

Annex

[Original: English and French]

Proposed amendments to the ATP

1. Annex 1, Appendix 2, section 1.2

Amend the third paragraph to read:

"For calculating the mean surface area of the body of a panel van, the test station appointed by the competent authority shall select from one of the following three methods A-C. For calculating the mean surface area of the body of a tank, the test station appointed by the competent authority may use method A or D."

(Reference document: ECE/TRANS/WP.11/2021/4, as amended)

2. Annex 1, Appendix 2, section 1.2

Amend the last three paragraphs (Method C) to read:

"Method C. If methods A or B are not acceptable to the experts, the internal surface of the panel van shall be measured according to the figures and formulae in method B.

The initial K value shall then be calculated based on the internal surface area, taking the insulation thickness as nil to start the iteration process. From this K value, the average insulation thickness is calculated from the assumption that λ for the insulation has a value of 0,025 W/m·°C

$$d = S_i \times \Delta T \times \lambda / W$$

Once the thickness of the insulation has been estimated, the external surface area is calculated and the mean surface area is determined. The final K value is derived from successive iterations."

(Reference document: ECE/TRANS/WP.11/2021/4)

3. Annex 1, Appendix 2, section 1.2, Method C

Add new last paragraph to read as follows:

"A different value of λ may be used in this method if the actual value of λ can be estimated by physical measurements of the properties of the main thermal insulator of the wall, or by statistical data of other ATP units of similar features. The value of λ and the statistical data used, if applicable, shall be indicated in or annexed to the test report Model No. 1 A."

(Reference document: ECE/TRANS/WP.11/2021/3, as amended)

4. Annex 1, Appendix 2, section 1.2

After the last paragraph, add the following text:

"Method D. If method A is not acceptable to the experts, the external surface of the tank shall be measured, taking into account the geometrical shape of the tank and the main values needed to model this shape (e.g. diameter, radius, length of cylinder, etc.). This method can only be used if the tank can be assimilated to regular geometrical forms (cylinder, cone, sphere) that can be described by mathematical equations.

The initial K value shall then be calculated based on the external surface area, taking the insulation thickness as nil to start the iteration process. From this K value, the average

insulation thickness is calculated from the assumption that λ for the insulation has a value of 0,035 W/m °C

$$d = S_e \times \Delta T \times \lambda / W$$

Once the thickness of the insulation has been estimated, the internal surface area is calculated taking into consideration the geometrical shape of the tank, and the mean surface area is determined. The final K value is derived from successive iterations.

A different value of λ may be used in this method if the actual value of λ can be estimated by physical measurements of the properties of the main thermal insulator of the wall, or by statistical data of other ATP units of similar features. The value of λ and the statistical data used, if applicable, shall be indicated in or annexed to the test report Model No. 1 B."

(Reference document: ECE/TRANS/WP.11/2021/4, as amended)

5. Annex 1, Appendix 2, section 4.5.2

Replace the formula " $\frac{Q_{mod}-Q_{Ref}}{Q_{ref}} \geq -0,10$ (1)" with the formula " $\frac{Q_{mod}-Q_{Ref}}{Q_{ref}} \geq -0.10$ "

Consequential amendment:

In Annex 1, appendix 2, section 9.2.1:

In the formula " $2 * \frac{|P_{nom-max,1} - P_{nom-max,2}|}{P_{nom-max,1} + P_{nom-max,2}} \leq 0,035$ " replace "0,035" by "0.035".

(Reference document: ECE/TRANS/WP.11/2021/2)

6. Annex 1, Appendix 2, section 6.2.3

Amend paragraph 6.2.3 to read as follows:

"At the request of the manufacturer, replacement of the original refrigerant fluid of mechanically refrigerated equipment in service is allowed under the following conditions:

(a) a test report or addendum confirming equivalence to a similar mechanically refrigerated unit with the drop-in refrigerant fluid is available in accordance with annex 1, appendix 2, section 4.5 of the ATP Agreement; and

(b) an efficiency test according to 6.2.1 or 6.2.2 has been successfully carried out.

In the event that the request is accepted, the manufacturer's plate must be corrected accordingly.

In the particular case of replacement of the refrigerant fluid such as those mentioned in the table below, subparagraph (a) only requires the manufacturer to request from the official test station the issue of an addendum without any additional testing.

Original refrigerant	Drop-in refrigerant
R404A	R452A

(Reference document: ECE/TRANS/WP.11/2021/7)

7. Annex 1, Appendix 2, paragraph 7.3.2

Amend the second line of paragraph 7.3.2, which starts with "The internal...", to read as follows:

"The internal surface area of the body shall not vary by more than 20 %."

(Reference document: ECE/TRANS/WP.11/2021/16)

8. Annex 1, Appendix 2, paragraph 7.3.2

Amend the definition of S_{body} to read as follows:

" S_{body} is the geometric mean of the inside surface area and the outside surface area of the body,"

(Reference document: ECE/TRANS/WP.11/2021/16, as amended)

9. Annex 1, Appendix 2, paragraph 7.3.3

Amend the definition of $S_{chilled-comp}$ to read as follows:

" $S_{chilled-comp}$ is the inside surface area of the chilled compartment for the given positions of the bulkheads,"

(Reference document: ECE/TRANS/WP.11/2021/16)

10. Annex 1, Appendix 2, paragraph 7.3.3

Amend the definition of S_{bulk} to read as follows:

" S_{bulk} are the surface areas of the bulkheads,"

(Reference document: ECE/TRANS/WP.11/2021/16)

11. Annex 1, Appendix 2, paragraph 7.3.4

Amend the definition of $S_{frozen-comp}$ to read as follows:

" $S_{frozen-comp}$ is the inside surface area of the frozen compartment for the given positions of the bulkheads,"

(Reference document: ECE/TRANS/WP.11/2021/16)

12. Annex 1, Appendix 4, paragraph 7.3.4

Amend the definition of S_{bulk} to read as follows:

" S_{bulk} are the surface areas of the bulkheads,"

(Reference document: ECE/TRANS/WP.11/2021/16)

13. Annex 1, Appendix 2, section 7.3.7

In the heading of the third column of the table replace "*Removable*" by "*Movable*"

(Reference documents: ECE/TRANS/WP.11/2021/9 and ECE/TRANS/WP.11/2021/18)

14. Annex 1, Appendix 2, section 9.2.1

In the third paragraph, that starts with "*For mono-temperature...*", add a last sentence to read:

"The cooling capacity obtained for the third temperature level may be calculated by the testing station on the basis of an interpolation based on the results obtained during tests carried out at the -20 °C and 0 °C temperature levels."

(Reference document: ECE/TRANS/WP.11/2021/8)

15. Annex 1, Appendix 3 (A), footnote 4

Amend footnote 4 to read as follows:

"4. *Multi-temperature equipment is insulated equipment with two or more compartments for different temperatures in each compartment. For multi-temperature equipment a declaration of conformity (see 7.3.6 of annex 1, appendix 2) shall be carried in addition to the ATP certificate.*"

(Reference document: ECE/TRANS/WP.11/2021/18)
