

ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

Working Party on the Transport of Perishable Foodstuffs

Sixty-fifth session

Geneva, 27-30 October 2009

Item 6 of the provisional agenda

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

Supplements and specifications to Annex 1, Appendix 2, paragraph 21 of ATP

ATP HANDBOOK

Supplements to Annex 1, Appendix 2, paragraph 21 of the ATP Handbook

Transmitted by the Government of the Russian Federation

SUMMARY

Executive summary:

The analysis of requirements for the placement of air temperature measurement devices inside and outside of tanks (further referred to as “tanks”) with a few compartments given in subparagraph (b) of Annex 1, Appendix 2, Paragraph 21 of ATP has shown that the said requirements should only be applied to tanks with three and more compartments, as in tanks with two compartments the placement of air temperature measurement devices aimed at determining the K coefficient should be different.

There is a contradiction between the requirements regarding the number and placement of air temperature measurement devices inside and outside of tanks aimed at identifying the K coefficient in the last indents of paragraphs 3 and 4 of Annex 1, Appendix 2 of ATP and the second sentence of the last indent of subparagraph b) of Annex 1, Appendix 2, Paragraph 21 of ATP regarding tanks with two compartments.

Annex 1, Appendix 2, paragraph 21 of ATP contains a textual description of the requirements for the placement of air temperature measurement devices inside and outside of tanks with one and more compartments during tests aimed at determining the K coefficient.

The absence in the ATP Handbook of graphic illustrations in the form of layouts for the placement of air temperature measuring devices inside and outside of tanks with one and more compartments during tests aimed at determining the K coefficient complicates the perception of the textual descriptions in Annex 1, Appendix 2, Paragraph 21 of ATP. As a result they may be misunderstood or misinterpreted.

Proposed solution:

Specifying the first indent of the current version of subparagraph (b) of Annex 1, Appendix 2, paragraph 21 of ATP, stating that the requirements for the placement of temperature measurement devices given below in the said subparagraph (b) pertain to tanks with three and more compartments.

Supplementing Annex 1, Appendix 2, paragraph 21 of ATP with a new subparagraph describing the requirements for the placement of air temperature measurement devices inside and outside of tanks with two compartments during tests aimed at determining the K coefficient.

Specifying the last sentence of the last indent of subparagraph (b) Annex 1, Appendix 2, Paragraph 21 of ATP stating the minimum total number of air temperature measurements inside tanks with two and more compartments.

Supplementing Annex 1, Appendix 2 of the ATP Handbook with layouts for the placement of air temperature measuring devices inside and outside of tanks with one, two, three and more compartments during tests of tanks aimed at determining the K coefficient.

Introduction

1. At the sixty-fourth session of the Working Party on the Transport of Perishable Foodstuffs (WP.11), the Russian Federation presented Informal document No. 4 with a proposal to supplement the ATP Handbook with layouts demonstrating the placement of air temperature measuring devices inside and outside of tanks with one and three compartments during tests of such tanks aimed at determining the K coefficient.

2. At the sixty-fourth session, WP.11 examined the proposal of the Russian Federation, adopted it in principle and asked the Russian Federation to present at the sixty-fifth session an official document taking into consideration the following remarks made during discussions at the sixty-fourth session:

- Provide for tanks with more than three compartments and reflect it in the graphical illustrations;
- Translate the captions to the illustrations into English.

3. During the preparation of the aforementioned document, the Russian Federation identified that the requirements for the placement of air temperature measurement devices inside and outside tanks with several compartments given in subparagraph (b) of Annex 1, Appendix 2, paragraph 21 of ATP may only be applied to tanks with three and more compartments, as in tanks with two compartments the placement of air temperature measurement devices aimed at determining the K coefficient should be different.

4. Paragraphs 3 and 4 of Annex 1, Appendix 2 of ATP read: “If the body is not parallelepipedic, the 12 points of measurements shall be distributed as satisfactorily as possible having regard to the shape of the body.”

At the same time, fulfilling the requirements of subparagraph (b) of Annex 1, Appendix 2, Paragraph 21 of ATP concerning tanks with two compartments requires a total of 8 (eight) air temperature measurement devices inside and outside of the tank: at the extremities of a horizontal diameter near the bottoms and at the extremities of a vertical diameter near both sides of the common partition.

5. Installation of a smaller number of temperature measuring devices aimed at determining the K coefficient in tanks with two compartments than specified in the last indents of paragraphs 3 and 4 of Annex 1, Appendix 2, paragraph 21 of ATP may affect the measurement error, the requirements of which are given in Annex 1, Appendix 2, paragraph 27 of ATP.

6. In line with the requirements of Annex 1, Appendix 2, paragraph 27 of ATP during tests aimed at determining the K coefficient when using the internal heating method, the maximum measurement error shall be $\pm 5\%$.

Comments to paragraph 27 in the ATP Handbook contain formulas for the calculation of this error. It largely depends on the quotient of the absolute error of temperature measurement devices and the difference between the air temperature inside and outside of the tested transport equipment's body that in turn depends on the number and placement of air temperature measurement devices inside and outside of the tested transport equipment.

7. In order to fulfil the requirements given in the last indents of paragraphs 3 and 4 and Annex 1, Appendix 2, paragraph 27 of ATP and achieve a smaller measurement error it is important to specify the ATP requirements for:

- The number and placement of air temperature measurement devices inside and outside tanks with two compartments during tests of tanks aimed at determining the K coefficient. The minimum number of air temperature measurement devices inside and outside tanks with two compartments must also be no less than 12 (twelve), which will ensure a lower measurement error than the currently suggested (eight) temperature measurement devices;
- The minimum total number of air temperature measurements inside tanks with two and more compartments.

8. On the basis of the above, the Russian Federation submits for consideration by the WP.11 at its sixty-fifth session this Informal document.

Proposals

9. Amend the first indent of subparagraph (b) of Annex 1, Appendix 2, paragraph 21 of ATP as given below and change the notation from (b) to (c):

(c) *If the tank has three and more compartments, the measurements shall be made at the following points: ... {further according to the text}.*

10. Supplement Annex 1, Appendix 2, paragraph 21 of ATP with a new subparagraph (b) as follows:

(b) *If the tank has two compartments, the measurements shall be made at least at the following points:*

- *Near the bottom of the first compartment and near the common partition in the second compartment – at the extremities of three radiuses forming 120° angles, one of the radiuses being directed vertically upwards;*
- *Near the bottom of the second compartment and near the common partition in the first compartment – at the extremities of three radiuses forming 120° angles, one of the radiuses being directed vertically downwards.*

11. Make the last indent of the current version of subparagraph (b) of Annex 1, Appendix 2, paragraph 21 of ATP a separate subparagraph (d) of Annex 1, Appendix 2, paragraph 21 of ATP wording its last sentence as follows:

(d) *...For tanks with ~~several~~ **two and more compartments** the mean inside temperature of each compartment shall be the arithmetic mean of the measurements made in the compartment, while the number of those measurements **in each compartment** shall be no less than four, **and the total number of measurements in all compartments of the tank shall be no less than twelve.***

12. To simplify the understanding, the proposed new version of Annex 1, Appendix 2, paragraph 21 of ATP is shown below, as from subparagraph (b)

(b) *If the tank has two compartments, the measurements shall be made at least at the following points:*

- *Near the bottom of the first compartment and near the common partition in the second compartment – at the extremities of three radiuses forming 120° angles, one of the radiuses being directed vertically upwards;*
- *Near the bottom of the second compartment and near the common partition in the first compartment – at the extremities of three radiuses forming 120° angles, one of the radiuses being directed vertically downwards.*

- (c) *If the tank has three and more compartments, measurements shall be made at the following points:*

For each of the two end compartments, at least the following:

- *At the extremities of a horizontal diameter near the bottom and at the extremities of a vertical diameter near the common partition;*

And for each of the remaining compartments, at least the following:

- *At the extremity of a diameter inclined at an angle of 45° to the horizontal near one of the partitions, and at the extremities of a diameter perpendicular to the first and near the other partition;*

- (d) *The mean inside temperature and the mean outside temperature of the tank shall respectively be the arithmetic mean of all the measurements made inside and outside the tank. For tanks having two and more compartments, the mean inside temperature of each compartment shall be the arithmetic mean of the measurements made in the compartment, and the number of those measurements in each compartment shall be no less than four and the total number of measurements in all compartments of the tank shall be no less than twelve.*

13. Supplement the ATP Handbook with the following comments to the current version of subparagraph (a) and the new subparagraphs (b) and (c) of Annex 1, Appendix 2, paragraph 21 of ATP:

Comment to the current version of subparagraph (a) of Annex 1, Appendix 2, paragraph 21 of ATP:

"The layout of the placement of air temperature measurement devices inside and outside tanks with one compartment is shown in figure 1."

Comment to the new subparagraph (b) of Annex 1, Appendix 2, paragraph 21 of ATP:

"The layout of the placement of air temperature measurement devices inside and outside tanks with two compartments is shown in figure 2."

Comment to the new subparagraph (c) of Annex 1, Appendix 2, paragraph 21 of ATP:

"The layout of the placement of air temperature measurement devices inside and outside tanks with three and more compartments is shown in figure 3."

14. The figures mentioned appear below.

15. Change the subsequent numbering of figures in the ATP Handbook.

Justification

16. In the Russian Federation's opinion it is crucial to ensure the harmonized observance of ATP requirements by all Contracting Parties. The specialists at the testing facilities of the

Contracting Parties must be fully aware of all the ATP provisions regarding the testing of tanks with one, two, three, and more compartments aimed at determining the K coefficient.

17. After the introduction of the supplements and precisions proposed by the Russian Federation into the ATP and the ATP Handbook, no questions should remain as to the placement of air temperature measuring devices inside and outside tanks with one, two, three and more compartments during tests of tanks aimed at determining the K coefficient.

Simplification

18. The introduction of the supplements and precisions proposed by the Russian Federation into the ATP and the ATP Handbook will simplify the understanding of the ATP requirements for the placement of air temperature measuring devices inside and outside tanks with one, two, three and more compartments and the training of specialists charged with conducting tests of tanks' compliance with the ATP requirements.

Costs

19. None.

Practical feasibility

20. It is expected that the proposed supplements and precisions will enable the specialists of ATP Contracting Parties' testing facilities to achieve an unambiguous interpretation of the ATP requirements for the placement of air temperature measuring devices inside and outside tanks with one, two, three, and more compartments during tests of tanks aimed at determining the K coefficient.

Enforceability

21. No problems with ensuring application are expected.

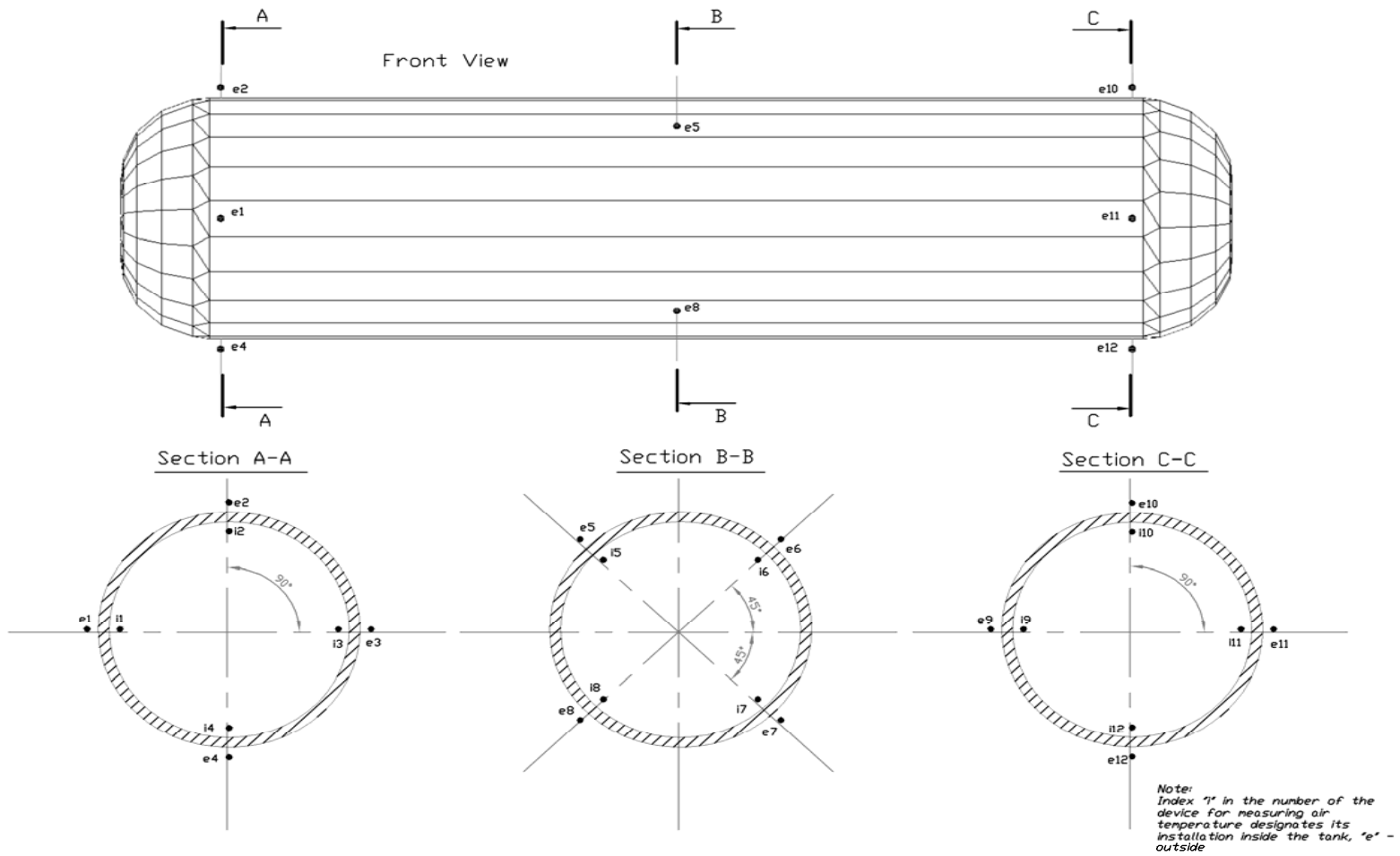


Fig. 1

Scheme of accommodation of devices for measuring air temperature inside and outside the tank with one compartment

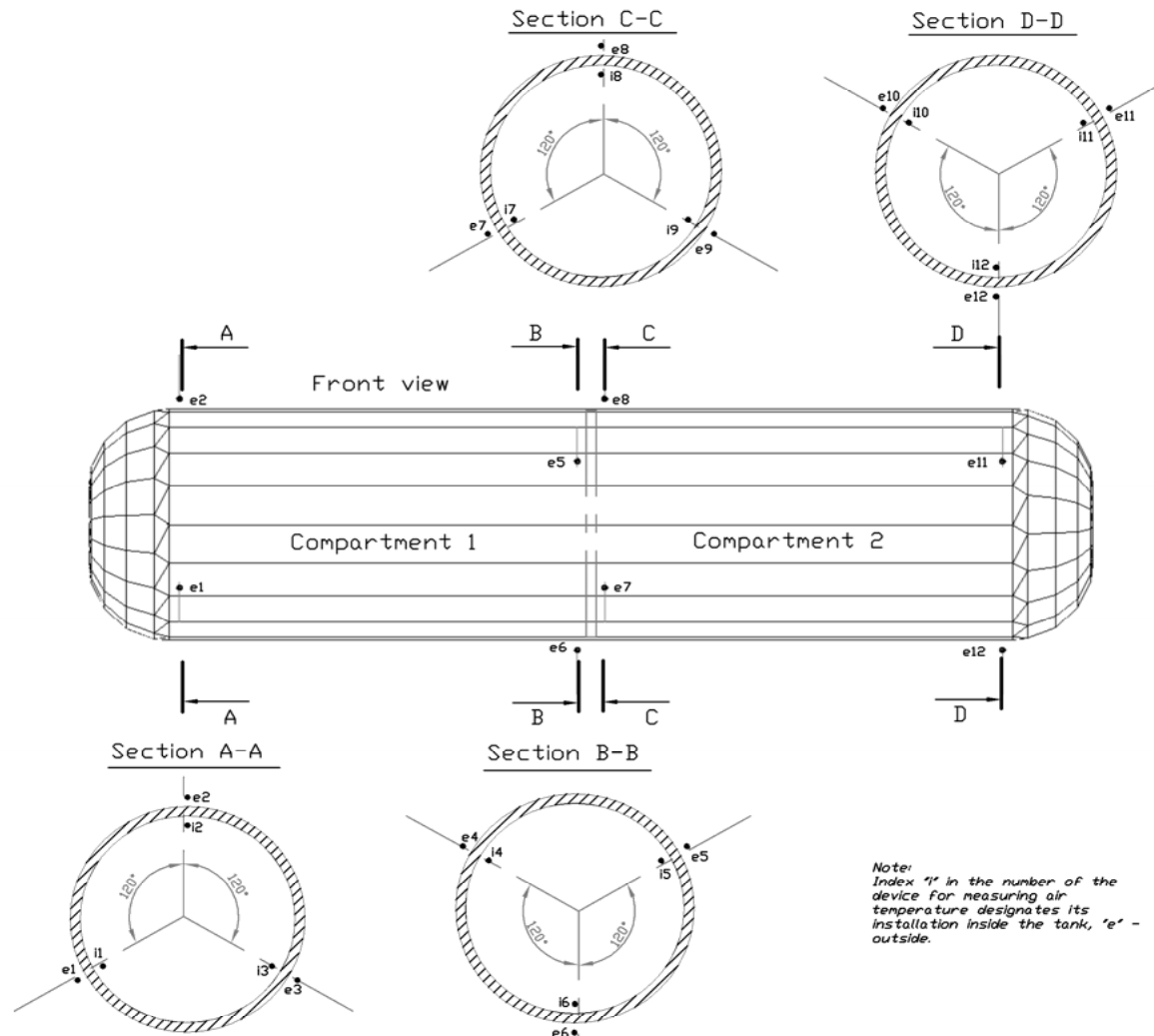


Fig. 2

Scheme of accommodation of devices for measuring air temperature inside and outside the tank with two compartment

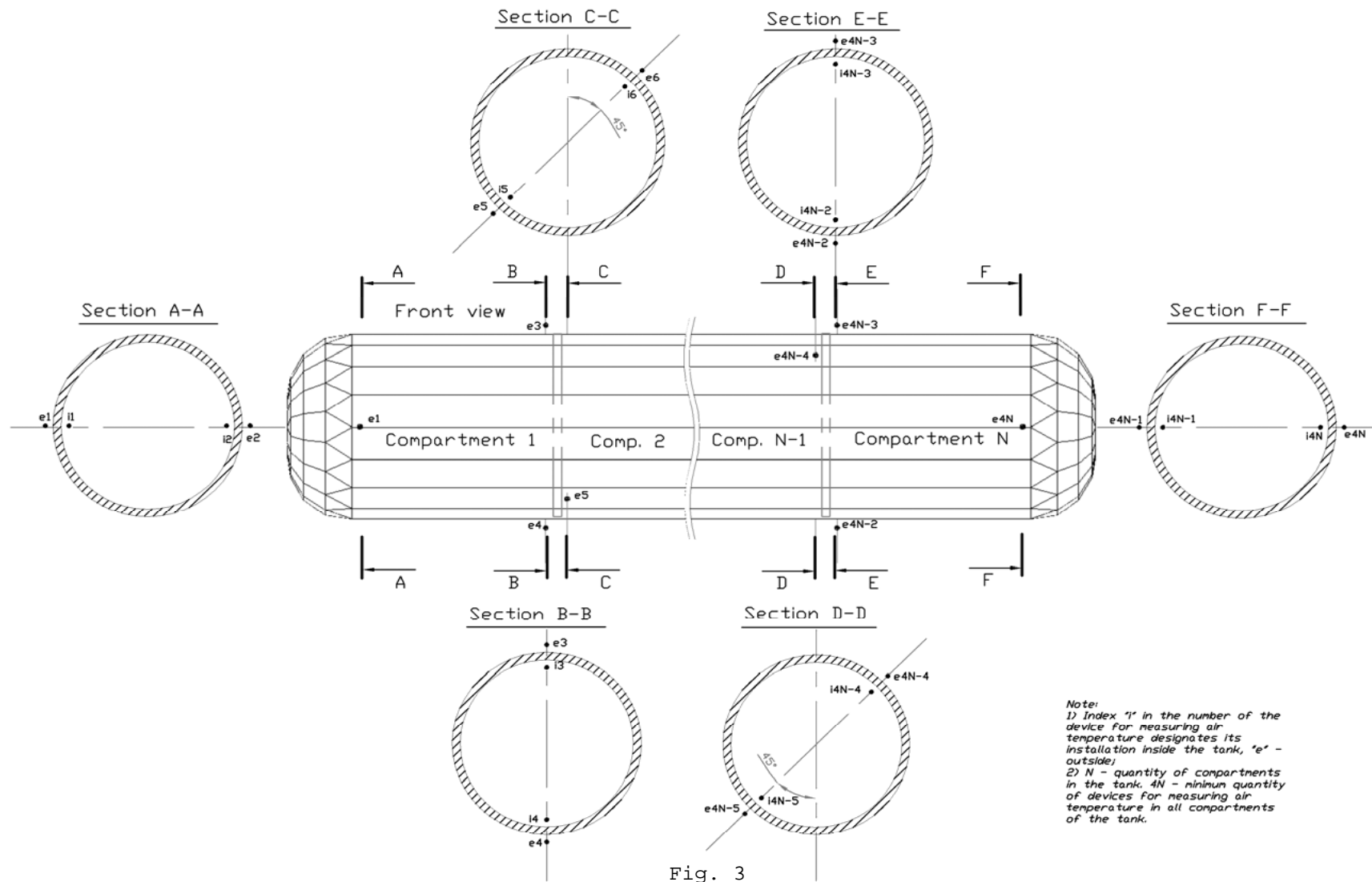


Fig. 3

Scheme of accommodation of devices for measuring air temperature inside and outside the tank with three and more compart.