

**INTERNATIONAL STANDARDS FOR
PHYTOSANITARY MEASURES**

DEBARKED AND BARK-FREE WOOD

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INTRODUCTION

SCOPE

This standard provides practical guidance to National Plant Protection Organizations (NPPOs) on differentiating wood with bark, debarked wood and bark-free wood, and how the removal of bark may reduce the risk of introduction and/or spread of quarantine pests associated with wood. This standard also provides guidance to NPPOs in determining tolerance levels for bark where the removal of bark is used as a single phytosanitary measure.

These guidelines do not consider the effectiveness of other treatments in combination with the removal of bark, nor do they provide technical justification for them.

REFERENCES

Export certification system, 1997. ISPM No. 7, FAO, Rome.
Glossary of phytosanitary terms, 2005. ISPM No. 5, FAO, Rome.
Guidelines for a phytosanitary import regulatory system, 2004. ISPM No. 20, FAO, Rome.
Guidelines for pest risk analysis, 1995. ISPM No. 2, FAO, Rome
Guidelines for regulating wood packaging material in international trade, 2002. ISPM No. 15, FAO, Rome.
Guidelines for the notification of non-compliance and emergency action, 2001. ISPM No. 13, FAO, Rome
International Plant Protection Convention, 1997. FAO, Rome.
Pest risk analysis for quarantine pests, including analysis of environmental risks and living modified organisms, 2004. ISPM No. 11, FAO, Rome.

DEFINITIONS

Definitions of phytosanitary terms used in the present standard can be found in ISPM No. 5 (*Glossary of phytosanitary terms*).

For the purpose of country consultation, this section also contains terms or definitions which are new or revised in the present draft standard. Once this standard has been adopted, the new and revised terms and definitions will be transferred into ISPM No. 5, and will not appear in the standard itself.

New term and definition

bark	The layer of a woody stem or root, outside the cambium
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Revised terms and definitions

bark-free wood	Wood from which all bark, except ingrown bark around knots and bark pockets between rings of annual growth, has been removed
debarking	Any process designed to remove bark from wood. Debarking does not necessarily make the wood bark-free

OUTLINE OF REQUIREMENTS

Depending on origin and destination, wood without any treatment poses a risk for the movement of quarantine pests. Some NPPOs require debarked or bark-free wood as a requirement for import. These guidelines provide advice to NPPOs on the minimum conditions applying to debarked and bark-free wood and a system for the identification of compliant wood. It also provides guidance for the verification of compliance and measures to be applied on non-compliance.

BACKGROUND

Wood with bark may be a pathway for the introduction and spread of quarantine pests. The level of risk is dependent on a wide range of factors such as the commodity type, origin and any treatment applied to the wood.

Debarking using conventional commercial procedures usually does not remove all of the bark from logs. It is recognized that up to approximately 3 percent of bark from coniferous wood and approximately 10 percent of bark from non-coniferous wood may remain after debarking.

Some National Plant Protection Organizations (NPPOs) apply debarking or bark-freeness as a phytosanitary measure to manage the risk associated with the movement of wood. Different interpretations by NPPOs of what constitutes debarked and bark-free wood often have an impact on the international trade in wood.

When the phytosanitary measures of debarking and rendering bark-free wood are considered insufficient to ensure that all pest risks are sufficiently managed, these measures may be applied in combination with other treatments. Alternatively, other treatments may not require the removal of bark. Additionally, in some cases the removal of bark from wood may increase the efficacy of other treatments and may facilitate visual inspection.

Ingrown bark around knots (i.e. areas of bark from branches that have become encased during annual growth) and bark pockets (i.e. areas of bark between rings of annual growth) are not considered to present a phytosanitary risk (a cross-sectional line drawing of wood is provided in Appendix 1).

REQUIREMENTS

1. General Requirements

1.1 Regulated commodities

This standard applies to wood and to all products made from wood other than:

- plywood, particle board, oriented strand board, veneer and other products made from wood that have been created using glue, heat and pressure, or a combination thereof
- sawdust, wood wool, wood shavings
- thin wood 6 mm in thickness or less.

1.2 Basis for regulating

Some NPPOs require debarking as a phytosanitary measure. Debarking of logs may be undertaken by industry as part of wood processing designed to remove a large majority of the bark. Debarking may adequately reduce the phytosanitary risk from larger xylophagous insects by limiting the possibilities of cambial feeding by the larvae. For the much smaller insects, such as bark beetles, the debarking process may leave sufficient bark for the larvae to complete their life cycle. The area around branch bases, for example, is particularly attractive to some bark beetles and therefore debarking is not always an adequate phytosanitary measure. It may also have only a limited effect against some fungal organisms. A generalized categorization of pest risk associated with the presence of bark is listed in Annex 1.

Although many pest risks are reduced by debarking, NPPOs should consider that, in some cases, the residual bark that remains after debarking may present a risk. For example, residual bark is often found in the widened area at the base of a tree, especially where large root buttresses are present, and around branch nodes. These areas are known to be preferred locations for beetle invasion and ovipositing. In such cases another phytosanitary measure may be required. This may be a requirement that the wood be bark-free.

Phytosanitary measures should not be required where there is evidence that pest risk is adequately managed or absent. This may be because of the origin (which may be a pest free area) or the order, genera or species of wood concerned. For example, tropical hardwood imported into a temperate country may not require the removal of bark. Importing NPPOs should determine whether the removal of bark is technically justified before applying it as a phytosanitary requirement.

2. Specific Requirements

2.1 Debarking

Debarking may be considered a sufficient requirement where it is significantly effective against pests that are known to be present in the country of origin and that are dependent on bark for some or all stages of their developmental cycle. Its use may be limited to certain times of the year, based on the period of emergence of pests in exporting country and further processing in the importing country, or may be combined with another measure where it is not sufficient to manage the phytosanitary risk when used alone.

2.1.1 Debarking tolerances

NPPOs may consider setting tolerances for residual levels of bark and, in addition to the criteria set out in ISPM No. 11 (*Pest risk analysis for quarantine pests, including analysis of environmental risks and living modified organisms*, 2004), should take into account the following:

- species of tree in relation to pest epidemiology
- bark thickness
- for species dependent on bark, the quantity of residual bark
- insect gallery size and configuration
- whether pest development occurs within the bark or below the bark
- moisture content and temperature of wood to sustain pest development
- climatic and seasonal conditions necessary to sustain pest development throughout the harvesting, storage and transport phases
- potential infestation of residual bark and wood
- commodity type (round wood, sawn wood, wood chips)
- transferability of pests from one species of wood to another.

Where debarking is required as a phytosanitary measure, NPPOs may consider a tolerance where individual pieces of wood should not have bark on more than 10 percent of their total surface area. NPPOs should consider that the shape and size of pieces of bark will affect the level of risk. For example, a piece of bark the shape and size of a sheet of paper (e.g. A4 or letter-size) poses a higher risk than a long narrow strip of the same surface area. Illustrations of debarked wood meeting the general tolerances specified are shown in Appendix 2.

2.1.2 Inspection to verify debarking

Inspection should verify that any tolerances set by the importing NPPO have not been exceeded. However, to provide some guidance to NPPOs where tolerances have not been established, debarking should at least remove the majority of bark on wood.

2.2 Bark-free wood

In some cases where the smallest pieces of bark may present a risk, NPPOs may apply a requirement that the wood be bark-free as a phytosanitary measure where it is technically justified. These may include:

- where a specific pest risk is identified and can be eliminated by complete removal of the bark
- wood that is subject to the application of another treatment and that treatment is insufficient to eliminate all pest risks, including re-infestation
- where the presence of bark may have an adverse effect on the efficacy of another treatment required to mitigate pest risks.

2.2.1 Bark tolerances for bark-free wood

Bark-free wood should generally not contain any bark above the cambial layer. However, NPPOs may allow defined tolerances for bark remnants for example for:

- maximum size of individual bark pieces per piece of wood
- maximum number or total bark area on each piece of wood
- maximum number of pieces of wood with bark remnants.

2.2.2 Inspection to verify the wood is bark-free

Where NPPOs require that wood be bark-free, the commodity should not retain any visible indication of bark. In many cases, this wood may contain evidence of cambium, which may appear as a brown discoloured tissue on the surface of the wood. Furthermore bark-free wood may also contain ingrown bark and bark pockets, but in general should not contain any evidence of the layer

of tissue above the cambium. However, if a specific tolerance has not been determined, infrequent detection of very small pieces (e.g. credit card size) may be permitted, provided that these show no evidence of pests. Illustrations of acceptable bark-free wood appear in Appendix 3.

2.3 Responsibilities of the exporting NPPO

The NPPO of the exporting country is responsible for the application of phytosanitary measures, the certification of exports and/or marking systems (if used) to verify compliance.

2.4 Non-compliance

In cases of non-compliance, the NPPO of the exporting country should be notified in accordance with ISPM No. 13 (*Guidelines for the notification of non-compliance and emergency action*).

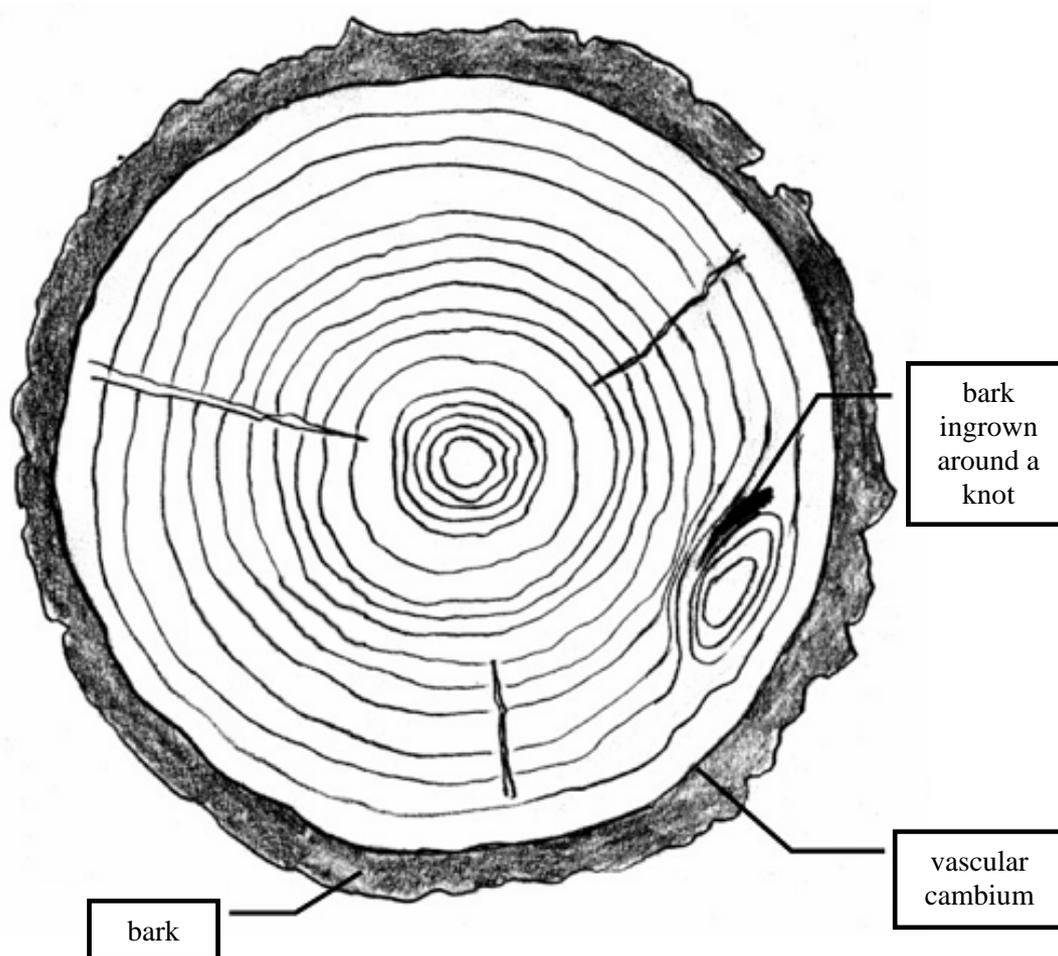
**GENERALIZED CATEGORIZATION OF PESTS BY PEST RISK ASSOCIATED
WITH THE PRESENCE OF BARK¹**

Effect of removal of bark on pest risk	Pest group
Removal of bark reduces phytosanitary risk	Cerambycidae*
	Curculionidae*
	Buprestidae*
	Fungi
	Lepidoptera
	Scolytidae*
	Siricidae
Removal of bark is not sufficient to reduce phytosanitary risk	Anobiidae
	Bostrychidae
	Isoptera (termites, not confined to wood)
	Lyctidae
	Nematoda

* For some species, debarking may not be an appropriate phytosanitary measure where the insect completes its life cycle either in the wood or in remaining bark. For other species, the complete removal of bark may not be an appropriate phytosanitary measure where the insect completes its life cycle within the wood.

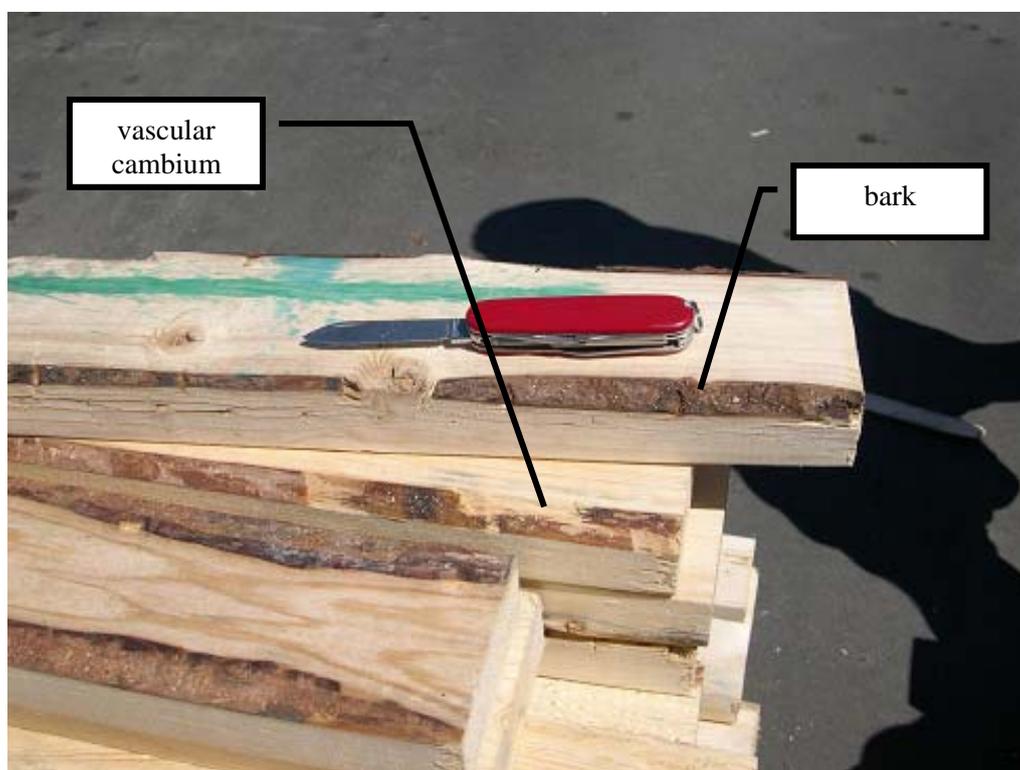
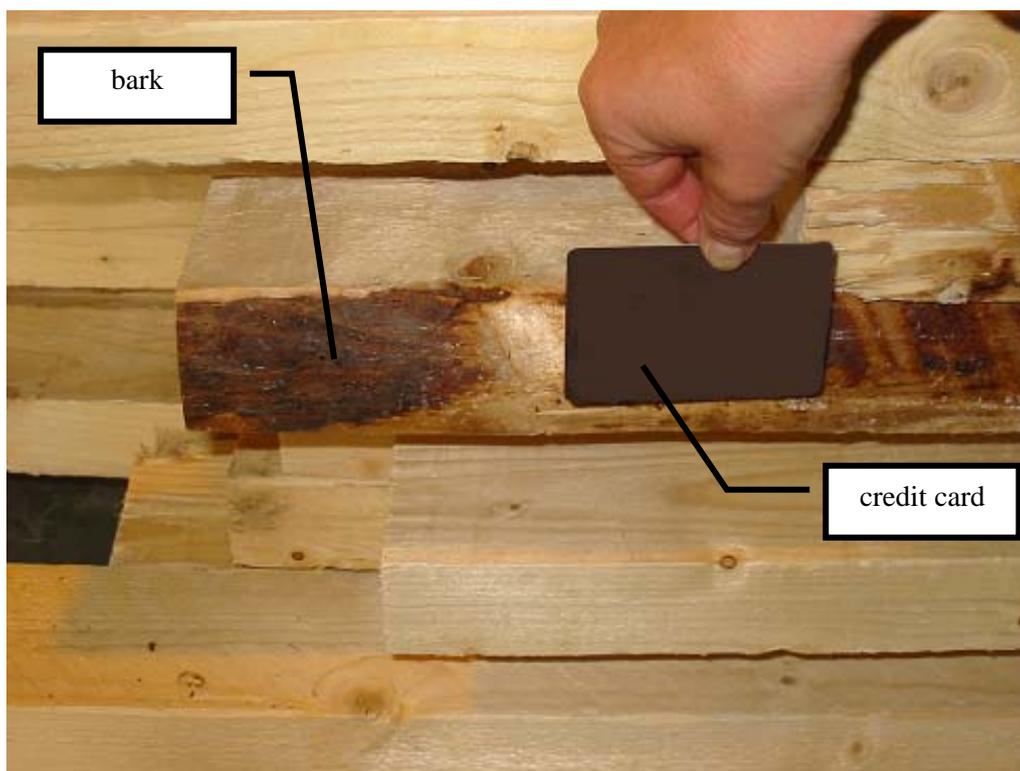
¹ This annex is an official part of the standard.

CROSS-SECTIONAL LINE DRAWING OF WOOD²



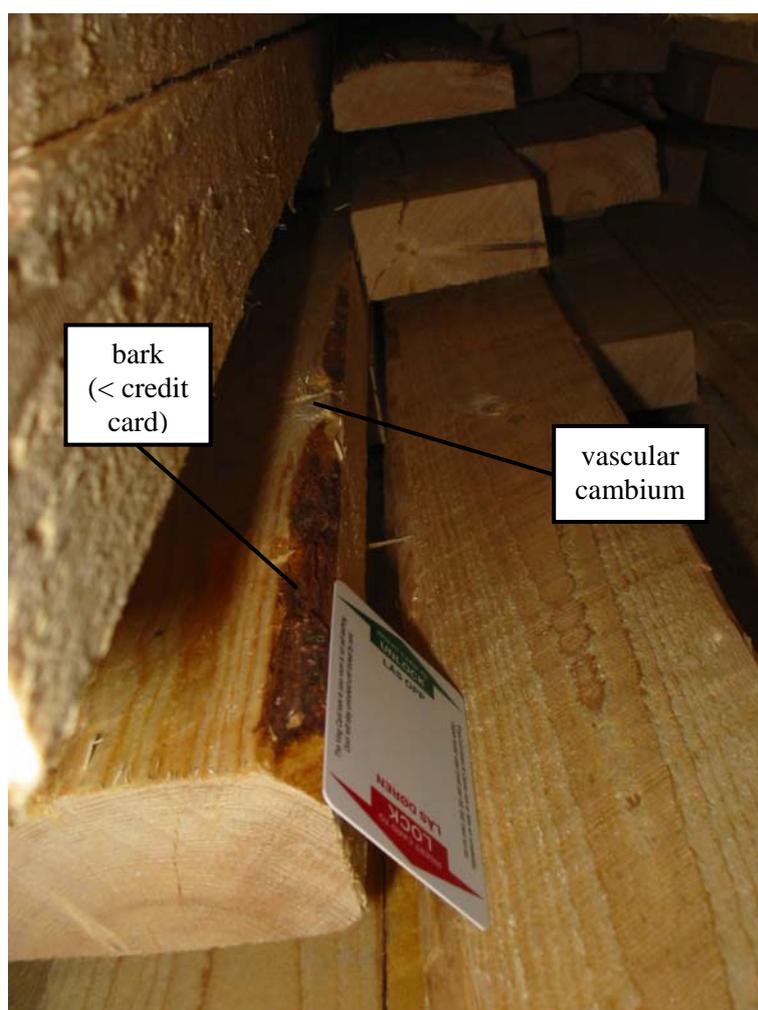
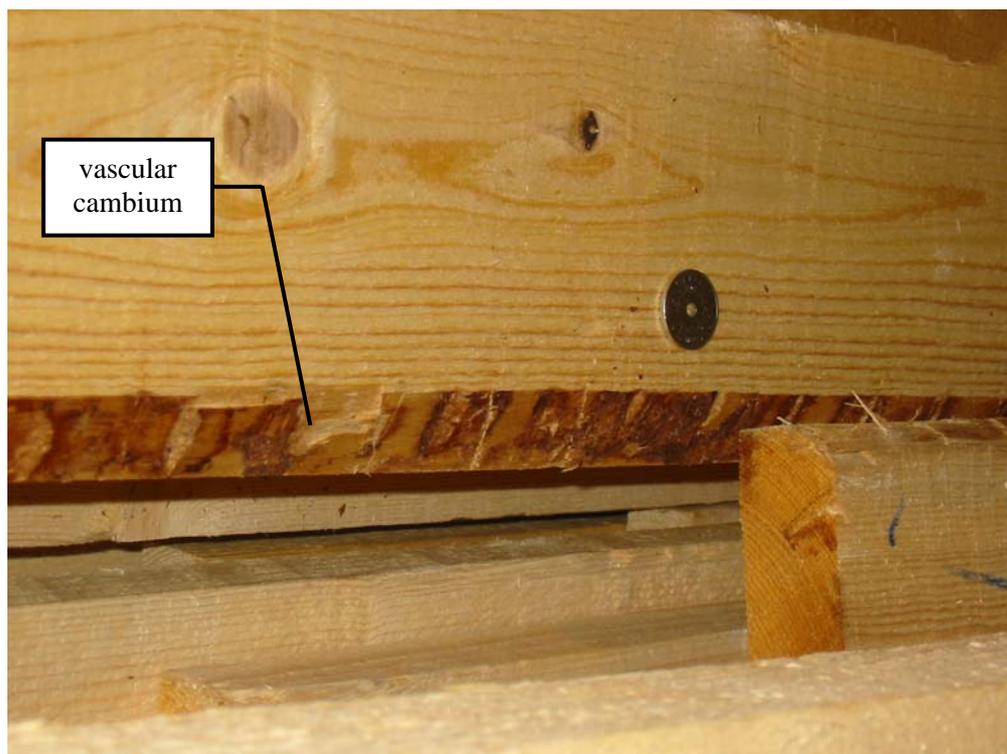
² This appendix is not an official part of the standard. It is provided for information only.

ILLUSTRATIONS OF DEBARKED WOOD³



³ This appendix is not an official part of the standard. It is provided for information only.

ILLUSTRATIONS OF BARK-FREE WOOD⁴



⁴ This appendix is not an official part of the standard. It is provided for information only.