



Eco Mark Product Category No.111
“Board Made of Wood or the Like 2.1”

Japan Environment Association
Eco Mark Office

1. Environmental Background

Wooden board such as fiberboard is widely used in Japan for construction, furniture, electric appliances and general goods.

Since wooden board is made from reused or unused plant fiber such as plywood lumber, disposed lumber from lumber factories, lumber from dismantled buildings, used packaging wood, low quality chips not used as raw material for paper, it contributes to optimizing the use of resources. The widespread use of such board should be encouraged.

In 2000, six important laws including the Basic Law for Establishing a Recycling-Based Society were enacted to realize a recycling-oriented society. Another example is the Construction Material Recycling Act (law on the recycling of materials used in construction) enforced in May 2002. This Act sets down basic principles for promoting the sorted dismantling and recycling of specific construction materials that have been disposed of, to facilitate effective use of construction materials and appropriate handling of wastes. Timber is also classified as a specific construction material. In basic policies based on the Act, the targeted recycling rate for specific construction materials in 2010 (including reduction) is set at 95%. The rate in 2000 was 83%, of which reduction made up 45% and recycling of lumber generated in construction 38%. Recycling includes materials used as heat sources. The rate of reuse in such materials is still low, indicating the need for further efforts. The characteristics of wood render it effective for carbon storage even in the form of a product, thus promoting use of wooded boards, which are recycled from wood, should help prevent global warming.

The Law on Promoting Green Purchasing (law related to promoting procurement of eco products by the government, etc.) is also another law established for the purpose of attaining a recycling-oriented society. This law lists recycled wooden boards such as particle and fiberboards as specific procurement items.

NOTE: This document is a translation of the criteria written in Japanese. In the event of dispute, the original document should be taken as authoritative.

However, some wooden board products consume a relatively large amount of energy at time of manufacturing, or contain formaldehyde in their adhesive which is emitted into the atmosphere in the room, having a potential adverse effect on health. These problems are increasingly drawing strong concerns and interests in recent years amongst consumers for causing sick house syndrome. Based on these trends, the Ministry of Health, Labor and Welfare is gradually setting down guideline values related to indoor levels of chemical substances causing indoor pollution. On the other hand, the Ministry of Land, Infrastructure and Transport is revising the Building Standard Law including health measures, etc., in relation to the emission of chemical substances indoors, and announcing technical standards concerning countermeasures for sick house syndrome.

Accordingly, wider use of wooden boards made of reused/unused wood that emit less chemicals contributes significantly to the conservation of the environment.

2. Applicable Products

Boards defined in the Japan Industrial Standard, JIS A 5905 and A 5908, or the equivalent to this qualification.

3. Terminology

- Reused/ Unused wood: Indicates the followings: thinned wood, waste wood, construction waste wood, and less useful wood.
 - Thinned wood: Wood produced from work activities adjusting the individual density of the objective tree type according to the congested state of forest stand..
 - Waste wood: Used wood (used packaging material, etc.), remainder material generated in wood processing plants (shavings generated in plywood and lumber plants, etc, low quality chips not used as raw material for paper, etc.), and wood and wooden materials such as trimmed branches, bark, etc.
 - Construction waste wood: Wood and wooden materials disposed as waste in construction work such as dismantling of buildings, construction of new buildings, building extensions, renovation, and construction related to other work.

- Less useful wood: Abandoned lumber in the forest, shrubs, tree roots, wood obtained from lumber damaged by disease, pests, disasters, bent or small diameter logs, etc. Also includes bamboo cut down in bamboo groves for the purpose of maintenance and management in environment preservation. Small caliber log measuring less than 14 cm in diameter corresponding to “a” or “b” below must be certified as forests sustainably managed by an independent third party or a public organization.
 - a.: Small diameter log from logs felled from natural forests.
 - b.: Small diameter log from logs produced by clear cutting, patch logging, and strip logging in plantation forests.
- Natural forests: Strictly defined as forests which have not experienced human disturbances, but including forests which are intended for the direction to be natural forests, long after being influenced by human.
- Natural regenerated forests: Similar to natural forests, forests with natural regeneration. They are intended to supply wood and wooden products. Regeneration support activities, fostering activities, etc are provided.
- Plantation forests: Forests made by planting, breeding, nursing, etc.
- Waste plant fiber: Agricultural residue generated in harvesting and the manufacturing process such as rice hull, and used packaging material such as jute bag, etc.
- Wooden part: Actual wood (including plant fiber)
- Adhesive: Added for adhesive functions required in the manufacture of baseboard in board making. Includes also agents added to bond baseboard with synthetic resin sheets when implementing overlays.
- Additives: Added to give new characteristics to products or supplement insufficient properties. Examples are hardeners, wax, formaldehyde catcher.
- Decorative work: Overlay, painting, etc.
 - Coating: The application of synthetic resin coating to both or one side of the baseboard by baking or printing. Examples include plain finish where the decorated side is rendered in one color, and patterned finish such as wood-like finish or subjective patterns.
 - Overlay: The pasting of synthetic resin sheet, film, synthetic resin impregnated paper, coated paper, after-coated paper, etc. to both or one side of the baseboard. Examples include plain finish where the decorated side is rendered in one color, patterned finish such as wood-like finish or subjective patterns. Also includes pasting of decorated veneer to both or one side of the baseboard.
- Prescription constituents: Components intentionally added with the purpose of providing particular functions to the product. Impurities which are inevitably mixed during the manufacturing process are excluded.

4. Certification Criteria

4-1. Environmental criteria

- (1) The percentage of reused/unused wood or waste plant fiber provided by terminology as materials for wooden parts shall be 100%. Less useful wood with small diameters shall satisfy Attachment 1 for forest certification if corresponding to “a” or “b”.
- (2) As for products which are given decorative works, , the percentage of the decorative works shall be 5% or less (weight percentage) of the whole product. (Note) The weight percentage means the weight percentage of the product or each material at the air dried state^{*1} or at the point of constant weight^{*2} under the condition of a temperature of 20±2°C and humidity of 65±5%.
^{*1}: Indicates leaving in a well-ventilated room for seven days or more.
^{*2}: Change is less than 0.1% when weight is measured every 24 hours.
- (3) Prescription constituents and weight percentage shall be reported for adhesives and additives. Adhesives and additives containing halogens should not be used.
- (4) Products should not use wood preserving agents (wood termicides, wood preservatives, wood pesticides, and wood fungicides) as prescription constituents.
- (5) For products using lumber from dismantled buildings (wood and wooden materials disposed in dismantling), lumber subject to preservatives, termicides, and pesticides shall be differentiated and eliminated. The content of harmful substances in these products shall meet the requirements for hexavalent chromium and arsenic given in Attachment 3, which is provide by the detailed enforcement regulations (December 26, 2002, Environment Ministry Ordinance No. 29) of the Soil Pollution Control Law.
- (6) Emissions of formaldehyde from products shall be of the F**** grade in accordance with JIS A 5905 or JIS A 5908, or falling outside the scope of regulations by the Ministry of the Land, Infrastructure and Transport. The products should meet the numerical criteria of “a” or “b” below.
 - a. The amount of Formaldehyde emissions measured by JIS A 1460 “Building boards Determination of formaldehyde emission -- Desicator method” shall be below 0.3 mg/l for average value and below 0.4 mg/l for maximum value.
 - b. The emission rate of formaldehyde measured by JIS A 1901 “Determination of the emission of volatile organic compounds and formaldehydes for building products -- Small chamber method” shall be less than 5µg/(m²·h).
- (7) Toluene and xylene shall not be added as prescription constituents.
- (8) Coatings if used for products shall conform to criteria for heavy metals and

heavy metal compounds (4-1. (8), Attachment 2) of (4) in “4-1 Environmental Criteria” of Eco Mark Product Category No. 126 “Paints Version1.0”.

- (9) For decorative work, resins made of halogens and organic halogenides shall not be added as prescription constituents. The prescription constituents of decorated parts shall be reported.
- (10) The production process shall conform to relevant environmental regulations and agreements on preventing air pollution, water contamination, noise, odor and emission of hazardous materials.
- (11) Energy-saving efforts shall be made in the manufacturing process.
- (12) The packaging of the product shall give consideration to resource-saving, ease of recycling, etc. Plastic materials used for containers and packaging shall not be added with resins made of halogens and organic halogenides.
- (13) Manuals on use shall be prepared and distributed to users of the product. Manuals shall include the following details:
 - i) Information related to Criteria 4-1. (1)-(9). (Indicate that enquiries can be made on details.)
 - ii) Product information related to disposal and recycling.

4-2. Quality criteria

- (1) JIS products shall conform to the corresponding quality standard of JIS A 5905, JIS A 5908, etc. Other products shall conform to similar JIS standards for items for which measurement methods are set down in JIS.

5. Certification Procedure

- (1) For Criterion 4-1.(1), documents issued by the raw material vendor certifying that the raw material is reused /unused wood or waste plant fibers shall be submitted. If there are multiple vendors, a list of the vendors and list of certification of the top 10 vendors in terms of volume of material traded shall be submitted.

If using thinned wood as the material, a certificate of origin that includes information on the place of production, type of tree, and year of planting shall be submitted with photographs of the forest concerned (showing clearly that the forest stand has been thinned). The thinning percentage and how many times the forest stand has been thinned, including the most recent thinning shall also be indicated if possible.

If using less useful wood, the following information shall be submitted. At the same time, official documents stating that the forest has been certified as sustainable by a third party shall be submitted.

- Type of forest (natural or man-made, etc.), place of production, type of tree, and year of tree planting if man-made forest.
- Under what conditions was the wood produced (damaged by disease/pests, damaged by disaster, bent or narrow trees, etc.). For small caliber log, indicate logging method and tip end diameter.

If using bamboo as the raw material in less useful wood, certificates indicating the following information and photographs/maps of the surroundings of the bamboo grove shall be submitted.

- Type of bamboo, place of production, surrounding conditions, and description that logging is carried out for the purpose of appropriate maintenance and management in environment preservation, as well as management plans and quantity.
- (2) For Criterion 4-1.(2), the weight percentage of decorated portions against the product weight shall be indicated in the attached certificate.
 - (3) For Criterion 4-1.(3), the prescription constituents and weight percentage shall be indicated in the attached certificate.
 - (4) For Criterion 4-1.(4), a list indicating whether the concerned substances are added shall be submitted.
 - (5) For Criterion 4-1.(5), documents certifying that lumber from dismantled buildings is sorted in use or not used (work manual, workflow, etc.) shall be submitted. If using lumber from dismantled buildings, results of tests implemented by a third party testing centers or public institutions shall be submitted.
 - (6) For Criterion 4-1.(6), results of tests indicating that results of measurements by methods prescribed in JIS A 1460 or JIS A 1901 meet standard levels shall be submitted. For products permitted to be labeled F**** grade in accordance with JIS A 5905 and JIS A 5908 or products authorized as falling outside the scope of regulations by the Ministry of Land, Infrastructure and Transport, documents certifying this or copies of such documents can be submitted in place of test results.
 - (7) For Criterion 4-1.(7), a list indicating whether the concerned substances are added shall be submitted.
 - (8) For Criterion 4-1.(8), the method of certifying compliance to certification criteria prescribed in Eco Mark Product Category No.126 "Paint Version1.0" shall be followed. However if using Eco Mark certified paint, the product name and certification number of the concerned paint can be indicated in the application form in place of certifying compliance with the application criteria.
 - (9) For Criterion 4-1.(9), a list indicating whether the concerned substances are added during surface processing shall be submitted.
 - (10) For Criterion 4-1.(10), a certificate by the manager of the plant manufacturing the product shall be submitted to certify that relevant local environmental laws, regulations, etc. have been observed with no violation for the last five years before the filing of the application.
 - (11) For Criterion 4-1.(11), the energy used during manufacturing per product unit (CO₂ emission) shall be submitted (KJ/m³, KW/m³, KJ/t, KW/t or kg-C/m³). Here manufacturing means the overall production process from the point the production plant received the raw materials. Documents on the actual energy used (CO₂ emission) shall also be submitted during renewal of contract.

- (12) For Criterion 4-1.(12), the packaging state at shipment (packaging method, packaging material, etc.) shall be specifically described. A list indicating whether the concerned substances are added to containers/packaging shall also be submitted.
- (13) For Criterion 4-1.(13), a manual shall be compiled and submitted.
- (14) For Criterion 4-2.(1), results of tests prescribed by JIS, etc. shall be submitted.

Attachment 1 Forestry Certification Provided Based on Definition of Terms

Certification criteria	- While balancing economical, ecological, and social benefits, the criteria shall comply with Agenda 21 and Statement of Principles on Forests, and observe related international agreements and conventions.
	- Including solid requirements, the criteria shall promote sustainable forests.
	- Recognized both domestically and internationally, the criteria shall be recommended as part of the process opened to participation by ecological, economical, and social stakeholders.
Certification system	- Certification systems shall have high transparency, maintain nation-wide or international reliability, and can verify requirements.
Certification body	- With fairness and high reliability, certification organizations and groups shall be able to verify that requirements are satisfied, convey the results, and able to execute requirements effectively.

Attachment 2 List of Chemicals Prescribed in 4-1.(8)

Substance	Standard Level
Cadmium Mercury Hexavalent chromium	Total ≤0.1%
Lead ≤0.06%	
Arsenic	Not to be added as prescription constituent.
Antimony	Not to be added as prescription constituent.
Tributyltin	Not to be added as prescription constituent.
Triphenyl tin	Not to be added as prescription constituent.

Established: July 1, 2004 (Version 2.0)

Revised: October 19, 2006 Version2.1, deletion of 6.Other Requirements)

Validity Period: June 30, 2009

These certification criteria and/or the product category will be revised or abolished when necessary.