

Engineering Specification

Wooden Packaging, Material Selection, Treatment and Marking Requirements

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Description of Key Changes	EC	Date
Key changes are listed below which were driven by the update of ISPM-15 (April, 2009) and how this has been interpreted in some key countries (especially China). <ul style="list-style-type: none"> Requirement for one IPPC logo marking on each of TWO opposite vertical sides of the article. Change from our previous "bark free" requirement to the newly accepted IPPC standard of "Debarked". Debarked is less stringent than bark free. Addition of restricted treatments (Chemical pressure impregnation), do not use this. Additional examples of markings and some new definitions 	L79979	07-2009
<ul style="list-style-type: none"> Added paragraph on sustainable sourcing of wooden raw materials (repeated from 5897660) Added references to 5897660 for REACH and other restricted substances affecting all packaging. Added additional examples of restricted chemical treatments (mercury and asbestos compounds). Added reference to dielectric heat treatments (new "DH" marking where applicable). Added examples of "debarked" wood which technically meet the requirements of ISPM-15. Added photographic examples of acceptable/unacceptable markings Add linkages to the 2017 version of the ISPM-15 Standard (see 4.5) 	P11793	04-2018

For user convenience, changes to this specification made since the July, 2009 version are in blue text. However, deletions of text are not included.

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1 Introduction

This specification provides the requirements for selection, treatment and marking wooden packaging in response to regulatory activities affecting exports of materials capable of harboring destructive pests; in particular non-indigenous insects such as the Asian long horned beetle and the pinewood nematode.

1.1 Scope

All packing materials made from any amount or any combination of solid non-manufactured wood and/or processed manufactured wood components. This is generally in the form of shipping pallets or crates.

1.2 Purpose

To minimize delays or rejected shipments associated with compliance checks due to International Phytosanitary regulations designed to combat pest migration.

1.3 Applicability

All IBM operations worldwide, including Original Equipment Manufacturers (OEM's) and other vendors performing work for IBM or under contract by IBM. It also includes packing for procured parts from suppliers bound for IBM Manufacturing, OEM, other vendors, or Field Service locations worldwide. For simplicity, the term IBM used in this document implies any or all of these entities which are part of the IBM global supply chain.

1.4 Objectives

To implement a common marking procedure globally and to identify and use only approved and properly treated materials as required due to international phytosanitary requirements and related quarantine controls.

Note: Regulators continue to change their preferred terminologies. Non-manufactured wood packing (NMWP) is technically the same as Solid Wood Packing Materials (SWPM). These terms may be used interchangeably in this document and in other official regulations. See section 6 for additional terminology.

2 Requirements

All *non-manufactured* wood packaging (NMWP or SWPM) of any type used for shipments on behalf of IBM worldwide must be selected, treated and marked per this specification regardless of origin or destination.

All *manufactured* wood packaging (MWPM) must be marked regardless of origin or destination. MWPM becomes immune to infestation as it is created and therefore does not require secondary treatments. **MWPM is not regulated** and is not in scope for the ISPM-15 related regulations but is in scope for the requirements of this specification.

2.1 Materials Selection, Preparation and Treatment

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- All non-manufactured wood packaging (NMWP or SWPM) must be heat treated to a (wood) core temperature of min. 56°C (133°F) for min. 30 minutes. If heat treatment facilities do not exist then avoid this type of material (NMWP or SWPM) altogether.
- **Debarked Wood:** Due to inconsistent border inspections, it is preferable if wood is entirely bark free (see definitions). However, irrespective of the type of treatment applied, the minimum requirement (per ISPM-15) is that all wood packaging material must be made of debarked wood. Any number of visually separate and clearly distinct small pieces of bark may remain if they are:
 - Less than 3 cm in width (regardless of the length) or...
 - Greater than 3 cm in width, with the total surface area of an individual piece of bark less than 50 square cm.
- For methyl bromide treatment the removal of bark must be carried out before treatment because the presence of bark on the wood affects the efficacy of the methyl bromide treatment. For heat treatment, the removal of bark can be carried out before or after treatment.
- **Prohibited Treatments:**
 - Pressure treated wood shall not be used for packaging purposes. For instance, chemical pressure impregnation (CPI) using creosote, mercury compounds, arsenic compounds or other biocides. Many of these substances are now being restricted or banned (ref. REACH¹). The reason is that these chemicals are toxic and therefore the wood cannot be recycled or burned safely.
 - **Fumigation:** Although allowed by International Plant Protection quarantine regulations to combat pest migration, do **not** use **Methyl Bromide (MB)** for fumigation purposes. Exceptions to this policy are allowed only if MB is specifically mandated by law and no other remedy (like Heat Treatment or alternative materials that do not require treatment) is available. However, there is no requirement to measure packaging components or sub components for the presence of MB in their construction¹.

Exceptions:

- Fumigation with Methyl Bromide is allowed only as an interim measure until a suitable non-regulated alternative is approved by IBM Packaging Engineering and Procurement (such as plywood or other manufactured wood, plastic, corrugated, and so on) or until heat treatment or alternative approved treatments become available.
- Materials made and marked per the previous editions of this specification may still be used provided that they comply with current regulations. However, all newly built wooden packaging must be made and marked as described herein.
- “Do Not Export” or “Not for Export” could be marked on untreated non-manufactured wooden packaging materials that may be in use for internal warehousing purposes or other domestic shipping situation previously approved as an exception.
- Future Treatments: New wood treatment technologies are being developed and may be used in lieu of heat treatment but only if they are proven effective and accepted globally by the IPPC.

¹Refer to IBM Engineering Specification 5897660 for REACH and other substance restrictions affecting packaging.

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Important: *Exceptions to the requirements of this specification must be approved in writing by the responsible IBM Procurement Representative after gaining concurrence from all affected IBM Depts. (Pkg. Engineering, Global Logistics, Manufacturing, etc.).*

Responsible Sourcing of Wood and Paper based Packaging Materials:

All sources of wood and paper based packaging must come from sustainability managed forests. Packaging materials must not contain or be derived from any illegally sourced wood material. Illegally sourced wood material includes, but is not limited to wood products made from illegally harvested timber, materials stolen from parks or other protected areas and wood material exported in violation of export bans.

2.2 Marking Procedure



- IBM requires some markings which are technically not required by International regulations at this time (Example: “MWPM” and part numbers). The purpose is so that operations personnel can identify compliant materials as regulations change.
- These and all other markings to be superseded only by regulatory requirements, accepted international standards, or a subsequent revision to this specification.
- For regulated materials only, the ISPM-15 compliant marking shall consist of the treatment initials (HT or MB), the material classification, the country of manufacture, and the supplier designation (see 2.3 and 2.9 for further details). Mark the pallet, skid, crate, or other wooden packaging assembly a minimum of two times -- once on each of two opposite exterior vertical surfaces.
- *ISPM-15 specifies the “preference” of dual markings but some countries (including China) have interpreted this to be a mandatory minimum requirement.*
- Use **19mm** (0.75”) minimum characters. Printing may be done with ink jet printing, heat stamping, paint stencil, or other similar permanent and indelible method. Hand writing the information is not permissible.
- The default color should be black or other maximum contrasting color if appropriate. Do not use red or orange colors since these colors are used with labeling of dangerous goods.
- The ISPM-15 compliance symbol, the country of manufacture, the supplier designation and the treatment initials must be kept together as shown in the example of section 2.9.
- Client specific information such as Part Number, EC level and so on should appear separately from the ISPM-15 related markings.
- Crates with removable sides and top must be marked on each panel as well as the base pallet. See section 2.9 for examples.

2.3 Material Classifications and Markings

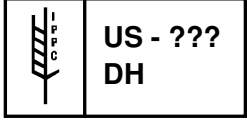
A given item shall only carry ONE classification regardless of how many different materials are included in the construction. Follow this list in sequence, the item should carry the marking of the first scenario that matches exactly.


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Solid Wood Packing Material (SWPM or NMWP), Heat Treated		
H T	Material Composition Requirements	Example
Must Contain	ANY amount of properly heat treated non-manufactured wood which by definition has been heated to a wood core temperature of at least 56°C / 133°F for a minimum of 30 minutes and that documentation certifying that fact has been provided by the treatment facility to the package/pallet manufacturer and can be traced to the production of that specific package, pallet, and	
May Contain	Any amount of MWPM and/or non-wooden material.	
Must Not Contain:	Any amount of untreated non-manufactured wood.	
<p>Note: The “???” is to be replaced by the officially assigned facility code (see section 2.4 for additional details). Do not actually mark “???”.</p> <p>Important: Use of kiln dried lumber is acceptable <u>provided</u> that it meets the temperature and duration requirements (56°C / 133°F for 30 minutes) to meet the definition of “heat treated” per ISPM-15. Such materials are usually mill stamped “KD-HT” or “HT”. Dry lumber alone is not a reliable indication of proper heat treatment nor is lumber mill stamped with just “KD”.</p>		
SWPM or NMWP, Fumigated with Methyl Bromide		
M B	Material Composition Requirements	Example
Must Contain	ANY amount of properly fumigated non-manufactured wood with documentation certifying that fact provided by the treatment facility to the package/pallet manufacturer and can be traced to the production and treatment of that specific package, pallet, shipment, and so on.	
May Contain	Any amount of MWPM and/or non-wooden material.	
Must Not Contain:	Any amount of untreated non-manufactured wood regardless of species	
<p>Note: The “???” is to be replaced by the officially assigned facility code (see section 2.4 for additional details). Do not actually mark “???”. Example Shown: CN = China.</p> <p>Important: It is <u>IBM's policy</u> to avoid the use of fumigation as a treatment measure due to secondary environmental concerns (toxicity to non-targeted species and atmospheric ozone depletion). Fumigation should be considered the “last resort” where all other options fail due to availability or extreme cost considerations. Shippers are required to seek other treatment options or alternative materials in lieu of fumigation.</p> <p>However, fumigation is authorized by International standards and regulations and may be required by some countries. This is because exemptions to the Montreal Protocol on ozone depletion are allowed for pest quarantine purposes. Therefore, it is listed here for reference and awareness since it is likely that some pallets or packaging will enter our system treated and marked in this manner. Such materials should be reused where possible since the “damage is already done” with regard to the use of the fumigant.</p>		

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Solid Wood Packing Material (SWPM or NMWP), Dielectric Heat		
D H	Material Composition Requirements	Example
Must Contain	ANY amount of properly dielectrically heat treated (e.g. microwave) wood packaging material composed of non-manufactured wood, not exceeding 20cm when measured across the smallest dimension of the piece or the stack. Must be heated to achieve a minimum temperature of least 60°C / 140°F for a minimum of 1 continuous minute throughout the entire profile of the wood (including its surface).	
May Contain	Any amount of MWPM and/or non-wooden material.	
Must Not Contain:	Any amount of untreated non-manufactured wood.	
<p>Note: The “???” is to be replaced by the officially assigned facility code (see section 2.4 for additional details). Do not actually mark “???”.</p> <p>Comments: Dielectric heating is a technology approved by ISPM in 2017 aimed at speeding up the heat treatment process. ISPM-15 requires at ‘DH’ marking for this method of treatment. Refer to ISPM-15 (2017) for additional info (see section 4.5 of this document).</p>		

Manufactured Wood Packaging Material (MWPM)		
MWPM	Material Composition Requirements	Example
Must Contain	ANY amount of manufactured / processed wood components. Example: A pallet or crate made with any amount of Oriented Strandboard (OSB), plywood, strawboard, masonite, particle board, paper overlaid veneer (POV), laminated veneer lumber (LVL) or combination of these. These all meet the definition of manufactured wood packing materials as defined by the Animal and Plant Health Inspection Service (APHIS). Such materials are NOT regulated. Usually the assembly will be 100% processed wood components aside from hardware items (nails, etc.)	 <p>The MWPM mark is an IBM specified mark; not an official regulatory mark and therefore does not get an IPPC symbol or facility code.</p>
May Contain	Any amount of non-wooden material (e.g. metal or plastic cleats on a crate).	
Must Not Contain:	Any amount of non-manufactured wood (NMWP or SWPM) of any type whether treated or not.	
<p><i>Plywood/OSB/Masonite, and so on are considered “manufactured wood” because it has been processed under extreme heat and pressure. It is irrelevant what wood species is used in the manufacture of these materials (can be coniferous and/or non-coniferous). Assembling a pallet from cut lumber is <u>not</u> considered “manufactured” with regard to pest regulations.</i></p>		

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Very careful consideration must be given for assemblies which contain a mixture of materials as explained below. For instance, even if the majority of the construction consists of manufactured wood (MWPM) components, the marking shall relate to the non-manufactured wood packaging (NMWP) component that exists (if any) and any treatment that was done to it. Manufactured wood (MWPM) has typically been processed under heat and pressure such as plywood, particle board, oriented strand board, and so on. Manufactured wood is not regulated.

2.4 Supplier or Facility Code Designation

Required: To identify the final assembly supplier of the pallet, package, crate and so on which contains treated wood. This may be done only per following specification:

The facility code assigned to the producer of the wooden packaging material by the authorized National Plant Protection Organization (NPPO). This code must be used if this system is established in the origin country.

Important: The facility code shall be that of the final assembly location which built the regulated and treated pallet or package; not the source of the raw wood from which the assembly was made. If an authorized NPPO process is not established in the origin country to provide the facility code and therefore, a proper ISPM-15 compliant marking is not possible, **then an alternative non-regulated packaging material must be used.**

Thus, it is not acceptable to mark supplier names, logo's, or initials in lieu of the authorized facility codes on regulated articles. NPPO Agency logo's are permitted and may be required in some countries as part of the [treatment](#) audit trail.

2.5 Country of Manufacture of the Wooden Assembly

Required: This is the 2 character abbreviation as defined by ISO-3166 and precedes the facility code. The country that is marked is that which built the wooden packaging assembly (pallet, crate, etc.), not necessarily the source of the raw wood or the contents on the pallet or in the wooden packaging. The NPPO audit process will generally be done on the Manufacturer's premises and will involve inspection of raw wood sources and certifications from those sources regarding their treatment facilities. It is possible that lumber from multiple sources may be included in a given package assembly.

2.6 Part Number of the Wooden Assembly

The 7 digit alphanumeric IBM part number of the package assembly. This is **required** for IBM designed and specified items, and is **recommended** for supplier's pallets and their part number for it.

2.7 Engineering Change (EC) Level of the Wooden Assembly

Optional: The six digit alphanumeric "EC" number which may distinguish a different design for items with the same part number. This may be important to some locations and it is their prerogative to specify it if they wish. If the EC level is included, use the prefix "EC" in front of the number to identify it.

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2.8 Reusable Pool System Symbol

Optional / Restricted: For instance, the “EUR” symbol associated with the European pool system pallets (such as “Euro Pallets”) or any other similar program previously established or future program. These markings to be used only as specified by that system. Only pallets meeting the design and construction requirements of the marked pool system are to carry that symbol. Note: Unless the treatment type is marked on a “Euro Pallet” it should not be exported to regulated countries except within EU countries.

2.9 Examples of Acceptable and Unacceptable Markings

Conforming Marks



Figure 1¹ – Mark matches example 6 of Annex 2 of ISPM 15:2009. Additional information included outside the borders of the mark.

Non-Conforming Marks

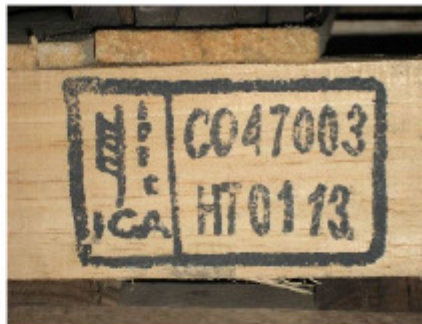


Figure 2¹ – Information beyond what is prescribed in Annex 2 of ISPM 15:2009 contained within the borders of the mark.



Figure 3¹ – Mark matches example 1 of Annex 2 of ISPM 15:2009.



Figure 4¹ – Mark does not contain the required borders.



Figure 5¹ – Orientation of information does not match the examples in Annex 2 of ISPM 15:2009. Information included within the borders of the mark exceeds the requirements.

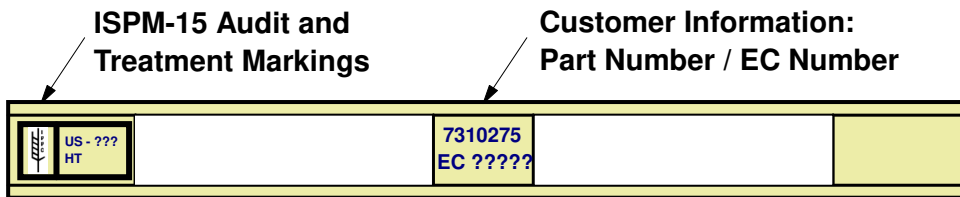
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Source of Above Images:

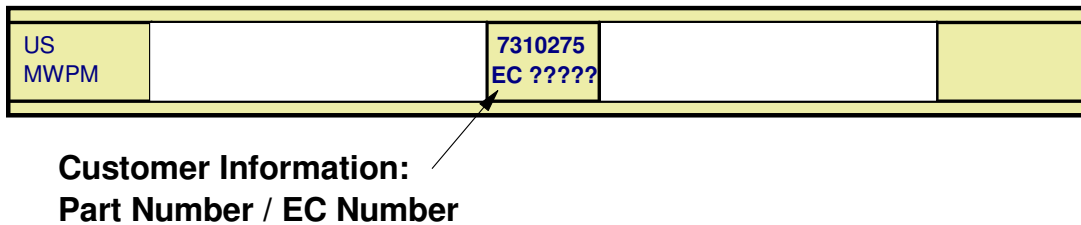
https://www.ippc.int/static/media/files/publications/en/2014/04/30/ispm_15_ed_withannexes_2014-04-30.pdf
(page 44)

Comment: Although these images are from an official source, the conforming marks on the left appear to be fainter than IBM would recommend to ensure long term legibility. Suppliers should use marking techniques that maximize contrast, clarity and long term legibility.

2.10 Example Markings of a Wooden Pallet

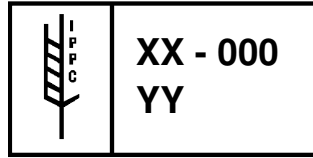


Example 1 (above): Solid Wood Pallet which may include non-wood components such as metal, plastic, including composite wood, etc. **The IPPC logo markings must appear on at least TWO opposite vertical sides and must be permanent and legible.**



Example 2 (above): Composite Wood Pallet which may include non-wood components such as metal, plastic, etc. Important: There is no IPPC logo marking on a composite wood pallet (that is, a pallet with no solid wood whatsoever) **because such materials are not restricted.**

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Important: This stamp / marking shown above has been adopted by the International Plant Protection Convention (IPPC), an organization with over 115 member countries. The IPPC symbol on the left side of the marking is the officially licensed mark that will be used for all properly treated regulated materials (NMWP or SWPM) to indicate compliance with global phytosanitary standards. The right side of the marking provides an audit trail to the source of the materials:

- **XX** = The 2 character ISO 3166 country of origin of the wooden package assembly, not necessarily the raw wood within the assembly. Don't mark "XX".
- **000** = The unique facility code assigned to that manufacturer by the NPPO (National Plant Protection Organization or Govt. Authorized lumber grading agency). Don't mark "000".
- **YY** = The 2 character abbreviation of the treatment method (HT or MB). Don't mark "YY"
- NPPO or Grading agency logos are permissible but must be placed **OUTSIDE** the rectangular borders of the IPPC logo. This is a new requirement in the 2009 edition of ISPM-15.

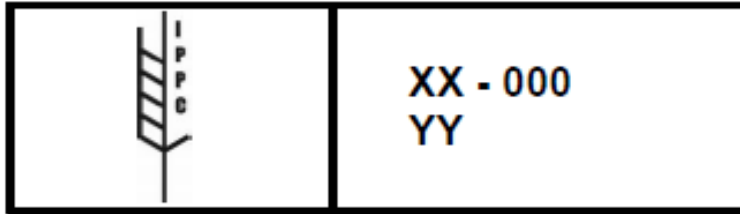
Placing the IPPC symbol on the regulated articles implies that the treatment process has met Governmental standards and has been audited by authorized parties. Typically, this would be the lumber grading agencies or other group acting as an agent for the National Plant Protection Organization (NPPO). **Caution:** Use of the IPPC symbol PRIOR to that audit being conducted is not allowed. Contact your local pallet supplier or NPPO for specific rules in that respect.

Conversely, the IPPC symbol must NOT be used for materials which are not regulated even if they are inherently pest-free; for instance, plastics, manufactured wood (such as plywood and OSB marked as MWPM by IBM), corrugated fiberboard, metals, other composites, and so on.

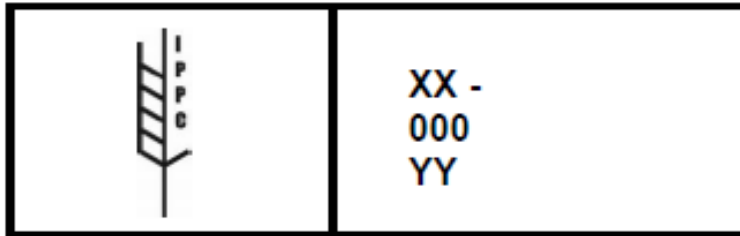
See below for alternative marking layouts (from ISPM-15, Annex 2) which can be employed if space is limited on a particular item.

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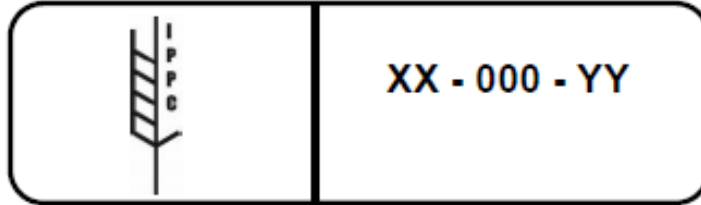
Example 1



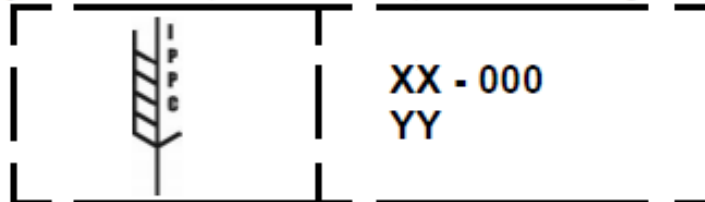
Example 2



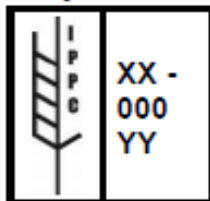
Example 3 (This represents a prospective example of a mark with the border with rounded corners.)



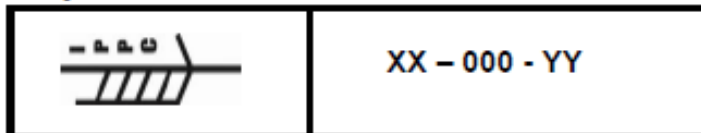
Example 4 (This represents a prospective example of a mark applied by stencilling; small gaps may be present in the border, and the vertical line, and elsewhere among the components of the mark.)



Example 5



Example 6



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3 Additional Requirements and Points of Emphasis

3.1 What to do if the Material Classification Cannot be Affirmed

Paint over existing marks or simply do not mark items if the origin or treatment cannot be affirmed. By default, anything marked this way or unmarked cannot be used for export to a regulated country or shipped to or from IBM. Untreated pallets that are used for internal handling or warehousing purposes may be marked "Do not Export".

3.2 What to do with refurbished components that are already marked

If refurbishing a pallet which has already been marked; obliterate, cover up, or remove the original markings,



3.3 Remanufactured and Repaired Pallets

- A **remanufactured** pallet is one in which more than approximately one third of its components have been replaced. Use of remanufactured pallets is encouraged. However, remanufactured pallets containing any amount of NMWP or SWPM must be entirely retreated and remarked even if all of the components of the refurbished pallet were previously treated.
- A **repaired** pallet is one in which less than approximately one third of its components have been replaced. The newly added components each have to be treated and marked with the IPPC logo but the entire assembly does not have to be retreated and remarked.

3.4 What NOT to Mark

- Do not mark items which are clearly not of wooden origin unless that assembly does have some wooden components somewhere else in the assembly. For instance, if a package consisted of a plastic pallet and a wood crate on top of it then the appropriate wood classification marking should be placed on a vertical surface of the wooden crate portion, not the plastic base pallet. No pest related markings are required for corrugated or plastic items since these are not regulated items.
- It is not necessary to mark each piece of lumber in an assembly, nor is it absolutely necessary for the required marking to be placed only on the regulated material portion of the assembly. For instance, if an assembly was made from a permanent combination of heat treated wood and plywood, the HT marking could appear on the plywood surface if this made it more visible. However, despite this, some inspectors have expressed a preference that the marking should appear on the regulated portion of the assembly. So if there is otherwise no difference then it would be *recommended* to put the marking on the NMWP portion if feasible.
- Do not mark items as being treated if the composition or treatment history is unknown or cannot be verified.

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Examples of Debarked Wood (per ISPM-15 rules)	Photos
<p>1. Although this board has bark and vascular cambium, it is considered to be within the limitations of debarked lumber. The bark on this board has several close calls. There is non-continuous bark that is less than 3cm in width, and non-continuous bark that is wider than 3cm. Where the bark is wider than 3 cm, it is smaller than 50 square cm (fits under a credit card). BORDERLINE, AVOID IF POSSIBLE</p> <p>2. This board is very similar to #1. It has small non-continuous pieces of bark. None of the bark on this board measured wider than 3cm. PASS</p> <p>3. Two small strips of bark run along each of the top edges of this board. The strips are both less than 3cm wide. Because they less than 3cm wide, they could both run the whole length of the board and still pass as debarked. PASS</p> <p>4. There is no bark on this board. There is vascular cambium, which does not count as "bark". PASS</p> <p>5. Similar to #3, this board has a thin strip of bark that is less than 3cm in width, so is considered to be "debarked". PASS</p> <p>6. This board is BARK FREE. Because this board greatly surpasses the standard, it passes. PASS</p>	
<p>This board has bark and vascular cambium exposed along its side. It is continuous down the entire side of the board, and measures greater than 3cm in width in most places. Because the bark is wider than 3cm in one or more places and does not fit under a credit card, this board would fail the debark test. FAIL</p>	

4 References

4.1 IBM Procurement

[Http://www-03.ibm.com/procurement/proweb.nsf/ContentDocsByTitle/United+States~Information+for+suppliers](http://www-03.ibm.com/procurement/proweb.nsf/ContentDocsByTitle/United+States~Information+for+suppliers)

4.2 United States Department of Agriculture (USDA / APHIS)

http://www.aphis.usda.gov/import_export/plants/plant_imports/wood_packaging_materials.shtml

4.3 National Wooden Pallet and Container Association (NWPCA)

<http://www.nwpc.com>

4.4 IBM Import / Export Shipping Procedural Instructions (SPI's)

<https://www-03.ibm.com/procurement/wwd/spi/globalspis.nsf>

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Note: The above site is password protected, access approved for IBM suppliers via IBM Procurement. This process provides country specific import requirements.

4.5 International Standard for Phytosanitary Measures, **ISPM-15 (2017)** “Guidelines for Regulating Wood Packaging Material in International Trade” Also known as “the IPPC Standard”. <https://www.ippc.int/en/publications/640/>

Direct to Document:

https://www.ippc.int/static/media/files/publication/en/2017/05/ISPM_15_2013_En_2017-05-25_PostCPM12_InkAm.pdf

See also Frequently Asked Questions: <https://www.ippc.int/en/faq/#Ispm15>

4.6 Listing of Countries that have adopted ISPM-15 (<http://www.ispm15.com>)

Are you reading this file hard copy? Find it soft copy at this IBM Internet accessible URL:

<http://www-03.ibm.com/procurement/proweb.nsf/ContentDocsByTitle/United+States~Information+for+suppliers>

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5 Terminology

Following are common terms used in the pallet industry which may or may not be included in this specification.

Term	Definition
Banding Notch	See "strap slot"
Bark Free Wood	Wood from which all bark excluding the vascular cambium, ingrown bark around knots, and bark pockets between rings of annual growth has been removed. For photo examples: http://tcrlc.com/debarked_wood_definition_photos.html
Block	Rectangular, square, or cylindrical deck spacer, often identified by its location within the pallet -- corner block, end block, edge block, inner block, center or middle block
Block Pallet	A type of pallet with blocks between the pallet decks or beneath the top deck
Butted Deck board	An inner deck board placed tightly against an adjacent lead deck board.
Bottom Deck	Assembly of deck boards comprising the lower, load bearing surface of the pallet.
Captive Pallet	A pallet intended for use within the confines of a single facility, system or ownership; not intended to be exchanged.
Chamfered Deck boards	Deck boards with edges or one or two faces beveled, either along the full or specified length of board or between the stringers or blocks, allowing easier entry by pallet jack wheels.
Closed Distribution System	Shipping system restricted to moving goods between specified plants and facilities.
Coniferous Wood	Derived from coniferous species of wood which are needle bearing trees such as Pine, Spruce, and Fir. These are also known in the trade as "softwoods" even though it has nothing to do with wood density. Many coniferous species are susceptible to infestation by the pinewood nematode.
Non-Coniferous Wood	Derived from non-coniferous (or deciduous) species of wood which are broadleaf bearing trees such as Oak, Aspen, Maple, Alder, and Poplar. Non-Coniferous trees lose their leaves during autumn. These are also known in the trade as "hardwoods" even though it has nothing to do with wood density. Many hardwoods are susceptible to infestation by wood boring insects such as the Asian Long horned Beetle..
Debarked	From the IPPC Standard: The removal of bark from round wood (important: debarking does not necessarily make the wood "bark free"!); For example Photos: http://tcrlc.com/debarked_wood_definition_photos.html
Deck	One or more boards or panels comprising the top or bottom surface.
Deck Mat	Assembly of deck boards and stringer boards, forming the deck of a block pallet.
Deck board	Element or component of a pallet deck, oriented perpendicular to the stringer or stringboard.
Deck board Spacing	Distance between deck board supports (stringers, stringer boards, or blocks)
Deflection	The amount of deformation or bending in a pallet or pallet component under load
Double Face Pallet	A pallet with top and bottom decks
Drive Screw Nail	Helically threaded pallet nail
Engineered Wood	Products made from processed or manufactured wood. For instance, plywood and oriented strand board. Although made from wood these are not considered "non-manufactured wood" with regard to quarantine regulations.
Exchange Pallet	A pallet intended for use among a designated group of shippers and receivers where ownership of the pallet is transferred with the ownership of the unit load; common pool pallet.
Expendable Pallet	A pallet designed for a single trip to the receiver wherein it is disposed ("one way").
Fastener	A mechanical device for joining pallet components such as nails, screws, bolts, or staples.
Flush Pallet	A pallet with deck boards flush with the stringers or blocks along the sides of the pallet.
Fork Entry	Opening between the decks, beneath the top deck or beneath the stringer notch to admit forks.
4-Way Block Pallet	A pallet with openings at both pallet ends and along pallet sides sufficient to admit hand pallet jacks; full four-way entry pallet.
Free Span	The distance between supports in a warehouse rack.
4-way Entry (Full)	Implies that it is a block style vs. Stringer style pallet.

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4-way Entry (Partial)	Implies that it is a stringer style pallet with fork notches in the stringers.
Full Perimeter Base	A pallet which has bottom deck boards on all four sides on the outside edges of the pallet. See also Unidirectional base.
Hand (wheel) jack opening	Space provided in the bottom deck to allow pallet jack wheels to bear on the floor.
Hardened Steel Nail	Heat treated and tempered steel pallet nail with a MIBANT angle between 8 and 28 degrees.
Hardwood	An industry term meaning wood from non-coniferous or broad leafed species of trees. This does not mean that it is always harder than some coniferous (softwood) species.
Heat Treated	Implies that the wood has been heated to a specific core temperature and duration. 56C for 30 minutes is typically the minimum temperature and duration in order to be considered "heat treated". Note: "Kiln Dried" may or may not have achieved minimum temperature requirements to be considered heat treated; conversely, something that is heat treated is not necessarily "dry" (< 20% moisture).
Helically Threaded Nail	Helically (continuous spiral) threaded pallet nail. See also drive screw nail
IPPC	International Plant Protection Convention
ISPM	International Standards for Phytosanitary Measures. ISPM-15 is pertinent to this.
Joint	Intersection and connection of components, often identified by location within the pallet as the end joint, center joint, and corner joint.
Kiln Dried	Implies that the wood has been dried in a kiln to a moisture content of less than 20% by weight. Usually this also means that the temperature achieved also meets heat treatment requirements but not necessarily.
Pallet Length	Refers to the stringer or stringboard (in block pallets) length; it also refers to the first dimension given to describe the pallet. I.e. 48" x 40", where 48" is the pallet stringer / stringboard length.
Manufactured Wood Packing Materials (MWPM)	Materials which by virtue of the way they are made are not pathways for pest migration. Examples: Plywood, oriented strand board (OSB), paper overlaid veneer (POV), masonite, and particle board. Such materials are not regulated and are therefore compliant with international regulations aimed at preventing pest migration. MWPM is not an officially recognized acronym, it is used by IBM to mark materials of this type for our own convenience so that self-declarations are accurate.
MIBANT Angle	The bend angle in a fastener shank when subjected to a MIBANT test.
MIBANT Test	Morgan Impact Bend Angle Nail Tester: a tool used in the lumber industry as an indication of impact bend resistance of nails and staples. See ASTM F680 "Standard Test Methods for Nails."
Non-Coniferous Wood	See definition moved up next to Coniferous Wood for convenience.
NPPO	National Plant Protection Organization. This is an agency affiliated with the IPPC and has jurisdiction within a given country. Example: APHIS for the United States.
Non-Manufactured Wood Packing (NMWP) (Same as SWPM)	All packing materials (pallets, crates, dunnage, and so on) that are made from any amount of dimensional lumber whether treated or not. Many countries require such materials to be heat treated, chemically treated, or fumigated to prevent pest migration.. NMWP is equivalent to SWPM (solid wood packing material).
Non-Reversible Pallet	A pallet with bottom deck board configuration different from the top deck and therefore should not be inverted for use.
Notch	Cutout in lower portion of the stringer to allow entry for the fork tine, usually 9" in length and 1-1.5" in depth.
Notched Stringer	A stringer with two notches spaced for fork-tine entry. A pallet made with these is considered a partial 4-way entry pallet.
Opening Height	The vertical distance measured between decks, or from the floor to the underside of the top deck, or from the floor to the top of the stringer notch.
Oriented Strandboard (OSB)	Composite wood comprised of flakes of wood mixed with resin and formed into panels.
Overall Height	The vertical distance measured from the floor to the top of the pallet.
Pallet Jack	Hand-propelled, wheeled platform, equipped with a lifting device for moving palletized unit loads.

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Particle Board (PB)	Defined to mean a panel composed of cellulosic material (usually wood) in the form of discrete particles (as distinguished from fibers, flakes, or strands) that are pressed together with resin.
Presswood	Made from cellulosic material in the form of discrete particles that are pressed together with resin. Presswood blocks are often used in pallet construction.
Racked Across Deck boards	Maximum load carrying capacity and deflection of a pallet where the rack frame supports the pallet only at the ends of the deck boards.
Racked Across Stringers	Maximum load carrying capacity and deflection of a pallet where the rack frame supports the pallet only at the ends of stringers.
Refurbishment	The process of repairing and reusing a discarded and salvaged pallet.
Remanufactured Wood Packing Materials	Wood packaging material that has had more than approximately one third of its components replaced. See 3.3 for significance of this.
Repaired Wood Packing Material	Wood packaging material that has had up to approximately one third of its components removed and replaced. See 3.3 for significance of this.
Returnable / Reusable Pallet	A pallet designed for multiple cycles requiring infrequent maintenance (Pool Pallets are returnable / reusable).
Reversible Pallet	A pallet with identical top and bottom decks.
Skid	A pallet having no bottom deck.
Reused Pallet	A pallet which has not been repaired or remanufactured but simply used for another shipment. Reused pallets, once treated and marked may be reshipped without restriction.
Softwood	An industry term meaning wood from coniferous or needle bearing species of trees. These are not necessarily softer or lower density than some hardwood species.
Solid Deck Pallet	A pallet constructed with no deck board spacing.
Solid Wood Packing Material (SWPM) (Same as NMWP)	Implies that the wood is raw lumber and the processing done to it has been limited to one or more of the following -- dimensional cutting, debarking, heat treatments, chemical treatments, and kiln drying. Same as Non-Manufactured Wood Packing (NMWP). Regulations may use these designations interchangeably.
Span	The distance between stringer or block supports.
Strap Slot	Recess or cutout on the upper edge of the stringer or the bottom of the top deck board to allow tie-down or a unit load to the pallet deck with strapping / banding. Also called the banding notch.
Stringer	Continuous longitudinal solid or notched beam component of the pallet used to support deck components.
Stringer board	In block pallets, the solid board member extending for the full length of the pallet perpendicular to deck board members and placed between deck boards and blocks. The length of the stringer board defines the length (or first) dimension of the pallet.
Two-way Entry Pallet	A pallet with unnotched solid stringers allowing entry only from two opposite ends.
Thin Wood	Wood which has been cut to 6 mm or less thickness. Such wood, although meeting the definition of non-manufactured wood, is not considered a major risk or pathway for pests and therefore is not subject to the treatment requirements of the IPPC standard.
Unidirectional Base	A pallet with bottom deck boards on two parallel outside edges and perhaps in the center and open to the floor on the adjacent sides. (Typical of the "Euro Pallet").
Wane	A defective beveled or slanting edge on a board, denoted by bark or a lack of wood. Note: Inspectors, upon observing wane will assume that the wood has bark on it. This can cause delays in some countries.
Wing Pallet	A pallet which has deck boards which extend beyond the edge of the stringer.

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