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Item 5 (b) of the provisional agenda
**Proposals of amendments to ATP:
new proposals**

Editorial correction in formula in appendix 2, annex 1, procedure 4.5.2

Submitted by the Government of Spain

Summary

Executive summary:	Editorial correction in formula in appendix 2, annex 1. Procedure 4.5.2.
Action to be taken:	Delete number (1) in formula of equivalence of the refrigerants.
Related documents:	ECE/TRANS/WP.11/2016/18 (submitted by France) ECE/TRANS/WP.11/2017/23 (submitted by Transfrigoroute International) and the report ECE/TRANS/WP.11/237.

Introduction

1.   In 2016, France presented the proposal contained in document ECE/TRANS/WP.11/2016/18, where it proposed a new Section 10 of Annex 1, Appendix 2, where it established a test methodology to determine the equivalence with the change of refrigerant of the refrigeration units in the equipment.

2.   In point 10.2 of this Section, regarding the test procedure, the following formula was used, referencing the equation with the number (1) between parenthesis (in bold blue):

"10.2. Test methodology

The unit containing the new refrigerant is subjected to a limited test in accordance with the description described in section 4.

The equivalence of the refrigerants is then tested by testing the following inequality:

$$\frac{Q_{mod} - Q_{Ref}}{Q_{ref}} \geq -0,035 \ (1)$$

where:

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$Qref$ is the refrigerating capacity of the certified unit,

$Qmod$ is the refrigerating capacity of the unit with the new refrigerant,

For an approved type of refrigeration unit:

•**If equation (1)** is satisfied for two different class temperatures, one of which is the minimum class temperature, and for each type of drive across the range of effective refrigerating capacities generated by the refrigeration unit, then the refrigerating capacities of the reference refrigeration unit and the modified one are considered to be equivalent. In this case, the ATP test station may produce an addendum noting that the refrigerating capacities of a particular refrigeration machine are equivalent when either refrigerant is used. This is a case of strict equivalence…"

3.   Following this equation, in one of the subsequent paragraphs explaining the methodology, (1) was used to refer to this equation.

4.   Subsequently, in 2017, Transfrigoroute International (TI) made a proposal to modify the ATP reflected in the document ECE/TRANS/WP.11/2017/23, where TI proposed to incorporate a new section in appendix 2 of annex 1: 4.5 "Procedure for subjecting refrigeration units to mechanical tests when changing the refrigeration agent" based on the French proposal of 2016 mentioned above and which was approved as is reflected in document ECE/TRANS/WP.11/237.

"4.5.2 Test procedure

Due to the similar behavior of the retrofit and the reference refrigerants the number of tests necessary for a type approval can be reduced. In terms of refrigerating capacity the retrofit refrigerants must comply with a criterion of equivalence which allows an at maximum 10 % lower refrigerating capacity for the retrofit refrigerant when compared with the approved reference refrigerant.

The criterion of equivalence is defined by the formula

$$\frac{Q_{mod}-Q_{Ref}}{Q_{ref}} \geq -0,10 \ \textbf{(1)}$$

where:

$Qref$ is the refrigerating capacity of the unit tested with the reference refrigerant,

$Qretrof$ is the refrigerating capacity of the unit tested with the retrofit refrigerant,

The number of tests and the evaluation of the retrofit refrigerants is based on the differences in test results when compared with the reference refrigerant. At least a test at the lowest and at the highest temperature of the respective temperature class in the mode of drive with the highest refrigerating capacities has to be carried out…"

5.   In point 4.5.2 "Procedure" of this new section, the same formula appears again as in the initial French document of 2016, but in this case the subsequent explanatory text does not mention this equation. Nevertheless, the (1) has been included after the equation in the ATP 2020 edition in the French, English and Russian editions. The deletion of the numbering of the equation is an editorial amendment that was forgotten to be made when amending the initial French proposal, and should be corrected.

Proposal

6.   Delete the number "(1)" after the formula indicated in the previous text, in all language versions.

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