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Working Party on the Transport of
Perishable Foodstuffs
(Fifty-ninth session,
Geneva, 27-31 October 2003)

ANNEX 1, APPENDIX 2, ATP

Transmitted by Germany

Proposed amendment to Annex 1, Appendix 2, Accuracy

Reasons:

The design of the refrigerating unit for new insulated bodies refers to 30 °C.

Up to now, the provision has only stated that, for the cooling test, the required class must be reached within a maximum period of 6 hours at an outside temperature of at least 15 °C. However, the refrigerating capacity of a refrigerating unit depends on the outside temperature. This will lead to different results if the test is carried out with one and the same mechanically refrigerated equipment at different outside temperatures.

Proposed amendment:

Amendment to Annex 1, Appendix 2, Paragraph 49 (b):

…at an outside temperature of **30** °C, the inside temperature…

Supplement to Annex 1, Appendix 2, Paragraph 49 (b) to be inserted before the last sentence:

…In the case of lower outside temperatures, the cooling times listed in Annexes 4 A and B shall apply. …

Supplement:

Annex 4, A: Graph

Annex 4, B: Table

Inscriptions related to the diagram

Maximum cooling times depending on the outside temperature.

Time in minutes

Temperature in °C

For measuring points above the line, classification in the envisaged class is not possible!

All values using a comma should be replaced by valves using a point.

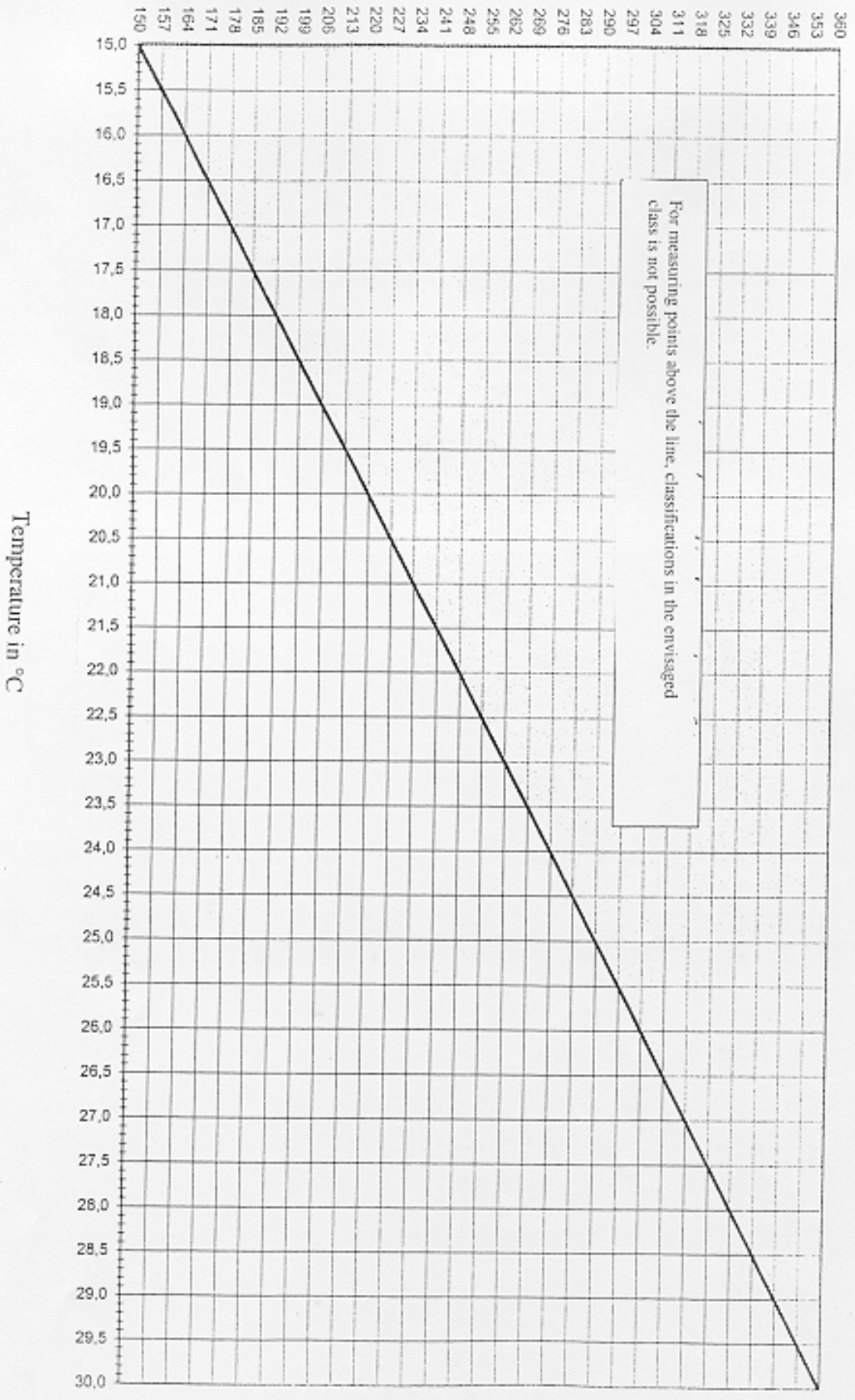
Inscriptions related to the table

Temperature in °C

Time in min

All commas should be replaced by points (see above).

Maximum cooling timer depending on the outside temperature



T in °C	Time in minutes
30,0	360,0
29,9	358,6
29,8	357,2
29,7	355,8
29,6	354,4
29,5	353,0
29,4	351,6
29,3	350,2
29,2	348,8
29,1	347,4
29,0	346,0
28,9	344,6
28,8	343,2
28,7	341,8
28,6	340,4
28,5	339,0
28,4	337,6
28,3	336,2
28,2	334,8
28,1	333,4
28,0	332,0
27,9	330,6
27,8	329,2
27,7	327,8
27,6	326,4
27,5	325,0
27,4	323,6
27,3	322,2
27,2	320,8
27,1	319,4
27,0	318,0
26,9	316,6
26,8	315,2
26,7	313,8
26,6	312,4
26,5	311,0
26,4	309,6
26,3	308,2
26,2	306,8
26,1	305,4
26,0	304,0
25,9	302,6
25,8	301,2
25,7	299,8
25,6	298,4
25,5	297,0
25,4	295,6
25,3	294,2
25,2	292,8
25,1	291,4

T in °C	Time in minutes
25,0	290,0
24,9	288,6
24,8	287,2
24,7	285,8
24,6	284,4
24,5	283,0
24,4	281,6
24,3	280,2
24,2	278,8
24,1	277,4
24,0	276,0
23,9	274,6
23,8	273,2
23,7	271,8
23,6	270,4
23,5	269,0
23,4	267,6
23,3	266,2
23,2	264,8
23,1	263,4
23,0	262,0
22,9	260,6
22,8	259,2
22,7	257,8
22,6	256,4
22,5	255,0
22,4	253,6
22,3	252,2
22,2	250,8
22,1	249,4
22,0	248,0
21,9	246,6
21,8	245,2
21,7	243,8
21,6	242,4
21,5	241,0
21,4	239,6
21,3	238,2
21,2	236,8
21,1	235,4
21,0	234,0
20,9	232,6
20,8	231,2
20,7	229,8
20,6	228,4
20,5	227,0
20,4	225,6
20,3	224,2
20,2	222,8
20,1	221,4

T in °C	Time in minutes
20,0	220,0
19,9	218,6
19,8	217,2
19,7	215,8
19,6	214,4
19,5	213,0
19,4	211,6
19,3	210,2
19,2	208,8
19,1	207,4
19,0	206,0
18,9	204,6
18,8	203,2
18,7	201,8
18,6	200,4
18,5	199,0
18,4	197,6
18,3	196,2
18,2	194,8
18,1	193,4
18,0	192,0
17,9	190,6
17,8	189,2
17,7	187,8
17,6	186,4
17,5	185,0
17,4	183,6
17,3	182,2
17,2	180,8
17,1	179,4
17,0	178,0
16,9	176,6
16,8	175,2
16,7	173,8
16,6	172,4
16,5	171,0
16,4	169,6
16,3	168,2
16,2	166,8
16,1	165,4
16,0	164,0
15,9	162,6
15,8	161,2
15,7	159,8
15,6	158,4
15,5	157,0
15,4	155,6
15,3	154,2
15,2	152,8
15,1	151,4
15,0	150,0

Proposed amendment to Annex 1, Appendix 2, Paragraph 49 (b)

Definition of uniform test procedures and test appliances for the periodical testing of mechanically refrigerated equipment

Reasons:

Since neither uniform test procedures nor requirements to be fulfilled by the test appliances have been laid down, it cannot be guaranteed that all tests are carried out under the same conditions. Another objective to be achieved is the comparability of results. Important parameters to ensure a correct organization of tests are: external thermometers with external measuring appliances, positioning of the thermometers, accuracy of the thermometers, number of thermometers and correct organization of the cooling test.

These aspects have to be included in the ATP Agreement in order to reflect the constant quality of testing and the actual quality of the vehicle both for the authority and the owner thus ensuring safety for the final consumer.

Proposed amendment:

Annex 1, Appendix 2, Paragraph 49 (b)

i) It shall be verified that, when the outside temperature is not lower than + 15 °C, the inside temperature of the empty equipment can be brought
- 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.

ii) To measure the air temperature reached in any given case, two thermometers shall be positioned at defined points inside the insulated body.
One of these thermometers shall be positioned at the centre of the insulated body at approximately 100 mm above the bottom. The other shall be positioned at the point farthest away from the blower aperture of the refrigerating unit, again at approximately 100 mm above the bottom.
The outside temperature shall be measured with a thermometer at the coldest point at

the inlet to the condenser.

iii) Calibrated measuring systems with a maximum tolerance of ± 0.3 K shall be used to measure the temperature.
All temperatures shall be recorded continuously and automatically every 5 minutes.
Before the start of the cooling process, it shall be ensured that the insulated body is not pre-cooled, i.e. has a wall temperature of > +15 °C, so that a minimum inside temperature of > 15 °C is guaranteed.

iv) If the results are favourable, 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.

Proposed amendment to Annex 1, Appendix 2, Accuracy

Reasons:

a) Change from °C to K:

In engineering it has for many years been common practice to express temperatures in °C and temperature differences in K. This has up to now not been taken account of in the ATP Agreement and thus causes misunderstandings.

b) Change from e.g. 20 °C ± 0.5 °C to 20.0 °C ± 0.5 °C:

The information 20 °C allows for measured values between 19.5 °C and 20.4 °C. In case of an admissible tolerance of ± 0.5 °C, this would cover measured values between 19.1 °C and 20.9 °C. If the results are expressed with the required accuracy, values between 19 °C and 21 °C would be possible.

Proposed amendment:

Annex 1, Appendix 2	Old	New
(6)	± 0.3 °C ± 1 °C 0.2 °C	± 0.3 K ± 1.0 K 0.2 K
(8)	± 0.5 °C 25 °C ± 2 °C 20 °C ± 0.5 °C + 20 °C	± 0.5 K 25.0 °C ± 2.0 K 20.0 °C ± 0.5 K + 20.0 °C
(9)	25 °C ± 2 °C	25.0 °C ± 2.0 K
(10)	0 °C + 10 °C 2 °C	0.0 °C + 10.0 °C 2.0 K
(13)	2 °C	2.0 K
(18)	± 0.5 °C 25 °C ± 2 °C 20 °C ± 0.5 °C 20 °C	± 0.5 K 25.0 °C ± 2.0 K 20.0 °C ± 0.5 K 20.0 °C
(20)	3 °C 2 °C	3.0 K 2.0 K
(23)	2 °C	2.0 K
(32)	30 °C ± 0.5 °C 25 °C ± 2 °C	30.0 °C ± 0.5 K 25.0 °C ± 2.0 K
(34a)	30 °C	30.0 °C
(34b)	30 °C	30.0 °C

Annex 1. Appendix 2	Old	New
(34c) (34c)	30 °C 2 °C	30.0 °C 2.0 °C
(38)	30 °C	30.0 °C
(49)	30 °C 15 °C 15 °C	30.0 °C 15.0 °C 15.0 °C
(55)	30 °C ± 0.5 K	30.0 °C ± 0.5 K

Proposed amendment to Annex 1, Appendix 2, Paragraph 54, Instrumentation

Reasons:

This paragraph lists not only instruments to measure the refrigerating capacity but also accuracies and tolerances. Some of the information concerning accuracy is missing, some of the information is outdated and does no longer reflect the state of the art.

Proposed amendment:

Para. on instrumentation and accuracy

The refrigerating capacity shall be determined with an accuracy of ± 5%. ~~The refrigerant flow measurement shall be accurate to ± 1% (previously ± 5%).~~

Supplement:

a) The accuracy of the temperature measuring system ~~thermometer~~ shall be ± 0.2 K ~~± 0.1 K~~.

b) The electrical energy and fuel consumption shall be determined with an accuracy of ± 0.5%.

c) The speed of rotation shall be measured to an accuracy of ± 1%.

d) --

e) The electrical energy consumption shall be determined with an accuracy of ± 0.5%.