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Working Party on the Transport of Perishable Foodstuffs

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Item 5 (a) of the provisional agenda

Proposals of amendments to the ATP:

Pending proposals

Procedure for the efficiency testing of in-service independent, multi-temperature, mechanically refrigerated equipment

Transmitted by the Government of France

Background

1. ATP was amended in 2013 to cover multi-compartment, multi-temperature equipment.
2. France subsequently presented a testing method that was suitable for multi-temperature, reversible equipment.
3. The proposal was based on the testing method for independent, mono-temperature, mechanically refrigerated equipment with the addition of a test for the reversibility of compartments that made it possible to limit the length of the test while maintaining its relevance.
4. WP.11 agreed that in the tables for equipment with two or three compartments, the heading "Temperatures" should be replaced by the heading "Class temperature". It also agreed that the test should be easy and inexpensive.
5. An attempt to adopt the proposal initially just for multi-temperature equipment with two or three compartments was unsuccessful and Germany stated that further modifications should be made to the proposal.

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Proposal

6. The procedure proposed is the same as that used for mono-temperature equipment, with the proposed addition of additional reversibility tests.

Impact

7. This proposal is based on the test method for mono-temperature independent equipment. It adds only one test for the reversibility of compartments that will make it possible to limit the length of the test while retaining all its relevance.

8. The cost of this test is very similar to that of the test for mono-temperature equipment, although slightly higher as it requires more sensors and a longer time for instrumentation and analysis.

9. The environmental impact is significant, as servicing can be made compulsory, leading to better machine performance.

Proposed amendment to ATP

10. It is proposed to add a subparagraph (iii) to ATP, Annex 1, Appendix 2, paragraph 6.2, as follows:

“(iii) Multi-compartment equipment in which class temperatures can be modified

The test prescribed in (i) is conducted simultaneously for all the compartments. During these tests, if the partitions are movable, they should be positioned so that the compartment surfaces are proportional to the individual capacities of the evaporators at 0° C.

Measurements should be taken until the warmest temperature measured by one of the two sensors located inside each compartment reaches the class temperature.

Additional tests are then carried out:

The set points are chosen in order to check that the temperatures are correctly maintained at $0.0\text{ °C} \pm 3\text{ °C}$ for at least 10 minutes in one compartment when the other compartments are at -20 °C and then when the set points of all the compartments are reversed.

The temperature should rise with the doors closed, with the unit in use. The temperatures are recorded; there is no maximum time limit for this test.

The equipment is considered compliant if:

- For each compartment, the class temperature has been reached within the time limit shown in the table in (i). To define this time limit, the lowest (coldest) mean outside temperature is selected from the two sets of measurements taken with the two outside sensors.
- The additional tests mentioned in (iii) are satisfactory.”