Rome.
- Guidelines on notification of non-compliance and emergency action*, 2001. ISPM No. 13, FAO, Rome.

DEFINITIONS AND ABBREVIATIONS¹

Additional declaration	A statement that is required by an importing country to be entered on a phytosanitary certificate and which provides specific additional information pertinent to the phytosanitary condition of a consignment
Bark-free wood*	Wood from which all bark except vascular cambium, ingrown bark around knots, and bark pockets between rings of annual growth has been removed
Chemical pressure impregnation*	Impregnation of wood with a chemical preservative through a process of heat and pressure in accordance with an officially recognized technical specification
Certificate	An official document which attests to the phytosanitary status of any consignment affected by phytosanitary regulations
Commodity	A type of plant, plant product, or other article being moved for trade or other purpose
Consignment	A quantity of plants, plant products and/or other articles being moved from one country to another and covered, when required, by a single phytosanitary certificate (a consignment may be composed of one or more commodities or lots)
CPI*	Chemical pressure impregnation

¹ Terms marked with an (*) are new or revised

Debarking	Removal of bark from round wood (debarking does not necessarily make the wood bark-free)
Dunnage*	Wood used to support a consignment but which does not remain associated with the consignment
Emergency action	A prompt phytosanitary action undertaken in a new or unexpected phytosanitary situation
Emergency measure	A phytosanitary regulation or procedure established in a new or unexpected phytosanitary situation. An emergency measure may or may not be a provisional measure
Fumigation	Treatment with a chemical agent that reaches the commodity wholly or primarily in a gaseous state
Find free	To inspect a consignment, field or place of production and consider it to be free from a specific pest
Free from (of a consignment, field, or place of production)	Without pests (or a specific pest) in numbers or quantities that can be detected by the application of phytosanitary procedures
Heat treatment*	The process in which a commodity is heated until it reaches a specific minimum temperature for a minimum period of time as measured at a specific location in or on the commodity
HT*	Heat treatment
Infestation (of a commodity)	Presence in a commodity of a living pest of the plant or plant product concerned. Infestation includes infection
KD*	Kiln drying
Kiln-drying*	A process in which wood is dried in a closed chamber using heat and/or humidity control to achieve a required moisture content
NPPO	National Plant Protection Organization
Official	Established, authorized or performed by a National Plant Protection Organization
Phytosanitary action	An official operation, such as inspection, testing, surveillance or treatment, undertaken to implement phytosanitary regulations or procedures
Phytosanitary certificate	Certificate patterned after the model certificates of the IPPC
Phytosanitary measure	Any legislation, regulation or official procedure having the purpose to prevent the introduction and/or spread of pests
Phytosanitary procedure	Any officially prescribed method for implementing phytosanitary regulations including the performance of inspections, tests, surveillance or treatments in connection with regulated pests

Phytosanitary regulation	Official rule to prevent the introduction and/or spread of quarantine pests, or to limit the economic impact of regulated non-quarantine pests, including establishment of procedures for phytosanitary certification
Plant products	Unmanufactured material of plant origin (including grain) and those manufactured products that by their nature or that of their processing , may create a risk for the introduction and spread of pests
Quarantine pest	A pest of potential economic importance to the area endangered thereby and not yet present there, or present but not widely distributed and being officially controlled
Raw wood*	Wood which has not undergone processing or treatment to permanently alter its character
Regulated article	Any plant, plant product, storage place, packaging, conveyance, container, soil and any other organism, object, or material capable of harbouring or spreading pests, deemed to require phytosanitary measures, particularly where international transportation is involved
Treatment	Officially authorized procedure for the killing, removal or rendering infertile of pests
Wood	A commodity class for round wood, sawn wood, wood chips or dunnage, with or without bark
Wood packing material*	Wood or wood products (excluding paper products) used in supporting, protecting or carrying a consignment

OUTLINE OF REQUIREMENTS

This standard describes phytosanitary measures for non-manufactured wood packing materials. It describes options for measures to be applied to non-manufactured wood packing and identifies wood packing materials for which measures are not appropriate. The standard specifies general measures that may be applied and should be accepted by NPPOs. It also identifies approved measures that may be applied where accepted bilaterally. Guidelines are provided for certification and other procedures and requirements relevant to the implementation of phytosanitary measures for wood packing.

1. Purpose

Wood packing such as pallets, dunnage, crating, packing blocks, drums, cases, load boards, pallet collars, and skids can be present in any imported consignment, including consignments which would not normally be the target of phytosanitary inspection. Wood packing is frequently made of non-manufactured, low quality, inexpensive raw wood that may not have undergone sufficient processing or treatment to remove or kill pests present in the raw wood and therefore becomes a pathway for the introduction and spread of pests. Furthermore, wood packing is very often re-used (in that packing received with an imported consignment may be used to accompany an expected consignment). Therefore, the true origin of any piece of wood packing material is difficult to determine and thus its phytosanitary status cannot be ascertained.

NPPOs may establish requirements for non-manufactured wood packing to manage the pest risk associated with this pathway. The process for establishing import requirements for wood packing may be different from that used for commodities moving as consignments. The normal process of undertaking risk analysis to determine if measures are necessary and the strength of such measures is frequently not possible for wood packing material because its origin and phytosanitary status may not be known. For this reason, it is desirable to regulate wood packing broadly by applying globally accepted measures that eliminate the pest risk for most important regulated pests and significantly reduce the risk for a number of others.

2. Exempted Wood Packing Materials

Certain wood packing materials by their nature, processing, handling, or origin are not considered a pathway for the introduction of quarantine pests and may be exempt from being regulated.

2.1 Manufactured wood packing

Wood packing comprised wholly of wood-based products such as plywood, particle board, oriented strand board, and veneer which have been created using glue, heat and pressure or a combination thereof should be considered sufficiently processed to have removed or killed any pests that may have been associated with the raw wood and should therefore not be regulated as non-manufactured wood packing.

2.2 Specific types of non-manufactured wood packing

Non-manufactured wood packing materials such as veneer peeler cores², that by their nature, processing or handling are not pathways for the introduction of quarantine pests may also be considered exempt where this phytosanitary status can be practically verified.

Wood packing materials such as sawdust, wood wool, and shavings, and raw wood cut into thin³ pieces such as wood used for the manufacture of fruit

² Veneer peeler cores are a by-product of veneer production involving high temperatures and comprising the center of a log remaining after the peeling process.

³ Thin wood is considered to be 6mm thickness or less according to the Customs Harmonized

boxes, or wood from certain types of timber (e.g. tropical hardwoods to temperate countries) may also be considered exempt where the importing NPPO has determined that such products are not important pathways for the introduction and spread of quarantine pests.

2.3 Other exemptions

The NPPO of an importing country should consider exempting non-manufactured wood packing material exported from any other country (or particular exporter) from specific requirements where evidence is provided to demonstrate that the pest risk is adequately managed.

3. General Measures

A general measure is any treatment, processing, or a combination of these that significantly reduces the risk for most pests and lessens the risk for other pests. The choice of a general measure is based on consideration of:

- the range of pests which may be affected
- the efficacy of the measure
- a change in the character of the commodity which has a long-term effect in reducing risk
- technical and/or commercial feasibility.

General measures should be accepted by all NPPOs as the basis for authorizing the entry of non-manufactured wood packing without further requirements except where:

- secondary infestation has occurred, or is considered likely to have occurred, as determined by inspection and/or testing
- it is determined through PRA that specific quarantine pests associated with certain types of wood packing from specific sources require more rigorous measures.

3.1 Heat treatment (HT)

Heat treatment is a general measure requiring that non-manufactured wood packing material be heated in accordance with a specific time-temperature schedule that achieves a minimum wood core temperature of 56°C for a minimum of 30 minutes.⁴ Kiln drying (KD), chemical pressure impregnation (CPI), or other treatments may be considered HT treatments to the extent that these meet the HT specifications.

Wood packing treated with HT should display the marking shown in Appendix I or alternatively may be accompanied by a phytosanitary certificate attesting to the treatment. The certification of HT status may be based on other than a phytosanitary certificate or the recognized marking where the importing country accepts other forms of certification.

Commodity Description and Coding System (the Harmonized System or HS).

⁴ A minimum core temperature of 56° C for a minimum of 30 min. is chosen in consideration of the wide range of pests for which this combination is documented to be lethal and a commercially feasible treatment. Although it is recognized that some pests are known to have a higher thermal tolerance, quarantine pests in this category are managed by NPPOs on a case by case basis. It is noted that the absence of bark is not required.

4. Approved Measures

In cases where general measures cannot be applied in the exporting country, the NPPO of the importing country may accept an approved measure. The choice of an approved measure is based on consideration of:

- the efficacy of the measure
- the range of pests that may be treated
- technical and/or commercial feasibility.

The NPPO of the importing country may use approved measures as the basis for authorizing the entry of non-manufactured wood packing without further requirements except where:

- secondary infestation has occurred, or is considered likely to have occurred, as determined by inspection or testing
- it is determined through PRA that specific quarantine pests associated with certain types of wood packing from specific sources require more rigorous measures.

4.1 Fumigation using methyl bromide

Fumigation with methyl bromide according to the specifications in Appendix II is an approved treatment. However, NPPOs should recognize that methyl bromide treatment does not change the character of the wood and has no residual effect and therefore does not prevent re-infestation or secondary infestation. NPPOs of importing countries may consider establishing time limits for the period between fumigation and shipment and may consider other safeguards to ensure the phytosanitary status of the wood packing treated by methyl bromide fumigation.

Wood packing treated by fumigation with methyl bromide should be accompanied by an official certificate attesting to the treatment. This may be a commercial treatment certificate. Alternatively, the certification of fumigation treatment may also be based on another type of certification accepted by the imported country.

5. Other Measures

NPPOs should accept other measures for non-manufactured wood packing if those measures have been demonstrated to provide an equivalent level of phytosanitary protection and are technically and operationally feasible to apply.

Treatments⁵ that may be considered include but are not limited to:

Fumigation

- Phosphine
- Sulfuryl fluoride
- Carbonyl sulphide

CPI

- High-pressure/vacuum process
- Double vacuum process
- Hot and cold open tank process
- Sap displacement method

Irradiation

- Gamma radiation
- X-rays
- Microwaves
- Infra red

Controlled atmosphere

Chemical dip

6. Minimum Requirements

In cases where treatments cannot be applied or verified in an exporting country, the NPPO of the importing country should require at minimum that non-manufactured wood packing is comprised of bark-free wood that is free of pests and signs of live pests. On arrival, it may be subject to inspection, and treatment or disposal at the discretion of the NPPO of the importing country.

6.1 Dunnage

Dunnage, (often low quality wood and usually sourced locally) requires special consideration. Operational limitations demand for example that it be cut to size during loading. NPPOs of importing countries should accept dunnage that is marked as complying with general measures. However, where the application of general measures to dunnage in service may be impracticable, NPPOs should require at minimum that dunnage be comprised of bark-free wood that is free of pests and signs of live pests.

7. Compliance Checks on Procedures Applied Prior to Export

The NPPO of the exporting country has responsibility for ensuring that internal systems for exports meet the requirements set out in this standard or those agreed bilaterally. This includes monitoring certification systems that verify compliance, and establishing inspection procedures.

8. Certification

⁵ Certain treatments such as phosphine fumigation and some CPI treatments are generally believed to be very effective but at present lack experimental data concerning efficacy which would allow them to be either general or approved measures. This present lack of data is specifically in relation to the elimination of raw wood pests present at the time of application of the treatment.

Recognizing the operational difficulties associated with the issuance of phytosanitary certificates for wood packing, NPPOs of importing countries are encouraged to accept alternative methods for verifying compliance and to collaborate with Customs officials regarding procedures that will facilitate identifying those consignments which contain wood packing.

The certification of HT status may be based on other than a phytosanitary certificate where other forms of certification have been agreed on a bilateral basis.

Wood packing that is heat treated (HT) should display the marking shown in Appendix I or alternatively may be accompanied by an official certificate attesting to the treatment.

Wood packing treated by fumigation with methyl bromide should be accompanied by an official certificate attesting to the treatment. This may be a commercial treatment certificate or a phytosanitary certificate. Alternatively, the certification of fumigation treatment may also be based on another type of certification if agreed bilaterally.

9. Other Procedures and Requirements

The regulation of non-manufactured wood packing requires that NPPOs have policies and procedures for other aspects of their responsibilities related to wood packing.

9.1 PRA

In cases where the source of packing material is known, PRA may provide the basis for the development of specific treatments or systems approaches. The NPPO of the importing country may require certain information for risk analysis and the development, implementation or review of specific import requirements.

9.2 Transit arrangements

Where consignments are moving in transit, the NPPOs of the transit countries may require measures in addition to those of the importing country to ensure that wood packing exposed or removed from consignments within their territories do not present an unacceptable risk. The NPPO of the importing country should consult with the NPPO of the transit country to reach agreement on the requirements to be met for consignments in transit. The NPPO of the exporting country should be made aware of these requirements and should respect the requirements of both the importing and transit country when known.

9.3 Measures for reinfestation or secondary infestation

The development and application of import requirements is based on pests that may be associated with raw wood. However, it should be recognized that wood packing treated or processed to be free of pests may become (re)infested and require emergency actions based on the pests found.

9.4 Non-compliance

Where requirements established by the importing country have not been met or the wood packing is found to be infested with regulated pests, the wood packing may be subject to treatment. Where a treatment is not available, the wood packing should be disposed of or refused entry. Where significant non-compliance occurs or in an emergency situation, the NPPO of the exporting country should be notified (see ISPM No. 13: *Guidelines on notification of non-compliance and emergency action*).

9.5 Signs of live pests

Phytosanitary actions should not be taken without sufficient technical justification. Where a general or approved measure has been applied, action should not be taken on wood packing based only on signs of pests.

Where a general or approved measure has not been applied, action can be taken based on sign of live pests (e.g. insect holes, frass) or bark on raw wood if quarantine pests have been found to be associated with such signs at the time of inspection, or on previous inspection(s) of equivalent consignments. Likewise, action may be based on information indicating the likelihood that pests are associated with the sign. In the case of consignments of a new commodity or consignments from a new source, it may be practical to take emergency action based on the signs of live pests or bark without detection of the pest.

9.6 Disposal

Disposal of wood packing is a risk management option that may be invoked by the NPPO of the importing country upon arrival of the wood packing where treatment is not available or desirable. The following methods are recommended for the destruction of wood packing where this is required.

Incineration

Complete burning

Burial

Deep burial in sites approved by appropriate authorities. (N.B. not a suitable disposal option for wood infested with termites).

Processing

Chipped and further processed in a manner approved by the NPPO of the importing country for the elimination of pests of concern (e.g. manufacture of oriented strand board).

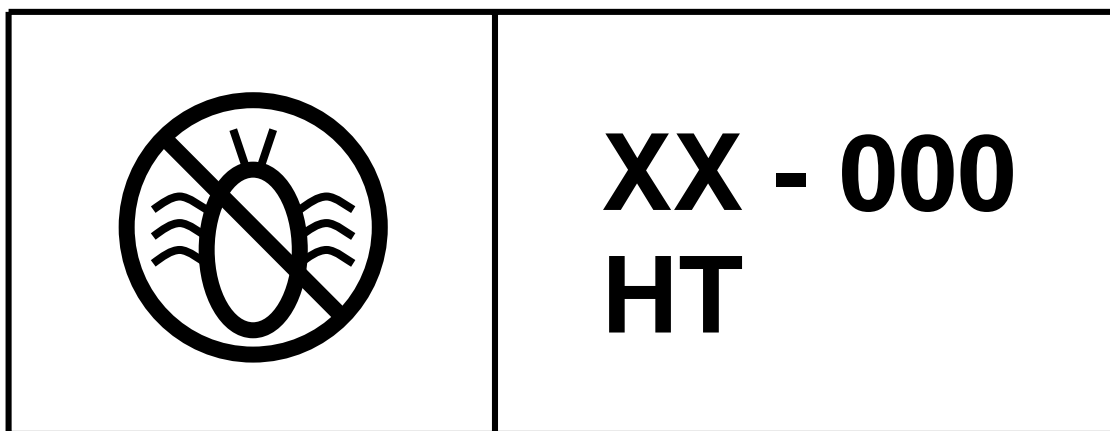
Other methods

Procedures endorsed by the NPPO as effective for the pests of concern.

The wood packing that requires emergency action should be appropriately safeguarded prior to treatment or disposal to prevent escape of any pest between the time of the detection of the non-compliance and the time of treatment or disposal.

**MARKING FOR GENERAL MEASURES ASSOCIATED WITH
NON-MANUFACTURED WOOD PACKING**

The mark shown below is to certify that the wood packing material which bears the mark has been subjected to general measures as described in this standard.



The mark should at minimum include the:

- symbol
- two letter ISO country abbreviation followed by a unique number assigned by the NPPO to the producer of the wood packing
- IPPC abbreviation for the general measure used.

NPPOs or producers may at their discretion add control numbers or other information used for identifying specific lots. Other information may also be included provided it is not confusing, misleading, or deceptive.

Markings should be:

- according to the model shown here
- legible
- permanent and not transferable (tags are not allowed)
- placed in a visible location on at least two opposite sides of the article being certified.

The use of red or orange should be avoided since these colors are used in the labeling of dangerous goods.

Reconditioned wood packing material or articles must be re-certified and re-marked. Old marks should be removed or covered.

Shippers should be encouraged to use appropriately marked wood for dunnage.

APPENDIX II

APPROVED MEASURES: METHYL BROMIDE FUMIGATION FOR NON-MANUFACTURED WOOD PACKING

The following minimum standard for methyl bromide fumigation treatment is approved for non-manufactured wood packing.

Temperature	Dosage Rate (lb/1,000 ft ³)	Minimum concentration readings (grams) at:			
		0.5 hr.	2 hrs.	4 hrs.	16 hrs.
21° C or above	1361g	1021	850	765	709
5-21° C	2268g	1701	1446	1304	1191

Notes

Any method of fumigation that meets or exceeds the specified temperature/time/concentration products is acceptable. For treatments of wood products alone, the concentration-time product must be at least 1920 gram-hours calculated on an initial methyl bromide concentration. For treatments of wood products associated with other commodities, the concentration-time product must be at least 760 gram-hours calculated on the initial methyl bromide concentration.

Both the **commodity** and the ambient temperature should be at the minimum recommended temperature or higher temperature throughout the entire treatment period.⁶

Readings more than 142g. below minimum at the end of exposure negates treatment. For readings less than 142g. below minimum at the end of exposure periods, add 57g./28 m³ for each 28 g. below minimum and extend the exposure for 4 hours.

Extra attention is required for maintaining minimum concentrations with sorptive materials.

Water vapor or other gasses may be evolved during the fumigation of uncured (green) wood. These gasses can give false readings unless an Ascarite filter (in addition to a Drierite filter) is used.

Adequate fan circulation is required to evenly distribute the fumigant initially and should be resumed anytime a difference of 100g. or more occurs between the highest and lowest readings.

APPENDIX III

REFERENCES ??

⁶ Certain countries require that the minimum commodity temp should be higher