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| **INF.6** |
| |  |  | | --- | --- | | **Economic Commission for Europe**  Inland Transport Committee  **Working Party on the Transport of Perishable Foodstuffs**  **Seventy-seventh session**  Geneva, 26-29 October 2021  Item 5 (b) of the provisional agenda  **Proposals of amendments to ATP:**  **new proposals** | 19 October 2021  English | |

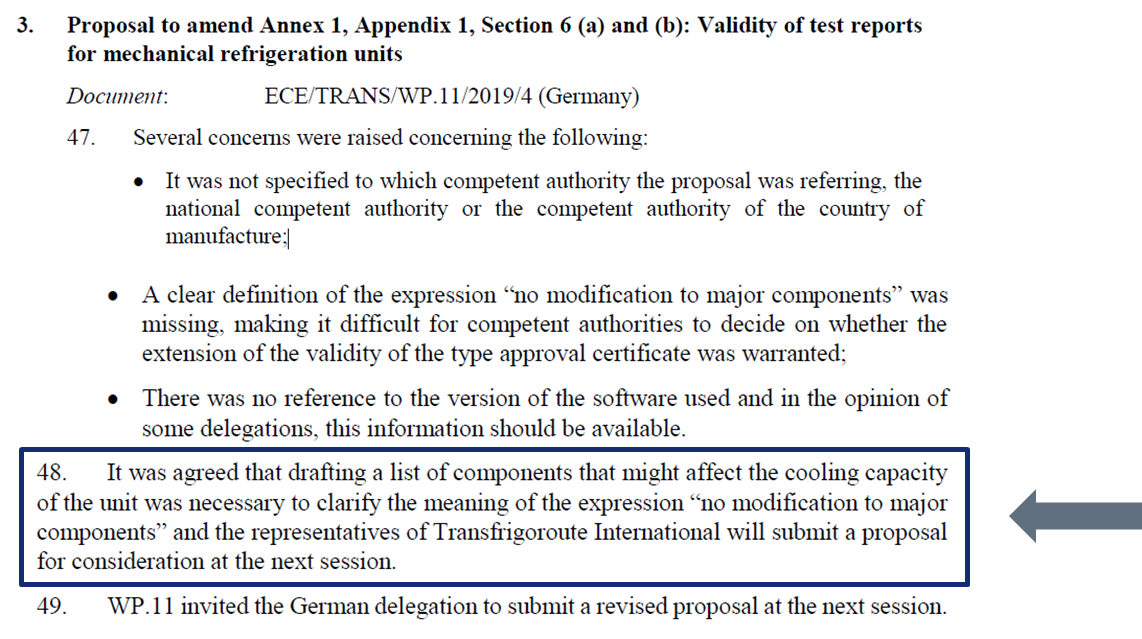
Proposed list of major components

Transmitted by Transfrigoroute International

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| *Summary* |
| **Executive summary**: Following a proposal from Germany (ECE/TRANS/WP.11/2019/4), it was agreed that drafting a list of components that might affect the cooling capacity of the unit was necessary to clarify the meaning of the expression “no modification to major components” and the representatives of Transfrigoroute International offer to submit a proposal for consideration.  **Action to be taken:** Annex 1, Appendix 2, Model No. 12  Annex 1, Appendix 2, Model No. 1 A  **Related documents**: Report of the 75th session of WP11 from 2019.  ECE/TRANS/WP.11/2021/17 (Germany) |
|  |

**Introduction**

In the report of the 75th, WP11 session from 2019, it was requested to TI to provide a list of Major components (as detailed below).



Proposal

The proposal below is mainly based on existing Model 1 A and Model 12 of Annex 1, Appendix 2.

Today if we make a high-level functional analysis of a special equipment for the Transport of Perishable Foodstuffs, we could list different functions as below:

* Power generation/Power source
* Cold/heat production & distribution
* Insulation.

Transfrigoroute International suggest to clearly separate components related to each of above functions.

* List of major components related to Power generation/Power source

(as per Annex 1, Appendix 2, Model No. 12)

| *Compressor drive* |  |  |
| --- | --- | --- |
|  |  |  |
| Electrical motor | Type |  |
| Nominal power | kW |
| Nominal speed | rpm |
| Supply voltage | V |
| Supply frequency | Hz |
| Internal Combustion Engine | Type |  |
| Number of cylinders |  |
| Cubic capacity | cc |
| Nominal power | kW |
| Nominal speed | rpm |
| Fuel |  |
| Hydraulic motor | Type |  |
| Method of drive |  |
| Alternator | Type |  |
| Method of drive |  |
| Other mechanical | Nominal speed | rpm |
| Minimum speed | rpm |

In regard to the multiple development of alternative power source for vehicles, including electrification, Transfrigoroute International suggest adjusting the list of major components related to Power generation/Power source as follow.

* List of major components related to Power generation/Power source

(Transfrigoroute International proposal Oct. 2021)

| *Compressor drive* |  |  |
| --- | --- | --- |
|  |  |  |
| Electrical power source Electrical motor Alternator Inverter/converter ePTO Battery etc | Type |  |
| Current type (AC/DC) |  |
| Nominal power | kW |
| Nominal speed (if applicable) | rpm |
| Supply voltage | V |
| Supply frequency | Hz |
| Internal Combustion Engine | Type |  |
| Number of cylinders |  |
| Cubic capacity | cc |
| Nominal power | kW |
| Nominal speed | rpm |
| Fuel | see note below |
| Hydraulic motor | Type |  |
|  | Method of drive |  |
| Other mechanical | Nominal speed | rpm |
| Minimum speed | rpm |

For Fuel type, please refer to the standards below (several fuel type could be mentiononed

| *Fuel type* | *Industry standard* |
| --- | --- |
|  |  |
| Road + Non-Road Gasoil | EN 590 |
| HVO - XTL | EN 15940 |
| Fatty Acid Methyl Esters (FAME) | EN 14214:2012 + A1:2014 |
| High FAME diesel fuel (B20 and B30) | EN 16709:2015 + A1:2018 |
| High FAME diesel fuel (B20 and B30) | EN 16709:2015 + A1:2019 |
| Natural gas or Biogas (CNG, LNG) | No standards |

* List of major components related to Cold/heat production & distribution

(as per Annex 1, Appendix 2, Model No. 12)

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Refrigerant | Refrigerant fluid |  |
| Refrigerant charge | kg |
| Compressor | Type |  |
| Number of cylinders |  |
| Cubic capacity | cc |
| Nominal speed of rotation | rpm |
| Heat exchangers Condenser Evaporator(s) | Type |  |
| Number of tubes |  |
| Fan pitch | mm |
| Nature of tube |  |
| Diameter of tube | mm |
| Exchange surface area | m2 |
| Frontal area | m2 |
| Heat exchangers Fans | Number of fans |  |
| Number of blades per fan |  |
| Diameter of fan | mm |
| Nominal power | W |
| Total nominal output at defined pressure | (m3/h) |
| Method of drive |  |
| Expansion valve | Type |  |

* List of major components related to Insulation

(as per Annex 1, Appendix 2, Model No. 1 A)

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Principal dimensions | Total inside surface area Si of body | m² |
|  | Total outside surface area Se of body | m² |
| Specifications of the body walls \* | Top |  |
|  | Bottom |  |
|  | Sides |  |
| Structural pecularities of body | Number, position and dimensions of doors |  |
|  | Number, position and dimensions of vents |  |
|  | Number, position and dimensions of ice-loading apertures |  |
| Accessories\*\* | Number and type |  |
| \*: Nature and thickness of materials constituting the body walls | |  |
| \*\*: Accessories that can have an impact on K coefficient | |  |

Justification

|  |  |
| --- | --- |
| Cost: | No cost impact |
| Feasibility: | The proposal can easily be implemented in ATP.  A transitional period is not needed. |
| Impact: | Thanks to this proposal, ATP could be easier to apply in case of multiple power source. This case will become more and more frequent, so it is important that ATP get adapted. |
| Enforceability: | Updated Model 12 could be monitored |