ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

Working Party on the Transport of Perishable Foodstuffs

Sixty-fifth session
Geneva, 27-30 October 2009
Items 5 (b) and 6 of the provisional agenda

PROPOSALS OF AMENDMENTS TO THE AGREEMENT ON THE INTERNATIONAL
CARRIAGE OF PERISHABLE FOOSTUFFS AND ON THE SPECIAL EQUIPMENT
TO BE USED FOR SUCH CARRIAGE (ATP)
AND ATP HANDBOOK

New proposals

Proposal for an amendment to Annex 1, Appendix 1, Paragraph 2 (c) (ii)[*]

Transmitted by the Government of Portugal

Justification

As a request and recommendation from the International Institute of Refrigeration D2 Sub-Commission meeting (Castelo Branco, Portugal, 4-5 June 2009), and in order to clarify the text with regard to eutectic plates, the following amendment is proposed to the Agreement on the International Carriage of Perishable Foodstuffs and on the Special Equipment to be Used for such Carriage (ATP).

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[*] The present document is submitted in accordance with the Programme of Work for 2008-2012 of the Inland Transport Committee (ECE/TRANS/2008/11, Item 2.11 (a)) which calls for the "Consideration of amendment proposals to ATP to ensure it is updated as necessary".

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Proposed amendment

Annex 1, Appendix 1, Paragraph 2(c) (ii)

Substitute the existing text

2.

…

    (c)

        (ii)   If it is refrigerated equipment, in which case the reference equipment shall be refrigerated equipment,

- the conditions set out under (i) above shall be satisfied;
- inside ventilation appliances shall be comparable;
- the source of cold shall be identical; and
- the reserve of cold per unit of inside surface area shall be greater or equal;

With the new text

2.

…

    (c)

        (ii)   If it is refrigerated equipment, in which case the reference equipment shall be ~~refrigerated equipment~~ **either**:

    (a)   mechanically refrigerated equipment other than equipment with eutectic plates,
- the conditions set out under (i) above shall be satisfied;
- inside ventilation appliances shall be comparable;
- the source of cold shall be identical; and
- the reserve of cold per unit of inside surface area shall be greater or equal;

Or   (b)   mechanically refrigerated equipment with eutectic plates:

- **the conditions set out under (i) above shall be satisfied;**
- **inside ventilation appliances shall be comparable;**
- **the source of cold shall be identical;**
- **the refrigerated unit and the eutectic system shall be the same, and shall not be modified;**
- **if the K value and/or mean surface area (S) is different from the reference equipment (insulated body of the refrigerated equipment) the thermal capacity (W) of the serial equipment shall be smaller than or equal to the thermal capacity (W) of the reference equipment (insulated body of the refrigerated equipment):**

$$W_{serial} \leq W_{reference} \qquad \text{Where} \qquad W = K.S.\Delta\theta$$

W is the thermal capacity required in a body of mean surface area S to maintain the absolute difference Δθ between the mean inside temperature θ$_i$ and the mean outside temperature θ$_e$, during continuous operation, when the mean outside temperature θ$_e$ is constant.

Note: When the Δθ value is not known, apply a Δθ value of 25ºC.

<u>**Proposed comment for the ATP Handbook:**</u>

Examples applying to eutectic plates:

Example 1

	Test report (Prototype)	Serial equipment **1**	Serial equipment **2**
K value	0.20 W/m^{2}K	0.16 W/m^{2}K	0.24 W/m^{2}K
Mean surface (S)	100 m^2	**120 m^2**	**80 m^2**
Thermal capacity (W)	500 W	**480 W**	**480 W**
Δθ	25 ºC	25 ºC	25 ºC
Final K value	---	---	---

<u>**Conclusion 1**</u>*: An insulated box of 120 m2 (much bigger) has a thermal capacity less than the prototype.*

<u>**Conclusion 2**</u>*: An insulated box of 80 m2 (much smaller) has a thermal capacity less than the prototype.*

Example 2

	Test report (Prototype)	Serial equipment **1**	Serial equipment **2**
K value	0.20 W/m^{2}K	---	---
Mean surface (S)	100 m^2	**120 m^2**	**80 m^2**
Thermal capacity (W)	500 W	500 W	500 W
Δθ	25 ºC	25 ºC	25 ºC
Final K value	---	**0.17**	**0.25**

<u>**Conclusion 1**</u>*: An insulated box of 120 m2 (much bigger) can have a K value equal to or less than 0.17 W/m^{2}K*

<u>**Conclusion 2**</u>*: An insulated box of 80 m2 (much smaller) can have a K value equal to or greater than 0.25 W/m^{2}K*

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