Annex II

[Original: English and French]

Proposed amendments to the ATP

1. Annex 1, Appendix 2, section 8, MODEL No. 14

In Model No.14 insert a footnote after "Serial Number" under the sections "Insulated body" and "Host Unit". Footnote reads as follows:

"[a] Individual serial number or series of serial numbers."

(Reference document: ECE/TRANS/WP.11/2022/8/Rev.1, as amended)

2. Annex 1, Appendix 3, footnote 12

In footnote 12, replace "his signature" by "signature".

(Reference document: ECE/TRANS/WP.11/2022/17)

3. Annex 1, Appendix 2, paragraph 4.3.1(b)

Add a new paragraph at the end to read:

"If the compressor is driven by an auxiliary electrical power source, the test shall be carried out at the nominal electrical input parameter of the compressor as specified by the manufacturer. "

(Reference document: ECE/TRANS/WP.11/2022/20)

4. Annex 1, Appendix 2, section 7.3.1

Replace "internal dividing walls" by "dividing walls".

(Reference document: ECE/TRANS/WP.11/2022/20)

5. Annex 1, Appendix 2, section 7.3.3

In the introductory sentence, replace the word "bulkheads" by "dividing walls" and in the body of the text, replace the word "bulkheads" by "dividing walls" (3 times).

(Reference document: ECE/TRANS/WP.11/2022/20)

6. Annex 1, Appendix 2, section 7.3.4

In the introductory sentence, replace "bulkheads" by "dividing walls" and in the body of the text, replace "bulkheads" by "dividing walls" (3 times).

(Reference document: ECE/TRANS/WP.11/2022/20)

7. Annex 1, Appendix 2, section 7.3.5

In the introductory sentence, replace "bulkheads" by "dividing walls"

(Reference document: ECE/TRANS/WP.11/2022/20)

8. Annex 1, Appendix 2, section 7.3.6

In the introductory sentence, replace "bulkheads" by "dividing walls" and in the body of the text, replace "bulkheads" by "dividing walls".

(Reference document: ECE/TRANS/WP.11/2022/20)

9. Annex 1, Appendix 2, section 7.3.7

In the heading and first paragraph, replace "internal dividing walls" by "dividing walls" (2 times).

(Reference document: ECE/TRANS/WP.11/2022/20)

10. Annex 1, Appendix 2, section 8, MODEL No. 14

Replace "bulkheads" by "dividing walls" (2 times).

(Reference document: ECE/TRANS/WP.11/2022/20)

11. Annex 1, Appendix 2

Insert a new paragraph 3.2.8 to read as follows:

"3.2.8 If the refrigerating appliance with all of its accessories has undergone separately, to the satisfaction of the competent authority, a test to determine the air circulation volume, the minimum required airflow in cooling mode for both mechanically refrigerated equipment and mechanically refrigerated and heated equipment with a forced ventilation system shall conform to the following formula[7]:

$\dot{V}_L = N \cdot V$

Where minimum airflow rate $\dot{V}_L$ is air changes per hour N, multiplied by the empty volume V.

Where N = 50

The air volume flow may be modulated in part load operation after reaching the set point temperature and if the temperature of the class is reached, the air flow needs not be continuous.

Where V exceeds 60 m^3 V_L may be limited to at least 3000 m^3 per hour for containers, wagons and lorries[8].

Where V exceeds 100 m^3 V_L may be limited to at least 5000 m^3 per hour."

Footnotes 7 and 8 read as follows:

"[7] Applies to equipment manufactured after (DD MM YEAR)

[8] Containers can be demountable bodies of lorries"

(Reference document: ECE/TRANS/WP.11/2022/16, as amended by informal document INF.10, as amended)

12. Annex 1, Appendix 2

Insert a new paragraph 3.4.9 to read:

"3.4.9 The equipment should comply with the airflow requirements in cooling mode prescribed in paragraph 3.2.8"

(Reference document: ECE/TRANS/WP.11/2022/16, as amended by informal document INF.10, as amended)

13. Annex 1, Appendix 2, paragraph 7.3.1

Add new indent at the end to read

"- The equipment should comply with the airflow requirements in cooling mode prescribed in paragraph 3.2.8."

(Reference document: ECE/TRANS/WP.11/2022/16, as amended by informal document INF.10, as amended)

14. Annex 1, Appendix 3,

Insert new section 7.2.6 in the Model form of Certificate of compliance to read:

"7.2.6 XX air changes/hour"

(Reference document: ECE/TRANS/WP.11/2022/16, as amended by informal document INF.10, as amended)

15. Annex 1, Appendix 3,

Insert a new footnote 11, after footnote 10, to read:

"[11] Where XX is the number of air changes per hour calculated by dividing the total airflow of the circulation fans by the total internal volume of the equipment. In the case of multi-compartment equipment with movable bulkheads, the total airflow of the circulation fans has to be divided by the maximum internal volume of each compartment."

(Reference document: ECE/TRANS/WP.11/2022/16, as amended by informal document INF.10, as amended)

16. Annex 1, Appendix 3,

Renumber existing footnotes 11 to 15 as 12 to 16.

(Reference document: ECE/TRANS/WP.11/2022/16, as amended by informal document INF.10, as amended)

Annex. III

[Original: English and French]

Additions to the ATP Handbook

1. Annex 1, Appendix 2, section 1.2

In the table of "Method A", replace "bulkhead" by "dividing walls".

(Reference document: ECE/TRANS/WP.11/2022/20)

2. Annex 1, Appendix 2

Add a new comment after paragraph 3.2.8 to read as follows:

"Airflow is an essential parameter within temperature-controlled transport.

For frozen cargoes, airflow should be low to avoid desiccation but sufficient to remove heat entering through the insulated walls, supply air can deviate below the set temperature to remove heat without damaging the product. Chilled cargoes require higher airflow for good temperature distribution and also because the supply air temperature cannot be allowed to deviate significantly below the set temperature due to freezing or chilling damage. Some chilled cargoes are metabolically active and therefore require higher airflow to remove that heat.

Intermittent fan operation should not be used for sensitive cargo where close temperature distribution is required. Generally, start/stop operation of the unit when the evaporator fans/unit are allowed to cycle shall be used only for frozen goods transportation.

Table 1
Examples of air flow requirements for temperature sensitive goods

Type of goods	*Temperature range [°C]*	*Sensitivity to humidity*	*Recommended air change rate[ac/h]*
Hanging meat	-1/+1°C	Yes	50 –90
Chilled products	-1/+6°C	Yes	50 – 90
Frozen foods	< -18°C	No	40 – 60
Ice cream	< -20 °C	low	40 – 60

"

(Reference document: ECE/TRANS/WP.11/2022/16, as amended by informal document INF.10, as amended)