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Economic Commission for Europe**Inland Transport Committee****Working Party on the Transport of Perishable Foodstuffs****Seventy-fourth session**

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Item 5 (f) of the provisional agenda

**Status and implementation of the Agreement on
the International Carriage of Perishable Foodstuffs****and on the Special Equipment to be Used for such Carriage (ATP):
interpretation of ATP****Proposed amendment to Annex 1, Appendix 2, paragraph 6.5:
Cool down test, measuring the outside temperature****Transmitted by the Government of Finland****Introduction**

1. In service verification of the effectiveness of thermal appliances of equipment constructed from 2 January 2012 is judged based on the table presented in Annex 1, Appendix 2, paragraph 6.2 (i). The table takes into account as well as possible the physical fact that the effectiveness of the mechanically operated refrigerating units decrease and the heat flow through the walls increase due to the rise of the environmental temperature.
2. According to paragraph 6.5 the outside temperature during the test is measured from at least two points and “The final reading shall be from the warmest point inside the body and the coldest point outside.”
3. However it is not clearly defined what “final reading... coldest point outside” means in this context:
 - (a) Is it the coldest reading outside when the inside temperature has reached class temperature (e.g. -20 °C)?; or
 - (b) Is it the coldest reading outside during the whole cool down test?; or
 - (c) Could it be the mean outside temperature during the cool down test?
4. During the cool down test the difference between cases (a) and (b) could be several K. E.g. in class FRC each K represents 10 minutes in allowed cool down time. Will the equipment fail or pass the test may depend how the “final reading” is interpreted. The case

(c) quite obviously is between case (a) and (b) but the present text of ATP forces to select case (a) or (b).

5. Optimum situation is that the ambient temperature stays unchanged, but that is possible only in temperature controlled test chambers. Also if test is done outdoors the climatic variations during the test might be several K.

6. In Finland and probably in several other countries at least during cold time of the year, cool down tests are made indoors where ambient temperature +15 °C or above is possible. Test environments are however not climatic chambers and during the cool down test the outside temperature tends to rise because of the heat load from the refrigerating unit. Depending on the construction of the test site, the rise could be almost 10 K and virtually in all cases at least some K.

7. In addition the placement of the outside measuring points need to be defined clearly. In the present text only the minimum distances from the body wall and condenser inlet are defined. If the maximum distances are not defined, it is possible to place the sensors so that the readings do not represent the real temperature conditions affecting the tested equipment.

8. The purpose of the proposal is to make cool down tests and test sites more comparable and fair to the operators.

9. The proposal has no effect to those cool down tests which are done in stable ambient conditions. The proposed method to measure and report ambient temperature is also applicable to equipment constructed before 2 January 2012 keeping in mind that the cool down time requirement for those is always 6 hours.

10. There is no need for transitional period and no need to amend test report models.

Costs

11. No additional costs are expected. Clear procedure reduces disputes and on the long run reduces also the costs.

Environmental impact

12. No environmental impact.

Text of the proposal

13. It is proposed to amend Annex 1 Appendix 2 paragraph 6.5 last two sentences:

“For measuring the outside temperature of the body (T_e), at least 2 temperature measuring points shall be placed at a distance of at least 10 cm from an outer wall of the body and at least 20 cm from the air inlet of the condenser unit.

The final reading shall be from the warmest point inside the body and the coldest point outside.”

To read:

“For measuring the outside temperature of the body (T_e), at least 2 temperature measuring points shall be placed at a distance of at least 10 cm **and a maximum of 20 cm** from an outer wall of the body and at least 20 cm **and a maximum of 50 cm** from the air inlet of the condenser unit.

The final reading shall be from the warmest point inside the body and ~~the coldest point outside~~ **from the outside body the arithmetical mean temperature of all readings from the measuring points over the cool down test from the start until the class temperature has reached.”**
