[2] This phytosanitary treatment was adopted by the Commission on Phytosanitary Measures in --- 201-.

The annex is a prescriptive part of ISPM 28:2007.

[3] ISPM 28:2007 ANNEX X: HEAT TREATMENT OF WOOD PACKAGING MATERIAL USING DIELECTRIC HEAT (20--)

[4] Publication history

[5]

Date of this document	2011-05-16
Document category	Draft new Annex XX to ISPM 28:2007
Current document stage	Approved to go for MC 2011-06
Origin	CPM-1 (2006) added topic 2006-011 Revision of ISPM 15 (Regulation of wood packaging material in international trade) SC 2010-11 added topic 2007-114 Microwave irradiation of wood packaging material
Major stages	2006-12 treatment submitted to TPPT meeting 2007-07 revised text considered by TPFQ 2007-12 further revised text submitted to TPPT 2009-07 amended text considered by TPFQ, July 2009 2009-10 additional information submitted to TPPT, October 2009 2010-07 text updated July 2010 2011-03-29 text submitted to SC e-discussion forum and revised based on SC comments Text submitted to SC e-discussion poll SC 2011-05 approved to go for MC
Notes	2011-05 formatted and revised according to changes made to draft annex 1 to ISPM 15:2009

[6] Scope of the treatment

[7] This treatment applies to the heat treatment of wood packaging material using dielectric heat to reduce the risk of introduction and spread of Asian longhorned beetle (*Anoplophora glabripennis*) (ALB), pinewood nematode (*Bursaphelenchus xylophilus*) (PWN)[1] and those pests required to meet the criteria for treatment as prescribed in ISPM 15.

[8] Treatment description

[9] **Name of treatment** Heat treatment of wood packaging material using dielectric heat

[10] **Active ingredient** N/A

[11] **Treatment type** Heat

[12] **Target pest** Asian longhorned beetle (*Anoplophora glabripennis*) (ALB) and pinewood nematode

(*Bursaphelenchus xylophilus*) (PWN).

[13] **Target regulated articles** Debarked wood not exceeding 20 cm in cross-section

[14] **Treatment schedule**

[15] Where the application of heat treatment is undertaken using dielectric radiation (e.g. microwaves), wood packaging material composed of wood not exceeding 20 cm in cross-section when measured across the smallest dimension of the piece must be heated to achieve a minimum of 60 ˚C for 1 minute throughout the profile of the wood. Heating to the prescribed temperature must occur within 30 minutes from ambient temperature.

[16] Efficacy and confidence level of the treatment to kill the larvae and pupae of *Anoplophora glabripennis* and all life stages of *Bursaphelenchus xylophilus* are greater than $ED_{99.99683}$ at the 95% confidence level.

[17] When approving and auditing a heat treatment provider, the National Plant Protection Organization (NPPO) shall ensure that the following factors are appropriately addressed by those involved in treatment:

[18]
- The treatment needs to be monitored where the temperature is likely to be the coldest to ensure the target temperature is maintained.
- Irrespective of whether the dielectric heat treatment is conducted as a batch process or as a continuous (conveyor) process, if the operator is measuring the surface temperature to estimate compliance with the prescribed standard, the operator should have initially validated through testing that the internal wood temperatures meet or exceed 60 ˚C for 1 minute through the profile of the wood. For measuring the surface temperature at least two temperature sensors should be used.
- For wood exceeding 5 cm in thickness, dielectric heating at 2.45 GHz may require bidirectional application or multiple waveguides for the delivery of microwave energy to ensure uniformity of heating. For wood less than 5 cm in thickness, uniformity of heating for the chamber should be tested and equipment modified as needed to ensure uniform heating.
- Temperature sensors including the measurement and recording equipment are calibrated at a frequency specified by the NPPO.

[19] **Other relevant information**

[20] The coldest part of the wood will differ depending on the energy sources or processes applied. When using microwaves as a heating source, the coldest part of the wood is the surface.

[21] The TPPT based its evaluation of this treatment for ALB and PWN on the research work reported respectively by Fleming *et al.*, 2003, and Hoover *et al*., 2010.

[22] The general effectiveness of this treatment against other pests was supported by Fleming *et al.*, 2004; Henin et al., 2008; Soma *et al.*, 2002, 2003; Tomminen, J., Halik, S. and Bergdahl, D.R. ,1991 and Tomminen, J. and Nuorteva, M., 1992.

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[24] [1] The scope of phytosanitary treatments does not include issues related to pesticide registration or other domestic requirements for approval of treatments. Treatments also do not provide information on specific effects on human health or food safety, which should be addressed using domestic procedures prior to approval of a treatment. In addition, potential effects of treatments on product quality are considered for some host commodities before their international adoption. However, evaluation of any effects of a treatment on the quality of commodities may require additional consideration. There is no obligation for a contracting party to approve, register or adopt the treatments for use in its territory.