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Working Party on the Transport of Perishable Foodstuffs

Sixty-first session,
Geneva, 31 October-3 November 2005

**AGREEMENT ON THE INTERNATIONAL CARRIAGE OF PERISHABLE
FOODSTUFFS AND ON THE SPECIAL EQUIPMENT TO BE USED FOR SUCH
CARRIAGE (ATP)**

Draft amendments to Annex 1 to ATP

Note by the secretariat

The secretariat reproduces below the text of the draft amendments to Annex 1 to ATP as adopted by the Working Party at its sixtieth session.

* * *

Annex 1

- Paragraph 1. Replace “characterized” with “specified”(twice).
After “than 0.40 W/m².K”, replace “;” with “and by” and “walls” with “side-walls”.
Delete:
“This second condition is, however, not required for transport equipment designed prior to the date of entry into force of this amendment^{3/} and built before that date or during a period of three years following that date.”.
Delete the footnote:
“ ^{3/} *The date of entry into force of this amendment is 15 May 1991.*”.
- Paragraph 2. Delete: “with the aid of appropriate refrigerants and fittings”.
Replace “Such equipment shall comprise one or more compartments,” with “If such equipment includes one or more compartments,”.
Replace “paragraph 34” with “paragraph 3.1.3”.
In the last sentence, replace “coefficient of equipment” with “coefficient of refrigerated equipment”.
- Paragraph 3. Read the text between brackets as follows: “(fitted with either a mechanical compressor, or an "absorption" device, etc.)”.
Second sentence, replace “the temperature inside the empty body” with “the temperature T_i inside the empty body”.
Replace “value t_i” with “inside temperature T_i” (twice) and “t_i” with “T_i”in paragraph 3.
- Paragraph 4. Read as follows:

“**Heated equipment.** Insulated equipment, which is capable of raising the inside temperature of the empty body to, and thereafter maintaining it for not less than 12 hours without renewal of supply at, a practically constant value of not less than + 12 °C when the mean outside temperature, as indicated below:

-10 °C in the case of class A heated equipment;

-20 °C in the case of class B heated equipment.

Heat producing appliances shall have a capacity in conformity with the provisions of annex 1, appendix 2, paragraphs 3.3.1 to 3.3.5.

The K coefficient of equipment of class B shall in every case be equal to or less than 0.40 W/m².K.”.
- Paragraph 5. To be deleted.

Annex 1, Appendix 1

- Paragraph 1. Read (a) as follows:
“(a) before equipment enters into service;”.
Replace “paragraphs 29 and 49” with “sections 5 and 6”.
- Paragraph 2. (To be moved under new paragraph 6).
- Paragraph 3. Renumber as paragraph 2.
- Paragraph 4. Renumber as paragraph 3 and amend as reproduced in TRANS/WP.11/210, Annex 2.
- Paragraph 5. Renumber as paragraph 4.
- Paragraph 6. Renumber as paragraph 5.
- Insert a new paragraph 6 (existing paragraph 2) with the following changes:
- (a) Second sentence to be read: “If the unit tested meets class specification, the resulting test report shall be regarded as a Type Approval Certificate.”
- (c) (ii) Replace “inside ventilation appliances shall be comparable;” with “inside circulating fans shall be comparable;”;
- (c) (iii) (b) amend to read:
- “(b) insulated equipment to which is complete in every detail but minus its mechanical refrigeration unit which will be fitted at a later date.
The resulting aperture will be filled, during the measurement of the K coefficient, with close fitting panels of the same overall thickness and type of insulation as is fitted to the front wall. In which case:
- the conditions set out in (i) above shall be satisfied; and
 - the effective refrigerating capacity of the mechanical refrigeration unit fitted to insulated reference equipment shall be as defined in annex 1, appendix 2, paragraph 3.2.6.”
- Insert a new (d) as reproduced in TRANS/WP.11/210, Annex 2.
- Renumber existing (d) as (e).

Annex I, Appendix 2

Renumber subtitle “A” as “1”.

Paragraph 1. Renumber as 1.1 and amend to read:

“1.1 K coefficient. The overall heat transfer coefficient (K coefficient) of the special equipment is defined by the following formula:

$$K = \frac{W}{S \cdot \Delta T}$$

where W is either the heating power or the cooling capacity, as the case may be, required to maintain a constant absolute temperature difference ΔT between the mean inside temperature T_i and the mean outside temperature T_e , during continuous operation, when the mean outside temperature T_e is constant for a body of mean surface area S.”.

Paragraph 2. Renumber as 1.2 and read the last sentence as follows:

“In determining the two surface areas S_i and S_e , structural peculiarities and surface irregularities of the body, such as chamfers, wheel-arches and similar features, shall be taken into account and shall be noted under the appropriate heading in test reports; however, if the body is covered with corrugated sheet metal the area considered shall be that of the plane surface occupied, not that of the developed corrugated surface.”.

Insert a new subtitle to read: “**Temperature measuring points**”.

Paragraph 3. Renumber as 1.3 and replace “(?)” with “(T_i)”.

Paragraph 4. Renumber as 1.4 and replace “(?)” with “(T_e)”;
(a) At the end, insert “and”.

Paragraph 5. Renumber as 1.5 and replace “(?)” with “(T_i)” and “(?)” with “(T_e)”.

Insert a new paragraph 1.6 (existing paragraph 11) to read:

“1.6 Temperature measuring instruments protected against radiation shall be placed inside and outside the body at the points specified in paragraphs 1.3 and 1.4 of this appendix.”.

Insert a new subtitle to read: “**Steady state period and duration of test**”.

Paragraph 6. Renumber as 1.7 and replace “°C” with “K” (three times), “thermal capacity” with “heating power or cooling capacity” (twice) and “internal and external temperatures” with “inside and outside temperatures”.

Renumber subtitle “B” as “2”.

Renumber subtitle (a) as “2.1”.

Paragraph 7. Renumber as 2.1.1 and replace “Insulating capacity” with “K coefficient”.

Paragraph 8. (Moved under 2.1.4, second indent to be deleted).

Paragraph 9. (Moved under 2.1.5, first sentence to be deleted).

Insert a new subtitle to read: “**Test Method**”.

Paragraph 10. Renumber as 2.1.2 and replace “applied” with “used” (twice), “(resistors and the like)” with “(resistors etc.)”, “an air blower” with “fans”, “all interval surfaces” with “all inside surfaces”, “in paragraph 3” with “in paragraph 1.3” and “2 °C” with “2 K”.

Insert a new paragraph 2.1.3 (existing paragraph 54 (e)) to read:

“2.1.3 Heat quantity: The heat dissipated by the electrical resistance fan heaters shall not exceed a flow of $1\text{W}/\text{cm}^2$ and the heater units shall be protected by a casing of low emissivity.
The electrical energy consumption shall be determined with an accuracy of $\pm 0.5\%$.”

Paragraph 11. (Moved under 1.6).

Insert a new subtitle to read: “**Test procedure**”.

Insert a new paragraph 2.1.4 (first indent of existing paragraph 8) to read:

“2.1.4 Whatever the method employed, the mean temperature of the insulated chamber shall throughout the test be kept uniform, and constant in compliance with paragraph 1.7 of this appendix, to within $\pm 0.5\text{ K}$, at a level such that the temperature difference between the inside of the body and the insulated chamber is $25\text{ °C} \pm 2\text{ K}$, the average temperature of the walls of the body being maintained at $+ 20\text{ °C} \pm 0.5\text{ K}$.”

Insert a new paragraph 2.1.5 (second sentence of existing paragraph 9) to read:

“2.1.5 During the test, whether by the internal cooling method or by the internal heating method, the mass of air in the chamber shall be made to circulate continuously so that its speed of movement of the air 10 cm from the walls is maintained at between 1 and 2 metres/second.”

Paragraph 12. Renumber as 2.1.6.

Paragraph 13. Renumber as 2.1.7 and replace “2 °C” with “2 K”.

Paragraph 14. Renumber as 2.1.8.

Paragraph 15. To be deleted.

Renumber subtitle (b) as “2.2”.

Paragraph 16. Renumber as 2.2.1.

Paragraph 17. Renumber as 2.2.2 and replace “Insulating capacity” with “K coefficients” and “tested” with “measured”.

Paragraph 18. (Moved under 2.2.5, second indent to be deleted).

Paragraph 19. (Moved under 2.2.6).

Insert a new subtitle to read: “**Test method**”.

Paragraph 20. Renumber as 2.2.3 and amend to read:

“2.2.3 An electrical heating appliance (resistors, etc.) shall be placed inside the tank. If the tank has several compartments, an electrical heating appliance shall be placed in each compartment. The electrical heating appliances shall be fitted with fans with a delivery rate sufficient to ensure that the difference between the maximum temperature and the minimum temperature inside each compartment does not exceed 3 K when continuous operation has been established. If the tank comprises several compartments, the difference between the mean temperature in the coldest compartment and the mean temperature in the warmest compartment shall not exceed 2 K, the temperatures being measured as specified in paragraph 2.2.4 of this appendix.”.

Paragraph 21. Renumber as 2.2.4.

Insert a new subtitle to read: “**Test procedure**”.

Insert a new paragraph 2.2.5 (first indent of existing paragraph 18) to read:

“2.2.5 Throughout the test, the mean temperature of the insulated chamber shall be kept uniform, and constant in compliance with paragraph 1.7 of this appendix, at a level such that the difference in temperature between the inside of the tank and that of the insulated chamber is not less than $25\text{ }^{\circ}\text{C} \pm 2\text{ K}$, with the average temperature of the tank walls being maintained at $+ 20\text{ }^{\circ}\text{C} \pm 0.5\text{ K}$.”.

Insert a new paragraph 2.2.6 (existing paragraph 19) to read:

“2.2.6 The mass of air in the chamber shall be made to circulate continuously so that the speed of movement of the air 10 cm from the walls is maintained at between 1 and 2 metres/second.”.

Paragraph 22. Renumber as 2.2.7.

Paragraph 23. Renumber as 2.2.8 and replace “ $2\text{ }^{\circ}\text{C}$ ” with “ 2 K ”.

Paragraph 24. Renumber as 2.2.9.

Paragraph 25. To be deleted.

Renumber subtitle (c) as “2.3”.

Paragraph 26. Renumber subtitle (i) as “2.3.1” and amend to read as follows:

“2.3.1 Verification of the K coefficient

Where the purpose of the tests is not to determine the K coefficient but simply to verify that it is below a certain limit, the tests carried out as described in paragraphs 2.1.1. to 2.2.9 of this appendix may be stopped as soon as the measurements made show that the K coefficient meets the requirements.”.

Paragraph 27. Renumber subtitle (ii) as “2.3.2” (with the text of the existing paragraph 27).

Delete the subtitle (iii).

Paragraph 28. To be deleted.

Paragraph 29. (Moved under section 5).

Paragraph 30. To be deleted.

Renumber subtitle “C.” as “3.” and replace “**EFFICIENCY**” with “**EFFECTIVENESS**”.

Paragraph 31. To be deleted.

Renumber “**Refrigerated equipment**” as subtitle “3.1”.

Paragraph 32. Renumber as 3.1.1 and amend to read:

“3.1.1 The empty equipment shall be placed in an insulated chamber whose mean temperature shall be kept uniform, and constant to within ± 0.5 K, at + 30 °C. The mass of air in of the chamber shall be made to circulate as described in paragraph 2.1.5 of this appendix.”.

Paragraph 33. Renumber as 3.1.2 and replace “in paragraphs 3 and 4” with “in paragraphs 1.3 and 1.4”.

Insert a new subtitle to read: “**Test procedure**”.

Paragraph 34. Renumber as 3.1.3.

Insert a new subtitle to read: “**Provisions common to all types of refrigerated equipment**”.

Paragraph 35. Renumber as 3.1.4.

Paragraph 36. Renumber as 3.1.5 and delete the last sentence.

Insert a new subtitle to read: “**Criterion of satisfaction**”.

Insert a new paragraph 3.1.6 (last sentence of existing paragraph 36).

Renumber “**Mechanically refrigerated equipment**” as subtitle “3.2”.

Insert a new subtitle to read: “**Test method**”.

Paragraph 37. Renumber as 3.2.1 and replace “in paragraphs 32 and 33” with “in paragraphs 3.1.1 and 3.1.2”.

Insert a new subtitle to read: “**Test procedure**”.

Paragraph 38. Renumber as 3.2.2.

Paragraph 39. Renumber as 3.2.3.

Paragraph 40. Renumber as 3.2.4 and delete the last sentence.

Insert a new subtitle to read: “**Criterion of satisfaction**”.

Insert a new paragraph 3.2.5 (last sentence of existing paragraph 40 and replace

“(if any) of” with “with any”).

Paragraph 41. Renumber as 3.2.6.

Paragraph 42. Renumber as 3.2.7 and replace “in paragraphs 37 to 40” with “in paragraphs 3.2.1 to 3.2.4”, and replace also “of paragraph 41” with “of paragraph 3.2.6”.

Renumber “**Heated equipment**” as subtitle “3.3”.

Insert a new subtitle to read: “**Test method**”.

Paragraph 43. Renumber as 3.3.1 and replace “in paragraph 9” with “in paragraph 2.1.5”.

Paragraph 44. Renumber as 3.3.2 and replace “paragraphs 3 and 4” with “paragraphs 1.3 and 1.4”.

Insert a new subtitle to read: “**Test procedure**”.

Paragraph 45. Renumber as 3.3.3.

Paragraph 46. Renumber as 3.3.4.

Paragraph 47. Renumber as 3.3.5 and amend to read:

“3.3.5 The test shall be continued for 12 hours after the difference between the mean inside temperature and the mean outside temperature of the body has reached the level corresponding to the conditions prescribed for the class to which the equipment is presumed to belong. In the case of new equipment, the above temperature difference shall be increased by 35 per cent.”.

Insert a new subtitle to read: “**Criterion of satisfaction**”.

Insert a new paragraph 3.3.6 (last sentence of existing paragraph 47).

Delete the subtitle “**Test reports**”.

Paragraph 48. To be deleted.

Paragraph 49. (Moved under section 6).

Paragraph 50. To be deleted.

Renumber subtitle “**D.**” as “**4.**”.

Insert a new subtitle to read: “**4.1 General principles**”.

Paragraph 51. Renumber as 4.1.1 and amend to read:

“4.1.1 When attached to either a calorimeter box or the insulated body of a unit of transport equipment, and operating continuously, this capacity is:

$$W_o = W_j + U \cdot DT$$

where

U is the heat leakage of the calorimeter box or insulated body, Watts/°C.

ΔT is the difference between the mean inside temperature T_i and the mean outside temperature T_e of the calorimeter or insulated body (K),

W_j is the heat dissipated by the fan heater unit to maintain each temperature difference in equilibrium.”.

Insert a new subtitle to read: “**4.2 Test method**”.

Paragraph 52. Renumber as 4.2.1 and amend to read:

“4.2.1 The refrigeration unit is either fitted to a calorimeter box, or the insulated body of a unit of transport equipment.

In each case, the heat leakage is measured at a single mean wall temperature prior to the capacity test. An arithmetical correction factor, based upon the experience of the testing station, is made to take into account the average temperature of the walls at each thermal equilibrium during the determination of the effective refrigerating capacity.

It is preferable to use a calibrated calorimeter box to obtain maximum accuracy.

Measurements and procedure shall be as described in paragraphs 1.1 to 2.1.8 above; however, it is sufficient to measure U the heat leakage only, the value of this coefficient being defined by the following relationship:

$$U = \frac{W}{\Delta T_m}$$

where:

W is the heating power (in watts) dissipated by the internal heater and fans;

ΔT_m is the difference between the mean internal temperature T_i and the mean external temperature T_e ;

U is the heat flow per degree of difference between the air temperature inside and outside the calorimeter box or unit of transport equipment measured with the refrigeration unit fitted.

The calorimeter box or unit of transport equipment is placed in a test chamber. If a calorimeter box is used, $U \cdot \Delta T$ should be not more than 35% of the total heat flow W_o .

The calorimeter box or unit of transport equipment shall be heavily insulated.”.

Paragraph 53. (Moved under 4.3.2).

Paragraph 54. Renumber as 4.2.2 and amend the beginning to read:

“4.2.2 Instrumentation

Test stations shall be equipped with instruments to measure the U value to an accuracy of $\pm 5\%$. Heat transfer through air leakage should not exceed 5% of the total heat transfer through the calorimeter box or through the insulated body

of the unit of transport equipment. The refrigerating capacity shall be determined with an accuracy of $\pm 5\%$.

The instrumentation of the calorimeter box or unit of transport equipment shall conform to paragraphs 4.1.3 and 4.1.4 above. The following are to be measured:

(a)...

(d) ... with a pressure regulator.”;

(e) (to be moved under 2.1.3 and remainder unchanged).

Paragraph 55. Renumber as 4.2.3 and amend to read:

“4.2.3 Test conditions

- (i) The average air temperature at the inlet(s) to the refrigeration unit shall be maintained at $30\text{ }^{\circ}\text{C} \pm 0.5\text{ K}$.
The maximum difference between the temperatures at the warmest and at the coldest points shall not exceed 2 K.
- (ii) Inside the calorimeter box or the insulated body of the unit of transport equipment (at the air inlet to the evaporator): there shall be three levels of temperature between $-25\text{ }^{\circ}\text{C}$ and $+12\text{ }^{\circ}\text{C}$ depending on the characteristics of the unit, one temperature level being at the minimum prescribed for the class requested by the manufacturer with a tolerance of $\pm 1\text{ K}$.

The mean inside temperature shall be maintained within a tolerance of $\pm 0.5\text{ K}$. During the measurement of refrigerating capacity, the heat dissipated within the calorimeter box or the insulated body of the unit of transport equipment shall be maintained at a constant level with a tolerance of $\pm 1\%$.

When presenting a refrigeration unit for test, the manufacturer shall supply:

- Documents describing the unit to be tested;
- A technical document outlining the parameters that are most important to the functioning of the unit and specifying their allowable range;
- The characteristics of the equipment series tested; and
- A statement as to which prime mover(s) shall be used during testing.”.

Renumber subtitle: “56. **Test procedure**” as “4.3”.

Paragraph 56. Renumber as 4.3.1 and amend as follows:

- (a) Replace “ $3\text{ }^{\circ}\text{C}$ ” with “ 3 K ” and amend the last sentence to read: “It shall then be lowered by 5 K below the lower limit class temperature.”;
- (b) Third indent: replace “power output,” with “capacity, with” and “in paragraph 55” with “in paragraph 4.2.3”;
- Sixth indent: replace “for each” with “accordingly”.

The last sentence of paragraph 56 is moved as first sentence under 4.3.2 and

amended as follows:

“4.3.2 The same procedure shall be followed for the enthalpy method described below, but in this case the heat power dissipated by the evaporator fans at each temperature level shall also be measured.

(the following is from existing paragraph 53 as amended)

“This method may, alternatively, be used to test reference equipment. In this case, the effective refrigerating capacity is measured by multiplying the mass flow (m) of the refrigerant liquid by the difference in enthalpy between the refrigerant vapour leaving the unit (h_o) and the liquid at the inlet to the unit (h_i).

To obtain the effective refrigerating capacity, the heat generated by the evaporator fans (W_f) is deducted. It is difficult to measure W_f if the evaporator fans are driven by an external motor, in this particular case the enthalpy method is not recommended. When the fans are driven by internal electric motors, the electrical power is measured by appropriate instruments with an accuracy of $\pm 3\%$, with refrigerant flow measurement being accurate to $\pm 5\%$.

The heat balance is given by the formula:

$$W_o = (h_o - h_i) m - W_f$$

Appropriate methods are described in standards ISO 971, BS 3122, DIN, NEN, etc. An electric heater is placed inside the equipment in order to obtain the thermal equilibrium.” ”.

Paragraph 57. Renumber as 4.3.3 and amend to read as follows:

“4.3.3 Precautions

As the tests for effective refrigerating capacity are carried out with the thermostat of the refrigeration unit disconnected, the following precautions shall be observed:

if the equipment has a hot gas injection system, it shall be inoperative during the test;

with automatic controls of the refrigeration unit which unload individual cylinders (to tune the capacity of the refrigeration unit to motor output) the test shall be carried out with the number of cylinders appropriate for the temperature.”.

Paragraph 58. Renumber as 4.3.4 and amend (ii) to read as follows:

“(ii) the rate of air circulation is that specified by the manufacturer.

If the air circulation of a refrigeration unit’s evaporator fans are to be measured, methods capable of measuring the total delivery volume shall be used. Use of one of the relevant existing standards, i.e. BS 848, ISO 5801, AMCA 210-85, DIN 24163, NFE 36101, NF X10.102, DIN 4796 is recommended;”.

Insert a new subtitle to read: “**4.4 Test result**”.

Paragraph 59. Renumber as 4.4.1 and amend to read:

“4.4.1 The refrigeration capacity for ATP purposes is that relating to the mean temperature at the inlet(s) of the evaporator. The temperature measuring instruments shall be protected against radiation.”.

Insert a new title to read as follows:

“**5. CHECKING THE INSULATING CAPACITY OF EQUIPMENT IN SERVICE**”.

Insert the text of existing paragraph 29 amended to read as follows:

“For the purpose of checking the insulating capacity of each piece of equipment in service as prescribed in appendix 1, paragraphs 1 (b) and 1 (c), to this annex, the competent authorities may:

Apply the methods described in paragraphs 2.1.1 to 2.3.2 of this appendix; or

Appoint experts to assess the fitness of the equipment for retention in one or other of the categories of insulated equipment. These experts shall take the following particulars into account and shall base their conclusions on information as indicated below.

5.1 General examination of the equipment

This examination shall take the form of an inspection of the equipment to determine the following:

- (i) the general design of the insulating sheathing;
- (ii) the method of application of insulation;
- (iii) the nature and condition of the walls;
- (iv) the condition of the insulated compartment;
- (v) the thickness of the walls;

and to make all appropriate observations concerning the effective insulating capacity of the equipment. For this purpose the experts may cause parts of the equipment to be dismantled and require all documents they may need to consult (plans, test reports, specifications, invoices, etc.) to be placed at their disposal.

5.2 Examination for air-tightness (not applicable to tank equipment)

The inspection shall be made by an observer stationed inside the equipment, which shall be placed in a brightly-illuminated area. Any method yielding more accurate results may be used.

5.3 Decisions

- (i) If the conclusions regarding the general condition of the body are favourable, the equipment may be kept in service as insulated equipment of its initial class for a further period of not more than three years. If the conclusions of the expert or experts are not acceptable, the equipment may

be kept in service only following a satisfactory measurement of K coefficient according to the procedure described in paragraphs 2.1.1 to 2.3.2 of this appendix; it may then be kept in service for a further period of six years.

- (ii) In the case of heavily insulated equipment, if the conclusions of an expert or experts show the body to be unsuitable for keeping in service in its initial class but suitable for continuing in service as normally insulated equipment, then the body may be kept in service in an appropriate class for a further three years. In this case, the distinguishing marks (as in appendix 4 of this annex) shall be changed appropriately.
- (iii) If the equipment consists of units of serially-produced equipment of a particular type satisfying the requirements of appendix 1, paragraph 6, to this annex and belonging to one owner, then in addition to an inspection of each unit of equipment the K coefficient of not less than 1% of the number of units involved, may be measured in conformity with the provisions of sections 2.1, 2.2 and 2.3 of this appendix. If the results of the examinations and measurements are acceptable, all the equipment in question may be kept in service as insulating equipment of its initial class for a further period of six years.”.

Insert a new title to read as follows:

“6. VERIFYING THE EFFECTIVENESS OF THERMAL APPLIANCES OF EQUIPMENT IN SERVICE”.

Insert the text of existing paragraph 49 amended to read as follows:

“To verify as prescribed in appendix 1, paragraphs 1 (b) and 1 (c), to this annex the effectiveness of the thermal appliance of each item of refrigerated, mechanically refrigerated or heated equipment in service, the competent authorities may:

Apply the methods described in sections 3.1, 3.2 and 3.3 of this appendix; or

Appoint experts to apply the following provisions:

6.1 Refrigerated equipment other than equipment with fixed eutectic accumulators

It shall be verified that the inside temperature of the empty equipment, previously brought to the outside temperature, can be brought to the limit temperature of the class to which the equipment belongs, as prescribed in this annex, and maintained below the said limit temperature for a period t

$$\text{such that } t \geq \frac{12\Delta T}{\Delta T'} \quad \text{in which}$$

?T is the difference between + 30 °C and the said limit temperature, and

?T' is the difference between the mean outside temperature during the test and the class limit temperature, the outside temperature being not lower than + 15 °C.

If the results are acceptable, the equipment may be kept in service as refrigerated equipment of its initial class for a further period of not more than three years.

6.2 Mechanically refrigerated equipment

Checks shall be made to ensure that, when the outside temperature is not lower than + 15 °C, the inside temperature of the empty equipment, which has been previously equalized to that outside, can be reduced to the required class temperature within a maximum period of 6 hours:

In the case of equipment in classes A, B or C, to the minimum temperature, as prescribed in this annex;

In the case of equipment in classes D, E or F, to the limit temperature, as prescribed in this annex.

If the results are acceptable, the equipment may be kept in service as mechanically refrigerated equipment of its initial class for a further period of not more than three years.

6.3 Heated equipment

It shall be verified that the difference between the inside temperature of the equipment and the outside temperature which governs the class to which the equipment belongs as prescribed in this annex (a difference of 22 K in the case of class A and of 32 K in the case of class B) can be achieved and be maintained for not less than 12 hours. If the results are acceptable, the equipment may be kept in service as heated equipment of its initial class for a further period of not more than three years.

6.4 Provisions common to refrigerated, mechanically refrigerated and heated equipment

- (i) If the results are not acceptable, refrigerated, mechanically refrigerated or heated equipment may be kept in service in its initial class only if it passes at a testing station the tests described in sections 3.1, 3.2 and 3.3 of this appendix; it may then be kept in service in its initial class for a further period of six years.
- (ii) If the equipment consists of units of serially-produced refrigerated, mechanically refrigerated or heated equipment of a particular type satisfying the requirements of appendix 1, paragraph 6, to this annex and belonging to one owner, then in addition to an inspection of the thermal appliances to ensure that their general condition appears to be satisfactory, the effectiveness of the cooling or heating appliances of not less than 1% of the number of units may be determined at a testing station in conformity with the provisions of sections 3.1, 3.2 and 3.3 of this appendix. If the results of the examinations and of the determination of effectiveness are acceptable, all the equipment in question may be kept in service in its initial class for a further period of six years.”.

Paragraph 60. Renumber as 7. and amended to read as follows:

“7.

TEST REPORTS

A test report of the type appropriate to the equipment tested shall be drawn up for each test in conformity with one or other of the models 1 to 10 hereunder.”.

MODEL No. 1 A

Footnote 1, replace “*paras 29 to 49*” with “*sections 5 to 6*”.

MODEL No. 1 B

Footnote 1, replace “*paras 29 to 49*” with “*sections 5 to 6*”.

MODEL No. 2 A

First sentence, replace “paragraphs 7 or 15” with “sub-section 2.1”.

Replace “?” with “T”.

Last sentence, replace “annex 1, appendix 1, paragraph 2 (a)” with “annex 1, appendix 1, paragraph 6 (a)”.

MODEL No. 2 B

First sentence, replace “paragraphs 16 or 25” with “sub-section 2.2”.

Replace “?” with “T”.

Last sentence, replace “annex 1, appendix 1, paragraph 2 (a)” with “annex 1, appendix 1, paragraph 6 (a)”.

MODEL No. 3

First sentence, replace “paragraph 29” with “section 5”.

MODEL No. 4 A

First sentence, replace “paragraphs 32 to 36” with “sub-section 3.1” and “except 34 (b) and 34 (c)” with “except 3.1.3 (b) and 3.1.3 (c)”.

Last sentence, replace “annex 1, appendix 1, paragraph 2 (a)” with “annex 1, appendix 1, paragraph 6 (a)”.

MODEL No. 4 B

First sentence, replace “paragraphs 32 to 36” with “sub-section 3.1” and “except 34 (a) and 34 (c)” with “except 3.1.3 (a) and 3.1.3 (c)”.

Last sentence, replace “annex 1, appendix 1, paragraph 2 (a)” with “annex 1, appendix 1, paragraph 6 (a)”.

MODEL No. 4 C

First sentence, replace “paragraphs 32 to 36” with “sub-section 3.1” and “except 34 (a) and 34 (b)” with “except 3.1.3 (a) and 3.1.3 (b)”.

Last sentence, replace “annex 1, appendix 1, paragraph 2 (a)” with “annex 1, appendix 1, paragraph 6 (a)”.

MODEL No. 5

First sentence, replace “paragraphs 37 to 40” with “sub-section 3.2”.

Last sentence, replace “annex 1, appendix 1, paragraph 2 (a)” with “annex 1, appendix 1, paragraph 6 (a)”.

MODEL No. 6

First sentence, replace “paragraphs 43 to 47” with “ sub-section 3.3”.
Last sentence, replace “annex 1, appendix 1, paragraph 2 (a)” with “annex 1, appendix 1, paragraph 6 (a)”.

MODEL No. 7

First sentence, replace “paragraph 49 (a)” with “ sub-section 6.1”.

MODEL No. 8

First sentence, replace “paragraph 49 (b)” with “ sub-section 6.2”.

MODEL No. 9

First sentence, replace “paragraph 49 (c)” with “ sub-section 6.3”.

MODEL No. 10

Second sentence, replace “paragraphs 51 to 59” with “section 4”.

Annex 1, Appendix 3

Amend title A to read:

- “A. FORM OF CERTIFICATE FOR INSULATED, REFRIGERATED, MECHANICALLY REFRIGERATED OR HEATED EQUIPMENT USED FOR THE INTERNATIONAL CARRIAGE OF PERISHABLE FOODSTUFFS BY LAND”**

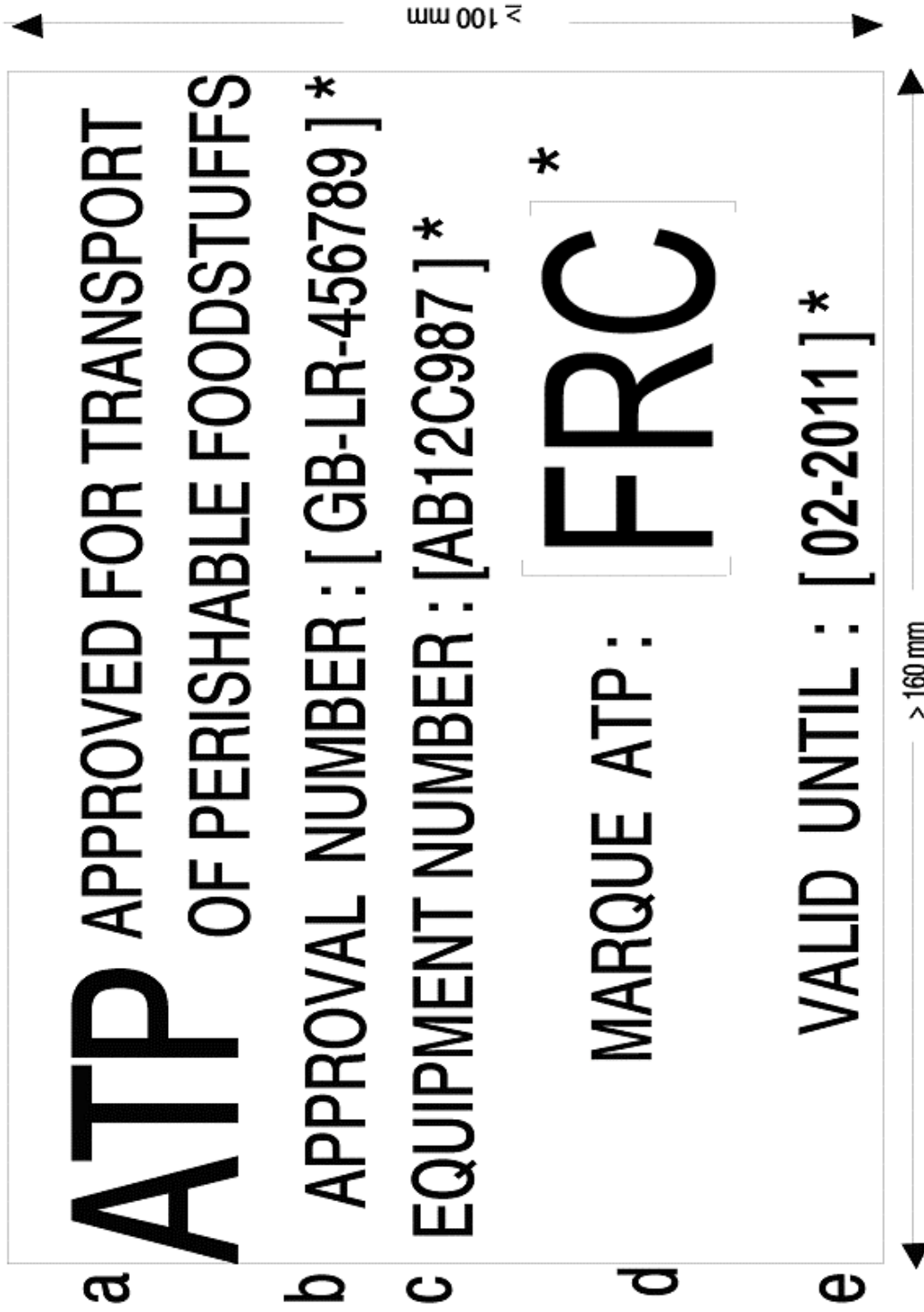
Footnote 3, replace “*paragraph 42*” with “*paragraph 3.2.7*”.

Amend title B to read:

- “B. CERTIFICATION PLATE OF COMPLIANCE OF THE EQUIPMENT, AS PROVIDED FOR IN ANNEX 1, APPENDIX 1, PARAGRAPH 3”**

Model of certification plate:

Replace with the following:



* The particulars in square brackets are given by way of example

Annex 1, Appendix 4

First sentence, replace “paragraph 5” with “paragraph 4”.

Delete the following:

“Class B mechanically refrigerated equipment with normal
Insulation FNB^{1/}

Class C mechanically refrigerated equipment with normal
insulation FNC^{1/}

Class E mechanically refrigerated equipment with normal
insulation FNE^{1/}

Class F mechanically refrigerated equipment with normal
insulation FNF^{1/}”

Delete the footnote: “^{1/} See transitional provisions in paragraph 5 of this annex.”

Last sentence, replace “RNA 5-1974” by “FRC 02-2011”, then in the last line: “2=month
(February)” and “2011 = year”.
