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## Economic Commission for Europe

### Inland Transport Committee

#### Working Party on the Transport of Perishable Foodstuffs

##### Seventy-first session

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Item 6 of the provisional agenda

##### ATP Handbook

### **Proposed comments on minor and limited modifications for the ATP Handbook**

**Transmitted by Finland**

#### **Introduction**

1. On 30 September 2015, amendments to annex 1 of ATP enter into force. See C.N.253.2015.TREATIES-XI.B.22

<http://www.unece.org/fileadmin/DAM/trans/doc/2015/wp11/CN.253.2015.Reissued.20042015-Eng.pdf>. In the amendments to annex 1, appendix 1 paragraph 6 (c) (i) some new provisions are given for the minimum conditions to be met for serially produced equipment to be regarded as being of the same type as tested reference equipment. The purpose of the amendments is to increase the possibilities for modifying insulated bodies without having to carry out new K coefficient tests.

2. The consequences of the amendments were discussed at the IIR sub-commission on refrigerated transport meeting in April 2015 and on the basis of those discussions the sub-commission decided to recommend Finland to make a proposal to WP.11 regarding the ATP Handbook.

#### **Present situation (after new text enters into force on 30 September 2015)**

3. Annex 1, appendix 1 paragraph 6 (c) (i) is amended as follows by adding the following text and footnote at the end:

- "minor and limited modifications of added or exchanged interior and exterior fittings may be permitted:\*

- if the equivalent volume of accumulated insulation material of all such modifications is less than 1/100th of the total volume of the insulating material in the insulated unit;
  - if the K coefficient of the tested reference equipment, corrected by a calculation of the added thermal losses, is less than or equal to the K coefficient limit of the category of the equipment; and
  - if such modifications of interior fittings are carried out using the same technique, particularly as concerns glued fittings.
- All modifications shall be done by or be approved by the manufacturer of the insulated equipment.

\*) The present provisions regarding minor and limited modifications apply to equipment manufactured after the date of their entry into force (30 September 2015)."

4. In the text neither "minor and limited modifications" nor "total volume of insulating material" are defined. This could lead to different interpretations in ATP countries and might put manufacturers and operators in an unequal position, especially when transport equipment is exported from one country to another.

## **Technical impact of the proposal**

5. The first question is from where the 1/100th or 1% of the total volume of the insulating material should be calculated. The obvious answer is to use the tested body as the basis for the calculation. For example, if the volume of the insulation is 10m<sup>3</sup>, 1% is 0.1m<sup>3</sup> or 100 litres. This "total volume of insulating material" should be determined by the test station and be stated on the test report. Perhaps the term "total reference volume of the insulating material" should be introduced.

6. How should possible size variations be taken into account: the inside surface area of serially produced bodies may be 20% smaller or bigger than the tested body. Again, the obvious answer is to decrease or increase the maximum amount of removed insulation respectively, in this case within a range of 80 to 120 litres.

7. Technically, the "total (reference) volume of the insulating material" could be calculated by subtracting the inside volume of the insulated body from the outside volume of the insulated body. However, using this method counts all inside and outside surface materials as insulating materials and is not what is literally stated in annex 1, appendix 1 paragraph 6 of ATP. A more accurate result could be obtained if the thicknesses of inside surface materials are added to the inside dimensions of the body and the thicknesses of outside surface materials are subtracted from the outside dimensions. A comparison of the methods can be seen below. The difference between the methods is more than 10%.

Determining the total volume of insulating material										
	Inside	mm		mm	Insulation	mm		mm	Outside	mm
Top	GF	2		0	PU	96		0	GF	2
Bottom	Al	4	Plywood	18	PU	80		0	GF	3
Left side	GF	3		0	PU	44		0	GF	3
Right side	GF	3		0	PU	44		0	GF	3
Front	GF	2	Plywood	4	PU	89	Plywood	4	GF	2
Rear	GF	3		0	PU	74		0	GF	3
	Dimensions with surface materials				Dimensions without surface materials					
	Inside		Outside		Inside		Outside			
Length, mm	7500		7681		7509		7672			
Height, mm	2700		2905		2724		2900			
Width, mm	2500		2600		2506		2594			
Volume, m3	50,63		58,01		51,26		57,71			
Volume of the insul. material, m3		7,39			6,45			diff.	-12,7 %	
1/100, in litres		73,90			64,54					
+20 %		88,68			77,45					
-20 %		59,12			51,63					

## Economic impact of the proposal

8. Costs are expected to be lower if practices are harmonized. There are no environmental impacts of the proposal.

## Conclusion

9. To avoid different interpretations and situations in which transport equipment are certified in one country but are questioned in other countries harmonization is important. Now, when new provisions have entered into force, but different interpretations have not yet developed, is a good time to temper that kind of development. In this case, the ATP Handbook might be the best way to proceed.

## Proposal

10. Add the following new comments to annex 1, appendix 1, paragraph 6 (c) (i) of the ATP Handbook:

"Comment 1:

Minor and limited modifications in this context mean added accessories like load securing rails, wheel arches, lamps etc. which reduce locally the amount and thickness of the insulating material compared to the reference equipment. Reducing the insulating thickness

overall, by adding a whole wall or door, shall not be regarded as minor and limited modifications.

Comment 2:

The total volume of the insulating material shall be calculated by the test station and stated on the test report as the "total reference volume of the insulating material". It shall be...

Alternative 1: ... the outside volume of the insulated body from which the thicknesses of the outside surface materials are subtracted minus the inside volume of the insulated body to which the thicknesses of inside surface materials are added.

or

Alternative 2: ... the outside volume of the insulated body minus the inside volume of the insulated body.

If the inside surface area of the serially produced equipment differs from the reference equipment by not more than 20%, the total volume of the insulating material, from which the 1/100th is calculated, shall be corrected by the same percentage.

Comment 3:

The K coefficient of the equipment corrected by calculation shall be rounded up to the next tenth: to 0.30, 0.40 0.50, 0.60 or 0.70 W/m<sup>2</sup>K."

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