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Joint Meeting of Experts on the Regulations annexed to the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN) (ADN Safety Committee)

Twenty-third session
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Report of the Joint Meeting of Experts on the Regulations annexed to the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN Safety Committee) on its twenty-third session*

Addendum

Annex I

Proposed amendments to the Regulations annexed to ADN for entry into force on 1 January 2015

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Chapter 1.1

1.1.3.1 (c) In the first sentence, after "per packaging", insert ", including intermediate bulk containers (IBCs) and large packagings,".

1.1.4.2.1 In the first sentence, replace "and tank-containers" by ", tank-containers and MEGCs". In the first sentence of paragraph (c), replace "or tank-containers" by ", tank-containers or MEGCs". In the second sentence of paragraph (c), replace "and tank-containers" by ", tank-containers and MEGCs".

1.1.5 Add the following sentence: "The requirements of the standard that do not conflict with ADN shall be applied as specified, including the requirements of any other standard, or part of a standard, referenced within that standard as normative.".

(Reference document: ECE/TRANS/WP.15/AC.1/130, Annex II*)*

Chapter 1.2

1.2.1 In the definitions of *Auto-ignition temperature, Deflagration, Detonation, Explosion, and Explosive atmosphere,* replace "EN 1127-1:1997, No. 331" by "EN 13237:2011".

(Reference document: ECE/TRANS/WP.15/AC.2/2013/18*)*

1.2.1 In the definition of *Bulk container* add the following new Note at the end:

*"**NOTE:** This definition only applies to bulk containers meeting the requirements of Chapter 6.11 of ADR."*.

(Reference document: ECE/TRANS/WP.15/219, Annex I*)*

[The amendment to the definition of *Closure* in the French version does not apply to the English text.]

(Reference document: ECE/TRANS/WP.15/AC.1/130, Annex II*)*

1.2.1 In the definition of *Electrical apparatus protected against water jets* replace "IEC publication 529" by "IEC publication 60529".

1.2.1 Amend the definition of *Explosion group* to read as follows:

"*Explosion group* means a grouping of flammable gases and vapours according to their maximum experimental safe gaps (standard gap width, determined in accordance with specified conditions) and minimum ignition currents, and of electrical apparatus intended to be used in a potentially explosive atmosphere (see EN IEC 60079-0:2012).”

(Reference document: ECE/TRANS/WP.15/AC.2/2013/18*)*

1.2.1 In the definition of *Flame arrester*: Replace "EN 12 874 (1999)" by "EN ISO 16852:2010".

(Reference document: ECE/TRANS/WP.15/AC.1/130, Annex II*)*

1.2.1 Amend the definition of *High-velocity vent valve* to read as follows:

"High-velocity vent valve means a pressure relief valve designed to have nominal flow velocities which exceed the flame velocity of the flammable mixture, thus preventing flame transmission. This type of installation shall be tested in accordance with standard EN ISO 16852:2010."

(Reference document: ECE/TRANS/WP.15/AC.2/2013/18*)*

1.2.1 In the definition of *Nominal capacity of the receptacle*, delete "means the nominal volume of the dangerous substance contained in the *receptacle* expressed in litres".

1.2.1 In the definition of *Protective gloves*: Replace "EN 374-1:1994, 374-2:1994 or 374-3:1994" by "EN 374-1:2003, EN 374-2:2003 or EN 374-3:2003 + AC:2006".

1.2.1 In the definition of *Protective shoes*: Replace "EN 346:1997" by "EN ISO 20346:2004".

1.2.1 In the definition of *Protective suit*: Replace "EN 340:1993" by "EN 340:2003".

1.2.1 In the definition of *Steady burning*: Replace "EN 12 874:1999" by "EN ISO 16852:2010".

(Reference document: ECE/TRANS/WP.15/AC.1/130, Annex II*)*

1.2.1 In the definition of *Temperature class* replace "EC publication 79 and EN 50 014:1994" by "EN 13237:2011".

[1.2.1 Modify the definition of *Types of protection* to read as follows:

"Types of protection:

EEx (d): flameproof enclosure (EN IEC 60079-1:2007);

EEx (e): increased safety (EN IEC 60079-7:2007);

EEx (ia) and EEx (ib): intrinsic safety (EN 60079-11:2012);

EEx (m): encapsulation (EN 60079-18:2009);

EEx (p): pressurized apparatus (EN 60079-2:2007);

EEx (q): powder filling (EN 60079-5:2007);

(see IEC 60079-0:2012)."]

(Reference document: ECE/TRANS/WP.15/AC.2/2013/18*)*

1.2.1 Add the following new definitions:

"*Boil-off* means the vapour produced above the surface of a boiling cargo due to evaporation. It is caused by heat ingress or a drop in pressure."

(Reference documents: ECE/TRANS/WP.15/AC.2/2013/27 and Informal document INF.20 as amended*)*

"*Escape boat* means a specially equipped onsite boat designed to withstand all identified hazards of the cargo and to evacuate the people in danger."

"*Escape route* means a safe route from danger towards safety or to another means of evacuation."

"*Evacuation boat* means a specially equipped and manned boat called in for rescuing people in danger or evacuating them within the minimum safe period of time provided by a safe haven or a safe area.

(Reference document: ECE/TRANS/WP.15/AC.2/42, Annex II and ECE/TRANS/WP.15/AC.2/2013/28, as amended)

1.2.1 Definitions

"*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 safety valves."

(Reference documents: ECE/TRANS/WP.15/AC.2/2013/27 and Informal document INF.20 as amended*)*

"*Life boat (i.e. ship's boat)* means an onboard boat in transport, rescue, salvage and work duties."

(Reference document: ECE/TRANS/WP.15/AC.2/42, Annex II and ECE/TRANS/WP.15/AC.2/2013/28, as amended)

"Liquefied natural gas (LNG) means natural gas (with a high content of methane, CH_4) that has liquefied under refrigeration."

(Reference documents: ECE/TRANS/WP.15/AC.2/2013/27 and Informal document INF.20 as amended*)*

"*Means of evacuation* means any means that can be used by people to move from danger to safety as follows:

Dangers that have to be taken into account are:

- For class 3, packing group III, UN 1202, second and third entry and for classes 4.1, 8 and 9 on tank vessels: leakage at the manifold;
- For other substances of class 3 and class 2 and for flammable substances of class 8 on tank vessels: fire in the area of the manifold on the deck and burning liquid on the water;
- For class 5.1 on tank vessels: oxidizing substances in combination with flammable liquids may cause an explosion;
- For class 6.1 on tank vessels: toxic gases around the manifold and in the direction of the wind;
- For dangerous goods on dry cargo vessels: dangers emanating from the goods in the cargo holds."

"Safe area means a designated, recognisable area outside the cargo area which can be readily accessed by all persons on board. The safe area provides protection against the identified hazards of the cargo by a water screen for at least 60 minutes. The safe area can be evacuated during an incident. A safe area is not acceptable when the identified danger is fire or explosion."

"Safe haven means a designated, recognisable, readily accessible module (fixed or floating) capable of protecting all persons on board against the identified hazards of the cargo for at least sixty minutes during which communication to the emergency and rescue services is possible. A safe haven can be integrated into the wheelhouse or into the accommodation. A safe haven can be evacuated during an incident. A safe haven on board is not acceptable when the identified danger is fire or explosion. A safe haven on board and a floating safe haven outside the ship are certified by a recognized classification society. A safe haven on land is constructed according to local law."

(Reference document: ECE/TRANS/WP.15/AC.2/42, Annex II and ECE/TRANS/WP.15/AC.2/2013/28, as amended)

"*Water film* means a deluge of water for protection against brittle fracture."

(Reference documents: ECE/TRANS/WP.15/AC.2/2013/27 and Informal document INF.20 as amended*)*

"Water screen means a vertical water barrier, which extends over a height of at least 3 meters above the deck and the full width of the vessel with an overshoot of at least 1.5 meters sideways of the hull. The water screen shall protect against the identified hazards of the cargo. The water screen shall be capable of being put into operation from the wheelhouse and from the safe area."

(Reference document: ECE/TRANS/WP.15/AC.2/42, Annex II and ECE/TRANS/WP.15/AC.2/2013/28, as amended)

Chapter 1.4

"1.4.2.2.1 (d) Amend to read as follows:

"ascertain that a second means of evacuation in the event of an emergency from the vessel side is available, when the landside installation is not equipped with a second necessary means of evacuation."

1.4.2.3.1 (d) Replace by "(*Deleted*)".

1.4.3.1.1 (f) Amend to read as follows:

"He shall ascertain that the landside installation is equipped with one or two means of evacuation from the vessel in the event of an emergency."

1.4.3.3 (q) Amend to read as follows:

"He shall ascertain that the landside installation is equipped with one or two means of evacuation from the vessel in the event of an emergency."

(Reference document: ECE/TRANS/WP.15/AC.2/42, Annex II and ECE/TRANS/WP.15/AC.2/2013/28, as amended)

1.4.3.3 (x) Amend to read as follows:

"He shall ascertain that the landside installation is equipped with one or two means of evacuation from the vessel in the event of an emergency."

Consequential amendment:

1.4.3.7.1 Insert a new (g) to read as follows:

"(g) Ascertain that the landside installation is equipped with one or two means of evacuation from the vessel in the event of an emergency."

The existing (g) becomes (h).

1.4.3.7.1 Delete existing (h) and (n) and reorder accordingly.

(Reference document: ECE/TRANS/WP.15/AC.2/2013/20, as amended*)*

Chapter 1.6

1.6.1 Add the following new transitional provision:

"1.6.1.28 As an exception to the provisions of 1.6.1.1, application of EN ISO/IEC 17020:2004 for the purposes of 1.15.3.8 and 1.16.4.1 shall not be recognized after 28 February 2015.".

1.6.7.2.2.2 In the table, item 1.2.1, replace "EN 12 874:1999" by "EN ISO 16852:2010" (twice).

(Reference document: ECE/TRANS/WP.15/AC.1/130, Annex II*)*

1.6.7.2.2.2 Delete the provisions relating to 7.2.3.20 "Use of cofferdams for ballasting".

1.6.7.2.2.2 Modify the provisions relating to 7.2.3.20.1 to read as follows:

"7.2.3.20.1 sentence 1	Ballast water Prohibition against filling cofferdams with water	N.R.M. Renewal of the certificate of approval after 31 December 2038 Until then, the following requirements apply on board vessels in service: Cofferdams may be filled with water during unloading to provide trim and to permit residue-free drainage if possible. When the vessel is underway, cofferdams may be filled with ballast water only when cargo tanks are empty.
7.2.3.20.1 sentence 2	Proof of stability in the event of a leak connected with ballast water	N.R.M. Renewal of the certificate of approval after 31 December 2044 for Type G and Type N vessels
7.2.3.20.1 sentence 4	Fitting of ballast tanks and compartments with level indicators	N.R.M. Renewal of the certificate of approval after 31 December 2012 for Type C and G tank vessels and Type N double hull tank vessels"

[1.6.7.2.2.2 Modify the provisions relating to 9.3.1.13 to read as follows:

"9.3.1.13.1	Stability (general)	For proof of stability in damaged condition:
9.3.3.13.1		N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.1.13.2		
9.3.3.13.2		For proof of intact stability:
		N.R.M. Renewal of the certificate of approval after 31 December 2017

1.6.7.2.2.2 Delete the provisions relating to 9.3.3.13.3 "Stability (general)".]

1.6.7.2.2.4 Replace by "(*Deleted*)".

(Reference documents: ECE/TRANS/WP.15/AC.2/2013/15, as amended*)*

1.6.7.4.2 In Table 3., for UN No. 1202, second entry, in column (2), replace "EN 590:2004" by "EN 590:2009 + A1:2010".

(Reference document: ECE/TRANS/WP.15/AC.1/130, Annex II*)*

Chapter 1.8

1.8.1.2.1 Modify to read as follows:

"In order to carry out the checks provided for in Article 4, paragraph 3 of ADN, the Contracting Parties shall use the checklist developed by the Administrative Committee.* A copy of this checklist shall be given to the master of the vessel. Competent authorities of other Contracting Parties may decide to simplify or refrain from conducting subsequent checks if a copy of the checklist is presented to them. This paragraph shall not prejudice the right of Contracting Parties to carry out specific measures or more detailed checks.

**Note by the secretariat: The models of the checklist can be found on the United Nations Economic Commission for Europe website (http://www.unece.org/trans/danger/danger.html)."*

(Reference documents: ECE/TRANS/WP.15/AC.2/2013/13, as amended*)*

Chapter 1.15

1.15.3.8 Replace "EN 29001:1997" by "EN ISO 9001:2008 + AC:2009" and "EN ISO/IEC 17020:2004" by "EN ISO/IEC 17020:2012 (except clause 8.1.3)".

Chapter 1.16

1.16.4.1 Replace "EN ISO/IEC 17020:2004" by "EN ISO/IEC 17020:2012 (except clause 8.1.3)".

Chapter 2.1

2.1.3.10 Delete the last column of the Table.

Chapter 3.2

3.2.1, Table A For UN No. 1202, second entry, in column (2), replace "EN 590:2004" by "EN 590:2009 + A1:2010".

(Reference document: ECE/TRANS/WP.15/AC.1/130, Annex II*)*

Consequential amendment:

3.2.1, Table A, for UN No. 1972, column (8) Insert "T".

(Reference documents: ECE/TRANS/WP.15/AC.2/2013/27 and Informal document INF.20 as amended*)*

[3.2.1, Table A For UN numbers 3256, 3257 and 3258, delete special provision 580 in column (6).**]**

(Reference document: ECE/TRANS/WP.15/AC.1/130, Annex II*)*

3.2.3.1, explanatory note for column (20), 40 Replace by "(*Deleted*)".

(Reference documents: ECE/TRANS/WP.15/AC.2/2013/23*)*

3.2.3.1, explanatory notes for column (20) Insert the following new note at the end:

"42. Loading of refrigerated liquefied gases shall be carried out in such a manner as to ensure that unsatisfactory temperature gradients do not occur in any cargo tank, piping or other ancillary equipment. When determining the holding time (as described in 7.2.4.16.17), it shall be assured that the degree of filling does not exceed 98% in order to prevent the safety vales from opening when the tank is in liquid full condition. When refrigerated liquefied gases are carried using a system according to 9.3.1.24.1 (b) or 9.3.1.24.1 (c), a refrigeration system is not required."

3.2.3.2, Table C, UN No. 3082, HEAVY HEATING OIL Delete "40" in column (20)

(Reference documents: ECE/TRANS/WP.15/AC.2/2013/23*)*

3.2.3.2, Table C, Insert the following new entry for UN No. 1972:

(1)	(2)	(3)a	(3)b	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
UN No. or substance identification No.	Name and description	Class	Classification code	Packing group	Dangers	Type of tank vessel	Cargo tank design	Cargo tank type	Cargo tank equipment*	Opening pressure of the high velocity vent valve in kPa	Maximum degree of filling	Relative density at 20°C	Type of sampling device	Pumproom below deck permitted	Temperature class	Explosion group	Anti-explosion protection required	Equipement required	Number of cones/ blue lights	Additional requirements/ Remarks
1972	METHANE, REFRIGERATED LIQUID or NATURAL GAS, REFRIGERATED LIQUIFIED, with high methane content	2	3F		2.1	G	1	1	1		95		1	no	T1	IIA	yes	PP, EX, A	1	2 31, 42

(Reference documents: ECE/TRANS/WP.15/AC.2/2013/27 and Informal document INF.20 as amended)

3.2.3.2 In footnotes 1, 2, 3, 4, 5 and 7 related to the list of substances in Table C replace "IEC 79-4" by "a standardized determination procedure".

[3.2.3.2 In footnote 8, replace "IEC 79-4" by "a standardized determination procedure" and "EN 50014" by "EN 60079-0:2012".]

[3.2.3.3, column (16) Replace "IEC 60079-1-1" by "IEC 60079-20-1".]

(Reference document: ECE/TRANS/WP.15/AC.2/2013/18*)*

3.2.3.3, column (20), remark 40 Replace by "(*Deleted*)".

(Reference document: ECE/TRANS/WP.15/AC.2/2013/23*)*

[3.2.4.2, item 3.1 Modify to read as follows: "Auto-ignition temperature in accordance with IEC 60079-20-1, EN 14522, DIN 51 794; where applicable, indicate the temperature class in accordance with IEC 60079-20-1".]

(Reference document: ECE/TRANS/WP.15/AC.2/2013/18*)*

3.2.4.2, item 3.2 Modify to read as follows:

"Flash-point

For flash-points up to 175 ° C

Closed-cup test methods – non-equilibrium procedure

Abel method: EN ISO 13736:2008

Abel-Pensky method: DIN 51755–1:1974 or NF M T60-103:1968

Pensky-Martens method: EN ISO 2719:2012

Luchaire apparatus: French standard NF T60-103:1968

Tag method: ASTM D56-05(2010)

Closed-cup test methods – equilibrium procedure

Rapid equilibrium procedure: EN ISO 3679:2004; ASTM D3278-96(2011)

Closed-cup equilibrium procedure: EN ISO 1523:2002+AC1:2006; ASTM D3941-90 (2007)

For flash-points above 175 ° C

In addition to the above-mentioned methods, the following open-cup test method may be applied:

Cleveland method: EN ISO 2592:2002; ASTM D92-12."

(Reference documents: ECE/TRANS/WP.15/AC.2/2013/18*)*

3.2.4.2, item 3.3 Replace "EN 1839:2004" by "EN 1839:2012".

(Reference document: ECE/TRANS/WP.15/AC.1/130, Annex II*)*

3.2.4.2, item 3.4 Replace "IEC 60079-1:2003….." by "IEC 60079-20-1:2010 in mm.".

[3.2.4.3, column (16) Replace "IEC 60079-1-1" by "IEC 60079-20-1".]

(Reference documents: ECE/TRANS/WP.15/AC.2/2013/18*)*

3.2.4.3, column (20), remark 40 Replace by "(*Deleted*)".

(Reference document: ECE/TRANS/WP.15/AC.2/2013/23*)*

Chapter 3.3

[Chapter 3.3 Amend special provision 580 to read:

"580 (*Deleted*)".]

(Reference document: ECE/TRANS/WP.15/AC.1/130, Annex II*)*

Chapter 5.1

5.1.2.1 Amend paragraph (b) to read as follows:

"(b) Orientation arrows illustrated in 5.2.1.9 shall be displayed on two opposite sides of overpacks containing packages which shall be marked in accordance with 5.2.1.9.1, unless the marking remains visible."

(Reference document: ECE/TRANS/WP.15/AC.1/130, Annex II*)*

Chapter 5.3

5.3.2.2.1 Amend the second paragraph to read as follows:

"If the size and construction of the vehicle are such that the available surface area is insufficient to affix these orange-coloured plates, their dimensions may be reduced to a minimum of 300 mm for the base, 120 mm for the height and 10 mm for the black border. In this case, a different set of dimensions within the specified range may be used for the two orange-coloured plates specified in 5.3.2.1.1.

When reduced dimensions of orange-coloured plates are used for a packaged radioactive material carried under exclusive use, only the UN number is required and the size of the digits stipulated in 5.3.2.2.2 may be reduced to 65 mm in height and 10 mm in stroke thickness.".

(Reference document: ECE/TRANS/WP.15/219, Annex I*)*

Chapter 5.5

5.5.3.1 Add the following paragraph:

"5.5.3.1.4 Sub-sections 5.5.3.6 and 5.5.3.7 only apply when there is an actual risk of asphyxiation in the wagon/vehicle or large container. It is for the participants concerned to assess this risk, taking into consideration the hazards presented by the substances being used for cooling or conditioning, the amount of substance to be carried, the duration of the journey and the types of containment to be used. As a rule, it is assumed that packages containing dry ice (UN 1845) as a coolant do not present such a risk."

(Reference document: ECE/TRANS/WP.15/AC.1/130, Annex II*)*

[5.3.3 Replace "for which a mark for elevated temperature substances is required according to special provision 580 in Column (6) of Table A of Chapter 3.2" with "containing a substance that is carried or handed over for carriage in a liquid state at or above 100 °C or in a solid state at or above 240 °C".**]**

(Reference document: ECE/TRANS/WP.15/AC.1/130, Annex II*)*

Chapter 7.1

7.1.4.77 Replace by the following text and table:

"Based on local circumstances, competent authorities may prescribe additional requirements for the availability of means of evacuation.

7.1.4.77 Possible means of evacuation in case of an emergency

		Dry cargo bulk (vessel and barge)		*Container (vessel and barge) and packaged goods*
		Class		*Class*
		4.1, 4.2, 4.3	*5.1, 6.1, 7, 8, 9*	*All classes*
1	Two escape routes inside or outside the cargo area in opposite directions	•	•	•
2	One escape route outside the cargo area and one safe haven outside the vessel including the escape route towards it at the opposite end	•	•	•
3	One escape route outside the cargo area and one safe haven on the vessel at the opposite end		•	•
4	One escape route outside the cargo area and one life boat at the opposite end	•	•	•
5	One escape route outside the cargo area and one escape boat at the opposite end	•	•	•
6	One escape route inside the cargo area and one escape route outside the cargo area at the opposite end	•	•	•
7	One escape route inside the cargo area and one safe haven outside the vessel in the opposite direction	•	•	•
8	One escape route inside the cargo area and one safe haven on the vessel in the opposite direction		•	•
9	One escape route inside the cargo area and one life boat at the opposite end	•	•	•
10	One escape route inside the cargo area and one escape boat at the opposite end	•	•	•
11	One escape route inside or outside the cargo area and two safe havens on the vessel at opposite ends		•	•
12	One escape route inside or outside the cargo area and two safe areas on the vessel at opposite ends		•	•
13	One escape route outside the cargo area	•	•	•
14	One escape route inside the cargo area	•	•	•
15	One or more safe havens outside the vessel, including the escape route towards it	•	•	•
16	One or more safe havens on the vessel		•	•
17	One or more escape boats	•	•	•
18	One escape boat and one evacuation boat	•	•	•
19	One or more evacuation boats		•	•

• = Possible option.

7.1.4.78-7.1.4.99 (*Reserved*)"

(Reference document: ECE/TRANS/WP.15/AC.2/42, Annex II and ECE/TRANS/WP.15/AC.2/2013/28, as amended)

Consequential amendment:

7.1.6.1.14, HA03, last paragraph Delete "local".

(Reference document: ECE/TRANS/WP.15/AC.2/2013/11*)*

Chapter 7.2

7.2.4.10.1 Modify to read as follows:

"Loading or unloading shall start only once a checklist conforming with section 8.6.3 of ADN has been completed for the cargo in question and questions 1 to 19 of the list have been checked off with an "X". Irrelevant questions should be deleted. The list shall be completed, after the pipes intended for the handling are connected and prior to the handling, in duplicate and signed by the master or a person mandated by himself and the person responsible for the handling at the shore facilities. If a positive response to all the questions is not possible loading or unloading is only permitted with the prior consent of the competent authority."

(Reference document: ECE/TRANS/WP.15/AC.2/2013/11)

7.2.4.16.9 Modify to read as follows:

"For cargoes that should be transported in an open type N vessel with a flame arrester:

(a) During loading or unloading in a closed tank vessel of substances for which an open type N vessel with a flame arrester is sufficient according to columns (6) and (7) of Table C of Chapter 3.2, the cargo tanks may be opened using the safe pressure-relief device referred to in 9.3.2.22.4 (a) or 9.3.3.22.4 (a).

For cargoes that may be transported on open type N vessels:

(b) During loading or unloading in a closed tank vessel of substances for which an open type N vessel is sufficient according to columns (6) and (7) of Table C of Chapter 3.2, the cargo tanks may be opened using the safe pressure-relief device referred to in 9.3.2.22.4 (a) or 9.3.3.22.4 (a) or using another suitable opening in the vapour pipe if any accumulation of water and its penetration into the cargo tanks is prevented and the opening is appropriately closed again after loading or unloading."

(Reference documents: ECE/TRANS/WP.15/AC.2/2013/22 as amended*)*

7.2.4.16 Insert the following text at the end:

"7.2.4.16.16 Measures to be taken before loading refrigerated liquefied gases

Unless the temperature of the cargo is controlled in accordance with 9.3.1.24.1 (a) or 9.3.1.24.1 (c) guaranteeing the use of the maximal boil-off in any service conditions, the holding time has to be determined by the master or another person on his behalf before loading and validated by the master or another person on his behalf during loading and shall be documented on board.

7.2.4.16.17 Determination of the holding time

A table, approved by the classification society that certified the vessel, giving the relation between holding time and filling conditions, incorporating the parameters below shall be kept on board.

The holding time of the cargo shall be determined on the basis of the following parameters:

- The heat transmission coefficient as defined in 9.3.1.27.9;
- The set pressure of the safety valves;

- The initial filling conditions (temperature of cargo during loading and degree of filling);
- The ambient temperatures as given in 9.3.1.24.2.
- When using the boil-off vapours, the minimum guaranteed use of the boil-off vapours (that is the amount of boil-off vapours used under any service conditions), may be taken into account.

Adequate safety margin

To leave an adequate margin to ensure safety, the holding time is at least three times the expected duration of the journey of the vessel, including the following:

- To ensure safety for short journeys of (as expected) no more than 5 days, the minimum holding time for any vessel with refrigerated liquefied gases is 15 days.
- For long journeys of (as expected) more than 10 days, the minimum holding time shall be 30 days, adding two days for each day the journeys takes more than 10 days.

As soon as it becomes clear that the cargo will not be unloaded within the holding time, the master shall inform the nearest emergency services according to 1.4.1.2."

7.2.4.29 Replace by the following text:

"7.2.4.29 Transport of refrigerated liquefied gases

During loading or unloading the drip tray as mentioned in 9.3.1.21.11 shall be placed under the shore connection of the piping for loading and unloading in use, and a water film as mentioned in 9.3.1.21.11 shall be activated.

7.2.4.30-7.2.4.39 (*Reserved*)".

(Reference documents: ECE/TRANS/WP.15/AC.2/2013/27 and Informal document INF.20 as amended*)*

7.2.4.77 Replace by the following text and table:

"Based on local circumstances, competent authorities may prescribe additional requirements for the availability of means of evacuation.

7.2.4.77 Possible means of evacuation in case of an emergency

		Tank vessel/tank barge				
		Class				
		2, 3 packing group I, II and rest of III	*3 packing group III (UN No. 1202 two entries: second and third), 4.1*	*5.1, 6.1*	*8*	*9*
1	Two escape routes inside or outside the cargo area in opposite directions	•	•	•	•	•
2	One escape route outside the cargo area and one safe haven outside the vessel including the escape route towards it from the opposite end	•	•	•	•	•
3	One escape route outside the cargo area and one safe haven on the vessel at the opposite end		•	•**	•	•
4	One escape route outside the cargo area and one life boat at the opposite end		•		•	•
5	One escape route outside the cargo area and one escape boat at the opposite end	•	•	•	•	•
6	One escape route inside the cargo area and one escape route outside the cargo area at the opposite end	•	•	•	•	•
7	One escape route inside the cargo area and one safe haven outside the vessel in the opposite direction	•	•	•	•	•
8	One escape route inside the cargo area and one safe haven on the vessel in the opposite direction		•	•**	•	•
9	One escape route inside the cargo area and one life boat at the opposite end		•		•	•
10	One escape route inside the cargo area and one escape boat at the opposite end	•	•	•	•	•
11	One escape route inside or outside the cargo area and two safe havens on the vessel at opposite ends		•	•**	•	•
12	One escape route inside or outside the cargo area and two safe areas on the vessel at opposite ends		•	•**	•	•
13	One escape route outside the cargo area		•		*•	•
14	One escape route inside the cargo area		•		*•	•
15	One or more safe havens outside the vessel, including the escape route towards it	•	•	•	*•	•

• = Possible option. * = Not accepted in case of classification codes TFC, CF or CFT."

**= Not accepted if there is a risk that oxidizing substances in combination with flammable liquids may cause an explosion.

7.2.4.78-7.2.4.99 (*Reserved*)"

(Reference document: ECE/TRANS/WP.15/AC.2/42, Annex II and ECE/TRANS/WP.15/AC.2/2013/28, as amended)

Chapter 8.1

8.1.2.1 (j) Replace with "(*Deleted)*".

(Reference documents: ECE/TRANS/WP.15/AC.2/2013/13*)*

"8.1.2.3 Insert at the end:

"(q) When transporting refrigerated liquefied gases and the temperature is not controlled in accordance with 9.3.1.24.1 (a) and 9.3.1.24.1 (c), the determination of the holding time (7.2.4.16.16, 7.2.4.16.17). The heat transmission coefficient shall be documented and kept on board."

Chapter 8.2

8.2.2.3.3.1, "Practice" Insert the following text:

"- Handling refrigerated liquefied gases".

(Reference documents: ECE/TRANS/WP.15/AC.2/2013/27 as amended by Informal document INF.20*)*

Chapter 8.6

8.6.3, ADN Checklist, Question 4 Replace by the following text: "Have suitable means in accordance with 7.1.4.77 and 7.2.4.77 been provided for boarding or leaving, including in cases of emergency?"

(Reference document: ECE/TRANS/WP.15/AC.2/42, Annex II and ECE/TRANS/WP.15/AC.2/2013/28, as amended)

Question 12.2 Insert at the end "(pressure at connecting point __ kPa)".

Questions 15.1 and 15.2 Insert at the end "(agreed pressure __ kPa)".

Question 17, first indent Delete "(only when loading the vessel)" and insert "□ when loading □ when unloading".

(Reference document: ECE/TRANS/WP.15/AC.2/2013/19*)*

Add at the following new question and footnote at the end:

"19. When transporting refrigerated liquefied gases, has the holding time been determined according to 7.2.4.16.16, and is known and documented on board?*

* Only during loading operations."

(Reference documents: ECE/TRANS/WP.15/AC.2/2013/27 and Informal document INF.20 as amended*)*

Explanation of question 4 Replace "(e.g. a lowered dinghy)" by "if required in accordance with 7.1.4.77 and 7.2.4.77."

(Reference document: ECE/TRANS/WP.15/AC.2/42, Annex II and ECE/TRANS/WP.15/AC.2/2013/28, as amended)

In the Explanations, insert "Question 17: To prevent backflow from the shore, it is also necessary to activate the overflow prevention device on the vessel under certain circumstances when unloading. It is obligatory during loading and optional during unloading. Delete this item if it is not necessary during loading."

(Reference document: ECE/TRANS/WP.15/AC.2/2013/19*)*

Chapter 9.3

9.3.1.11.2 (a), first indent, second paragraph Insert the following text after "refrigerated cargo tanks": "and cargo tanks used for the transport of refrigerated liquefied gases"

9.3.1.11.2 Insert the following text at the end:

"(e) Cargo tanks intended to contain products at a temperature below -10°C shall be suitably insulated to ensure that the temperature of the vessel's structure does not fall below the minimum allowable material design temperature. The insulation material shall be resistant to flame spread. "

9.3.1.11 Insert the following text at the end:

"9.3.1.11.9 In case the vessel has insulated cargo tanks, the hold spaces shall only contain dry air to protect the insulation of the cargo tanks against moisture."

(Reference documents: ECE/TRANS/WP.15/AC.2/2013/27 as amended by Informal document INF.20*)*

9.3.1.21.5 (a) and (b), 9.3.2.21.5 (a) and (b) and 9.3.3.21.5 (a) and (d) Replace "EN 60309-2:1999" by "EN 60309-2:1999 + A1:2007 + A2:2012".

(Reference document: ECE/TRANS/WP.15/AC.1/130, Annex II*)*

9.3.1.21 Insert the following text at the end:

"9.3.1.21.11 On vessels certified to carry refrigerated liquefied gases the following protective measures shall be provided in the cargo area:

- Drips trays shall be installed under the shore connections of the piping for loading and unloading through which the loading and unloading operation is carried out. They must be made of materials which are able to resist the temperature of the cargo and be insulated from the deck. The drip trays shall have a sufficient volume and an overboard drain;
- A water spray system to cover:

  1. exposed cargo tank domes and exposed parts of cargo tanks;
  2. exposed on-deck storage vessels for flammable or toxic products;
  3. parts of the cargo deck area where a leakage may occur.

  The capacity of the water spray system shall be such that when all spray nozzles are in operation, the outflow is of 300 liters per square meter of cargo deck area per hour. The system shall be capable of being put into operation from the wheelhouse and from the deck;
- A water film around the shore connection of the piping for loading and unloading in use to protect the deck and the shipside in the way of the shore connection of the piping for loading and unloading in use during connecting and disconnecting the loading arm or hose. The water film shall have sufficient capacity. The system shall be capable of being put into operation from the wheelhouse and from the deck.

9.3.1.21.12 Vessels carrying refrigerated liquefied gases shall have on board, for the purpose of preventing damage to the cargo tanks during loading and the piping for loading and unloading during loading and unloading, a written instruction for pre-cooling. This instruction shall be applied before the vessel is put into operation and after long-term maintenance."
(Reference documents: ECE/TRANS/WP.15/AC.2/2013/27 as amended by Informal document INF.20*)*

9.3.1.24.1 Insert a new indent (c) to read as follows:

"(c) For UN No. 1972 only, and when the use of LNG as fuel is authorized according to 1.5.3.2, a system for the regulation of cargo tank pressure whereby the boil-off vapours are utilized as fuel;".

The current (c) becomes (d).

9.3.1.25.2 Insert the following text at the end:

"For transport of refrigerated liquefied gases

(h) The piping for loading and unloading and cargo tanks shall be protected from excessive stresses due to thermal movement and from movements of the tank and hull structure.

(i) Where necessary, piping for loading and unloading shall be thermally insulated from the adjacent hull structure, to prevent the temperature of the hull falling below the design temperature of the hull material."

(j) All piping for loading and unloading, which may be closed off at each end when containing liquid (residue), shall be provided with safety valves. These safety valves shall discharge into the cargo tanks and shall be protected against inadvertent closing."

9.3.1.27.9 Replace by the following text:

"For all cargo systems, the heat transmission coefficient as used for the determination of the holding time (7.2.4.16.16 and 7.2.4.16.17) shall be determined by calculation. Upon completion of the vessel, the correctness of the calculation shall be checked by means of a heat balance test. The calculation and test shall be performed under supervision by the recognized classification society which classified the vessel.

The heat transmission coefficient shall be documented and kept on board. The heat transmission coefficient shall be verified at every renewal of the certificate of approval."

9.3.1.52.3 (b) (iv) (2) Amend to read as follows:

"directly at the top edge of the sill of the entrance doors of the accommodation and service spaces when the cargo in the gas phase is heavier than air; otherwise sensors shall be fitted close to the ceiling."

(Reference documents: ECE/TRANS/WP.15/AC.2/2013/27 and Informal document INF.20 as amended*)*

9.3.2.21.5 (c) Replace "EN 12827:1996" by "EN 12827:1999".

(Reference document: ECE/TRANS/WP.15/AC.1/130, Annex II*)*

9.3.2.22.5 (a) (iii) Replace "a flame arrester with a fixed plate stack" by "a flame arrester with a fixed or spring-loaded plate stack".

9.3.3.22.5 (a) (iii) Replace "a flame arrester with a fixed plate stack" by "a flame arrester with a fixed or spring-loaded plate stack".

(Reference document: ECE/TRANS/WP.15/AC.2/2013/12*)*