



INF. 8

6 November 2014

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RID: 4th Session of the RID Committee of Experts' standing working group
(Madrid, 17 - 20 November 2014)

Subject: Holding times for refrigerated liquefied gases in tanks

Note by the Secretariat

1. The Joint Meeting's working group on tanks (Berne, 17 – 21 March 2014) proposed various provisions relating to the holding time for refrigerated liquefied gases in tanks. The Joint Meeting adopted these provisions.
2. As these provisions were not included in Annex III to the report of the Joint Meeting's spring session in 2014 (document ECE/TRANS/WP.15/AC.1/134/Add.2), the Secretariat sets out all these texts below.

1.2.1 Insert the following new definition:

"**Holding time**" means the time that will elapse from the establishment of the initial filling condition until the pressure has risen due to heat influx to the lowest set pressure of the pressure limiting devices (s) of tanks intended for the carriage of refrigerated liquefied gases.

NOTE: For portable tanks, see 6.7.4.1."

1.6.3 Add a new transitional provision to read as follows:

"1.6.3.xx Tank-wagons for refrigerated liquefied gases constructed before 1 July 2017 in accordance with the requirements in force up to 31 December 2016 but which do not conform to the requirements of 6.8.3.2.10, 6.8.3.2.11 and 6.8.3.5.4 applicable from 1 January 2017 may continue to be used until the next periodic inspection after

1 July 2017. Until this time, to meet the requirements of 4.3.3.5 and 5.4.1.2.2 (d), the actual holding times may be estimated without recourse to the reference holding time."

1.6.4 Add a new transitional provision to read as follows:

"1.6.4.xx Tank-containers for refrigerated liquefied gases constructed before 1 July 2017 in accordance with the requirements in force up to 31 December 2016 but which do not conform to the requirements of 6.8.3.4.10, 6.8.3.4.11 and 6.8.3.5.4 applicable from 1 January 2017 may continue to be used until the next periodic inspection after 1 July 2017. Until this time, to meet the requirements of 4.3.3.5 and 5.4.1.2.2 (d), the actual holding times may be estimated without recourse to the reference holding time."

4.3.3 Add the following new sub-section:

4.3.3.5 The actual holding time shall be determined for each journey of a tank carrying a refrigerated liquefied gas on the basis of the following:

- (a) The reference holding time for the refrigerated liquefied gas to be carried (see 6.8.3.4.10) as indicated on the plate referred to in 6.8.3.5.4;
- (b) The actual filling density;
- (c) The actual filling pressure;
- (d) The lowest set pressure of the pressure limiting device(s);
- (e) The deterioration of the insulation*.

NOTE: ISO 21014:2006 Cryogenic vessels – Cryogenic insulation performance details methods of determining the insulation performance of cryogenic vessels and provides a method of calculating the holding time.

The date (or time) by which the actual holding time will be exceeded shall be provided on the transport document (see 5.4.1.2.2 (d)).

Tanks shall not be offered for carriage:

- (a) In an ullage condition liable to produce an unacceptable hydraulic force due to surge within the shell;
- (b) When leaking;
- (c) When damaged to such an extent that the integrity of the tank or its lifting or securing arrangements may be affected;
- (d) Unless the service equipment has been examined and found to be in good working order;
- (e) Unless the actual holding time for the refrigerated liquefied gas being carried has been determined;
- (f) Unless the duration of carriage, after taking into consideration any delays which might be encountered, does not exceed the actual holding time;

- (g) Unless the pressure is steady and has been lowered to a level such that the actual holding time may be achieved*.

* Guidance is provided in the European Industrial Gases Association (EIGA) document "Methods to prevent the premature activation of relief devices on tanks" available at www.eiga.eu."

5.4.1.2.2 (d) Amend to read as follows:

"(d) In the case of tank-wagons and tank-containers carrying refrigerated liquefied gases the consignor shall enter in the transport document the date (or time) by which the actual holding time will be exceeded."

6.8.3.2.15 At the end, add the following sentence:

"For type testing of the effectiveness of the insulation system, see 6.8.3.4.11."

6.8.3.4 Insert the following paragraphs 6.8.3.4.10 and 6.8.3.4.11:

"Holding times for tanks carrying refrigerated liquefied gases

6.8.3.4.10 The reference holding time for tanks carrying refrigerated liquefied gases shall be determined on the basis of the following:

- (a) The effectiveness of the insulation system, determined in accordance with 6.8.3.4.11;
- (b) The lowest set pressure of the pressure limiting device(s);
- (c) The initial filling conditions;
- (d) An assumed ambient temperature of 30 °C;
- (e) The physical properties of the individual refrigerated liquefied gas intended to be carried.

6.8.3.4.11 The effectiveness of the insulation system (heat influx in Watts) shall be determined by type testing the tanks. This test shall consist of either:

- (a) A constant pressure test (for example at atmospheric pressure) during which the loss of refrigerated liquefied gas is measured over a period of time; or
- (b) A closed system test during which the rise in pressure in the shell is measured over a period of time.

When performing the constant pressure test, variations in atmospheric pressure shall be taken into account. When performing either test corrections shall be made for any variation of the ambient temperature from the assumed ambient temperature reference value of 30 °C.

NOTE: ISO 21014:2006 Cryogenic vessels – Cryogenic insulation performance details methods of determining the insulation performance of cryogenic vessels and provides a method of calculating the reference holding time.

Renumber the existing paragraphs **6.8.3.4.10** to **6.8.3.4.16**.

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6.8.3.5.4 Amend to read as follows:

"6.8.3.5.4 On tanks intended for the carriage of refrigerated liquefied gases:

- the maximum working pressure allowed;
- reference holding time (in days or hours) for each gas¹⁹;
- the associated initial pressures (in bar gauge or kPa gauge)¹⁹.

Consequential amendments (suggested by the secretariat but not discussed by the Working Group or by the Joint Meeting):

Chapter 3.2

Table A For UN Nos. 1003, 1038, 1073, 1913, 1951, 1961, 1963, 1966, 1970, 1972, 1977, 2187, 2201, 2591, 3136, 3158, 3311 and 3312, in column (18), delete:

"CW30".

4.3.2.1.7 Replace "6.8.3.4.16" by:

"6.8.3.4.18".

6.8.3.4.12 (former 6.8.3.4.10) Replace "6.8.3.4.14" by:

"6.8.3.4.16".

6.8.3.4.16 (former 6.8.3.4.14) Replace "6.8.3.4.15" by:

"6.8.3.4.17".

6.8.3.4.18 (former 6.8.3.4.16) Replace "6.8.3.4.10 to 6.8.3.4.15" by:

"6.8.3.4.12 to 6.8.3.4.17".

6.8.3.5.10 In the last but one indent, replace "6.8.3.4.10 to 6.8.3.4.13" by:

"6.8.3.4.12 and 6.8.3.4.15".

6.8.3.5.11 In the last indent of the left-hand column, replace "6.8.3.4.13" by:

"6.8.3.4.15".

7.5.11

CW 30 Amend to read as follows:

"CW 30 (Deleted)".
