

PART I

General provisions

CHAPTER 1.1

SCOPE AND APPLICABILITY

1.1.1 Structure

The Regulations annexed to ADN are grouped into nine parts. Each part is subdivided into chapters and each chapter into sections and subsections (see table of contents). Within each part the number of the part is included with the numbers of the chapters, sections and subsections, for example Part 2, Chapter 2, section 1 is numbered “2.2.1”.

1.1.2 Scope

1.1.2.1 For the purposes of Article 2 paragraph 2 (a) and Article 4 of ADN, the annexed Regulations specify:

- (a) dangerous goods which are barred from international carriage;
- (b) dangerous goods which are authorized for international carriage and the conditions attaching to them (including exemptions) particularly with regard to:
 - classification of goods, including classification criteria and relevant test methods;
 - use of packagings (including mixed packing);
 - use of tanks (including filling);
 - consignment procedures (including marking and labelling of packages and placarding and marking of vehicles and wagons embarked, the marking of vessels as well as documentation and information required);
 - provisions concerning the construction, testing and approval of packagings and tanks;
 - use of means of transport (including loading, mixed loading and unloading).

1.1.2.2 For the purposes of Article 5 of ADN, section 1.1.3 of this chapter specifies the cases in which the carriage of dangerous goods is partially or totally exempted from the conditions of carriage established by ADN.

1.1.2.3 For the purposes of Article 7 of ADN, Chapter 1.5 of this part specifies the rules concerning the derogations, special authorizations and equivalences for which that article provides.

1.1.2.4 For the purposes of Article 8 of ADN, Chapter 1.6 of this part specifies the transitional measures concerning the application of the Regulations annexed to ADN.

1.1.2.5 The provisions of ADN also apply to empty vessels or vessels which have been unloaded as long as the holds, cargo tanks or receptacles or tanks accepted on board are not free from dangerous substances or gases, except for the exemptions for which section 1.1.3 of these Regulations provides.

1.1.3 Exemptions

1.1.3.1 *Exemptions related to the nature of the transport operation*

The provisions laid down in ADN do not apply to:

- (a) the carriage of dangerous goods by private individuals where the goods in question are packaged for retail sale and are intended for their personal or domestic use or for their leisure or sporting activities provided that measures have been taken to prevent any leakage of contents in normal conditions of carriage. When these goods are flammable liquids carried in refillable receptacles filled by, or for, a private individual, the total quantity shall not exceed 60 litres per receptacle and 240 litres per cargo transport unit. Dangerous goods in IBCs, large packagings or tanks are not considered to be packaged for retail sale;
- (b) the carriage of machinery or equipment not specified in these annexed Regulations and which happen to contain dangerous goods in their internal or operational equipment, provided that measures have been taken to prevent any leakage of contents in normal conditions of carriage;
- (c) the carriage undertaken by enterprises which is ancillary to their main activity, such as deliveries to or returns from building or civil engineering sites, or in relation to surveying, repairs and maintenance, in quantities of not more than 450 litres per packaging and within the maximum quantities specified in 1.1.3.6. Measures shall be taken to prevent any leakage of contents in normal conditions of carriage. These exemptions do not apply to Class 7.

Carriage undertaken by such enterprises for their supply or external or internal distribution does not fall within the scope of this exemption;

- (d) the carriage undertaken by the competent authorities for the emergency response or under their supervision, insofar as such carriage is necessary in relation to the emergency response, in particular carriage undertaken to recover dangerous goods involved in an incident or accident and move them to the nearest appropriate safe place;
- (e) emergency transport under the supervision of the competent authorities intended to save human lives or protect the environment provided that all measures are taken to ensure that such transport is carried out in complete safety;
- (f) the carriage of uncleaned empty static storage vessels which have contained gases of Class 2, groups A, O or F, substances of Class 3 or Class 9 belonging to packing group II or III or pesticides of Class 6.1 belonging to packing group II or III, subject to the following conditions:

All openings with the exception of pressure relief devices (when fitted) are hermetically closed;

Measures have been taken to prevent any leakage of contents in normal conditions of carriage; and

The load is fixed in cradles or crates or other handling devices or to the vehicle, container or vessel in such a way that they will not become loose or shift during normal conditions of carriage.

This exemption does not apply to static storage vessels which have contained desensitized explosives or substances the carriage of which is prohibited by ADN.

NOTE: For radioactive material see 1.7.1.4.

1.1.3.2 Exemptions related to the carriage of gases

The provisions laid down in ADN do not apply to the carriage of:

- (a) *(Reserved)*;
- (b) *(Reserved)*;
- (c) gases of Groups A and O (according to 2.2.2.1), if the pressure of the gas in the receptacle or tank at a temperature of 20 °C does not exceed 200 kPa (2 bar) and if the gas is not a liquefied or a refrigerated liquefied gas. This includes every kind of receptacle or tank, e.g. also parts of machinery and apparatus;
- (d) gases contained in the equipment used for the operation of the vessel (e.g. fire extinguishers), including spare parts;
- (e) *(Reserved)*;
- (f) gases contained in foodstuffs (except UN 1950), including carbonated beverages;
- (g) gases contained in balls intended for use in sports; and
- (h) gases contained in light bulbs provided they are packaged so that the projectile effects of any rupture of the bulb will be contained within the package.

1.1.3.3 Exemptions related to substances used for the propulsion of vessels, vehicles or wagons carried, for the operation of their special equipment, for their upkeep or for safety

The requirements of ADN do not apply to substances used for the propulsion of vessels, vehicles or wagons carried, for the operation of their special equipment, for their upkeep or to ensure safety, which are carried on board in the packaging, receptacle or tanks intended for use for this purpose.

1.1.3.4 Exemptions related to special provisions or to dangerous goods packed in limited or excepted quantities

NOTE: For radioactive material see 1.7.1.4.

1.1.3.4.1 Certain special provisions of Chapter 3.3 exempt partially or totally the carriage of specific dangerous goods from the requirements of ADN. The exemption applies when the special provision is referred to in Column (6) of Table A of Chapter 3.2 against the dangerous goods entry concerned.

1.1.3.4.2 Certain dangerous goods may be subject to exemptions provided that the conditions of Chapter 3.4 are met.

1.1.3.4.3 Certain dangerous goods may be subject to exemptions provided that the conditions of Chapter 3.5 are met.

1.1.3.5 *Exemptions related to empty uncleaned packagings*

Empty uncleaned packagings (including IBCs and large packagings) which have contained substances of Classes 2, 3, 4.1, 5.1, 6.1, 8 and 9 are not subject to the conditions of ADN if adequate measures have been taken to nullify any hazards. Hazards are nullified if adequate measures have been taken to nullify all hazards of Classes 1 to 9.

1.1.3.6 *Exemptions related to quantities carried on board vessels*

- 1.1.3.6.1 (a) In the event of the carriage of dangerous goods in packages, the provisions of ADN other than those of 1.1.3.6.2 are not applicable when the gross mass of all the dangerous goods carried does not exceed 3,000 kg.

This provision does not apply to the carriage of:

- (i) substances and articles of Class 1;
 - (ii) substances of Class 2, groups T, F, TF, TC, TO, TFC or TOC, according to 2.2.2.1.3 and aerosols of groups C, CO, F, FC, T, TF, TC, TO, TFC and TOC according to 2.2.2.1.6;
 - (iii) substances of Classes 4.1 or 5.2. for which a danger label of model No. 1 is required in column (5) of Table A of Chapter 3.2;
 - (iv) substances of Class 6.2, Group A;
 - (v) substances of Class 7 other than UN Nos. 2908, 2909, 2910 and 2911;
 - (vi) substances assigned to Packing Group I;
 - (vii) substances carried in tanks;
- (b) In the event of the carriage of dangerous goods in packages other than tanks, the provisions of ADN other than those of 1.1.3.6.2 are not applicable to the carriage of:
- substances of Class 2 of group F in accordance with 2.2.2.1.3 or aerosols of group F according to 2.2.2.1.6; or
 - substances assigned to Packing Group I, except substances of Class 6.1;
- when the gross mass of these goods does not exceed 300 kg.

- 1.1.3.6.2 The carriage of exempted quantities according to 1.1.3.6.1 is, however, subject to the following conditions:

- (a) The obligation to report in accordance with 1.8.5 remains applicable;
- (b) Packages, except vehicles and containers (including swap bodies), shall comply with the requirements for packagings referred to in Parts 4 and 6 of ADR or RID; the provisions of Chapter 5.2 concerning marking and labelling are applicable;
- (c) The following documents shall be on board:
 - the transport documents (see 5.4.1.1); they shall concern all the dangerous goods carried on board;
 - the stowage plan (see 7.1.4.11.1);
- (d) The goods shall be stowed in the holds.

This provision does not apply to goods loaded in:

- containers with complete spray-proof walls;
 - vehicles with complete spray-proof walls;
- (e) Goods of different class shall be separated by a minimum horizontal distance of 3 m. They shall not be stowed on top of each other.
- This provision does not apply to:
- containers with complete metal walls;
 - vehicles with complete metal walls;
- (f) For seagoing and inland navigation vessels, where the latter carry only containers, the above requirements under (d) and (e) shall be considered to have been met if the provisions of the IMDG Code regarding stowage and separation are met and if this particular is recorded in the transport document.

1.1.3.7 Exemptions related to the carriage of lithium batteries

The provisions laid down in ADN do not apply to:

- (a) Lithium batteries installed in a means of transport, performing a transport operation and destined for its propulsion or for the operation of any of its equipment;
- (b) Lithium batteries contained in an equipment for the operation of this equipment used or intended for use during transport carriage (e.g. a laptop computer).

1.1.3.8 *(Reserved)*

1.1.3.9 Exemptions related to dangerous goods used as a coolant or conditioner during carriage

When used in vehicles or containers for cooling or conditioning purposes, dangerous goods that are only asphyxiant (which dilute or replace the oxygen normally in the atmosphere) are only subject to the provisions of section 5.5.3.

1.1.4 Applicability of other regulations

1.1.4.1 General

The following requirements are applicable to packages:

- (a) In the case of packagings (including large packagings and intermediate bulk containers (IBCs)), the applicable requirements of one of the international regulations shall be met (see also Part 4 and Part 6);
- (b) In the case of containers, tank-containers, portable tanks and multiple element gas containers (MEGCs), the applicable requirements of ADR, RID or the IMDG Code shall be met (see also Part 4 and Part 6);
- (c) In the case of vehicles or wagons, the vehicles or wagons and their load shall meet the applicable requirements of ADR or of RID, as relevant.

NOTE: For the marking, labelling, placarding and orange plate marking, see also Chapters 5.2 and 5.3.

1.1.4.2 ***Carriage in a transport chain including maritime, road, rail or air carriage***

1.1.4.2.1 Packages, containers, portable tanks and tank-containers, which do not entirely meet the requirements for packing, mixed packing, marking, labelling of packages or placarding and orange plate marking, of ADN, but are in conformity with the requirements of the IMDG Code or the ICAO Technical Instructions shall be accepted for carriage in a transport chain including maritime or air carriage subject to the following conditions:

- (a) If the packages are not marked and labelled in accordance with ADR, they shall bear markings and danger labels in accordance with the requirements of the IMDG Code or the ICAO Technical Instructions;
- (b) The requirements of the IMDG Code or the ICAO Technical Instructions shall be applicable to mixed packing within a package;
- (c) For carriage in a transport chain including maritime carriage, if the containers, portable tanks or tank-containers are not marked and placarded in accordance with Chapter 5.3 of these Regulations, they shall be marked and placarded in accordance with Chapter 5.3 of the IMDG Code. In such case, only 5.3.2.1.1 of these Regulations is applicable to the marking of the vehicle itself. For empty, uncleaned portable tanks and tank-containers, this requirement shall apply up to and including the subsequent transfer to a cleaning station.

This derogation does not apply in the case of goods classified as dangerous goods in classes 1 to 9 of ADN and considered as non-dangerous goods according to the applicable requirements of the IMDG Code or the ICAO Technical Instructions.

1.1.4.2.2 When a maritime, road, rail or air transport operation follows or precedes carriage by inland waterway, the transport document used or to be used for the maritime, road, rail or air transport operation may be used in place of the transport document prescribed in 5.4.1 provided that the particulars it contains are in conformity with the applicable requirements of the IMDG Code, ADR, RID or the ICAO Technical Instructions, respectively except that, when additional information is required by ADN, it shall be added or entered at the appropriate place.

NOTE: For carriage in accordance with 1.1.4.2.1, see also 5.4.1.1.7. For carriage in containers, see also 5.4.2.

1.1.4.3 ***Use of IMO type portable tanks approved for maritime transport***

IMO type portable tanks (types 1, 2, 5 and 7) which do not meet the requirements of Chapters 6.7 or 6.8 of ADR, but which were built and approved before 1 January 2003 in accordance with the provisions of the IMDG Code (Amdt. 29-98) may continue to be used provided that they meet the applicable periodic inspection and test provisions of the IMDG Code¹. In addition, they shall meet the provisions corresponding to the instructions set out in columns (10) and (11) of Table A in Chapter 3.2 and the provisions of Chapter 4.2 of ADR. See also 4.2.0.1 of the IMDG Code.

1.1.4.4 *(Reserved)*

¹ The International Maritime Organization (IMO) has issued “Guidance on the Continued Use of Existing IMO Type Portable Tanks and Road Tank Vehicles for the Transport of Dangerous Goods” as circular DSC.1/Circ.12 and Corrigenda. The text of this guidance can be found on the IMO website at: www.imo.org.

1.1.4.5 *(Reserved)*

1.1.4.6 *Other regulations applicable to carriage by inland waterway*

1.1.4.6.1 In accordance with article 9 of ADN, transport operations shall remain subject to the local, regional or international requirements generally applicable to the carriage of goods by inland waterway.

1.1.4.6.2 Where the requirements of these Regulations are in contradiction with the requirements referred to in 1.1.4.6.1, the requirements referred to in 1.1.4.6.1 shall not apply.

1.1.5 *Application of standards*

Where the application of a standard is required and there is any conflict between the standard and the provisions of ADN, the provisions of ADN take precedence.

CHAPTER 1.2

DEFINITIONS AND UNITS OF MEASUREMENT

1.2.1 Definitions

NOTE: This section contains all general or specific definitions.

For the purposes of these regulations:

A

Accommodation means spaces intended for the use of persons normally living on board, including galleys, food stores, lavatories, washrooms, bathrooms, laundries, halls, alleyways, etc., but excluding the wheelhouse;

ADR means the European Agreement concerning the International Carriage of Dangerous Goods by Road;

Aerosol, see *Aerosol dispenser*;

Aerosol dispenser means any non-refillable receptacle meeting the requirements of 6.2.6 of ADR or of RID made of metal, glass or plastics, and containing a gas, compressed, liquefied or dissolved under pressure, with or without a liquid, paste or powder, and fitted with a release device allowing the contents to be ejected as solid or liquid particles in suspension in a gas, as a foam, paste or powder or in a liquid state or in a gaseous state;

Animal material means animal carcasses, animal body parts, or animal foodstuffs;

Approval

Multilateral approval, for the carriage of Class 7 material, means approval by the relevant competent authority of the country of origin of the design or shipment, as applicable, and by the competent authority of each country through or into which the consignment is to be carried;

Unilateral approval, for the carriage of Class 7 material, means an approval of a design which is required to be given by the competent authority of the country of origin of the design only. If the country of origin is not a Contracting Party to ADN, the approval shall require validation by the competent authority of the first Contracting Party to ADN reached by the consignment (see 6.4.22.6 of ADR);

ASTM means the American Society for Testing and Materials (ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA, 19428-2959, United States of America);

Auto-ignition temperature (EN 1127-1:1997, No. 331) means the lowest temperature determined under prescribed test conditions of a hot surface on which a flammable substance in the form of a gas/air or vapour/air mixture ignites.

B

Bag means a flexible packaging made of paper, plastics film, textiles, woven material or other suitable material;

Battery-vehicle means a vehicle containing elements which are linked to each other by a manifold and permanently fixed to this vehicle. The following elements are considered to be elements of a battery-vehicle: cylinders, tubes, bundles of cylinders (also known as frames), pressure drums as well as tanks destined for the carriage of gases as defined in 2.2.2.1.1 with a capacity of more than 450 litres;

Battery-wagon means a wagon containing elements which are linked to each other by a manifold and permanently fixed to a wagon. The following elements are considered to be elements of a battery wagon: cylinders, tubes, bundles of cylinders (also known as frames), pressure drums as well as tanks intended for gases of Class 2 with a capacity greater than 450 litres;

Bilge water means oily water from the engine room bilges, the peak, the cofferdams and the double-hull spaces;

Biological/technical name means a name currently used in scientific and technical handbooks, journals and texts. Trade names shall not be used for this purpose;

Body (for all categories of IBC other than composite IBCs) means the receptacle proper, including openings and closures, but does not include service equipment;

Box means a packaging with complete rectangular or polygonal faces, made of metal, wood, plywood, reconstituted wood, fibreboard, plastics or other suitable material. Small holes for purposes of ease of handling or opening or to meet classification requirements, are permitted as long as they do not compromise the integrity of the packaging during carriage;

Breathing apparatus (ambient air-dependent filter apparatus) means an apparatus which protects the person wearing it when working in a dangerous atmosphere by means of a suitable filter. For such apparatuses, see for example European standard EN 136:1998. For the filters used, see for example European standard EN 371:1992 or EN 372:1992;

Breathing apparatus (self-contained) means an apparatus which supplies the person wearing it when working in a dangerous atmosphere with breathing air by means of pressurized air carried with him or by means of an external supply via a tube. For such apparatuses, see for example European standard EN 137:1993 or EN 138:1994;

Bulk container means a containment system (including any liner or coating) intended for the carriage of solid substances which is in direct contact with the containment system. Packagings, intermediate bulk containers (IBCs), large packagings and tanks are not included.

A bulk container is:

- of a permanent character and accordingly strong enough to be suitable for repeated use;
- specially designed to facilitate the carriage of goods by one or more means of transport without intermediate reloading;
- fitted with devices permitting its ready handling;
- of a capacity of not less than 1.0 m³.

Examples of bulk containers are containers, offshore bulk containers, skips, bulk bins, swap bodies, trough-shaped containers, roller containers, load compartments of vehicles or wagons;

Bulkhead means a metal wall, generally vertical, inside the vessel and which is bounded by the bottom, the side plating, a deck, the hatchway covers or by another bulkhead;

Bulkhead (watertight) means

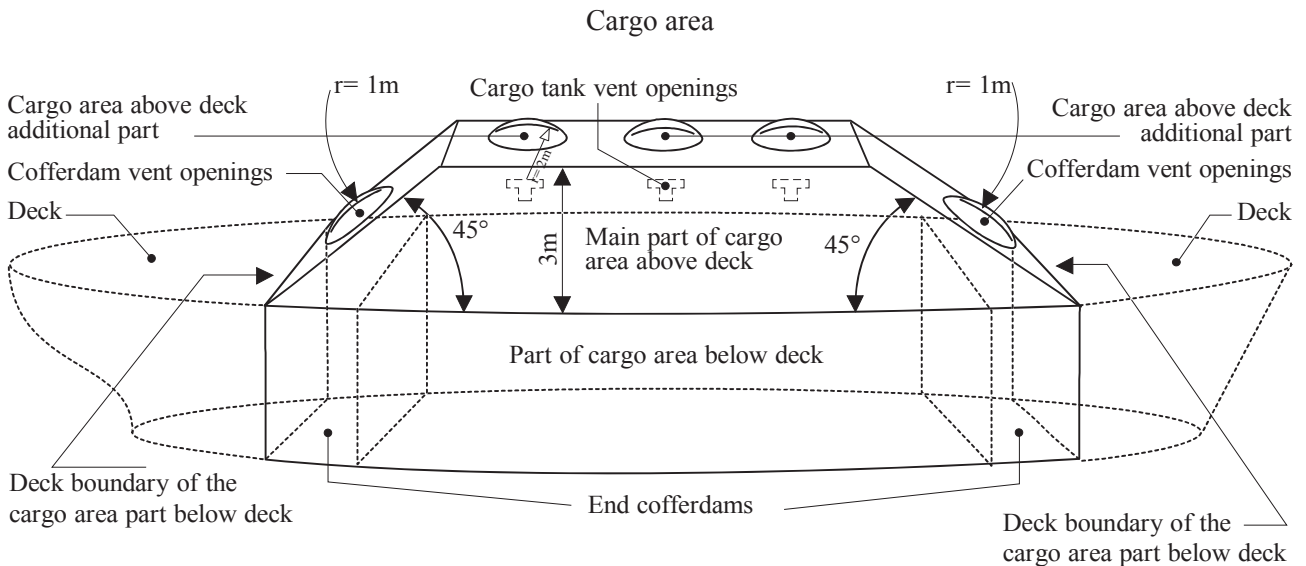
- In a dry cargo vessel: a bulkhead constructed so that it can withstand water pressure with a head of 1.00 metre above the deck but at least to the top of the hatchway coaming;
- In a tank vessel: a bulkhead constructed to withstand a water pressure of 1.00 metre above the deck;

Bundle of cylinders (frame) means an assembly of cylinders that are fastened together and are interconnected by a manifold and carried as a unit. The total water capacity shall not exceed 3,000 litres except that bundles intended for the carriage of toxic gases of Class 2 (groups starting with letter T according to 2.2.2.1.3) shall be limited to 1,000 litres water capacity.

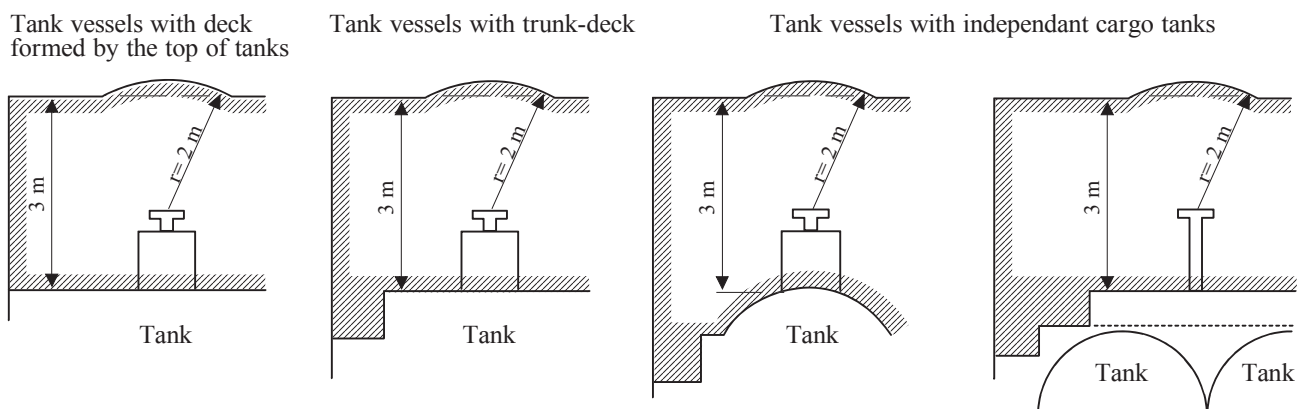
C

Capacity of shell or shell compartment, for tanks, means the total inner volume of the shell or shell compartment expressed in litres or cubic metres. When it is impossible to completely fill the shell or the shell compartment because of its shape or construction, this reduced capacity shall be used for the determination of the degree of filling and for the marking of the tank;

Cargo area means the whole of the following spaces (see figures below);



Above deck cargo area for various tank vessel



Cargo area (additional part above deck) (when anti-explosion protection is required, comparable to zone 1) means the spaces not included in the main part of the cargo area above deck comprising 1.00 m radius spherical segments centred over the ventilation openings of the cofferdams and the service spaces located in the cargo area part below the deck and 2.00 m spherical segments centred over the ventilation openings of the cargo tanks and the opening of the pump-rooms;

Cargo area (main part above deck) (when anti-explosion protection is required - comparable to zone 1) means the space which is bounded:

- at the sides, by the shell plating extending upwards from the decks sides;
- fore and aft, by planes inclined at 45° towards the cargo area, starting at the boundary of the cargo area part below deck;
- vertically, 3 m above the deck;

Cargo area (part below deck) means the space between two vertical planes perpendicular to the centre-line plane of the vessel, which comprises cargo tanks, hold spaces, cofferdams, double-hull spaces and double bottoms; these planes normally coincide with the outer cofferdam bulkheads or hold end bulkheads. Their intersection line with the deck is referred to as the boundary of the cargo area part below deck;

Cargo piping, see *Piping for loading and unloading*;

Cargo pump-room (when anti-explosion protection is required, comparable to zone 1) means a service space where the cargo pumps and stripping pumps are installed together with their operational equipment;

Cargo residues means liquid cargo which cannot be pumped out of the cargo tanks or piping by means of the stripping system;

Cargo tank (when anti-explosion protection is required, comparable to zone 0) means a tank which is permanently attached to the vessel and the boundaries of which are either formed by the hull itself or by walls separate from the hull and which is intended for the carriage of dangerous goods;

Cargo tank (condition)

discharged : empty, but containing residual cargo;
empty : dry, but not gas-free;
gas-free : not containing any measurable concentration of dangerous gases;

Cargo transport unit means a vehicle, a wagon, a container, a tank-container, a portable tank or an MEGC;

Carriage means the change of place of dangerous goods, including stops made necessary by transport conditions and including any period spent by the dangerous goods in vessels, vehicles, wagons, tanks and containers made necessary by traffic conditions before, during and after the change of place.

This definition also covers the intermediate temporary storage of dangerous goods in order to change the mode or means of transport (transshipment). This shall apply provided that transport documents showing the place of dispatch and the place of reception are presented on request and provided that packages and tanks are not opened during intermediate storage, except to be checked by the competent authorities;

Carriage in bulk means the carriage of an unpackaged solid which can be discharged;

NOTE: *Within the meaning of ADN, the carriage in bulk referred to in ADR or RID is considered as carriage in packages.*

Carrier means the enterprise which carries out the transport operation with or without a transport contract;

CDNI means Convention on the Collection, Storage and Reception of Waste Generated during Navigation on the Rhine and Other Inland Waterways;

Certified safe type electrical apparatus means an electrical apparatus which has been tested and approved by the competent authority regarding its safety of operation in an explosive atmosphere, e.g.

- intrinsically safe apparatus;
- flameproof enclosure apparatus;
- apparatus protected by pressurization;
- powder filling apparatus;
- apparatus protected by encapsulation;
- increased safety apparatus.

NOTE: *Limited explosion risk apparatus is not covered by this definition.*

CEVNI means the UNECE European Code for Inland Waterways;

CGA means the Compressed Gas Association (CGA, 4221 Walney Road, 5th Floor, Chantilly VA 20151-2923, United States of America);

CIM means the Uniform Rules Concerning the Contract of International Carriage of Goods by Rail (Appendix B to the Convention concerning International Carriage by Rail (COTIF)), as amended;

Classification society (recognized) means a classification society which is recognized by the competent authorities in accordance with Chapter 1.15;

Classification of zones (see Directive 1999/92/CE)*

Zone 0: areas in which dangerous explosive atmospheres of gases, vapours or sprays exist permanently or during long periods;

Zone 1: areas in which dangerous explosive atmospheres of gases, vapours or sprays are likely to occur occasionally;

Zone 2: areas in which dangerous explosive atmospheres of gases, vapours or sprays are likely to occur rarely and if so for short periods only;

Closed container, see Container;

Closed-type sampling device means a device penetrating through the boundary of the cargo tank but constituting a part of a closed system designed so that during sampling no gas or liquid may escape from the cargo tank. The device shall be of a type approved by the competent authority for this purpose;

Closed vehicle means a vehicle having a body capable of being closed;

Closed wagon means a wagon with sides and a fixed or movable roof.

Closure means a device which closes an opening in a receptacle;

CMNI means the Convention on the Contract for the Carriage of Goods by Inland Waterway (Budapest, 22 June 2001).

CMR means the Convention on the Contract for the International Carriage of Goods by Road (Geneva, 19 May 1956), as amended;

Cofferdam (when anti-explosion protection is required, comparable to zone 1) means an athwartship compartment which is bounded by watertight bulkheads and which can be inspected. The cofferdam shall extend over the whole area of the end bulkheads of the cargo tanks. The bulkhead not facing the cargo area shall extend from one side of the vessel to the other and from the bottom to the deck in one frame plane;

Collective entry means an entry for a defined group of substances or articles (see 2.1.1.2, B, C and D);

Combination packaging means a combination of packagings for carriage purposes, consisting of one or more inner packagings secured in an outer packaging in accordance with 4.1.1.5 of ADR;

NOTE: The “*inners*” of “*Combination packagings*” are always termed “*inner packagings*” and not “*inner receptacles*”. A glass bottle is an example of such an “*inner packaging*”.

* Official Journal of the European Communities No. L 23 of 28 January 2000, p.57.

Common vapour piping means a pipe connecting two or more cargo tanks. This pipe is fitted with safety valves which protect cargo tanks against unacceptable internal overpressures or vacuums; it is intended to evacuate gases and vapours to the shore facility;

Compensation piping means a pipe of the shore facility which is connected during the unloading to the vessel's common vapour pipe or venting piping. This pipe is designed so as to protect the vessel against detonations or the passage of flames from the shore side;

Competent authority means the authority or authorities or any other body or bodies designated as such in each State and in each specific case in accordance with domestic law;

Compliance assurance (radioactive material) means a systematic programme of measures applied by a competent authority which is aimed at ensuring that the requirements of ADN are met in practice;

Composite IBC with plastics inner receptacle means an IBC comprising structural equipment in the form of a rigid outer casing encasing a plastics inner receptacle together with any service or other structural equipment. It is so constructed that the inner receptacle and outer casing once assembled form, and are used as, an integrated single unit to be filled, stored, transported or emptied as such;

NOTE: *Plastics material, when used in connection with inner receptacles for composite IBCs, is taken to include other polymeric materials such as rubber.*

Composite packaging (plastics material) is a packaging consisting of an inner plastics receptacle and an outer packaging (made of metal, fibreboard, plywood, etc.). Once assembled such a packaging remains thereafter an inseparable unit; it is filled, stored, despatched and emptied as such;

NOTE: *See NOTE under Composite packagings (glass, porcelain or stoneware).*

Composite packaging (glass, porcelain or stoneware) is a packaging consisting of an inner glass, porcelain or stoneware receptacle and an outer packaging (made of metal, wood, fibreboard, plastics material, expanded plastics material, etc.). Once assembled, such a packaging remains thereafter an inseparable unit; it is filled, stored, despatched and emptied as such;

NOTE: *The "inners" of "composite packagings" are normally termed "inner receptacles". For example, the "inner" of a 6HA1 (composite packaging, plastics material) is such an "inner receptacle" since it is normally not designed to perform a containment function without its "outer packaging" and is not therefore an "inner packaging".*

Confinement system, for the carriage of Class 7 material, means the assembly of fissile material and packaging components specified by the designer and agreed to by the competent authority as intended to preserve criticality safety;

Consignee means the consignee according to the contract for carriage. If the consignee designates a third party in accordance with the provisions applicable to the contract for carriage, this person shall be deemed to be the consignee within the meaning of ADN. If the transport operation takes place without a contract for carriage, the enterprise which takes charge of the dangerous goods on arrival shall be deemed to be the consignee;

Consignment means any package or packages, or load of dangerous goods, presented by a consignor for carriage;

Consignor means the enterprise which consigns dangerous goods either on its own behalf or for a third party. If the transport operation is carried out under a contract for carriage, consignor means the consignor according to the contract for carriage. In the case of a tank vessel, when the cargo tanks are empty or have just been unloaded, the master is considered to be the consignor for the purpose of the transport document;

Containment system, for the carriage of Class 7 material, means the assembly of components of the packaging specified by the designer as intended to retain the radioactive material during carriage;

Container means an article of transport equipment (lift van or other similar structure):

- of a permanent character and accordingly strong enough to be suitable for repeated use;
- specially designed to facilitate the carriage of goods, by one or more means of transport, without breakage of load;
- fitted with devices permitting its ready stowage and handling, particularly when being transloaded from one means of transport to another;
- so designed as to be easy to fill and empty;
- having an internal volume of not less than 1 m³, except for containers for the carriage of radioactive material.

In addition:

Closed container means a totally enclosed container having a rigid roof, rigid side walls, rigid end walls and a floor. The term includes containers with an opening roof where the roof can be closed during transport;

Large container means:

- (a) a container which does not meet the definition of a small container;
- (b) in the meaning of the CSC, a container of a size such that the area enclosed by the four outer bottom corners is either
 - (i) at least 14 m² (150 square feet) or
 - (ii) at least 7 m² (75 square feet) if fitted with top corner fittings;

Open container means an open top container or a platform based container;

Sheeted container means an open container equipped with a sheet to protect the goods loaded;

Small container means a container which has either any overall outer dimension (length, width or height) less than 1.5 m, or an internal volume of not more than 3 m³;

A swap body is a container which, in accordance with European Standard EN 283 (1991 edition) has the following characteristics:

- from the point of view of mechanical strength, it is only built for carriage on a wagon or a vehicle on land or by roll-on roll-off ship;

- it cannot be stacked;
- it can be removed from vehicles by means of equipment on board the vehicle and on its own supports, and can be reloaded;

NOTE: The term “container” does not cover conventional packagings, IBCs, tank-containers, vehicles or wagons. Nevertheless, a container may be used as a packaging for the carriage of radioactive material.

Control temperature means the maximum temperature at which an organic peroxide or a self-reactive substance can be safely carried;

Conveyance means, with respect to the carriage by inland waterway, any vessel, hold or defined deck area of any vessel; for carriage by road or by rail, it means a vehicle or a wagon;

Crate means an outer packaging with incomplete surfaces;

Criticality safety index (CSI) assigned to a package, overpack or container containing fissile material, for the carriage of Class 7 material, means a number which is used to provide control over the accumulation of packages, overpacks or containers containing fissile material;

Critical temperature means the temperature above which the substance cannot exist in the liquid state;

Cryogenic receptacle means a transportable thermally insulated receptacle for refrigerated liquefied gases of a water capacity of not more than 1,000 litres (see also *Open cryogenic receptacle*);

CSC means the International Convention for Safe Containers (Geneva, 1972) as amended and published by the International Maritime Organization (IMO), London;

Cylinder means a transportable pressure receptacle of a water capacity not exceeding 150 litres (see also *Bundle of cylinders (frame)*);

D

Damage control plan means the plan indicating the boundaries of the watertight compartments serving as the basis for the stability calculations, in the event of a leak, the trimming arrangements for the correction of any list due to flooding and the means of closure which are to be kept closed when the vessel is under way;

Dangerous goods means those substances and articles the carriage of which is prohibited by ADN, or authorized only under the conditions prescribed therein;

Dangerous reaction means:

- (a) combustion or evolution of considerable heat;
- (b) evolution of flammable, asphyxiate, oxidizing or toxic gases;
- (c) the formation of corrosive substances;
- (d) the formation of unstable substances; or

(e) dangerous rise in pressure (for tanks and cargo tanks only);

Deflagration means an explosion which propagates at subsonic speed (see EN 1127-1:1997);

Demountable tank means a tank, other than a fixed tank, a portable tank, a tank-container or an element of a battery-vehicle or a MEGC which has a capacity of more than 450 litres, is not designed for the carriage of goods without breakage of load, and normally can only be handled when it is empty;

Design, for the carriage of Class 7 material, means the description of special form radioactive material, low dispersible radioactive material, package or packaging which enables such an item to be fully identified. The description may include specifications, engineering drawings, reports demonstrating compliance with regulatory requirements, and other relevant documentation;

Design pressure means the pressure on the basis of which the cargo tank or the residual cargo tank has been designed and built;

Detonation means an explosion which propagates at supersonic speed and is characterized by a shock-wave (see EN 1127-1:1997);

Drum means a flat-ended or convex-ended cylindrical packaging made out of metal, fibreboard, plastics, plywood or other suitable materials. This definition also includes packagings of other shapes, e.g. round, taper-necked packagings or pail-shaped packagings. *Wooden barrels* and *jerricans* are not covered by this definition.

E

EC Directive means provisions decided by the competent institutions of the European Community and which are binding, as to the result to be achieved, upon each Member State to which it is addressed, but shall leave to the national authorities the choice of form and methods;

Emergency temperature means the temperature at which emergency procedures shall be implemented in the event of loss of temperature control;

Electrical apparatus protected against water jets means an electrical apparatus so designed that water, projected by a nozzle on the enclosure from any direction, has no damaging effects. The test conditions are specified in the IEC publication 529, minimum degree of protection IP55;

EN (standard) means a European standard published by the European Committee for Standardization (CEN) (CEN – Avenue Marnix 17, B-1000 Brussels);

Enterprise means any natural person, any legal person, whether profit-making or not, any association or group of persons without legal personality, whether profit-making or not, or any official body, whether it has legal personality itself or is dependent upon an authority that has such personality;

Escape device (suitable) means a respiratory protection device, designed to cover the wearer's mouth, nose and eyes, which can be easily put on and which serves to escape from a danger area. For such devices, see for example European standard EN 400:1993, EN 401:1993, EN 402:1993, EN 403:1993 or EN 1146:1997;

Exclusive use, for the carriage of Class 7 material, means the sole use, by a single consignor, of a conveyance or of a large container, in respect of which all initial, intermediate and final loading and unloading is carried out in accordance with the directions of the consignor or consignee;

Explosion means a sudden reaction of oxidation or decomposition with an increase in temperature or in pressure or both simultaneously (see EN 1127-1:1997);

Explosion danger areas means areas in which an explosive atmosphere may occur of such a scale that special protection measures are necessary to ensure the safety and health of the persons affected (see Directive 1999/92/EC*);

Explosion group means a grouping of flammable gases and vapours according to their maximum experimental safe gaps and minimum ignition currents, and of electrical apparatus which may be used in the corresponding potentially explosive atmosphere (see IEC publication 79 and EN 50014: 1994).

Explosive atmosphere means a mixture of air with gases, vapours or mists flammable in atmospheric conditions, in which the combustion process spreads after ignition to the entire unconsumed mixture (see EN 1127-1:1997);

F

Fibreboard IBC means a fibreboard body with or without separate top and bottom caps, if necessary an inner liner (but no inner packagings), and appropriate service and structural equipment;

Filler means any enterprise

- (a) which fills dangerous goods into a tank (tank-vehicle, tank wagon, demountable tank, portable tank or tank-container) or into a battery-vehicle, battery-wagon or MEGC; or
- (b) which fills dangerous goods into a cargo tank; or
- (c) which fills dangerous goods into a vessel, a vehicle, a wagon, a large container or small container for carriage in bulk;

Filling pressure means the maximum pressure actually built up in the tank when it is being filled under pressure; (see also *Calculation pressure*, *Discharge pressure*, *Maximum working pressure (gauge pressure)* and *Test pressure*);

Filling ratio means the ratio of the mass of gas to the mass of water at 15° C that would fill completely a pressure receptacle fitted ready for use (capacity);

Filling ratio (cargo tank): Where a filling ratio is given for a cargo tank, it refers to the percentage of the volume of the cargo tank which may be filled with liquid during loading;

Fixed tank means a tank having a capacity of more than 1,000 litres which is permanently attached to a vehicle (which then becomes a tank-vehicle) or to a wagon (which then becomes a tank-wagon) or is an integral part of the frame of such vehicle or wagon;

Flame arrester means a device mounted in the vent of part of an installation or in the interconnecting piping of a system of installations, the purpose of which is to permit flow

* Official Journal of the European Communities No. L 23 of 28 January 2000, p.57.

but prevent the propagation of a flame front. This device shall be tested according to the European standard EN 12 874 (1999);

Flame arrester plate stack means the part of the flame arrester the main purpose of which is to prevent the passage of a flame front;

Flame arrester housing means the part of a flame arrester the main purpose of which is to form a suitable casing for the flame arrester plate stack and ensure a mechanical connection with other systems;

Flammable component (for aerosols) means flammable liquids, flammable solids or flammable gases and gas mixtures as defined in Notes 1 to 3 of sub-section 31.1.3 of Part III of the Manual of Tests and Criteria. This designation does not cover pyrophoric, self-heating or water-reactive substances. The chemical heat of combustion shall be determined by one of the following methods ASTM D 240, ISO/FDIS 13943: 1999 (E/F) 86.1 to 86.3 or NFPA 30B;

Flammable gas detector means a device allowing measuring of any significant concentration of flammable gases given off by the cargo below the lower explosive limit and which clearly indicates the presence of higher concentrations of such gases. Flammable gas detectors may be designed for measuring flammable gases only but also for measuring both flammable gases and oxygen.

This device shall be so designed that measurements are possible without the necessity of entering the spaces to be checked;

Flash-point means the lowest temperature of a liquid at which its vapours form a flammable mixture with air;

Flexible IBC means a body constituted of film, woven fabric or any other flexible material or combinations thereof, and if necessary, an inner coating or liner, together with any appropriate service equipment and handling devices;

Frame (Class 2), see *Bundle of cylinders*;

Fuel cell means an electrochemical device that converts the chemical energy of a fuel to electrical energy, heat and reaction products;

Fuel cell engine means a device used to power equipment and which consists of a fuel cell and its fuel supply, whether integrated with or separate from the fuel cell, and includes all appurtenances necessary to fulfil its function;

Full load means any load originating from one consignor for which the use of a vehicle, of a wagon or of a large container is exclusively reserved and all operations for the loading and unloading of which are carried out in conformity with the instructions of the consignor or of the consignee;

NOTE: *The corresponding term for Class 7 is “exclusive use”.*

G

Gas (for the purposes of Class 2) means a substance which:

- (a) at 50° C has a vapour pressure greater than 300 kPa (3 bar); or

(b) is completely gaseous at 20° C under standard pressure of 101.3 kPa;

Otherwise, *Gases* means gases or vapours;

Gas cartridge, see *Small receptacle containing gas*;

Gas detection system means a fixed system capable of detecting in time significant concentrations of flammable gases given off by the cargoes at concentrations below the lower explosion limit and capable of activating the alarms;

Gas return piping means a pipe of the shore facility which is connected during loading to the vessel's common vapour piping or venting piping. This pipe is designed so as to protect the vessel against detonations or the passage of flames from the shoreside;

GHS means the fourth revised edition of the Globally Harmonized System of Classification and Labelling of Chemicals, published by the United Nations as document ST/SG/AC.10/30/Rev.4;

H

Handling device (for flexible IBCs) means any sling, loop, eye or frame attached to the body of the IBC or formed from the continuation of the IBC body material;

Hermetically closed tank means a tank intended for the carriage of liquid substances with a calculation pressure of at least 4 bar or intended for the carriage of solid substances (powdery or granular) regardless of its calculation pressure, the openings of which are hermetically closed and which:

- is not equipped with safety valves, bursting discs, other similar safety devices or vacuum valves; or
- is not equipped with safety valves, bursting discs or other similar safety devices, but is equipped with vacuum valves, in accordance with the requirements of 6.8.2.2.3 of ADR; or
- is equipped with safety valves preceded by a bursting disc according to 6.8.2.2.10 of ADR, but is not equipped with vacuum valves; or
- is equipped with safety valves preceded by a bursting disc according to 6.8.2.2.10 of ADR and vacuum valves, in accordance with the requirements of 6.8.2.2.3 of ADR;

Highest class may be assigned to a vessel when:

- the hull, inclusive of rudder and steering gear and equipment of anchors and chains, complies with the rules and regulations of a recognized classification society and has been built and tested under its supervision;
- the propulsion plant, together with the essential auxiliary engines, mechanical and electrical installations, have been made and tested in conformity with the rules and regulations of this classification society, and the installation has been carried out under its supervision, and the complete plant was tested to its satisfaction on completion;

High velocity vent valve means a pressure-reducing valve with a nominal ejection speed greater than the speed of propagation of a flame of a flammable mixture, thus preventing the passage of a flame front. This type of installation shall be tested in accordance with European standard EN 12 874 (1999);

Hold (when anti-explosion protection is required, comparable to zone 1 - see *Classification of zones*) means a part of the vessel which, whether covered by hatchway covers or not, is bounded fore and aft by bulkheads and which is intended to carry goods in packages or in bulk. The upper boundary of the hold is the upper edge of the hatchway coaming. Cargo extending above the hatchway coaming shall be considered as loaded on deck;

Hold (condition)

discharged: empty, but containing residual cargo
empty: without residual cargo (swept clean);

Hold space (when anti-explosion protection is required, comparable to zone 1) means an enclosed part of the vessel which is bounded fore and aft by watertight bulkheads and which is intended only to carry cargo tanks independent of the vessel's hull.

Hose assemblies means hoses, which are integrated or welded on both sides into hose fittings; hose fittings shall be integrated so that it is only possible to loosen them with a tool.

Hose fittings means couplings and connection elements of hoses.

Hoses means flexible tubular semi-finished products of elastomers, thermoplastics or stainless steel composed of one or several coatings and liners.

I

IAEA means the International Atomic Energy Agency (IAEA), (IAEA, P.O. Box 100 – A-1400 Vienna);

IBC see *Intermediate bulk container*;

IBC Code means the International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk, published by the International Maritime Organization (IMO);

ICAO means the International Civil Aviation Organization (ICAO, 999 University Street, Montreal, Quebec H3C 5H7, Canada);

ICAO Technical Instructions means the Technical Instructions for the Safe Transport of Dangerous Goods by Air, which complement Annex 18 to the Chicago Convention on International Civil Aviation (Chicago 1944) published by the International Civil Aviation Organization (ICAO) in Montreal;

Identification number means the number for identifying a substance to which no UN number has been assigned or which cannot be classified under a collective entry with a UN number. These numbers have four figures beginning with 9;

IEC means the International Electrotechnical Commission;

IMDG Code means the International Maritime Dangerous Goods Code, for the implementation of Chapter VII, Part A, of the International Convention for the Safety of Life at Sea, 1974 (SOLAS Convention), published by the International Maritime Organization (IMO), London;

IMO means the International Maritime Organization (IMO, 4 Albert Embankment, London SE1 7SR, United Kingdom);

IMSBC Code means the International Maritime Solid Bulk Cargoes Code of the International Maritime Organization (IMO);

Independent cargo tank (when anti-explosion protection is required, comparable to zone 0) means a cargo tank which is permanently built in, but which is independent of the vessel's structure;

Inner packaging means a packaging for which an outer packaging is required for carriage;

Inner receptacle means a receptacle which requires an outer packaging in order to perform its containment function;

Inspection body means an independent monitoring and verification body certified by the competent authority;

Instruction means transmitting know-how or teaching how to do something or how to act. This transmission or teaching may be dispensed internally by the personnel;

Intermediate bulk container (IBC) means a rigid, or flexible portable packaging, other than those specified in Chapter 6.1 of ADR, that:

- (a) has a capacity of:
 - (i) not more than 3 m³ for solids and liquids of packing groups II and III;
 - (ii) not more than 1.5 m³ for solids of packing group I when packed in flexible, rigid plastics, composite, fibreboard and wooden IBCs;
 - (iii) not more than 3 m³ for solids of packing group I when packed in metal IBCs;
 - (iv) not more than 3 m³ for radioactive material of Class 7;
- (b) is designed for mechanical handling;
- (c) is resistant to the stresses produced in handling and transport as determined by the tests specified in Chapter 6.5 of ADR;

(see also *Composite IBC with plastics inner receptacle, Fibreboard IBC, Flexible IBC, Metal IBC, Rigid plastics IBC and Wooden IBC*)

NOTE 1: *Portable tanks or tank-containers that meet the requirements of Chapter 6.7 or 6.8 of ADR respectively are not considered to be intermediate bulk containers (IBCs).*

NOTE 2: *Intermediate bulk containers (IBCs) which meet the requirements of Chapter 6.5 of ADR are not considered to be containers for the purposes of ADN.*

Intermediate packaging means a packaging placed between inner packagings or articles and an outer packaging;

International regulations means ADR, ICAO-TI, IMDG Code, IMSBC Code or RID.

ISO (standard) means an international standard published by the International Organization for Standardization (ISO) (ISO, 1, rue de Varembe, CH-1204, Geneva 20);

J

Jerrican means a metal or plastics packaging of rectangular or polygonal cross-section with one or more orifices.

L

Large container, see *Container*;

Large packaging means a packaging consisting of an outer packaging which contains articles or inner packagings and which:

- (a) is designed for mechanical handling;
- (b) exceeds 400 kg net mass or 450 litres capacity but has a volume of not more than 3 m³;

Remanufactured large packaging means a metal or rigid plastics large packaging that:

- (a) Is produced as a UN type from a non-UN type; or
- (b) Is converted from one UN design type to another UN design type.

Remanufactured large packagings are subject to the same requirements of ADR that apply to new large packagings of the same type (see also design type definition in 6.6.5.1.2 of ADR);

Reused large packaging means a large packaging to be refilled which has been examined and found free of defects affecting the ability to withstand the performance tests; the term includes those which are refilled with the same or similar compatible contents and are carried within distribution chains controlled by the consignor of the product;

Light-gauge metal packaging means a packaging of circular, elliptical, rectangular or polygonal cross-section (also conical) and taper-necked and pail-shaped packaging made of metal, having a wall thickness of less than 0.5 mm (e.g. tinplate), flat or convex bottomed and with one or more orifices, which is not covered by the definitions for drums or jerricans;

Limited explosion risk electrical apparatus means an electrical apparatus which, during normal operation, does not cause sparks or exhibits surface temperatures which are above the required temperature class, including e.g.:

- three-phase squirrel cage rotor motors;
- brushless generators with contactless excitation;
- fuses with an enclosed fuse element;
- contactless electronic apparatus;

or means an electrical apparatus with an enclosure protected against water jets (degree of protection IP55) which during normal operation does not exhibit surface temperatures which are above the required temperature class;

Liner means a tube or bag inserted into a packaging, including large packagings or IBCs, but not forming an integral part of it, including the closures of its openings;

Liquefied Petroleum Gas (LPG) means a low pressure liquefied gas composed of one or more light hydrocarbons which are assigned to UN 1011, UN 1075, UN 1965, UN 1969 or

UN 1978 only and which consists mainly of propane, propene, butane, butane isomers, butene with traces of other hydrocarbon gases.

NOTE 1: *Flammable gases assigned to other UN numbers shall not be regarded as LPG.*

NOTE 2: *For UN No. 1075 see NOTE 2 under 2F, UN No. 1965, in the table for liquefied gases in 2.2.2.3.*

Liquid means a substance which at 50° C has a vapour pressure of not more than 300 kPa (3 bar) which is not completely gaseous at 20° C and 101.3 kPa, and which:

- (a) has a melting point or initial melting point of 20° C or less at a pressure of 101.3 kPa, or
- (b) is liquid according to the ASTM D 4359-90 test method or
- (c) is not pasty according to the criteria applicable to the test for determining fluidity (penetrometer test) described in 2.3.4;

NOTE: *“Carriage in the liquid state” for the purpose of tank requirements means:*

- Carriage of liquids according to the above definition, or
- Solids handed over for carriage in the molten state;

Loader means any enterprise which:

- (a) Loads packaged dangerous goods, small containers or portable tanks into or onto a conveyance or a container; or
- (b) Loads a container, bulk-container, MEGC, tank-container or portable tank onto a conveyance; or
- (c) Loads a vehicle or a wagon into or onto a vessel;

Loading instrument: A loading instrument consists of a computer (hardware) and a programme (software) and offers the possibility of ensuring that in every ballast or loading case:

- the permissible values concerning longitudinal strength as well as the maximum permissible draught are not exceeded; and
- the stability of the vessel complies with the requirements applicable to the vessel. For this purpose intact stability and damage stability shall be calculated.

M

Manual of Tests and Criteria means the fifth revised edition of the Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, published by the United Nations (ST/SG/AC.10/11/Rev.5 as amended by document ST/SG/AC.10/11/Rev.5/Amend.1);

Mass density shall be expressed in kg/m³. In the event of repetition, the number alone shall be used;

Mass of package means gross mass of the package unless otherwise stated. The mass of containers, tanks, vehicles and wagons used for the carriage of goods is not included in the gross mass;

Master means a person as defined in Article 1.02 of the European Code for Inland Waterways (CEVNI);

Maximum capacity means the maximum inner volume of receptacles or packagings including intermediate bulk containers (IBCs) and large packagings expressed in cubic metres or litres;

Maximum net mass means the maximum net mass of contents in a single packaging or maximum combined mass of inner packagings and the contents thereof expressed in kilograms;

Maximum normal operating pressure, for the carriage of Class 7 material, means the maximum pressure above atmospheric pressure at mean sea-level that would develop in the containment system in a period of one year under the conditions of temperature and solar radiation corresponding to environmental conditions in the absence of venting, external cooling by an ancillary system, or operational controls during carriage;

Maximum permissible gross mass, means

- (a) (for IBCs) the mass of the IBC and any service or structural equipment together with the maximum net mass;
- (b) (for tanks) the tare of the tank and the heaviest load authorized for carriage;

NOTE: For portable tanks, see Chapter 6.7 of ADR.

Maximum working pressure means the maximum pressure occurring in a cargo tank or a residual cargo tank during operation. This pressure equals the opening pressure of high velocity vent valves or pressure relief valves;

MEGC, see *Multiple-element gas container*;

MEMU, see *Mobile explosives manufacturing unit*;

Metal hydride storage system means a single complete hydrogen storage system, including a receptacle, metal hydride, pressure relief device, shut-off valve, service equipment and internal components used for the carriage of hydrogen only;

Metal IBC means a metal body together with appropriate service and structural equipment;

Mobile explosives manufacturing unit (MEMU) means a unit, or a vehicle mounted with a unit, for manufacturing and charging explosives from dangerous goods that are not explosives. The unit consists of various tanks and bulk containers and process equipment as well as pumps and related equipment. The MEMU may have special compartments for packaged explosives;

NOTE: Even though the definition of MEMU includes the expression "manufacturing and charging explosives" the requirements for MEMUs apply only to carriage and not to manufacturing and charging of explosives.

Multiple-element gas container (MEGC) means a unit containing elements which are linked to each other by a manifold and mounted on a frame. The following elements are considered

to be elements of a multiple-element gas container: cylinders, tubes, pressure drums and bundles of cylinders as well as tanks for the carriage of gases as defined in 2.2.2.1.1 having a capacity of more than 450 litres.

NOTE: For UN MEGCs, see Chapter 6.7 of ADR.

N

Naked light means a source of light using a flame which is not enclosed in a flameproof enclosure.

Net explosive mass (NEM) means the total mass of the explosive substances, without the packagings, casings, etc. (*Net explosive quantity (NEQ)*, *net explosive contents (NEC)*, *net explosive weight (NEW)* or *net mass of explosive contents* are often used to convey the same meaning.);

Nominal capacity of the receptacle means the nominal volume of the dangerous substance contained in the receptacle expressed in litres. For compressed gas cylinders the nominal capacity shall be the water capacity of the cylinder;

N.O.S. entry (not otherwise specified entry) means a collective entry to which substances, mixtures, solutions or articles may be assigned if they:

- (a) are not mentioned by name in Table A of Chapter 3.2, and
- (b) exhibit chemical, physical and/or dangerous properties corresponding to the Class, classification code, packing group and the name and description of the n.o.s. entry;

Not readily flammable means a material which is not in itself readily flammable or whose outer surface at least is not readily flammable and limits the propagation of a fire to an appropriate degree.

In order to determine flammability, the IMO procedure, Resolution A.653(16), or any equivalent requirements of a Contracting State are recognized;

O

Offshore bulk container means a bulk container specially designed for repeated use for carriage to, from and between offshore facilities. An offshore bulk container is designed and constructed in accordance with the guidelines for the approval of offshore containers handled in open seas specified by the International Maritime Organization (IMO) in document MSC/Circ.860;

Oil separator vessel means an open type N tank-vessel with a dead weight of up to 300 tonnes, constructed and fitted to accept and carry oily and greasy wastes from the operation of vessels. Vessels without cargo tanks are considered to be subject to Chapters 9.1 or 9.2;

Oily and greasy wastes from the operation of the vessel means used oils, bilge water and other oily or greasy wastes, such as used grease, used filters, used rags, and receptacles and packagings for such wastes;

Open container, see *Container*;

Open cryogenic receptacle means a transportable thermally insulated receptacle for refrigerated liquefied gases maintained at atmospheric pressure by continuous venting of the refrigerated liquefied gas;

Open vehicle means a vehicle the platform of which has no superstructure or is merely provided with side boards and a tailboard;

Open wagon means a wagon with or without side boards and a tailboard, the loading surfaces of which are open.

Opening pressure means the pressure referred to in a list of substances in Chapter 3.2, Table C at which the high velocity vent valves open. For pressure tanks the opening pressure of the safety valve shall be established in accordance with the requirements of the competent authority or a recognized classification society;

OTIF means Intergovernmental Organisation for International Carriage by Rail (OTIF, Gryphenhübeliweg 30, CH-3006 Bern);

Outer packaging means the outer protection of the composite or combination packaging together with any absorbent materials, cushioning and any other components necessary to contain and protect inner receptacles or inner packagings;

Overpack means an enclosure used (by a single consignor in the case of Class 7) to contain one or more packages, consolidated into a single unit easier to handle and stow during carriage;

Examples of overpacks:

- (a) a loading tray such as a pallet, on which several packages are placed or stacked and secured by a plastics strip, shrink or stretch wrapping or other appropriate means; or
- (b) an outer protective packaging such as a box or a crate;

Oxygen meter means a device allowing measuring of any significant reduction of the oxygen content of the air. Oxygen meters may either be a device for measuring oxygen only or part of a combination device for measuring both flammable gas and oxygen.

This device shall be so designed that measurements are possible without the necessity of entering the spaces to be checked.

P

Package means the complete product of the packing operation, consisting of the packaging or large packaging or IBC and its contents prepared for dispatch. Except for the carriage of radioactive material, the term includes receptacles for gases as defined in this section as well as articles which, because of their size, mass or configuration may be carried unpackaged or carried in cradles, crates or handling devices.

The term does not apply to goods which are carried in bulk in the holds of vessels, nor to substances carried in tanks in tank vessels.

On board vessels, the term also includes vehicles, wagons, containers (including swap bodies), tank-containers, portable tanks, battery-vehicles, battery-wagons, tank vehicles, tank wagons and multiple element gas containers (MECGs).

NOTE: For radioactive material, see 2.2.7.2., 4.1.9.1.1 and Chapter 6.4 of ADR.

Packaging means one or more receptacles and any other components or materials necessary for the receptacles to perform their containment and other safety functions (see also

Combination packaging, Composite packaging (plastics material), Composite packaging (glass, porcelain or stoneware), Inner packaging, Intermediate bulk container (IBC), Intermediate packaging, Large packaging, Light-gauge metal packaging, Outer packaging, Reconditioned packaging, Remanufactured packaging, Reused packaging, Salvage packaging and Sift-proof packaging);

Packer means any enterprise which puts dangerous goods into packagings, including large packagings and intermediate bulk containers (IBCs) and, where necessary, prepares packages for carriage;

Packing group means a group to which, for packing purposes, certain substances may be assigned in accordance with their degree of danger. The packing groups have the following meanings which are explained more fully in Part 2:

Packing group I : Substances presenting high danger;
Packing group II : Substances presenting medium danger; and
Packing group III : Substances presenting low danger;

NOTE: *Certain articles containing dangerous goods are assigned to a packing group.*

Partly closed sampling device means a device penetrating through the boundary of the cargo tank such that during sampling only a small quantity of gaseous or liquid cargo can escape into the open air. As long as the device is not used it shall be closed completely. The device shall be of a type approved by the competent authority for this purpose;

Piping for loading and unloading (cargo piping) means all piping which may contain liquid or gaseous cargo, including pipes, hose assemblies, connected pumps, filters and closure devices.

Portable tank means a multimodal tank having, when used for the carriage of gases as defined in 2.2.2.1.1, a capacity of more than 450 litres in accordance with the definitions in Chapter 6.7 of ADR or the IMDG Code and indicated by a portable tank instruction (T-Code) in Column (10) of Table A of Chapter 3.2 of ADR;

Portable tank operator, see *Tank-container/portable tank operator*;

Possibility of cargo heating means a cargo heating installation in the cargo tanks using a heat insulator. The heat insulator may be heated by means of a boiler on board the tank vessel (cargo heating system in accordance with 9.3.2.42 or 9.3.3.42) or from shore;

Possibility of a sampling connection means a locking connection for a closed-type or partly closed sampling device. The connection shall be fitted with a locking mechanism resistant to the internal pressure of the cargo tank. The installation shall be of a type certified by the competent authority for the intended use;

Pressure drum means a welded, transportable pressure receptacle of a water capacity exceeding 150 litres and of not more than 1,000 litres (e.g. cylindrical receptacles equipped with rolling hoops, spheres on skids);

Pressure relief device means a spring-loaded device which is activated automatically by pressure the purpose of which is to protect the cargo tank against unacceptable excess internal pressure;

Pressure receptacle means a collective term that includes cylinders, tubes, pressure drums, closed cryogenic receptacles, metal hydride storage systems, bundles of cylinders and salvage pressure receptacles;

Pressures means for tanks, all kinds of pressures (e.g. working pressure, opening pressure of the high velocity vent valves, test pressure) shall be expressed as gauge pressures in kPa (bar); the vapour pressure of substances, however, shall be expressed as an absolute pressure in kPa (bar);

Pressure tank means a tank designated and approved for a working pressure ≥ 400 kPa (4 bar).

Pressurized gas cartridge, see *Aerosol dispenser*;

Protected area means

- (a) the hold or holds (when anti-explosion protection is required, comparable to zone 1);
- (b) the space situated above the deck (when anti-explosion protection is required, comparable to zone 2), bounded:
 - (i) athwartships, by vertical planes corresponding to the side plating;
 - (ii) fore and aft, by vertical planes corresponding to the end bulkheads of the hold; and
 - (iii) upwards, by a horizontal plane 2.00 m above the upper level of the load, but at least by a horizontal plane 3.00 m above the deck.

Protected IBC (for metal IBCs) means an IBC provided with additional protection against impact, the protection taking the form of, for example, a multi-layer (sandwich) or double-wall construction, or a frame with a metal lattice-work casing.

Protective gloves means gloves which protect the wearer's hands during work in a danger area. The choice of appropriate gloves shall correspond to the dangers likely to arise. For protective gloves, see for example European standard EN 374-1:1994, 374-2:1994 or 374-3:1994;

Protective goggles, protective masks means goggles or face protection which protects the wearer's eyes or face during work in a danger area. The choice of appropriate goggles or masks shall correspond to the dangers likely to arise. For protective goggles or masks, see for example European standard EN 166:2001;

Protective shoes (or protective boots) means shoes or boots which protect the wearer's feet during work in a danger area. The choice of appropriate protective shoes or boots shall correspond to the dangers likely to arise. For protective shoes or boots, see for example European standard EN 346:1997;

Protective suit means a suit which protects the wearer's body during work in a danger area. The choice of appropriate suit shall correspond to the dangers likely to arise. For protective suits, see for example European standard EN 340:1993;

Q

Quality assurance means a systematic programme of controls and inspections applied by any organization or body which is aimed at providing confidence that the safety prescriptions in ADN are met in practice.

R

Radiation level, for the carriage of Class 7 material, means the corresponding dose rate expressed in millisieverts per hour;

Radioactive contents, for the carriage of Class 7 material, mean the radioactive material together with any contaminated or activated solids, liquids, and gases within the packaging;

Receptacle (Class 1) includes boxes, cylinders, cans, drums, jars and tubes, including any means of closure used in the inner or intermediate packaging;

Receptacle means a containment vessel for receiving and holding substances or articles, including any means of closing. This definition does not apply to shells (see also *Cryogenic receptacle*, *Inner receptacle*, *Rigid inner receptacle* and *Gas cartridge*);

Receptacle for residual products means a tank, intermediate bulk container or tank-container or portable tank intended to collect residual cargo, washing water, cargo residues or slops which are suitable for pumping;

Receptacle for slops means a steel drum intended to collect slops which are unsuitable for pumping;

Recycled plastics material means material recovered from used industrial packagings that has been cleaned and prepared for processing into new packagings;

Reel (Class 1) means a device made of plastics, wood, fibreboard, metal or other suitable material comprising a central spindle with, or without, side walls at each end of the spindle. Articles and substances can be wound on to the spindle and may be retained by side walls;

Relative density (or specific density) describes the ratio of the density of a substance to the density of pure water at 3.98 °C (1000 kg/m³) and is dimensionless;

Remanufactured large packaging see *Large packaging*;

Rescue winch means a device for hoisting persons from spaces such as cargo tanks, cofferdams and double-hull spaces. The device shall be operable by one person;

Residual cargo means liquid cargo remaining in the cargo tank or cargo piping after unloading without the use of the stripping system;

Reused large packaging see *Large packaging*;

RID means Regulations concerning the International Carriage of Dangerous Goods by Rail, Appendix C of COTIF (Convention concerning International Carriage by Rail);

Rigid inner receptacle (for composite IBCs) means a receptacle which retains its general shape when empty without its closures in place and without benefit of the outer casing. Any inner receptacle that is not rigid is considered to be flexible;

Rigid plastics IBC means a rigid plastics body, which may have structural equipment together with appropriate service equipment;

S

Safety adviser means a person who, in an undertaking the activities of which include the carriage, or the related packing, loading, filling or unloading, of dangerous goods by inland

waterways, is responsible for helping to prevent the risks inherent in the carriage of dangerous goods;

Safety valve means a spring-loaded device which is activated automatically by pressure the purpose of which is to protect the cargo tank against unacceptable excess internal pressure or negative internal pressure (see also, *High velocity vent valve*, *Pressure-relief device* and *Vacuum valve*);

SADT see *Self-accelerating decomposition temperature*;

Salvage packaging means a special packaging into which damaged, defective, leaking or non-conforming dangerous goods packages, or dangerous goods that have spilled or leaked are placed for purposes of carriage for recovery or disposal;

Salvage pressure receptacle means a pressure receptacle with a water capacity not exceeding 1 000 litres into which are placed damaged, defective, leaking or non-conforming pressure receptacle(s) for the purpose of carriage e.g. for recovery or disposal;

Sampling opening means an opening with a diameter of not more than 0.30 m fitted with a flame arrester plate stack, capable of withstanding steady burning and so designed that the opening period will be as short as possible and that the flame arrester plate stack cannot remain open without external intervention. The flame arrester plate stack shall be of a type approved by the competent authority for this purpose;

Self-accelerating decomposition temperature (SADT) means the lowest temperature at which self-accelerating decomposition may occur with the substance in the packaging as used during carriage. Provisions for determining the SADT and the effects of heating under confinement are contained in Part II of the *Manual of Tests and Criteria*;

Service space means a space which is accessible during the operation of the vessel and which is neither part of the accommodation nor of the cargo tanks, with the exception of the forepeak and after peak, provided no machinery has been installed in these latter spaces;

Settled pressure means the pressure of the contents of a pressure receptacle in thermal and diffusive equilibrium;

Sheeted container, see *Container*;

Sheeted vehicle means an open vehicle provided with a sheet to protect the load;

Sheeted wagon means an open wagon provided with a sheet to protect the load;

Sift-proof packaging means a packaging impermeable to dry contents, including fine solid material produced during carriage;

Slops means a mixture of cargo residues and washing water, rust or sludge which is either suitable or not suitable for pumping;

Small container, see *Container*;

Small receptacle containing gas (gas cartridge) means a non-refillable receptacle meeting the relevant requirements of 6.2.6 of ADR containing, under pressure, a gas or a mixture of gases. It may be fitted with a valve;

SOLAS means the International Convention for the Safety of Life at Sea, 1974, as amended;

Solid means:

- (a) a substance with a melting point or initial melting point of more than 20 °C at a pressure of 101.3 kPa; or
- (b) a substance which is not liquid according to the ASTM D 4359-90 test method or which is pasty according to the criteria applicable to the test for determining fluidity (penetrometer test) described in 2.3.4;

STCW means the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended.

Steady burning means combustion stabilized for an indeterminate period (see EN 12 874:1999);

Stripping system (efficient) means a system according to Annex II of CDNI for complete draining, if possible, of the cargo tanks and stripping the cargo piping except for the cargo residues;

Supply installation (bunkering system) means an installation for the supply of vessels with liquid fuels;

Supply vessel means an open type N tank vessel with a dead weight of up to 300 tonnes, constructed and fitted for the carriage and delivery to other vessels of products intended for the operation of vessels;

Swap-body, see *Container*.

T

Tank means a shell, including its service and structural equipment. When used alone, the term tank means a tank-container, portable tank, demountable tank, fixed tank or tank wagon as defined in this part, including tanks forming elements of battery-vehicles, battery wagons or MEGCs (see also *Demountable tank*, *Fixed tank*, *Portable tank* and *Multiple-element gas container*);

NOTE: For portable tanks, see 6.7.4.1 of ADR.

Tank-container means an article of transport equipment meeting the definition of a container, and comprising a shell and items of equipment, including the equipment to facilitate movement of the tank-container without significant change of attitude, used for the carriage of gases, liquid, powdery or granular substances and, when used for the carriage of gases as defined in 2.2.2.1.1 having a capacity of more than 0.45 m³ (450 litres);

NOTE: IBCs which meet the requirements of Chapter 6.5 of ADR are not considered to be tank-containers.

Tank-container/portable tank operator means any enterprise in whose name the tank-container/portable tank is registered;

Tank for residual products means a permanently built-in tank intended to collect residual cargo, washing water, cargo residues or slops which are suitable for pumping;

Tank record means a file containing all the important technical information concerning a tank, a battery-vehicle, a battery wagon or an MEGC, such as certificates referred to in 6.8.2.3, 6.8.2.4 and 6.8.3.4 of ADR;

Tank swap body is considered to be a tank-container;

Tank-vehicle means a vehicle built to carry liquids, gases or powdery or granular substances and comprising one or more fixed tanks. In addition to the vehicle proper, or the units of running gear used in its stead, a tank-vehicle comprises one or more shells, their items of equipment and the fittings for attaching them to the vehicle or to the running-gear units;

Tank vessel means a vessel intended for the carriage of substances in cargo tanks;

Tank wagon means a wagon intended for the carriage of liquids, gases, powdery or granular substances, comprising a superstructure, consisting of one or more tanks and their equipment and an underframe fitted with its own items of equipment (running gear, suspension, buffing, traction, braking gear and inscriptions).

NOTE: *Tank wagon also includes wagons with demountable tanks.*

Technical name means a recognized chemical name, or a recognized biological name where relevant, or another name currently used in scientific and technical handbooks, journals and texts (see 3.1.2.8.1.1);

Temperature class means a grouping of flammable gases and vapours of flammable liquids according to their ignition temperature; and of the electrical apparatus intended to be used in the corresponding potentially explosive atmosphere according to their maximum surface temperature (see IEC publication 79 and EN 50 014:1994);

Test pressure means the pressure at which a cargo tank, a residual cargo tank, a cofferdam or the loading and unloading piping shall be tested prior to being brought into service for the first time and subsequently regularly within prescribed times;

Through or into, for the carriage of Class 7 material, means through or into the countries in which a consignment is carried but specifically excludes countries "over" which a consignment is carried by air provided that there are no scheduled stops in those countries;

Toximeter means a device allowing measuring of any significant concentration of toxic gases given off by the cargo.

This device shall be so designed that such measurements are possible without the necessity of entering the spaced to be checked.

Training means teaching instruction, courses or apprenticeships dispensed by an organizer approved by the competent authority;

Transport index (TI) assigned to a package, overpack or container, or to unpackaged LSA-I or SCO-I, for the carriage of Class 7 material, means a number which is used to provide control over radiation exposure;

Transport unit means a motor vehicle without an attached trailer, or a combination consisting of a motor vehicle and an attached trailer;

Tray (Class 1) means a sheet of metal, plastics, fibreboard or other suitable material which is placed in the inner, intermediate or outer packaging and achieves a close-fit in such packaging. The surface of the tray may be shaped so that packagings or articles can be inserted, held secure and separated from each other;

Tube means a seamless transportable pressure receptacle of a water capacity exceeding 150 litres and of not more than 3,000 litres;

Types of protection (see IEC Publication 79 and EN 50 014:1994)

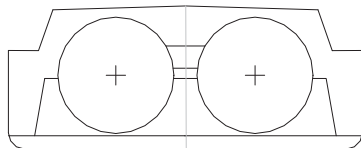
EEx (d)	:	flameproof enclosure (EN 50 018);
EEx (e)	:	increased safety (EN 50 019);
EEx (ia) and EEx (ib)	:	intrinsic safety (EN 50 020);
EEx (m)	:	encapsulation (EN 50 028);
EEx (p)	:	pressurized apparatus (EN 50 016);
EEx (q)	:	powder filling (EN 50 017).

Type of vessel

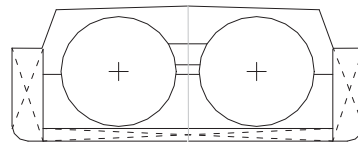
- Type G : means a tank vessel intended for the carriage of gases. Carriage may be under pressure or under refrigeration.
- Type C : means a tank vessel intended for the carriage of liquids. The vessel shall be of the flush-deck/double-hull type with double-hull spaces, double bottoms, but without trunk. The cargo tanks may be formed by the vessel's inner hull or may be installed in the hold spaces as independent tanks.
- Type N: means a tank vessel intended for the carriage of liquids.
- Closed Type N: a tank vessel intended for the carriage of liquids in closed cargo tanks.
- Open type N: a tank vessel intended for the carriage of liquids in open cargo tanks.
- Open Type N: with flame arrester :a tank vessel intended for the carriage of liquids in open cargo tanks whose openings to the atmosphere are equipped with a flame arrester capable of withstanding steady burning.

Sketches (as example)

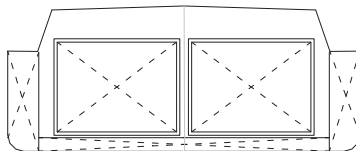
Type G :



Type G Condition of cargo tank 1,
Type of cargo tank 1
(also by flush-deck)

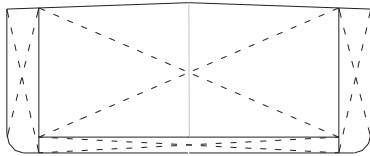


Type G Condition of cargo tank 1,
Type of cargo tank 1
(also by flush-deck)

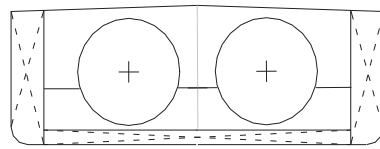


Type G Condition of cargo tank 2,
Type of cargo tank 1
(also by flush-deck)

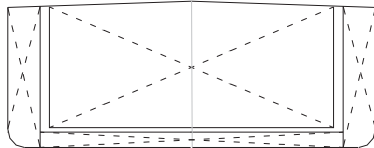
Type C :



Type C Condition of cargo tank 2,
Type of cargo tank 2

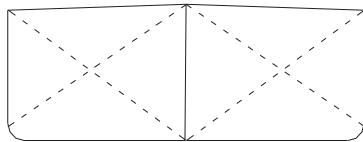


Type C Condition of cargo tank 1,
Type of cargo tank 1

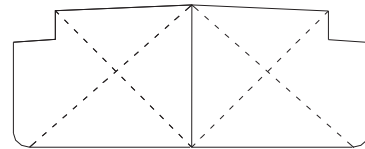


Type C Condition of cargo tank 2
Type of cargo tank 1

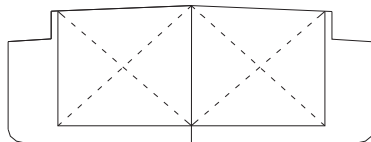
Type N :



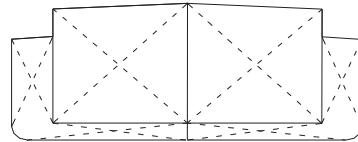
Type N Condition of cargo tank 2, 3 or 4
Type of cargo tank 2



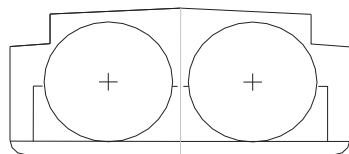
Type N Condition of cargo tank 2, 3 or 4
Type of cargo tank 2



Type N Condition of cargo tank 2, 3 or 4
Type of cargo tanks 1
(also by flush-deck)



Type N Condition of cargo tank 2, 3 or 4
Type of cargo tank 3
(also by flush-deck)



Type N Condition of cargo tank 2, 3 or 4
Type of cargo tank 1
(also by flush-deck)

U

UIC means the International Union of Railways (UIC, 16 rue Jean Rey, F-75015 Paris, France);

Undertaking, see *Enterprise*;

UNECE means the United Nations Economic Commission for Europe (UNECE, Palais des Nations, 8-14 avenue de la Paix, CH-1211 Geneva 10, Switzerland);

Unloader means any enterprise which:

- (a) Removes a container, bulk-container, MEGC, tank-container or portable tank from a conveyance; or
- (b) Unloads packaged dangerous goods, small containers or portable tanks out of or from a conveyance or a container; or
- (c) Discharges dangerous goods from a cargo tank, tank-vehicle, demountable tank, portable tank or tank-container; or from a battery-wagon, battery-vehicle, MEMU or MEGC; or from a conveyance for carriage in bulk, a large container or small container for carriage in bulk or a bulk container;
- (d) Removes a vehicle or a wagon from a vessel;

UN Model Regulations means the Model Regulations annexed to the seventeenth revised edition of the Recommendations on the Transport of Dangerous Goods published by the United Nations (ST/SG/AC.10/1/Rev.17);

UN number means the four-figure identification number of the substance or article taken from the United Nations Model Regulations.

V

Vacuum design pressure means the vacuum pressure on the basis of which the cargo tank or the residual cargo tank has been designed and built;

Vacuum-operated waste tank means a fixed or demountable tank primarily used for the carriage of dangerous wastes, with special constructional features and/or equipment to facilitate the loading and unloading of wastes as specified in Chapter 6.10 of ADR. A tank which fully complies with the requirements of Chapter 6.7 or 6.8 of ADR is not considered to be a vacuum-operated waste tank;

Vacuum valve means a spring-loaded device which is activated automatically by pressure the purpose of which is to protect the cargo tank against unacceptable negative internal pressure;

Vehicle means any vehicle covered by the definition of the term vehicle in the ADR (see *Battery-vehicle*, *Closed vehicle*, *Open vehicle*, *Sheeted vehicle* and *Tank-vehicle*);

Venting piping means a pipe connecting a cargo tank to the shore facility during loading. This pipe is fitted with safety valves protecting the cargo tank against unacceptable internal overpressures or vacuums; it is intended to evacuate gases to the shore facility;

Vessel means an inland navigation vessel or a seagoing vessel.

W

Wagon means a rail vehicle without its own means of propulsion that runs on its own wheels on railway tracks and is used for the carriage of goods (see also *battery-wagon*, *closed wagon*, *open wagon*, *sheeted wagon* and *tank wagon*);

Wastes means substances, solutions, mixtures or articles for which no direct use is envisaged but which are transported for reprocessing, dumping, elimination by incineration or other methods of disposal;

Watertight means a structural component or device so fitted as to prevent any ingress of water;

Weathertight means a structural component or device so fitted that in normal conditions it allows only a negligible quantity of water to penetrate;

Wooden barrel means a packaging made of natural wood, of round cross-section, having convex walls, consisting of staves and heads and fitted with hoops;

Wooden IBC means a rigid or collapsible wooden body, together with an inner liner (but no inner packaging) and appropriate service and structural equipment;

Working pressure means the settled pressure of a compressed gas at a reference temperature of 15° C in a full pressure receptacle.

NOTE: For tanks, see *Maximum working pressure*.

1.2.2 Units of measurement

1.2.2.1 The following units of measurement^a are applicable in ADN:

Measurement of	SI Unit ^b	Acceptable alternative unit	Relationship between units
Length	m (metre)	-	-
Area	m ² (square metre)	-	-
Volume	m ³ (cubic metre)	l ^c (litre)	1 l = 10 ⁻³ m ³
Time	s (second)	min. (minute) h (hour) d (day)	1 min. = 60 s 1 h = 3 600 s 1 d = 86 400 s
Mass	kg (kilogram)	g (gramme) t (ton)	1 g = 10 ⁻³ kg 1 t = 10 ³ kg
Mass density	kg/m ³	kg/l	1 kg/l = 10 ³ kg/m ³
Temperature	K (kelvin)	°C (degree Celsius)	0° C = 273.15 K
Temperature difference	K (kelvin)	°C (degree Celsius)	1° C = 1 K
Force	N (newton)	-	1 N = 1 kg.m/s ²
Pressure	Pa (pascal)	-	1 Pa = 1 N/m ²
Stress	N/m ²	bar (bar) N/mm ²	1 bar = 10 ⁵ Pa 1 N/mm ² = 1 MPa
Work	J (joule)	kWh (kilowatt hours)	1 kWh = 3.6 MJ
Energy	J (joule)	-	1 J = 1 N.m = 1 W.s
Quantity of heat	-	eV (electronvolt)	1 eV = 0.1602 H 10 ⁻¹⁸ J
Power	W (watt)	-	1 W = 1 J/s = 1 N.m/s
Kinematic viscosity	m ² /s	mm ² /s	1 mm ² /s = 10 ⁻⁶ m ² /s
Dynamic viscosity	Pa.s	mPa.s	1 mPa.s = 10 ⁻³ Pa.s
Activity	Bq (becquerel)	-	-
Dose equivalent	Sv (sievert)	-	-

^a The following round figures are applicable for the conversion of the units hitherto used into SI Units.

$$\begin{array}{lcl}
 \text{Force} & & \text{Stress} \\
 1 \text{ kg} & = & 9.807 \text{ N} \\
 1 \text{ N} & = & 0.102 \text{ kg}
 \end{array}
 \qquad
 \begin{array}{lcl}
 1 \text{ kg/mm}^2 & = & 9.807 \text{ N/mm}^2 \\
 1 \text{ N/mm}^2 & = & 0.102 \text{ kg/mm}^2
 \end{array}$$

$$\begin{array}{lcl}
 \text{Pressure} & & \\
 1 \text{ Pa} & = & 1 \text{ N/m}^2 \\
 1 \text{ bar} & = & 10^5 \text{ Pa}
 \end{array}
 \qquad
 \begin{array}{lcl}
 & = & 10^{-5} \text{ bar} \\
 & = & 1.02 \text{ kg/cm}^2 \\
 & = & 1.02 \text{ H } 10^{-5} \text{ kg/cm}^2 \\
 & = & 0.75 \text{ H } 10^{-2} \text{ torr} \\
 & = & 750 \text{ torr}
 \end{array}$$

$$1 \text{ kg/cm}^2 = 9.807 \text{ H } 10^4 \text{ Pa} = 0.9807 \text{ bar} = 736 \text{ torr}$$

$$1 \text{ torr} = 1.33 \text{ H } 10^2 \text{ Pa} = 1.33 \text{ H } 10^{-3} \text{ bar} = 1.36 \text{ H } 10^{-3} \text{ kg/cm}^2$$

Energy, Work, Quantity of heat

$$1 \text{ J} = 1 \text{ N.m} = 0.278 \text{ H } 10^{-6} \text{ kWh} = 0.102 \text{ kgm} = 0.239 \text{ H } 10^{-3} \text{ kcal}$$

$$1 \text{ kWh} = 3.6 \text{ H } 10^6 \text{ J} = 367 \text{ H } 10^3 \text{ kgm} = 860 \text{ kcal}$$

$$1 \text{ kgm} = 9.807 \text{ J} = 2.72 \text{ H } 10^{-6} \text{ kWh} = 2.34 \text{ H } 10^{-3} \text{ kcal}$$

$$1 \text{ kcal} = 4.19 \text{ H } 10^3 \text{ J} = 1.16 \text{ H } 10^{-3} \text{ kWh} = 427 \text{ kgm}$$

Power

$$1 \text{ W} = 0.102 \text{ kgm/s} = 0.86 \text{ kcal/h}$$

$$1 \text{ kgm/s} = 9.807 \text{ W} = 8.43 \text{ kcal/h}$$

$$1 \text{ kcal/h} = 1.16 \text{ W} = 0.119 \text{ kgm/s}$$

Kinematic viscosity

$$1 \text{ m}^2/\text{s} = 10^4 \text{ St (Stokes)}$$

$$1 \text{ St} = 10^{-4} \text{ m}^2/\text{s}$$

Dynamic viscosity

$$1 \text{ Pa.s} = 1 \text{ N.s/m}^2 = 10 \text{ P (poise)} = 0.102 \text{ kg.s/m}^2$$

$$1 \text{ P} = 0.1 \text{ Pa.s} = 0.1 \text{ N.s/m}^2 = 1.02 \text{ H } 10^{-2} \text{ kg.s/m}^2$$

$$1 \text{ kg.s/m}^2 = 9.807 \text{ Pa.s} = 9.807 \text{ N.s/m}^2 = 98.07 \text{ P}$$

^b The International System of Units (SI) is the result of decisions taken at the General Conference on Weights and Measures (Address: Pavillon de Breteuil, Parc de St-Cloud, F-92 310 Sèvres).

^c The abbreviation "L" for litre may also be used in place of the abbreviation "l" when a typewriter cannot distinguish between figure "1" and letter "l".

The decimal multiples and sub-multiples of a unit may be formed by prefixes or symbols, having the following meanings, placed before the name or symbol of the unit:

<u>Factor</u>			<u>Prefix</u>	<u>Symbol</u>
1 000 000 000 000 000 000	= 10 ¹⁸	quintillion	exa	E
1 000 000 000 000 000	= 10 ¹⁵	quadrillion	peta	P
1 000 000 000 000	= 10 ¹²	trillion	tera	T
1 000 000 000	= 10 ⁹	billion	giga	G
1 000 000	= 10 ⁶	million	mega	M
1 000	= 10 ³	thousand	kilo	k
100	= 10 ²	hundred	hecto	h
10	= 10 ¹	ten	deca	da
0.1	= 10 ⁻¹	tenth	deci	d
0.01	= 10 ⁻²	hundredth	centi	c
0.001	= 10 ⁻³	thousandth	milli	m
0.000 001	= 10 ⁻⁶	millionth	micro	μ
0.000 000 001	= 10 ⁻⁹	billionth	nano	n
0.000 000 000 001	= 10 ⁻¹²	trillionth	pico	p
0.000 000 000 000 001	= 10 ⁻¹⁵	quadrillionth	femto	f
0.000 000 000 000 000 001	= 10 ⁻¹⁸	quintillionth	atto	a

NOTE: 10⁹ = 1 billion is United Nations usage in English. By analogy, so is 10⁻⁹ = 1 billionth.

- 1.2.2.2 Unless expressly stated otherwise, the sign “%” in ADN represents:
- (a) In the case of mixtures of solids or of liquids, and also in the case of solutions and of solids wetted by a liquid, a percentage mass based on the total mass of the mixture, the solution or the wetted solid;
 - (b) In the case of mixtures of compressed gases, when filled by pressure, the proportion of the volume indicated as a percentage of the total volume of the gaseous mixture, or, when filled by mass, the proportion of the mass indicated as a percentage of the total mass of the mixture;
 - (c) In the case of mixtures of liquefied gases and dissolved gases, the proportion of the mass indicated as a percentage of the total mass of the mixture.
- 1.2.2.3 Pressures of all kinds relating to receptacles (such as test pressure, internal pressure, safety valve opening pressure) are always indicated in gauge pressure (pressure in excess of atmospheric pressure); however, the vapour pressure of substances is always expressed in absolute pressure.
- 1.2.2.4 Where ADN specifies a degree of filling for receptacles, this is always related to a reference temperature of the substances of 15° C, unless some other temperature is indicated.

CHAPTER 1.3

TRAINING OF PERSONS INVOLVED IN THE CARRIAGE OF DANGEROUS GOODS

1.3.1 Scope and applicability

Persons employed by the participants referred to in Chapter 1.4, whose duties concern the carriage of dangerous goods, shall be trained in the requirements governing the carriage of such goods appropriate to their responsibilities and duties. Employees shall be trained in accordance with 1.3.2 before assuming responsibilities and shall only perform functions, for which required training has not yet been provided, under the direct supervision of a trained person. Training requirements specific to security of dangerous goods in Chapter 1.10 shall also be addressed.

NOTE 1: With regard to the training for the safety adviser, see 1.8.3 instead of this section.

NOTE 2: With regard to expert training, see Chapter 8.2 instead of this section.

NOTE 3: For training with regard to Class 7, see also 1.7.2.5.

1.3.2 Nature of the training

The training shall take the following form, appropriate to the responsibility and duties of the individual concerned.

1.3.2.1 General awareness training

Personnel shall be familiar with the general requirements of the provisions for the carriage of dangerous goods.

1.3.2.2 Function-specific training

1.3.2.2.1 Personnel shall be trained, commensurate directly with their duties and responsibilities in the requirements of the regulations concerning the carriage of dangerous goods. Where the carriage of dangerous goods involves a multimodal transport operation, the personnel shall be aware of the requirements concerning other transport modes.

1.3.2.2.2 The crew shall be familiarized with the handling of fire-extinguishing systems and fire-extinguishers.

1.3.2.2.3 The crew shall be familiarized with the handling of the special equipment referred to in 8.1.5.

1.3.2.2.4 Persons wearing self-contained breathing apparatus shall be physically able to bear the additional constraints.

They shall:

- in the case of devices operating with pressurized air, be trained in their handling and maintenance;
- in the case of devices supplied with pressurized air through a hose, be instructed in their handling and maintenance. The instruction shall be supplemented by practical exercises.

1.3.2.2.5 The master shall bring the instructions in writing referred to in 5.4.3 to the attention of the other persons on board to ensure that they are capable of applying them.

1.3.2.3 *Safety training*

Commensurate with the degree of risk of injury or exposure arising from an incident involving the carriage of dangerous goods, including loading and unloading, personnel shall be trained in the hazards and dangers presented by dangerous goods.

The training provided shall aim to make personnel aware of the safe handling and emergency response procedures.

1.3.2.4 The training shall be periodically supplemented with refresher training to take account of changes in regulations.

1.3.3 **Documentation**

Records of training received according to this Chapter shall be kept by the employer and made available to the employee or competent authority, upon request. Records shall be kept by the employer for a period of time established by the competent authority. Records of training shall be verified upon commencing a new employment.

CHAPTER 1.4

SAFETY OBLIGATIONS OF THE PARTICIPANTS

1.4.1 General safety measures

1.4.1.1 The participants in the carriage of dangerous goods shall take appropriate measures according to the nature and the extent of foreseeable dangers, so as to avoid damage or injury and, if necessary, to minimize their effects. They shall, in all events, comply with the requirements of ADN in their respective fields.

1.4.1.2 When there is an immediate risk that public safety may be jeopardized, the participants shall immediately notify the emergency services and shall make available to them the information they require to take action.

1.4.1.3 ADN may specify certain of the obligations falling to the various participants.

If a Contracting Party considers that no lessening of safety is involved, it may in its domestic legislation transfer the obligations falling to a specific participant to one or several other participants, provided that the obligations of 1.4.2 and 1.4.3 are met. These derogations shall be communicated by the Contracting Party to the secretariat of the United Nations Economic Commission for Europe which will bring them to the attention of the Contracting Parties.

The requirements of 1.2.1, 1.4.2 and 1.4.3 concerning the definitions of participants and their respective obligations shall not affect the provisions of domestic law concerning the legal consequences (criminal nature, liability, etc.) stemming from the fact that the participant in question is e.g. a legal entity, a self-employed worker, an employer or an employee.

1.4.2 Obligations of the main participants

NOTE 1: Several participants to which safety obligations are assigned in this section may be one and the same enterprise. Also, the activities and the corresponding safety obligations of a participant can be assumed by several enterprises.

NOTE 2: For radioactive material see also 1.7.6.

1.4.2.1 Consignor

1.4.2.1.1 The consignor of dangerous goods is required to hand over for carriage only consignments which conform to the requirements of ADN. In the context of 1.4.1, he shall in particular:

- (a) ascertain that the dangerous goods are classified and authorized for carriage in accordance with ADN;
- (b) furnish the carrier with information and data in a traceable form and, if necessary, the required transport documents and accompanying documents (authorizations, approvals, notifications, certificates, etc.), taking into account in particular the requirements of Chapter 5.4 and of the tables in Part 3;
- (c) use only packagings, large packagings, intermediate bulk containers (IBCs) and tanks (tank-vehicles, demountable tanks, battery-vehicles, MEGCs, portable tanks, tank-containers, tank wagons and battery wagons) approved for and suited to the carriage of the substances concerned and bearing the markings prescribed by one of the international Regulations, and use only approved vessels or tank-vessels suitable for the carriage of the goods in question;

- (d) comply with the requirements on the means of dispatch and on forwarding restrictions;
- (e) ensure that even empty uncleaned and non degassed tanks (tank-vehicles, demountable tanks, battery-vehicles, MEGCs, portable tanks, tank-containers, tank wagons and tank vehicles) or empty uncleaned vehicles, wagons and large and small bulk containers are appropriately marked and labelled and that empty uncleaned tanks are closed and present the same degree of leakproofness as if they were full.

1.4.2.1.2 If the consignor uses the services of other participants (packer, loader, filler, etc.), he shall take appropriate measures to ensure that the consignment meets the requirements of ADN. He may, however, in the case of 1.4.2.1.1 (a), (b), (c) and (e), rely on the information and data made available to him by other participants.

1.4.2.1.3 When the consignor acts on behalf of a third party, the latter shall inform the consignor in writing that dangerous goods are involved and make available to him all the information and documents he needs to perform his obligations.

1.4.2.2 *Carrier*

1.4.2.2.1 In the context of 1.4.1, where appropriate, the carrier shall in particular:

- (a) ascertain that the dangerous goods to be carried are authorized for carriage in accordance with ADN;
- (b) ascertain that all information prescribed in ADN related to the dangerous goods to be carried has been provided by the consignor before carriage, that the prescribed documentation is on board the vessel or if electronic data processing (EDP) or electronic data interchange (EDI) techniques are used instead of paper documentation, that data is available during transport in a manner at least equivalent to that of paper documentation;
- (c) ascertain visually that the vessels and loads have no obvious defects, leakages or cracks, missing equipment, etc.;
- (d) *(Reserved)*;
- (e) verify that the vessels are not overloaded;
- (f) *(Reserved)*;
- (g) provide the master with the required instructions in writing and ascertain that the prescribed equipment is on board the vessel;
- (h) ascertain that the marking requirements for the vessel have been met;
- (i) ascertain that during loading, carriage, unloading and any other handling of the dangerous goods in the holds or cargo tanks, special requirements are complied with;
- (j) ascertain that the vessel substance list in accordance with 1.16.1.2.5 complies with Table C of chapter 3.2 including the modifications made to it.

Where appropriate, this shall be done on the basis of the transport documents and accompanying documents, by a visual inspection of the vessel or the containers and, where appropriate, the load.

1.4.2.2.2 The carrier may, however, in the case of 1.4.2.2.1 (a) and (b), rely on information and data made available to him by other participants.

1.4.2.2.3 If the carrier observes an infringement of the requirements of ADN, in accordance with 1.4.2.2.1, he shall not forward the consignment until the matter has been rectified.

1.4.2.2.4 *(Reserved)*

1.4.2.2.5 *(Reserved)*

1.4.2.3 *Consignee*

1.4.2.3.1 The consignee has the obligation not to defer acceptance of the goods without compelling reasons and to verify, before, during or after unloading, that the requirements of ADN concerning him have been complied with.

In the context of 1.4.1, he shall in particular:

(a) *(Deleted)*;

(b) carry out in the cases provided for by ADN the prescribed cleaning and decontamination of the vessels;

(c) *(Deleted)*;

(d) ascertain that provision has been made in the fore and aft sections of the vessel for its evacuation in the event of an emergency;

(e) *(Deleted)*;

(f) *(Deleted)*;

(g) *(Deleted)*;

(h) *(Deleted)*.

1.4.2.3.2 *(Deleted)*

1.4.2.3.3 *(Deleted)*

1.4.3 *Obligations of the other participants*

A non-exhaustive list of the other participants and their respective obligations is given below. The obligations of the other participants flow from section 1.4.1 above insofar as they know or should have known that their duties are performed as part of a transport operation subject to AND.

1.4.3.1 *Loader*

1.4.3.1.1 In the context of 1.4.1, the loader has the following obligations in particular:

- (a) He shall hand the dangerous goods over to the carrier only if they are authorized for carriage in accordance with ADN;
- (b) He shall, when handing over for carriage packed dangerous goods or uncleaned empty packagings, check whether the packaging is damaged. He shall not hand over a package the packaging of which is damaged, especially if it is not leakproof, and there are leakages or the possibility of leakages of the dangerous substance, until the damage has been repaired; this obligation also applies to empty uncleaned packagings;
- (c) He shall, when loading dangerous goods in a vessel, a vehicle, a wagon, or a large or small container, comply with the special requirements concerning loading and handling;
- (d) He shall, after loading dangerous goods into a container comply with the requirements concerning danger markings conforming to Chapter 5.3;
- (e) He shall, when loading packages, comply with the prohibitions on mixed loading taking into account dangerous goods already in the vessel, vehicle, wagon or large container and requirements concerning the separation of foodstuffs, other articles of consumption or animal feedstuffs;
- (f) He shall ascertain that provision has been made in the fore and aft sections of the vessel for its evacuation in the event of an emergency;
- (g) *(Reserved)*

1.4.3.1.2 The loader may, however, in the case of 1.4.3.1.1 (a), (d) and (e), rely on information and data made available to him by other participants.

1.4.3.2 Packer

In the context of 1.4.1, the packer shall comply with in particular:

- (a) the requirements concerning packing conditions, or mixed packing conditions; and
- (b) when he prepares packages for carriage, the requirements concerning marking and labelling of the packages.

1.4.3.3 Filler

In the context of 1.4.1, the filler has the following obligations in particular:

Obligations concerning the filling of tanks (tank-vehicles, battery-vehicles, demountable tanks, portable tanks, tank-containers, MEGCs, tank wagons and battery wagons):

- (a) He shall ascertain prior to the filling of tanks that both they and their equipment are technically in a satisfactory condition;
- (b) He shall ascertain that the date of the next test for tanks has not expired;
- (c) He shall only fill tanks with the dangerous goods authorized for carriage in those tanks;
- (d) He shall, in filling the tank, comply with the requirements concerning dangerous goods in adjoining compartments;

- (e) He shall, during the filling of the tank, observe the maximum permissible degree of filling or the maximum permissible mass of contents per litre of capacity for the substance being filled;
- (f) He shall, after filling the tank, ensure that all closures are in a closed position and that there is no leakage;
- (g) He shall ensure that no dangerous residue of the filling substance adheres to the outside of the tanks filled by him;
- (h) He shall, in preparing the dangerous goods for carriage, ensure that the orange plates, labels or placards as well as marks for elevated temperature substances and environmentally hazardous substances prescribed are affixed in accordance with the requirements of chapter 5.3 concerning tanks.

Obligations concerning the bulk loading of dangerous solids in vehicles, wagons or containers:

- (i) He shall ascertain, prior to loading, that the vehicles, wagons and containers, and if necessary their equipment, are technically in a satisfactory condition and that the carriage in bulk of the dangerous goods in question is authorized in these vehicles, wagons or containers;
- (j) He shall ensure after loading that the orange plates and placards or labels prescribed are affixed in accordance with the requirements of Chapter 5.3 applicable to such vehicles, wagons or containers;
- (k) He shall, when filling vehicles, wagons or containers with dangerous goods in bulk, ascertain that the relevant provisions of Chapter 7.3 of RID or ADR are complied with.

Obligations concerning the filling of cargo tanks:

- (l) *(Reserved)*;
- (m) He shall complete his section of the checklist referred to in 7.2.4.10 prior to the loading of the cargo tanks of a tank vessel;
- (n) He shall only fill cargo tanks with the dangerous goods accepted in such tanks;
- (o) He shall, when necessary, issue a heating instruction in the case of the carriage of substances whose melting point is 0 °C or higher;
- (p) He shall ascertain that during loading the trigger for the automatic device for the prevention of overfilling switches off the electric line established and supplied by the on-shore installation and that he can take steps against overfilling;
- (q) He shall ascertain that provision has been made in the fore and aft sections of the vessel for appropriate means for its evacuation in the event of an emergency;
- (r) He shall ascertain that, when prescribed in 7.2.4.25.5, there is a flame-arrester in the gas discharge pipe or the compensation pipe to protect the vessel against detonations and flame-fronts from the landward side;
- (s) He shall ascertain that the loading flows conform to the loading instructions referred to in 9.3.2.25.9 or 9.3.3.25.9 and that the pressure at the crossing-point of the gas

discharge pipe or the compensation pipe is not greater than the opening pressure of the high velocity vent valve;

- (t) He shall ascertain that the joints provided by him for the connecting flange of the ship/shore connections of the loading and unloading piping consist of a material which is not susceptible to be damaged by the cargo or causes a decomposition of the cargo nor forms harmful or dangerous components with it;
- (u) He shall ascertain that during the entire duration of loading or unloading a permanent and appropriate supervision is assured.

Obligations concerning the bulk loading of dangerous solids in vessels:

- (v) *(Reserved)*;
- (w) He shall only load the vessel with dangerous goods the bulk carriage of which is authorized in that vessel;
- (x) He shall ascertain that provision has been made in the fore and aft sections of the vessel for appropriate means for its evacuation in the event of an emergency.

1.4.3.4 ***Tank-container/portable tank operator***

In the context of 1.4.1, the tank-container/portable tank operator shall in particular:

- (a) ensure compliance with the requirements for construction, equipment, tests and marking;
- (b) ensure that the maintenance of shells and their equipment is carried out in such a way as to ensure that, under normal operating conditions, the tank-container/portable tank satisfies the requirements of ADR, RID or the IMDG Code until the next inspection;
- (c) have an exceptional check made when the safety of the shell or its equipment is liable to be impaired by a repair, an alteration or an accident.

1.4.3.5 *(Reserved)*

1.4.3.6 *(Reserved)*

1.4.3.7 ***Unloader***

NOTE: In this sub-section, unloading covers removal, unloading and discharging as indicated in the definition of unloader in 1.2.1.

1.4.3.7.1 In the context of 1.4.1, the unloader shall in particular:

- (a) Ascertain that the correct goods are unloaded by comparing the relevant information on the transport document with the information on the package, container, tank, MEMU, MEGC or conveyance;
- (b) Before and during unloading, check whether the packagings, the tank, the conveyance or container have been damaged to an extent which would endanger the unloading operation. If this is the case, ascertain that unloading is not carried out until appropriate measures have been taken;

- (c) Comply with all relevant requirements concerning unloading;
- (d) Immediately following the unloading of the tank, conveyance or container:
 - (i) Ensure the removal of any dangerous residues which have adhered to the outside of the tank, conveyance or container during the process of unloading; and
 - (ii) By unloading of packages, ensure the closure of valves and inspection openings;
- (e) Ensure that the prescribed cleaning and decontamination of the conveyances or containers is carried out;
- (f) Ensure that the containers, vehicles and wagons, once completely unloaded, cleaned and decontaminated, no longer bear danger markings conforming to Chapter 5.3;

Additional obligations concerning the unloading of cargo tanks:

- (g) Complete his section of the checklist referred to in 7.2.4.10 prior to the unloading of the cargo tanks of a tank vessel;
- (h) Ascertain that provision has been made in the fore and aft sections of the vessel for appropriate means for its evacuation in the event of an emergency;
- (i) Ascertain that, when prescribed in 7.2.4.25.5, there is a flame-arrester in the gas compensation piping or the gas return pipe to protect the vessel against detonations and flame-fronts from the landward side;
- (j) Ascertain that the unloading flows conform to the loading instructions referred to in 9.3.2.25.9 or 9.3.3.25.9 and that the pressure at the connecting-point of the gas discharge pipe or the gas return pipe does not exceed the opening pressure of the high velocity vent valve;
- (k) Ascertain that the gaskets provided by him for the connecting flange of the ship/shore connections of the loading and unloading piping consist of a material which will not be damaged by the cargo nor causes a decomposition of the cargo nor forms harmful or dangerous components with it;
- (l) Ascertain that during the entire duration of unloading a permanent and appropriate supervision is assured;
- (m) Ascertain that, during unloading by means of the on-board pump, it is possible for the shore facility to switch it off;

Additional obligations concerning the bulk unloading of dangerous solids in vessels:

- (n) Ascertain that provision has been made in the fore and aft sections of the vessel for appropriate means for its evacuation in the event of an emergency.

1.4.3.7.2 If the unloader makes use of the services of other participants (cleaner, decontamination facility, etc.) he shall take appropriate measures to ensure that the requirements of ADN have been complied with.

CHAPTER 1.5

SPECIAL RULES, DEROGATIONS

1.5.1 **Bilateral and multilateral agreements**

1.5.1.1 In accordance with Article 7, paragraph 1 of ADN, the competent authorities of the Contracting Parties may agree directly among themselves to authorize certain transport operations in their territories by temporary derogation from the requirements of ADN, provided that safety is not compromised thereby. The authority which has taken the initiative with respect to the temporary derogation shall notify such derogations to the Secretariat of the United Nations Economic Commission for Europe which shall bring them to the attention of the Contracting Parties.

NOTE: "Special arrangement" in accordance with 1.7.4 is not considered to be a temporary derogation in accordance with this section.

1.5.1.2 The period of validity of the temporary derogation shall not be more than five years from the date of its entry into force. The temporary derogation shall automatically cease as from the date of the entry into force of a relevant amendment to these annexed Regulations.

1.5.1.3 Transport operations on the basis of these agreements shall constitute transport operations in the sense of ADN.

1.5.2 **Special authorizations concerning transport in tank vessels**

1.5.2.1 *Special authorizations*

1.5.2.1.1 In accordance with paragraph 2 of Article 7 of ADN, the competent authority shall have the right to issue special authorizations to a carrier or a consignor for the international carriage in tank vessels of dangerous substances, including mixtures, the carriage of which in tank vessels is not authorized under these Regulations, in accordance with the procedure set out below.

1.5.2.1.2 The special authorization shall be valid, due account being taken of the restrictions specified therein, for the Contracting Parties and on whose territory the transport operation will take place, for not more than two years unless it is repealed at an earlier date. With the approval of the competent authorities of these Contracting Parties, the special authorization may be renewed for a period of not more than one year.

1.5.2.1.3 The special authorization shall include a statement concerning its repeal at an earlier date and shall conform to the model contained in subsection 3.2.4.1.

1.5.2.2 *Procedure*

1.5.2.2.1 The carrier or the consignor shall apply to the competent authority of a Contracting Party on whose territory the transport operation takes place for the issue of a special authorization.

The application shall conform to the model contained in subsection 3.2.4.2. The applicant shall be responsible for the accuracy of the particulars.

1.5.2.2.2 The competent authority shall consider the application from the technical and safety point of view. If it has no reservations, it shall draw up a special authorization in accordance with the criteria contained in subsection 3.2.4.3 and immediately inform the other competent authorities involved in the carriage in question. The special authorization shall be issued only when the authorities concerned agree to it or have not expressed opposition within a

period of two months after receiving the information. The applicant shall receive the original of the special authorization and keep a copy of it on board the vessel(s) involved in the carriage in question. The competent authorities shall immediately communicate to the Administrative Committee the applications for special authorizations, the applications rejected and the special authorizations granted.

1.5.2.2.3 If the special authorization is not issued because doubts or opposition have been expressed, the Administrative Committee shall decide whether or not to issue a special authorization.

1.5.2.3 *Update of the list of substances authorized for carriage in tank vessels*

1.5.2.3.1 The Administrative Committee shall consider all the special authorizations and applications communicated to it and decide whether the substance is to be included in the list of substances in these Regulations, authorized for carriage in tank vessels.

1.5.2.3.2 If the Administrative Committee enters technical or safety reservations concerning the inclusion of the substance in the list of substances of these Regulations authorized for carriage in tank vessels or concerning certain conditions, the competent authority shall be so informed. The competent authority shall immediately withdraw or, if necessary, modify the special authorization.

1.5.3 *Equivalents and derogations (Article 7, paragraph 3 of ADN)*

1.5.3.1 *Procedure for equivalents*

When the provisions of these Regulations prescribe for a vessel the use or the presence on board of certain materials, installations or equipment or the adoption of certain construction measures or certain fixtures, the competent authority may agree to the use or the presence on board of other materials, installations or equipment or the adoption of other construction measures or other fixtures for this vessel if, in line with recommendations established by the Administrative Committee, they are accepted as equivalent.

1.5.3.2 *Derogations on a trial basis*

The competent authority may, on the basis of a recommendation by the Administrative Committee, issue a trial certificate of approval for a limited period for a specific vessel having new technical characteristics departing from the requirements of these Regulations, provided that these characteristics are sufficiently safe.

1.5.3.3 *Particulars of equivalents and derogations*

The equivalents and derogations referred to in 1.5.3.1 and 1.5.3.2 shall be entered in the certificate of approval.

CHAPTER 1.6

TRANSITIONAL MEASURES

1.6.1 General

- 1.6.1.1 Unless otherwise provided, the substances and articles of ADN may be carried until 30 June 2013 in accordance with the requirements of ADN applicable up to 31 December 2012.
- 1.6.1.2 *(Deleted)*
- 1.6.1.3 The transitional measures of 1.6.1.3 and 1.6.1.4 of ADR and RID, or falling within the scope of 4.1.5.19 of the IMDG Code, concerning the packaging of substances and articles of Class 1, are also valid for carriage subject to ADN.
- 1.6.1.4 *(Deleted)*
- 1.6.1.5-1.6.1.7 *(Reserved)*
- 1.6.1.8 Existing orange-coloured plates which meet the requirements of sub-section 5.3.2.2 applicable up to 31 December 2004 may continue to be used provided that the requirements in 5.3.2.2.1 and 5.3.2.2.2 that the plate, numbers and letters shall remain affixed irrespective of the orientation of the vehicle or wagon are met.
- 1.6.1.9 *(Reserved)*
- 1.6.1.10 Lithium cells and batteries manufactured before 1 July 2003 which had been tested in accordance with the requirements applicable until 31 December 2002 but which had not been tested in accordance with the requirements of ADR or RID applicable as from 1 January 2003, and appliances containing such lithium cells or batteries, may continue to be carried up to 30 June 2013 if all the other applicable requirements are fulfilled.
- 1.6.1.11-12 *(Reserved)*
- 1.6.1.13 *(Deleted)*
- 1.6.1.14 IBCs manufactured before 1 January 2011 and conforming to a design type which has not passed the vibration test of 6.5.6.13 of ADR or which was not required to meet the criteria of 6.5.6.9.5 (d) of ADR at the time it was subjected to the drop test, may still be used.
- 1.6.1.15 IBCs manufactured, remanufactured or repaired before 1 January 2011 need not be marked with the maximum permitted stacking load in accordance with 6.5.2.2.2 of ADR. Such IBCs, not marked in accordance with 6.5.2.2.2 of ADR, may still be used after 31 December 2010 but must be marked in accordance with 6.5.2.2.2 of ADR if they are remanufactured or repaired after that date.
- 1.6.1.16 Animal material affected by pathogens included in Category B, other than those which would be assigned to Category A if they were in culture (see 2.2.62.1.12.2), may be carried in accordance with provisions determined by the competent authority until 31 December 2014.¹

¹ *Regulations for dead infected animals are contained e.g. in Regulation (EC) No. 1774/2002 of the European Parliament and of the Council of 3 October 2002 laying down health rules concerning animal by-products not intended for human consumption (Official Journal of the European Communities, No. L 273 of 10.10.2002, p. 1).*

- 1.6.1.17 *(Deleted)*
and
1.6.1.18
- 1.6.1.19 The provisions of 2.4.3 and 2.4.4 concerning the classification of environmentally hazardous substances applicable until 31 December 2010 may be applied until 31 December 2013.
- 1.6.1.20 Notwithstanding the requirements of Chapter 3.4 applicable as from 1 January 2011, dangerous goods packed in limited quantities, other than those which are assigned figure "0" in column (7a) of Table A of Chapter 3.2, may continue to be carried until 30 June 2015 in accordance with the requirements of Chapter 3.4 in force up to 31 December 2010. However, in such a case, the provisions of 3.4.12 to 3.4.15 in force as from 1 January 2011 may be applied as from 1 January 2011. For the purposes of the application of the last sentence of 3.4.13 (c), if the container carried is marked with the mark required in paragraph 3.4.12 applicable until 31 December 2010, the transport unit or wagon may be marked with the mark required in paragraph 3.4.15 applicable as from 1 January 2011.
- 1.6.1.21-23 *(Reserved)*
- 1.6.1.24 Lithium cells and batteries manufactured before 1 January 2014 which had been tested in accordance with the requirements applicable until 31 December 2012 but which had not been tested in accordance with the requirements applicable as from 1 January 2013, and appliances containing such lithium cells or batteries, may continue to be carried if all the other applicable requirements are fulfilled.
- 1.6.1.25 Packages and overpacks marked with a UN number in accordance with the provisions of ADN applicable up to 31 December 2012 and which do not conform to the requirements of 5.2.1.1 regarding the size of the UN number and of the letters "UN" applicable as from 1 January 2013 may continue to be used until 31 December 2013, and, for cylinders of 60 litres water capacity or less, until the next periodic inspection but no later than 30 June 2018.
- 1.6.1.26 Large packagings manufactured or remanufactured before 1 January 2014 and which do not conform to the requirements of 6.6.3.1 of ADR regarding the height of letters, numerals and symbols applicable as from 1 January 2013 may continue to be used. Those manufactured or remanufactured before 1 January 2015 need not be marked with the maximum permitted stacking load in accordance with 6.6.3.3 of ADR. Such large packagings not marked in accordance with 6.6.3.3 of ADR may still be used after 31 December 2014 but must be marked in accordance with 6.6.3.3 of ADR if they are remanufactured after that date.
- 1.6.1.27 Means of containment integral to equipment or machinery containing liquid fuels of UN Nos. 1202, 1203, 1223, 1268, 1863 and 3475 constructed before 1 July 2013, which do not conform to the requirements of paragraph (a) of special provision 363 of chapter 3.3 applicable as from 1 January 2013, may still be used.
- 1.6.2 Pressure receptacles and receptacles for Class 2**
- The transitional measures of sections 1.6.2 of ADR and RID are also valid for transport operations subject to ADN.
- 1.6.3 Fixed tanks (tank-vehicles and tank wagons), demountable tanks, battery vehicles and battery wagons**
- The transitional measures of sections 1.6.3 of ADR and RID are also valid for transport operations subject to ADN.

1.6.4 Tank-containers, portable tanks and MEGCs

The transitional measures of sections 1.6.4 of ADR and RID or of section 4.2.0 of the IMDG Code, depending on the case, are also valid for transport operations subject to ADN.

1.6.5 Vehicles

The transitional measures of section 1.6.5 of ADR are also valid for transport operations subject to ADN.

1.6.6 Class 7

The transitional measures of sections 1.6.6 of ADR and RID or of section 6.4.24 of the IMDG Code are also valid for transport operations subject to ADN.

1.6.7 Transitional provisions concerning vessels

1.6.7.1 General

1.6.7.1.1 For the purposes of Article 8 of ADN, section 1.6.7 sets out general transitional provisions in 1.6.7.2 (see Article 8, paragraphs 1, 2 and 4) and supplementary transitional provisions in 1.6.7.3 (see Article 8, paragraph 3).

1.6.7.1.2 In this section:

- (a) “Vessel in service” means a vessel according to Article 8, paragraph 2 of ADN;
- (b) “N.R.M.” means that the requirement does not apply to vessels in service except where the parts concerned are replaced or modified, i.e. it applies only to vessels which are new (as from the date indicated), or to parts which are replaced or modified after the date indicated; where existing parts are replaced by spare or replacement parts of the same type and manufacture, this shall not be considered a replacement ‘R’ as defined in these transitional provisions.

Modification shall also be taken to mean the conversion of an existing type of tank vessel, a type of cargo tank or a cargo tank design to another type or design at a higher level.

When in the general transitional provisions in 1.6.7.2 no date is specified after ‘N.R.M.’, it refers to N.R.M. after 26 May 2000. When in the supplementary transitional provisions in 1.6.7.3, no date is specified, it refers to N.R.M. after 26 May 2000.

- (c) “Renewal of the certificate of approval after the ...” means that the requirement shall be met at the next renewal of the certificate of approval following the date indicated. If the certificate of approval expires during the first year after the date of application of these Regulations, the requirement shall be mandatory only after the expiry of this first year.

1.6.7.2 *General transitional provisions*

1.6.7.2.1 *General transitional provisions for dry cargo vessels*

1.6.7.2.1.1 Vessels in service shall meet:

- (a) the requirements of paragraphs mentioned in the table below within the period established therein;
- (b) the requirements of paragraphs not mentioned in the table below at the date of application of these Regulations.

The construction and equipment of vessels in service shall be maintained at least at the previous standard of safety.

1.6.7.2.1.1 Table of general transitional provisions: Dry cargo		
Paragraphs	Subject	Time limit and comments
9.1.0.12.1	Ventilation of holds	N.R.M. Renewal of the certificate of approval after 31 December 2018 Until then, the following requirements apply on board vessels in service: Each hold shall have appropriate natural or artificial ventilation; for the carriage of substances of Class 4.3, each hold shall be equipped with forced-air ventilation; the appliances used for this purpose must be so constructed that water cannot enter the hold.
9.1.0.12.3	Ventilation of service spaces	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.1.0.17.2	Gas-tight openings facing holds	N.R.M. Renewal of the certificate of approval after 31 December 2018 Until then, the following requirements apply on board vessels in service: Openings of accommodation and the wheelhouse facing the holds must be capable of being tightly closed.
9.1.0.17.3	Entrances and openings in the protected area	N.R.M. Renewal of the certificate of approval after 31 December 2018 Until then, the following requirements apply on board vessels in service: Openings of engine rooms and service spaces facing the holds must be capable of being tightly closed.
9.1.0.31.2	Air intakes of engines	N.R.M. Renewal of the certificate of approval after 31 December 2034
9.1.0.32.2	Air pipes 50 cm above the deck	N.R.M. Renewal of the certificate of approval after 31 December 2018

1.6.7.2.1.1 Table of general transitional provisions: Dry cargo		
Paragraphs	Subject	Time limit and comments
9.1.0.34.1	Position of exhaust pipes	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.1.0.35	Stripping pumps in the protected area	N.R.M. Renewal of the certificate of approval after 31 December 2018 Until then, the following requirements apply on board vessels in service: In the event of the carriage of substances of Class 4.1, UN No. 3175, of all substances of Class 4.3 in bulk or unpackaged and polymeric beads, expandable, of Class 9, UN No. 2211, the stripping of the holds may only be effected using a stripping installation located in the protected area. The stripping installation located above the engine room must be clamped.
9.1.0.40.1	Fire extinguishers, two pumps, etc.	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.1.0.40.2	Fire extinguishing systems permanently fixed in engine rooms	N.R.M. Renewal of the certificate of approval after 31 December 2034
9.1.0.41 in conjunction with 7.1.3.41	Fire and naked light	N.R.M. Renewal of the certificate of approval after 31 December 2018 Until then, the following requirements apply on board vessels in service: Outlets of funnels shall be located not less than 2 m from the nearest point on hold hatchways. Heating and cooking appliances shall be permitted only in metal-based accommodation and wheelhouses. However: - Heating appliances fuelled with liquid fuels having a flashpoint above 55 °C shall be permitted in engine rooms; - Central-heating boilers fuelled with solid fuels shall be permitted in spaces situated below deck and accessible only from the deck.
9.2.0.31.2	Air intakes of engines	N.R.M. Renewal of the certificate of approval after 31 December 2034
9.2.0.34.1	Position of exhaust pipes	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.2.0.41 in conjunction with 7.1.3.41	Fire and naked light	N.R.M. Renewal of the certificate of approval after 31 December 2018

1.6.7.2.1.1 Table of general transitional provisions: Dry cargo		
Paragraphs	Subject	Time limit and comments
		<p>Until then, the following requirements apply on board vessels in service:</p> <p>Outlets of funnels shall be located not less than 2 m from the nearest point on hold hatchways.</p> <p>Heating and cooking appliances shall be permitted only in metal-based accommodation and wheelhouses.</p> <p>However:</p> <ul style="list-style-type: none"> - Heating appliances fuelled with liquid fuels having a flashpoint above 55 °C shall be permitted in engine rooms; - Central-heating boilers fuelled with solid fuels shall be permitted in spaces situated below deck and accessible only from the deck.

1.6.7.2.1.2 *(Deleted)*

1.6.7.2.2 *General transitional provisions for tank vessels*

1.6.7.2.2.1 Vessels in service shall meet:

- (a) the requirements of paragraphs mentioned in the table below within the period established therein;
- (b) the requirements of paragraphs not mentioned in the table below at the date of application of these Regulations.

The construction and equipment of vessels in service shall be maintained at least at the previous standard of safety.

1.6.7.2.2.2 Table of general transitional provisions for tank vessels

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
1.2.1	Limited explosion risk electrical apparatus	<p>N.R.M.</p> <p>Renewal of the certificate of approval after 31 December 2034</p> <p>Until then, the following requirements apply on board vessels in service:</p> <p>Limited explosion risk electrical apparatus is:</p> <ul style="list-style-type: none"> - Electrical apparatus which, during normal operation, does not cause sparks or exhibit surface temperatures exceeding 200 °C; or - Electrical apparatus with a spray-water protected housing which, during normal operation, does not exhibit surface temperatures above 200 °C.

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
1.2.1	Hold space	N.R.M. Renewal of the certificate of approval after 31 December 2038 for Type N open vessels whose hold spaces contain auxiliary appliances and which are carrying only substances of Class 8, with remark 30 in column (20) of Table C of Chapter 3.2.
1.2.1	Flame arrester Test according to standard EN 12 874:1999	N.R.M. from 1 January 2001 Renewal of the certificate of approval after 31 December 2034 Until then, the following requirements are applicable on board vessels in service: Flame arresters shall be of a type approved by the competent authority for the use prescribed.
1.2.1	High velocity vent valve Test according to standard EN 12 874:1999	N.R.M. Renewal of the certificate of approval after 31 December 2034 Until then, the following requirements are applicable on board vessels in service: High velocity vent valves shall be of a type approved by the competent authority for the use prescribed.
7.2.2.6	Approved gas detection system	N.R.M. Renewal of the certificate of approval after 31 December 2010
7.2.2.19.3	Vessels used for propulsion	N.R.M. Renewal of the certificate of approval after 31 December 2044
7.2.3.20	Use of cofferdams for ballasting	N.R.M. Renewal of the certificate of approval after 31 December 2038 Until then, the following requirements are applicable on board vessels in service: Cofferdams may be filled with water during unloading to provide trim and to permit residue-free drainage if possible.
7.2.3.20.1	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 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
7.2.3.20.1	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 ballast water only when cargo tanks are empty.
7.2.3.20.1	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
7.2.3.31.2	Motor vehicles only outside the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2034 for Type N vessels Until then, the following requirements apply on board vessels in service: The vehicle shall not be started on board.
7.2.3.51.3	Live sockets	N.R.M. Renewal of the certificate of approval after 31 December 2010 for Type G and Type N vessels
7.2.4.22.3	Sampling from other openings	N.R.M. Renewal of the certificate of approval after 31 December 2018 Until then, on board Type N open vessels in service cargo tank covers may be opened during loading for control and sampling.
8.1.6.2.	Hose assemblies	Hose assemblies of previous standards EN 12115:1999, EN 13765:2003 or EN ISO 10380:2003 may be used until 31 December 2018.
9.3.2.0.1 (c) 9.3.3.0.1 (c)	Protection of vapour pipes against corrosion	N.R.M. from 1 January 2001 Renewal of the certificate of approval after 31 December 2034
9.3.1.0.3 (d) 9.3.2.0.3 (d) 9.3.3.0.3 (d)	Fire-resistant materials of accommodation and wheelhouse	N.R.M. Renewal of the certificate of approval after 31 December 2034

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
9.3.3.8.1	Continuation of class	N.R.M. Renewal of the certificate of approval after 31 December 2044 for Type N open vessels with flame arresters and Type N open vessels. Until then, the following requirements apply on board vessels in service: Except where otherwise provided, the type of construction, the strength, the subdivision, the equipment and the gear of the vessel shall conform or be equivalent to the construction requirements for classification in the highest class of a recognized classification society.
9.3.1.10.2 9.3.2.10.2 9.3.3.10.2	Door coamings, etc.	N.R.M. Renewal of the certificate of approval after 31 December 2034 Until then, the following requirements apply on board vessels in service, with the exception of Type N open vessels: This requirement may be met by fitting vertical protection walls not less than 0.50 m in height. Until then, on board vessels in service less than 50.00 m long, the height of 0.50 m may be reduced to 0.30 m in passageways leading to the deck.
9.3.1.10.3 9.3.2.10.3 9.3.3.10.3	Height of sills of hatches and openings above the deck	N.R.M. from 1 January 2005 Renewal of the certificate of approval after 31 December 2010
9.3.1.11.1 (b)	Ratio of length to diameter of pressure cargo tanks	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.3.11.1 (d)	Limitation of length of cargo tanks	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.1.11.2 (a)	Arrangement of cargo tanks Distance between cargo tanks and side walls Height of saddles	N.R.M. Renewal of the certificate of approval after 31 December 2044 for Type G vessels whose keels were laid before 1 January 1977

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
9.3.1.11.2 (a)	Arrangement of cargo tanks Distance between cargo tanks and side walls Height of saddles	N.R.M. Renewal of the certificate of approval after 31 December 2044 Until then, the following requirements apply on board vessels in service whose keels were laid after 31 December 1976: Where tank volume is more than 200 m ³ or where the ratio of length to diameter is less than 7 but more than 5, the hull in the tank area shall be such that, in the event of a collision, the tanks remain intact as far as possible. This requirement shall be considered as having been met where, in the tank area, the vessel: - is double-hulled with a distance of at least 80 cm between the side plating and the longitudinal bulkhead - or is designed as follows: (a) Between the gangboard and the top of the floorplates there shall be side stringers at regular intervals of not more than 60 cm; (b) The side stringers shall be supported by web frames spaced at intervals of not more than 2.00 m. The height of the web frames shall be not less than 10% of the depth and in any event not less than 30 cm. They shall be fitted with a face plate made of flat steel having a cross section of not less than 15 cm ² ; (c) The side stringers referred to in (a) shall have the same height as the web frames and be fitted with a face plate made of flat steel having a cross section of not less than 7.5 cm ² .
9.3.1.11.2 (a)	Distance between suction wells and floor plates	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.1.11.2 (b) 9.3.2.11.2 (b) 9.3.3.11.2 (a)	Cargo tank fastenings	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.1.11.2 (c) 9.3.2.11.2 (c) 9.3.3.11.2 (b)	Capacity of suction well	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.1.11.2 (d) 9.3.2.11.2 (d)	Side struts between the hull and the cargo tanks	N.R.M. from 1 January 2001 Renewal of the certificate of approval after 31 December 2044

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
9.3.1.11.3 (a)	End bulkheads of cargo area with “A-60” insulation. Distance of 0.50 m from cargo tanks to end bulkheads	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.2.11.3 (a) 9.3.3.11.3 (a)	Width of cofferdams of 0.60 m Hold spaces with cofferdams or “A-60” insulated bulkheads Distance of 0.50 m from cargo tanks in hold spaces	N.R.M. Renewal of the certificate of approval after 31 December 2044 Until then, the following requirements apply on board vessels in service: Type C: minimum width of cofferdams: 0.50 m; Type N: minimum width of cofferdams: 0.50 m; on board vessels with a deadweight of up to 150 t: 0.40 m; Type N open: cofferdams shall not be required on board vessels with a deadweight up to 150 t and oil separator vessels: The distance between cargo tanks and end bulkheads of hold spaces shall be at least 0.40m.
9.3.3.11.4	Penetrations through the end bulkheads of hold spaces	N.R.M. from 1 January 2005 Renewal of the certificate of approval after 31 December 2044 for Type N open vessels whose keels were laid before 1 January 1977.
9.3.3.11.4	Distance of piping in relation to the bottom	N.R.M. from 1 January 2005 Renewal of the certificate of approval after 31 December 2038
9.3.3.11.4	Shut-off devices of the loading and unloading piping in the cargo tank from which they come	N.R.M. from 1 January 2005 Renewal of the certificate of approval after 31 December 2018
9.3.3.11.6 (a)	Form of cofferdam arranged as a pump room	N.R.M. Renewal of the certificate of approval after 31 December 2044 for Type N vessels whose keels were laid before 1 January 1977.
9.3.3.11.7	Distance between the cargo tanks and the outer wall of the vessel	N.R.M. after 1 January 2001 Renewal of the certificate of approval after 31 December 2038
9.3.3.11.7	Width of double hull	N.R.M. after 1 January 2010 Renewal of the certificate of approval after 31 December 2038
9.3.1.11.7	Distance between the suction well and the bottom spaces	N.R.M. after 1 January 2003 Renewal of the certificate of approval after 31 December 2038

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
9.3.3.11.8	Arrangement of service spaces located in the cargo area below decks	N.R.M. Renewal of the certificate of approval after 31 December 2038 for Type N open vessels
9.3.1.11.8 9.3.3.11.9	Dimensions of openings for access to spaces within the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.1.11.8 9.3.2.11.10 9.3.3.11.9	Interval between reinforcing elements	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.2.12.1 9.3.3.12.1	Ventilation openings in hold spaces	N.R.M. from 1 January 2003 Renewal of the certificate of approval after 31 December 2018
9.3.1.12.2 9.3.3.12.2	Ventilation systems in double-hull spaces and double bottoms	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.1.12.3 9.3.2.12.3 9.3.3.12.3	Height above the deck of the air intake for service spaces located below deck	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.1.12.6 9.3.2.12.6 9.3.3.12.6	Distance of ventilation inlets from cargo area	N.R.M. from 1 January 2003 Renewal of the certificate of approval after 31 December 2044
9.3.1.12.6 9.3.2.12.6 9.3.3.12.6	Permanently installed flame screens	N.R.M. from 1 January 2003 Renewal of the certificate of approval after 31 December 2018
9.3.3.12.7	Approval of flame arresters	N.R.M. Renewal of the certificate of approval after 31 December 2018 for Type N vessels whose keels were laid before 1 January 1977.
9.3.1.13 9.3.3.13	Stability (general)	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.3.13.3 paragraph 2	Stability (general)	N.R.M. from 1 January 2007 Renewal of the certificate of approval after 31 December 2044
9.3.1.14 9.3.3.14	Stability (intact)	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.2.14.2	Stability (intact)	N.R.M. Renewal of the certificate of approval after 31 December 2044

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
9.3.1.15	Stability (damaged condition)	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.3.15	Stability (damaged condition)	N.R.M. after 1 January 2007 Renewal of the certificate of approval after 31 December 2044
9.3.1.16.1 9.3.3.16.1	Distance of openings of engine rooms from the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.3.16.1	Internal combustion engines outside the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2034 for Type N open vessels
9.3.1.16.2 9.3.3.16.2	Hinges of doors facing the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2034 for vessels whose keels were laid before 1 January 1977 where alterations would obstruct other major openings.
9.3.3.16.2	Engine rooms accessible from the deck	N.R.M. Renewal of the certificate of approval after 31 December 2034 for Type N open vessels
9.3.1.17.1 9.3.3.17.1	Accommodation and wheelhouse outside the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2044 for vessels whose keels were laid before 1 January 1977, provided that there is no connection between the wheelhouse and other enclosed spaces. Renewal of the certificate of approval after 31 December 2044 for vessels up to 50 m in length whose keels were laid before 1 January 1977 and whose wheelhouses are located in the cargo area even if it provides access to another enclosed space, provided that safety is ensured by appropriate service requirements of the competent authority.
9.3.3.17.1	Accommodation and wheelhouse outside the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2044 for Type N open vessels
9.3.1.17.2 9.3.2.17.2 9.3.3.17.2	Arrangement of entrances and openings of forward superstructures	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.1.17.2 9.3.2.17.2 9.3.3.17.2	Entrances facing the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2044 for vessels up to 50 m in length whose keels were laid before 1 January 1977, provided that gas screens are installed.

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
9.3.3.17.2	Entrances and openings	N.R.M. Renewal of the certificate of approval after 31 December 2044 for Type N open vessels
9.3.3.17.3	Entrances and openings must be capable of being closed	N.R.M. Renewal of the certificate of approval after 31 December 2010 for Type N open vessels
9.3.1.17.4 9.3.3.17.4	Distance of openings from the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.3.17.5 (b), (c)	Approval of shaft passages and displaying of instructions	N.R.M. Renewal of the certificate of approval after 31 December 2018 for Type N open vessels
9.3.1.17.6 9.3.3.17.6	Pump-room below deck	N.R.M. Renewal of the certificate of approval after 31 December 2018 Until then, the following requirements apply on board vessels in service: Pump-rooms below deck shall <ul style="list-style-type: none"> - meet the requirements for service spaces: <ul style="list-style-type: none"> - for Type G vessels: 9.3.1.12.3 - for Type N vessels: 9.3.3.12.3 - be equipped with a gas detection system referred to in 9.3.1.17.6 or 9.3.3.17.6
9.3.2.20.2 9.3.3.20.2	Intake valve	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.3.20.2	Filling of cofferdams with pump	N.R.M. Renewal of the certificate of approval after 31 December 2018 for Type N open vessels
9.3.2.20.2 9.3.3.20.2	Filling of cofferdams within 30 minutes	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.3.21.1 (b)	Liquid level gauge	N.R.M. from 1 January 2005 Renewal of the certificate of approval after 31 December 2018 for vessels of Type N open with flame-arrester and those of Type N open Until then, on board vessels in service fitted with gauging openings, such openings shall: <ul style="list-style-type: none"> - be arranged so that the degree of filling can be measured using a sounding rod; - be fitted with an automatically-closing cover.
9.3.3.21.1 (g)	Sampling opening	N.R.M. Renewal of the certificate of approval after 31 December 2018 for Type N open vessels

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
9.3.1.21.4 9.3.2.21.4 9.3.3.21.4	Liquid-level alarm device independent from the liquid-level gauge	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.1.21.5 (a) 9.3.2.21.5 (a) 9.3.3.21.5 (a)	Socket close to the shore connections of the loading and unloading piping and switching off of vessel's pump	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.1.21.5 (b) 9.3.2.21.5 (b) 9.3.3.21.5 (d)	Installation of on-board pump switch-off from the shore	N.R.M. Renewal of the certificate of approval after 31 December 2006
9.3.2.21.5 (c)	Device for rapid shutting off of refuelling	N.R.M. Renewal of the certificate of approval after 31 December 2008
9.3.1.21.7 9.3.2.21.7 9.3.3.21.7	Vacuum or over-pressure alarms in cargo tanks for the carriage of substances <u>without</u> remark 5 in column (20) of Table C of Chapter 3.2	N.R.M. from 1 January 2001 Renewal of the certificate of approval after 31 December 2018
9.3.1.21.7 9.3.2.21.7 9.3.3.21.7	Temperature alarms in cargo tanks	N.R.M. from 1 January 2001 Renewal of the certificate of approval after 31 December 2018
9.3.1.22.1 (b)	Height of cargo tank openings above the deck	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.3.22.1 (b)	Cargo tank openings 0.50 m above the deck	N.R.M. Renewal of the certificate of approval after 31 December 2044 for vessels whose keels were laid before 1 January 1977.
9.3.1.22.4	Prevention of spark-formation by closure devices	N.R.M. from 1 January 2003 Renewal of the certificate of approval after 31 December 2018
9.3.1.22.3 9.3.2.22.4 (b) 9.3.3.22.4 (b)	Position of outlets of valves above the deck	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.2.22.4 (b) 9.3.3.22.4 (b)	Pressure setting of high velocity vent valves	N.R.M. Renewal of the certificate of approval after 31 December 2018

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
9.3.3.23.2	Test pressure for cargo tanks	N.R.M. Renewal of the certificate of approval after 31 December 2044 for vessels whose keels were laid before 1 January 1977, for which a test pressure of 15 kPa (0.15 bar) is required. Until then, a test pressure of 10 kPa (0.10 bar) shall be sufficient.
9.3.3.23.2	Test pressure for cargo tanks	N.R.M. Renewal of the certificate of approval after 31 December 2044 for oil-separator vessels in service before 1 January 1999. Until then, a test pressure of 5 kPa (0.05 bar) is sufficient.
9.3.3.23.3	Test pressure for piping for loading and unloading	N.R.M. Renewal of the certificate of approval at the latest by 1 January 2039 for oil-separator vessels in service before 1 January 1999. Until then, a test pressure of 400 kPa (4 bar) is sufficient.
9.3.2.25.1 9.3.3.25.1	Shut-down of cargo pumps	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.1.25.1 9.3.2.25.1 9.3.3.25.1	Distance of pumps, etc. from accommodation, etc.	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.1.25.2 (d) 9.3.2.25.2 (d)	Position of loading and unloading piping on deck	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.1.25.2 (e) 9.3.2.25.2 (e) 9.3.3.25.2 (e)	Distance of shore connections from accommodation, etc.	N.R.M. Renewal of the certificate of approval after 31 December 2034
9.3.2.25.2 (i)	Piping for loading and unloading, and vapour pipes, shall not have flexible connections fitted with sliding seals.	N.R.M. from 1 January 2009 Vessels in service having connections with sliding seals may no longer transport substances with toxic or corrosive properties (see column (5) of Table C of Chapter 3.2, hazards 6.1 and 8) following the renewal of the certificate of approval after 31 December 2008. Vessels in service shall not have flexible connections fitted with sliding seals following the renewal of the certificate of approval after 31 December 2018
9.3.3.25.2 (h)	Piping for loading and unloading, and vapour pipes, shall not have flexible connections fitted with sliding seals	N.R.M. from 1 January 2009 Vessels in service having connections with sliding seals may no longer transport substances with corrosive properties (see column (5) of Table C of Chapter 3.2, hazard 8) following the renewal of the certificate of approval after 31 December 2008. Vessels in service shall not have flexible connections with sliding seals following the renewal of the certificate of approval after 31 December 2018.

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
9.3.2.25.8 (a)	Ballasting suction pipes located within the cargo area but outside the cargo tanks	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.2.25.9 9.3.3.25.9	Loading and unloading flow	N.R.M. from 1 January 2003 Renewal of the certificate of approval after 31 December 2018
9.3.3.25.12	9.3.3.25.1 (a) and (c), 9.3.3.25.2 (e), 9.3.3.25.3 and 9.3.3.25.4 (a) are not applicable for Type N open with the exception of Type N open carrying corrosive substances (see Chapter 3.2, Table C, column (5), hazard 8)	N.R.M. Renewal of the certificate of approval after 31 December 2018 This time limit concerns only Type N open vessels carrying corrosive substances (see Chapter 3.2, Table C, column (5), hazard 8).
9.3.1.31.2 9.3.2.31.2 9.3.3.31.2	Distance of engine air intakes from the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.1.31.4 9.3.2.31.4 9.3.3.31.4	Temperature of outer parts of engines, etc.	N.R.M. Renewal of the certificate of approval after 31 December 2018 Until then, the following requirements apply on board vessels in service: The temperature of outer parts shall not exceed 300 °C.
9.3.1.31.5 9.3.2.31.5 9.3.3.31.5	Temperature in the engine room	N.R.M. Renewal of the certificate of approval after 31 December 2018 Until then, the following requirements apply on board vessels in service: The temperature in the engine room shall not exceed 45 °C.
9.3.1.32.2 9.3.2.32.2 9.3.3.32.2	Openings of air pipes 0.50 m above the deck	N.R.M. Renewal of the certificate of approval after 31 December 2010
9.3.3.34.1	Exhaust pipes	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.1.35.1 9.3.3.35.1	Stripping and ballast pumps in the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2034

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
9.3.3.35.3	Suction pipes for ballasting located within the cargo area but outside the cargo tanks	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.1.35.4	Stripping installation of the pump-room outside the pump-room	N.R.M. from 1 January 2003 Renewal of the certificate of approval after 31 December 2018
9.3.1.40.1 9.3.2.40.1 9.3.3.40.1	Fire extinguishing systems, two pumps, etc.	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.1.40.2 9.3.2.40.2 9.3.3.40.2	Fixed fire extinguishing system in engine room	N.R.M. Renewal of the certificate of approval after 31 December 2034
9.3.1.41.1 9.3.3.41.1	Outlets of funnels located not less than 2 m from the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2044 for vessels whose keels were laid before 1 January 1977.
9.3.3.41.1	Outlets of funnels	N.R.M. at the latest by 1 January 2039 for oil-separator vessels
9.3.1.41.2 9.3.2.41.2 9.3.3.41.2 in conjunction with 7.2.3.41	Heating, cooking and refrigerating appliances	N.R.M. Renewal of the certificate of approval after 31 December 2010
9.3.3.42.2	Cargo heating system	N.R.M. Renewal of the certificate of approval after 31 December 2034 for Type N vessels Until then, the following requirements apply on board vessels in service: This can be achieved by an oil separator fitted to the condensed water return pipe.
9.3.1.51.2 9.3.2.51.2 9.3.3.51.2	Visual and audible alarm	N.R.M. Renewal of the certificate of approval after 31 December 2034
9.3.1.51.3 9.3.2.51.3 9.3.3.51.3	Temperature class and explosion group	N.R.M. Renewal of the certificate of approval after 31 December 2034
9.3.3.52.1 (b), (c), (d) and (e)	Electrical installations	N.R.M. Renewal of the certificate of approval after 31 December 2034 for Type N open vessels

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
9.3.1.52.1 (e) 9.3.3.52.1 (e)	Electrical installations of the “certified safe” type in the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2034 for vessels whose keels were laid before 1 January 1977. Until then, the following conditions shall be met during loading, unloading and gas-freeing on board vessels having non-gastight wheelhouse openings (e.g. doors, windows, etc.) in the cargo area: (a) All electrical installations designed to be used shall be of a limited explosion-risk type, i.e. they shall be so designed that there is no sparking under normal operating conditions and the temperature of their outer surfaces does not rise above 200 °C, or be of a type protected against water spray the temperature of whose outer surfaces does not exceed 200 °C under normal operating conditions; (b) Electrical installations which do not meet the requirements of (a) above shall be marked in red and it shall be possible to switch them off by means of a central switch.
9.3.3.52.2	Accumulators located outside the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2034 for Type N open vessels
9.3.1.52.3 (a) 9.3.1.52.3 (b) 9.3.3.52.3 (a) 9.3.3.52.3 (b)	Electrical installations used during loading, unloading or gas-freeing	N.R.M. Renewal of the certificate of approval after 31 December 2034 for the following installations on vessels whose keels were laid before 1 January 1977: - Lighting installations in accommodation, with the exception of switches near the entrances to accommodation; - Radio telephone installations in accommodation and wheelhouses and combustion engine control appliances. Until then, all other electrical installations shall meet the following requirements: (a) Generators, engines, etc. IP13 protection mode; (b) Control panels, lamps, etc. IP23 protection mode; (c) Appliances, etc. IP55 protection mode.
9.3.3.52.3 (a) 9.3.3.52.3 (b)	Electrical installations used during loading, unloading or gas-freeing	N.R.M. Renewal of the certificate of approval after 31 December 2034 for Type N open vessels

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
9.3.1.52.3 (b) 9.3.2.52.3 (b) 9.3.3.52.3 (b) in conjunction with 3 (a)	Electrical installations used during loading, unloading or gas-freeing	N.R.M. Renewal of the certificate of approval after 31 December 2034 Until then, on board vessels in service, paragraph (3) (a) shall not apply to: - Lighting installations in accommodation, with the exception of switches near entrances to accommodation; - Radio telephone installations in accommodation and wheelhouses.
9.3.1.52.4 9.3.2.52.4 9.3.3.52.4 last sentence	Disconnection of such installations from a centralized location	N.R.M. Renewal of the certificate of approval after 31 December 2034
9.3.3.52.4	Red mark on electrical installations	N.R.M. Renewal of the certificate of approval after 31 December 2034 for Type N open vessels
9.3.3.52.5	Shutting down switch for continuously driven generator	N.R.M. Renewal of the certificate of approval after 31 December 2034 for Type N open vessels
9.3.3.52.6	Permanently fitted sockets	N.R.M. Renewal of the certificate of approval after 31 December 2034 for Type N open vessels
9.3.1.56.1 9.3.3.56.1	Metallic sheaths for all cables in the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2034 for vessels whose keels were laid before 1 January 1977
9.3.3.56.1	Metallic sheath for all cables in the cargo area	N.R.M. by 1 January 2039 at the latest for oil-separator vessels.

1.6.7.2.2.3 Transitional provisions concerning the application of the requirements of Table C of Chapter 3.2 to the carriage of goods in tank vessels.

1.6.7.2.2.3.1 The goods for which Type N closed with a minimum valve setting of 10 kPa (0.10 bar) is required in Table C of Chapter 3.2, may be carried in tank-vessels in service of Type N closed with a minimum valve setting of 6 kPa (0.06 bar) (cargo tank test pressure of 10 kPa (0.10 bar)). This transitional provision is valid until 31 December 2018.

1.6.7.2.2.3.2 (Remark 5)

On board tank vessels in service, the dismantling of the fixed plate stacks of flame arresters is permitted in the event of the carriage of substances for which remark 5 is included in column (20) of Table C of Chapter 3.2. This transitional provision is valid until 31 December 2010.

1.6.7.2.2.3.3 (Remarks 6 and 7)

On board tank vessels in service vapour pipes and pressure/vacuum valves do not need to be heated in the event of the carriage of substances for which remarks 6 or 7 are included in column (20) of Table C of Chapter 3.2. This transitional provision is valid until 30 December 2010.

On board tank vessels equipped with flame arresters with fixed plate stacks, the latter may be dismantled in the event of the carriage of the above-mentioned substances. This transitional provision is valid until 31 December 2010.

1.6.7.2.2.4 Paragraphs 9.3.1.13.3, 9.3.2.13.3 and 9.3.3.13.3 may be applied until 31 December 2014 in the version applicable on 31 December 2012.

1.6.7.3 *Supplementary transitional provisions applicable to specific inland waterways*

Vessels in service to which the transitional provisions of this subsection are applied shall meet:

- the requirements of paragraphs and subparagraphs mentioned in the table below and in the table of general transitional provisions (see 1.6.7.2.1.1 and 1.6.7.2.2.1) within the period established therein;
- the requirements of paragraphs and subparagraphs not mentioned in the table below or in the table of general transitional provisions at the date of application of these Regulations.

The construction and equipment of vessels in service shall be maintained at least at the previous standard of safety.

Table of supplementary transitional provisions		
Paragraph	Subject	Time limit and comments
9.1.0.11.1 (b)	Holds, common bulkheads with oil fuel tanks	N.R.M. The following requirements apply on board vessels in service: Holds may share a common bulkhead with the oil fuel tanks, provided that the cargo or its packaging does not react chemically with the fuel.
9.1.0.92	Emergency exit	N.R.M. The following requirements apply on board vessels in service: Spaces the entrances or exits of which are partly or fully immersed in damaged condition shall be provided with an emergency exit not less than 0.075 m above the damage waterline.
9.1.0.95.1 (c)	Height of openings above damage waterline	N.R.M. The following requirements apply on board vessels in service: The lower edge of any non-watertight openings (e.g. doors, windows, access hatchways) shall, at the final stage of flooding, be not less than 0.075 m above the damage waterline.

Table of supplementary transitional provisions		
Paragraph	Subject	Time limit and comments
9.1.0.95.2 9.3.2.15.2	Extent of the stability diagram (damaged condition)	N.R.M. The following requirements apply on board vessels in service: At the final stage of flooding the angle of heel shall not exceed: 20° before measures to right the vessel; 12° following measures to right the vessel.
9.3.3.8.1	Classification	N.R.M. Renewal of the certificate of approval after 31 December 2044 for Type N open vessels with flame arresters and Type N open vessels
9.3.1.11.1 (a) 9.3.2.11.1 (a) 9.3.3.11.1 (a)	Maximum capacity of cargo tanks	N.R.M. The following requirements apply on board vessels in service: The maximum permissible capacity of a cargo tank shall be 760 m ³ .
9.3.2.11.1 (d)	Length of cargo tanks	N.R.M. The following requirements apply on board vessels in service: The length of a cargo tank may exceed 10 m and 0.2 L.
9.3.1.12.3 9.3.2.12.3 9.3.3.12.3	Position of air inlets	N.R.M. The following requirements apply on board vessels in service: The air inlets to be positioned at least 5.00 m from the safety-valve outlets
9.3.2.15.1 (c)	Height of openings above damage waterline	N.R.M. The following requirements apply on board vessels in service: The lower edge of any non-watertight openings (e.g. doors, windows, access hatchways) shall, at the final stage of flooding, be not less than 0.075 m above the damage waterline.
9.3.2.20.2 9.3.3.20.2	Filling of cofferdams with water	N.R.M. The following requirements apply on board vessels in service: Cofferdams shall be fitted with a system for filling with water or inert gas.

Table of supplementary transitional provisions		
Paragraph	Subject	Time limit and comments
9.3.1.92 9.3.2.92	Emergency exit	N.R.M. The following requirements apply on board vessels in service: Spaces the entrances or exits of which are partly or fully immersed in damaged condition shall be provided with an emergency exit not less than 0.075 m above the damage waterline.

1.6.7.4 *Transitional provisions concerning the transport of substances hazardous to the environment or to health*

1.6.7.4.1 *Transitional provisions: vessels*

Single-hull tank vessels in service on 1 January 2009 with a dead weight on 1 January 2007 of less than 1,000 tonnes may continue to transport the substances they were authorized to carry on 31 December 2008 until 31 December 2018.

Supply vessels and oil separator vessels in service on 1 January 2009 with a dead weight on 1 January 2007 of less than 300 tonnes may continue to transport the substances they were authorized to carry on 31 December 2008 until 31 December 2038.

1.6.7.4.2 *Transitional periods applicable to substances*

By way of derogation from Part 3, Table C, the substances listed below may be transported in accordance with the requirements referred to in the following tables until the date specified.

Table 1. Until 31.12.2012 (Deleted)

2. Until 31.12.2015

(1)	(2)	(3a)	(3b)	(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 in %	Relative density at 20 °C	Type of sampling device	Pump room below deck permitted	Temperature class	Explosion group	Anti-explosion protection required	Equipment required	Number of blue cones/lights	Additional requirements/Remarks
1203	MOTOR SPIRIT or GASOLINE or PETROL	3	F1	II	3+N2+ CMR+F	N	2	2		10	97	0,68 - 0,72-10)	3	yes	T3	II A	yes	PP, EP, EX, TOX, A	1	14
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. vp50 > 175 kPa	3	F1	I	3+(N1, N2, N3, CMR, F or S)	N	1	1			97		1	yes	T4 ⁽³⁾	II B ⁽⁴⁾	yes	PP, EX, A	1	14; 27; 29
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. vp50 > 175 kPa	3	F1	I	3+(N1, N2, N3, CMR, F or S)	N	2	2	1	50	97		2	yes	T4 ⁽³⁾	II B ⁽⁴⁾	yes	PP, EX, A	1	14; 27; 29
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. 110 kPa < vp50 ≤ 175 kPa	3	F1	I	3+(N1, N2, N3, CMR, F or S)	N	2	2		50	97		3	yes	T4 ⁽³⁾	II B ⁽⁴⁾	yes	PP, EX, A	1	14; 27; 29
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. 110 kPa < vp50 ≤ 150 kPa	3	F1	I	3+(N1, N2, N3, CMR, F or S)	N	2	2	3	10	97		3	yes	T4 ⁽³⁾	II B ⁽⁴⁾	yes	PP, EX, A	1	14; 27; 29

(Until 31.12.2015)

(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. 110 kPa < vp50 ≤ 175 kPa	3	F1	II	3+(N1, N2, N3, CMR, F or S)	N	2	2		50	97		3	yes	T4 ³⁾	II B ⁴⁾	yes	PP, EX, A	1	14; 27; 29
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. 110 kPa < vp50 ≤ 150 kPa	3	F1	II	3+(N1, N2, N3, CMR, F or S)	N	2	2	3	10	97		3	yes	T4 ³⁾	II B ⁴⁾	yes	PP, EX, A	1	14; 27; 29
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. vp50 ≤ 110 kPa	3	F1	I	3+(N1, N2, N3, CMR, F or S)	N	2	2		10	97		3	yes	T4 ³⁾	II B ⁴⁾	yes	PP, EX, A	1	14; 27; 29
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. vp50 ≤ 110 kPa	3	F1	II	3+(N1, N2, N3, CMR, F or S)	N	2	2		10	97		3	yes	T4 ³⁾	II B ⁴⁾	yes	PP, EX, A	1	14; 27; 29
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S.	3	F1	III	3+(N1, N2, N3, CMR, F or S)	N	3	2			97		3	yes	T4 ³⁾	II B ⁴⁾	yes	PP, EX, A	0	14; 27
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. (NAPHTHA)	3	F1	II	3+N2+CMR+F	N	2	2		50	97	0.735	3	yes	T3	II A	yes	PP, EP, EX, TOX, A	1	14; 29

(Until 31.12.2015)

UN No. or substance identification No.	(1)	Name and description	(2)	Class	(3a)	Classification code	(3b)	Packing group	(4)	Dangers	(5)	Type of tank vessel	(6)	Cargo tank design	(7)	Cargo tank type	(8)	Cargo tank equipment	(9)	Opening pressure of the high-velocity vent valve in kPa	(10)	Maximum degree of filling in %	(11)	Relative density at 20 °C	(12)	Type of sampling device	(13)	Pump room below deck permitted	(14)	Temperature class	(15)	Explosion group	(16)	Anti-explosion protection required	(17)	Equipment required	(18)	Number of blue cones/lights	(19)	Additional requirements/Remarks	(20)
1268		PETROLEUM DISTILLATES; N.O.S or PETROLEUM PRODUCTS, N.O.S. (NAPHTHA)	110 kPa < vp50 ≤ 150 kPa	3	F1		II	3+N2+CMR+F	N	2	2	2	2	2	2	2	2	3	3	10	97	0.735	3	yes	T3	II A	yes	PP, EP, EX, TOX, A	1	14; 29											
1268		PETROLEUM DISTILLATES; N.O.S or PETROLEUM PRODUCTS, N.O.S. (NAPHTHA)	vp50 ≤ 110 kPa	3	F1		II	3+N2+CMR+F	N	2	2	2	2	2	2	2	2	3	3	10	97	0.735	3	yes	T3	II A	yes	PP, EP, EX, TOX, A	1	14; 29											
1268		PETROLEUM DISTILLATES; N.O.S, or PETROLEUM PRODUCTS, N.O.S. (BENZENE HEART CUT) vp50 ≤ 110 kPa		3	F1		II	3+N2+CMR+F	N	2	2	2	2	2	2	2	2	3	3	10	97	0.765	3	yes	T3	II A	yes	PP, EP, EX, TOX, A	1	14; 29											
1987		ALCOHOLS, N.O.S. (CYCLOHEXANOL)		3	F1		III	3+N3+F	N	3	3	3	3	3	3	3	3	4	4		95	0.95	3	yes			no	PP	0	7; 17; 20: +46 °C											
2430		ALKYLPHENOLS, SOLID, N.O.S. (nonylphenol, isomeric mixture, molten)		8	C4		II	8+N1+F	N	3	3	3	3	3	3	3	3	4	4		95	0.95	3	yes			no	PP, EP	0	7; 17; 20: +125°C; 34											
3256		ELEVATED TEMPERATURE LIQUID, FLAMMABLE; N.O.S. with flash-point above 60 °C, at or above its flash-point (Low QI Pitch)		3	F2		III	3+(N2 or N3)+F	N	3	3	3	3	3	3	3	3	4	4		95	1,1-1,3	3	yes	T2	II B	yes	PP, EP, EX, TOX, A	0	7											

(Until 31.12.2015)

UN No. or substance identification No.	(1)	Name and description	(2)	(3a)	Class	(3b)	Classification code	Packing group	(4)	Dangers	(5)	Type of tank vessel	(6)	Cargo tank design	(7)	Cargo tank type	(8)	Cargo tank equipment	(9)	Opening pressure of the high-velocity vent valve in kPa	(10)	Maximum degree of filling in %	(11)	Relative density at 20 °C	(12)	Type of sampling device	(13)	Pump room below deck permitted	(14)	Temperature class	(15)	Explosion group	(16)	Anti-explosion protection required	(17)	Equipment required	(18)	Number of blue cones/lights	(19)	Additional requirements/Remarks	(20)
3257		ELEVATED TEMPERATURE LIQUID, N.O.S. at or above 100 °C and below its flash-point (including molten metals, molten salts, etc.)		9	M9		III	9+(N1, N2, N3, CMR, F or S)	N	4	1	4		95	3	yes																							7; 20; +115°C; 22; 24; 25; 27 *sec 3.2.3.3		
3257		ELEVATED TEMPERATURE LIQUID, N.O.S. at or above 100 °C and below its flash-point (including molten metals, molten salts, etc.)		9	M9		III	9+(N1, N2, N3, CMR, F or S)	N	4	1	4		95	3	yes																							7; 20; +225°C; 22; 24; 27 *sec 3.2.3.3		
3295		HYDROCARBONS, LIQUID, N.O.S. vp50 > 175 kPa		3	F1		I	3+(N1, N2, N3, CMR, F or S)	N	1	1		97	1	yes	T4 ³⁾	II B ⁴⁾	PP, EX, A	1																				14; 27; 29		
3295		HYDROCARBONS, LIQUID, N.O.S. vp50 > 175 kPa		3	F1		I	3+(N1, N2, N3, CMR, F or S)	N	2	2		97	1	yes	T4 ³⁾	II B ⁴⁾	PP, EX, A	1																					14; 27; 29	
3295		HYDROCARBONS, LIQUID, N.O.S. 110 kPa < vp50 < 175 kPa		3	F1		I	3+(N1, N2, N3, CMR, F or S)	N	2	2		97	3	yes	T4 ³⁾	II B ⁴⁾	PP, EX, A	1																					14; 27; 29	
3295		HYDROCARBONS, LIQUID, N.O.S. 110 kPa < vp50 < 150 kPa		3	F1		I	3+(N1, N2, N3, CMR, F or S)	N	2	2		97	3	yes	T4 ³⁾	II B ⁴⁾	PP, EX, A	1																					14; 27; 29	
3295		HYDROCARBONS, LIQUID, N.O.S. 110 kPa < vp50 < 175 kPa		3	F1		II	3+(N1, N2, N3, CMR, F or S)	N	2	2		97	3	yes	T4 ³⁾	II B ⁴⁾	PP, EX, A	1																					14; 27; 29	

(Until 31.12.2015)

UN No. or substance identification No.	(1)	Name and description	(2)	Class	(3a)	Classification code	(3b)	Packing group	(4)	Dangers	(5)	Type of tank vessel	(6)	Cargo tank design	(7)	Cargo tank type	(8)	Cargo tank equipment	(9)	Opening pressure of the high-velocity vent valve in kPa	(10)	Maximum degree of filling in %	(11)	Relative density at 20 °C	(12)	Type of sampling device	(13)	Pump room below deck permitted	(14)	Temperature class	(15)	Explosion group	(16)	Anti-explosion protection required	(17)	Equipment required	(18)	Number of blue cones/lights	(19)	Additional requirements/Remarks	(20)				
3295		HYDROCARBONS, LIQUID, N.O.S. 110 kPa < vp50 < 150 kPa	3	F1	3+(N1, N2, N3, CMR, F or S)	N	2	2	3	10	97		3	yes	T4 ³⁾	II B ⁴⁾	yes	PP, EX, A	1	14; 27; 29					3	yes	T4 ³⁾	II B ⁴⁾	yes	PP, EX, A	1	14; 27; 29													
3295		HYDROCARBONS, LIQUID, N.O.S. vp50 ≤ 110 kPa	3	F1	3+(N1, N2, N3, CMR, F or S)	N	2	2		10	97		3	yes	T4 ³⁾	II B ⁴⁾	yes	PP, EX, A	1	14; 27; 29					3	yes	T4 ³⁾	II B ⁴⁾	yes	PP, EX, A	1	14; 27; 29													
3295		HYDROCARBONS, LIQUID, N.O.S. vp50 ≤ 110 kPa	3	F1	3+(N1, N2, N3, CMR, F or S)	N	3	2		10	97		3	yes	T4 ³⁾	II B ⁴⁾	yes	*	0	14; 27 *see 3.2.3.3					3	yes	T4 ³⁾	II B ⁴⁾	yes																
3295		HYDROCARBONS, LIQUID, N.O.S. (1-octen)	3	F1	3+N2+F	N	2	2		10	97	0.71	3	yes	T3	II B ⁴⁾	yes	PP, EX, A	1	14					3	yes	T1	II A	yes	PP, EX, TOX, A	0	14													
3295		HYDROCARBONS, LIQUID, N.O.S. (POLYCYCLIC AROMATIC HYDROCARBONS MIXTURE)	3	F1	3+CMR+F	N	3	2			97	1.08	3	yes	T1	II A	yes		0	14					3	yes	T1	II A	yes																

(Until 31.12.2015)

3. Until 31.12.2018

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 in %	Relative density at 20 °C	Type of sampling device	Pump room below deck permitted	Temperature class	Explosion group	Anti-explosion protection required	Equipment required	Number of blue cones/lights	Additional requirements/Remarks
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
1202	GAS OIL or DIESEL FUEL or HEATING OIL (LIGHT) (flash-point not more than 60 °C)	3	F1	III	3+(N1, N2, N3, CMR, F)	N	4	2			97	<0,85	3	yes			non	*	0	*see 3.2.3.3
1202	GAS OIL complying with standard EN 590: 2004 or DIESEL FUEL or HEATING OIL (LIGHT) with flash-point as specified in EN 590:2004	3	F1	III	3+N2+F	N	4	2			97	0,82 - 0,85	3	yes			non	PP	0	
1202	GAS OIL or DIESEL FUEL or HEATING OIL (LIGHT) (flash-point more than 60 °C but not more than 100 °C)	3	F1	III	3+(N1, N2, N3, CMR, F or S)	N	4	2			97	<1,1	3	yes			non	*	0	*see 3.2.3.3
1223	KEROSENE	3	F1	III	3+N2+F	N	3	2			97	≤ 0,83	3	yes	T3	II A ⁷⁾	yes	PP, EX, A	0	14
1300	TURPENTINE SUBSTITUTE	3	F1	III	3+N2+F	N	3	2			97	0,78	3	yes	T3	II B ⁴⁾	yes	PP, EX, A	0	
1863	FUEL, AVIATION, TURBINE ENGINE vp50 > 175 kPa	3	F1	I	3+(N1, N2, N3, CMR, F)	N	1	1			97		1	yes	T4 ³⁾	II B ⁴⁾	yes	PP, EX, A	1	14; 29
1863	FUEL, AVIATION, TURBINE ENGINE vp50 > 175 kPa	3	F1	I	3+(N1, N2, N3, CMR, F)	N	2	2	1	50	97		2	yes	T4 ³⁾	II B ⁴⁾	yes	PP, EX, A	1	14; 29
1863	FUEL, AVIATION, TURBINE ENGINE 110 kPa < vp50 ≤ 175 kPa	3	F1	II	3+(N1, N2, N3, CMR, F)	N	2	2		50	97		3	yes	T4 ³⁾	II B ⁴⁾	yes	PP, EX, A	1	14; 29
1863	FUEL, AVIATION, TURBINE ENGINE 110 kPa < vp50 ≤ 150 kPa	3	F1	II	3+(N1, N2, N3, CMR, F)	N	2	2	3	10	97		3	yes	T4 ³⁾	II B ⁴⁾	yes	PP, EX, A	1	14; 29

(Until 31.12.2018)

UN No. or substance identification No.	(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
1863	FUEL, AVIATION, TURBINE ENGINE vp50 ≤ 110 kPa	3	F1	II	3+(N1, N2, N3, CMR, F)	N	2	2			10	97		3	yes	T4 ³⁾	II B ⁴⁾	yes	PP, EX, A	1	14; 29
1863	FUEL, AVIATION, TURBINE ENGINE	3	F1	III	3+(N1, N2, N3, CMR, F)	N	3	2				97		3	yes	T4 ³⁾	II B ⁴⁾	yes	*	0	14 *see 3.2.3.3

(Until 31.12.2018)

1.6.7.5 *Transitional provisions concerning the modification of tank vessels*

1.6.7.5.1 The modification of the cargo area of a vessel in order to achieve a Type N double-hull vessel is admissible until 31 December 2018 under the following conditions:

- (a) The modified or new cargo area shall comply with the provisions of ADN. Transitional provisions under 1.6.7.2.2 may not be applied for the cargo area;
- (b) The vessel parts outside of the cargo area shall comply with the provisions of ADN. Moreover, the following transitional provisions under 1.6.7.2.2 may be applied: 1.2.1, 9.3.3.0.3 (d), 9.3.3.51.3 and 9.3.3.52.4 last sentence;
- (c) If goods which require explosion protection are entered in the list according to 1.16.1.2.5, accommodation and wheelhouses shall be equipped with a fire alarm system according to 9.3.3.40.2.3;
- (d) The application of this sub-section shall be entered in the certificate of approval under No. 12 (Additional observations).

1.6.7.5.2 Modified vessels may continue to be operated beyond 31 December 2018. The time limits stipulated in the applied transitional provisions under 1.6.7.2.2 shall be observed.

1.6.7.6 *Transitional provisions concerning the transport of gases in tank vessels*

Tank vessels in service on 1 January 2011 with a pump room below deck may continue to transport the substances listed in the following table until the renewal of the certificate of approval after 1 January 2045.

UN No. or ID No.	Class and classification code	Name and description
1005	2, 2TC	AMMONIA, ANHYDROUS
1010	2, 2F	1,2-BUTADIENE, STABILIZED
1010	2, 2F	1,3-BUTADIENE, STABILIZED
1010	2, 2F	BUTADIENE STABILIZED or BUTADIENES AND HYDROCARBON MIXTURE, STABILIZED, having a vapour pressure at 70 °C not exceeding 1.1 MPa (11 bar) and a density at 50 °C not lower than 0.525 kg/l
1011	2, 2F	BUTANE
1012	2, 2F	1-BUTYLENE
1020	2,2A	CHLOROPENTAFLUOROETHANE (REFRIGERANT GAS R 115)
1030	2,2F	1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152a)
1033	2,2F	DIMETHYL ETHER
1040	2,2TF	ETHYLENE OXIDE WITH NITROGEN up to a total pressure of 1 MPa (10 bar) at 50 °C
1055	2,2F	ISOBUTYLENE
1063	2,2F	METHYL CHLORIDE (REFRIGERANT GAS R 40)
1077	2,2F	PROPYLENE
1083	2,2F	TRIMETHYLAMINE, ANHYDROUS
1086	2,2F	VINYL CHLORIDE, STABILIZED
1912	2,2F	METHYL CHLORIDE AND METHYLENE CHLORIDE MIXTURE
1965	2,2F	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S., (MIXTURE A)

UN No. or ID No.	Class and classification code	Name and description
1965	2,2F	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S., (MIXTURE A0)
1965	2,2F	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S., (MIXTURE A01)
1965	2,2F	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S., (MIXTURE A02)
1965	2,2F	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S., (MIXTURE A1)
1965	2,2F	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S., (MIXTURE B)
1965	2,2F	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S., (MIXTURE B1)
1965	2,2F	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S., (MIXTURE B2)
1965	2,2F	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S., (MIXTURE C)
1969	2,2F	ISOBUTANE
1978	2,2F	PROPANE
9000		AMMONIA, ANHYDROUS, DEEPLY REFRIGERATED

1.6.8 Transitional provisions concerning training of the crew

The provisions of 7.1.3.15, 7.2.3.15, 8.2.2.3, 8.2.2.4 and 8.2.2.5 concerning the expert on board may be applied until 31 December 2014 in the version applicable on 31 December 2012. The responsible master and the person responsible for the loading or unloading of a barge shall be in possession of a certificate of special knowledge with the entry "The holder of this certificate has participated in an 8-lesson stability training" before 31 December 2019.

The condition for this entry is participation in a basic course required by the Regulations in force after 1 January 2013 or participation in a basic refresher course that, in derogation from 8.2.2.5, comprises 24 lessons of 45 minutes, including eight lessons devoted to the subject of stability.

CHAPTER 1.7

GENERAL PROVISIONS CONCERNING CLASS 7

1.7.1 Scope and application

NOTE 1: *In the event of accidents or incidents during the carriage of radioactive material, emergency provisions, as established by relevant national and/or international organizations, shall be observed to protect persons, property and the environment. Appropriate guidelines for such provisions are contained in "Planning and Preparing for Emergency Response to Transport Accidents Involving Radioactive Material", Safety Standard Series No. TS-G-1.2 (ST-3), IAEA, Vienna (2002).*

NOTE 2: *Emergency procedures shall take into account the formation of other dangerous substances that may result from the reaction between the contents of a consignment and the environment in the event of an accident.*

1.7.1.1 ADN establishes standards of safety which provide an acceptable level of control of the radiation, criticality and thermal hazards to persons, property and the environment that are associated with the carriage of radioactive material. These standards are based on the IAEA Regulations for the Safe Transport of Radioactive Material, 2009 edition, Safety Standards Series No. TS-R-1, IAEA, Vienna (2009). Explanatory material can be found in "Advisory Material for the IAEA Regulations for the Safe Transport of Radioactive Material (2005 Edition)", Safety Standard Series No. TS-G-1.1 (Rev.1), IAEA, Vienna (2008).

1.7.1.2 The objective of ADN is to establish requirements that shall be satisfied to ensure safety and to protect persons, property and the environment from the effects of radiation in the carriage of radioactive material. This protection is achieved by requiring:

- (a) Containment of the radioactive contents;
- (b) Control of external radiation levels;
- (c) Prevention of criticality; and
- (d) Prevention of damage caused by heat.

These requirements are satisfied firstly by applying a graded approach to contents limits for packages and vehicles and to performance standards applied to package designs depending upon the hazard of the radioactive contents. Secondly, they are satisfied by imposing requirements on the design and operation of packages and on the maintenance of packagings, including a consideration of the nature of the radioactive contents. Finally, they are satisfied by requiring administrative controls including, where appropriate, approval by competent authorities.

1.7.1.3 ADN applies to the carriage of radioactive material by inland waterways including carriage which is incidental to the use of the radioactive material. Carriage comprises all operations and conditions associated with and involved in the movement of radioactive material; these include the design, manufacture, maintenance and repair of packaging, and the preparation, consigning, loading, carriage including in-transit storage, unloading and receipt at the final destination of loads of radioactive material and packages. A graded approach is applied to the performance standards in ADN that are characterized by three general severity levels:

- (a) Routine conditions of carriage (incident free);
- (b) Normal conditions of carriage (minor mishaps);

(c) Accident conditions of carriage.

1.7.1.4 The provisions laid down in ADN do not apply to the carriage of:

- (a) Radioactive material that is an integral part of the means of transport;
- (b) Radioactive material moved within an establishment which is subject to appropriate safety regulations in force in the establishment and where the movement does not involve public roads or railways;
- (c) Radioactive material implanted or incorporated into a person or live animal for diagnosis or treatment;
- (d) Radioactive material in consumer products which have received regulatory approval, following their sale to the end user;
- (e) Natural material and ores containing naturally occurring radionuclides which are either in their natural state, or have only been processed for purposes other than for extraction of the radionuclides, and which are not intended to be processed for use of these radionuclides provided the activity concentration of the material does not exceed 10 times the values specified in 2.2.7.2.2.1 (b), or calculated in accordance with 2.2.7.2.2.2 to 2.2.7.2.2.6;
- (f) Non-radioactive solid objects with radioactive substances present on any surfaces in quantities not in excess of the limit set out in the definition for “contamination” in 2.2.7.1.2.

1.7.1.5 *Specific provisions for the carriage of excepted packages*

1.7.1.5.1 Excepted packages which may contain radioactive material in limited quantities, instruments, manufactured articles and empty packagings as specified in 2.2.7.2.4.1 shall be subject only to the following provisions of Parts 5 to 7 of ADR:

- (a) The applicable provisions specified in 5.1.2, 5.1.3.2, 5.1.4, 5.1.5.4, 5.2.1.9 and 7.5.11 CV33 (5.2) of ADR;
- (b) The requirements for excepted packages specified in 6.4.4 of ADR; and
- (c) If the excepted package contains fissile material, one of the fissile exceptions provided by 2.2.7.2.3.5 shall apply and the requirement of 6.4.7.2 of ADR shall be met.

1.7.1.5.2 Excepted packages are subject to the relevant provisions of all other parts of ADN.

1.7.2 Radiation protection programme

1.7.2.1 The carriage of radioactive material shall be subject to a radiation protection programme which shall consist of systematic arrangements aimed at providing adequate consideration of radiation protection measures.

1.7.2.2 Doses to persons shall be below the relevant dose limits. Protection and safety shall be optimized in order that the magnitude of individual doses, the number of persons exposed, and the likelihood of incurring exposure shall be kept as low as reasonably achievable, economic and social factors being taken into account within the restriction that the doses to individuals be subject to dose constraints. A structured and systematic approach shall be

adopted and shall include consideration of the interfaces between carriage and other activities.

1.7.2.3 The nature and extent of the measures to be employed in the programme shall be related to the magnitude and likelihood of radiation exposures. The programme shall incorporate the requirements in 1.7.2.2, 1.7.2.4, 1.7.2.5 and 7.5.11 CV33 (1.1) of ADR. Programme documents shall be available, on request, for inspection by the relevant competent authority.

1.7.2.4 For occupational exposures arising from transport activities, where it is assessed that the effective dose:

(a) is likely to be between 1 mSv and 6 mSv in a year, a dose assessment programme via work place monitoring or individual monitoring shall be conducted;

(b) is likely to exceed 6 mSv in a year, individual monitoring shall be conducted.

When individual monitoring or work place monitoring is conducted, appropriate records shall be kept.

NOTE: For occupational exposures arising from transport activities, where it is assessed that the effective dose is most unlikely to exceed 1mSv in a year, no special work patterns, detailed monitoring, dose assessment programmes or individual record keeping need be required.

1.7.2.5 Workers (see 7.1.4.14.7, NOTE 3) shall be appropriately trained in radiation protection including the precautions to be observed in order to restrict their occupational exposure and the exposure of other persons who might be affected by their actions.

1.7.3 Quality assurance

Quality assurance programmes based on international, national or other standards acceptable to the competent authority shall be established and implemented for the design, manufacture, testing, documentation, use, maintenance and inspection of all special form radioactive material, low dispersible radioactive material and packages and for carriage and in-transit storage operations to ensure compliance with the relevant provisions of ADN. Certification that the design specification has been fully implemented shall be available to the competent authority. The manufacturer, consignor or user shall be prepared to provide facilities for competent authority inspection during manufacture and use and to demonstrate to any cognizant competent authority that:

(a) the manufacturing methods and materials used are in accordance with the approved design specifications; and

(b) all packagings are periodically inspected and, as necessary, repaired and maintained in good condition so that they continue to comply with all relevant requirements and specifications, even after repeated use.

Where competent authority approval is required, such approval shall take into account and be contingent upon the adequacy of the quality assurance programme.

1.7.4 Special arrangement

1.7.4.1 Special arrangement shall mean those provisions, approved by the competent authority, under which consignments which do not satisfy all the requirements of ADN applicable to radioactive material may be transported.

***NOTE:** Special arrangement is not considered to be a temporary derogation in accordance with 1.5.1.*

- 1.7.4.2 Consignments for which conformity with any provision applicable to Class 7 is impracticable shall not be transported except under special arrangement. Provided the competent authority is satisfied that conformity with the Class 7 provisions of ADN is impracticable and that the requisite standards of safety established by ADN have been demonstrated through alternative means the competent authority may approve special arrangement transport operations for single or a planned series of multiple consignments. The overall level of safety in carriage shall be at least equivalent to that which would be provided if all the applicable requirements had been met. For international consignments of this type, multilateral approval shall be required.

1.7.5 Radioactive material possessing other dangerous properties

In addition to the radioactive and fissile properties, any subsidiary risk of the contents of the package, such as explosiveness, flammability, pyrophoricity, chemical toxicity and corrosiveness, shall also be taken into account in the documentation, packing, labelling, marking, placarding, stowage, segregation and carriage, in order to be in compliance with all relevant provisions for dangerous goods of ADN.

1.7.6 Non-compliance

- 1.7.6.1 In the event of a non-compliance with any limit in ADN applicable to radiation level or contamination,
- (a) The consignor shall be informed of the non-compliance
 - (i) by the carrier if the non-compliance is identified during carriage; or
 - (ii) by the consignee if the non-compliance is identified at receipt;
 - (b) The carrier, consignor or consignee, as appropriate shall:
 - (i) take immediate steps to mitigate the consequences of the non-compliance;
 - (ii) investigate the non-compliance and its causes, circumstances and consequences;
 - (iii) take appropriate action to remedy the causes and circumstances that led to the non-compliance and to prevent a recurrence of similar circumstances that led to the non-compliance; and
 - (iv) communicate to the competent authority(ies) on the causes of the non-compliance and on corrective or preventive actions taken or to be taken; and
 - (c) The communication of the non-compliance to the consignor and competent authority(ies), respectively, shall be made as soon as practicable and it shall be immediate whenever an emergency exposure situation has developed or is developing.

CHAPTER 1.8

CHECKS AND OTHER SUPPORT MEASURES TO ENSURE COMPLIANCE WITH SAFETY REQUIREMENTS

1.8.1 Monitoring compliance with requirements

1.8.1.1 *General*

1.8.1.1.1 In accordance with Article 4, paragraph 3 of ADN, Contracting Parties shall ensure that a representative proportion of consignments of dangerous goods carried by inland waterways is subject to monitoring in accordance with the provisions of this Chapter, and including the requirements of 1.10.1.5.

1.8.1.1.2 Participants in the carriage of dangerous goods (see Chapter 1.4) shall, without delay, in the context of their respective obligations, provide the competent authorities and their agents with the necessary information for carrying out the checks.

1.8.1.2 *Monitoring procedure*

1.8.1.2.1 In order to carry out the checks provided for in Article 4, paragraph 3 of ADN, the Contracting Parties shall use the checklist to be developed by the Administrative Committee. A copy of this checklist or a certificate showing the result of the check drawn up by the competent authority which carried it out shall be given to the master of the vessel and presented on request in order to simplify or avoid, where possible, subsequent checks. This paragraph shall not prejudice Contracting Parties' right to carry out specific measures for detailed checks.

1.8.1.2.2 The checks shall be random and shall as far as possible cover an extensive portion of the inland waterway network.

1.8.1.2.3 When exercising the right to monitor, the authorities shall make all possible efforts to avoid unduly detaining or delaying a vessel.

1.8.1.3 *Infringements of the requirements*

Without prejudice to other penalties which may be imposed, vessels in respect of which one or more infringements of the rules on the transport of dangerous goods by inland waterways are established may be detained at a place designated for this purpose by the authorities carrying out the check and required to be brought into conformity before continuing their journey or may be subject to other appropriate measures, depending on the circumstances or the requirements of safety.

1.8.1.4 *Checks in companies and at places of loading and unloading*

1.8.1.4.1 Checks may be carried out at the premises of undertakings, as a preventive measure or where infringements which jeopardize safety in the transport of dangerous goods have been recorded during the voyage.

1.8.1.4.2 The purpose of such checks shall be to ensure that safety conditions for the transport of dangerous goods by inland waterways comply with the relevant laws.

1.8.1.4.3 *Sampling*

Where appropriate and provided that this does not constitute a safety hazard, samples of the goods transported may be taken for examination by laboratories recognized by the competent authority.

1.8.1.4.4 *Cooperation of the competent authorities*

1.8.1.4.4.1 Contracting Parties shall assist one another in order to give proper effect to these requirements.

1.8.1.4.4.2 Serious or repeated infringements jeopardizing the safety of the transport of dangerous goods committed by a foreign vessel or undertaking shall be reported to the competent authority in the Contracting Party where the certificate of approval of the vessel was issued or where the undertaking is established.

1.8.1.4.4.3 The competent authority of the Contracting Party where serious or repeated infringements have been recorded may ask the competent authority of the Contracting Party where the certificate of approval of the vessel was issued or where the undertaking is established for appropriate measures to be taken with regard to the offender or offenders.

1.8.1.4.4.4 The latter competent authority shall notify the competent authorities of the Contracting Party where the infringements were recorded of any measures taken with regard to the offender or offenders.

1.8.2 Administrative assistance during the checking of a foreign vessel

If the findings of a check on a foreign vessel give grounds for believing that serious or repeated infringements have been committed which cannot be detected in the course of that check in the absence of the necessary data, the competent authorities of the Contracting Parties concerned shall assist one another in order to clarify the situation.

1.8.3 Safety adviser

1.8.3.1 Each undertaking, the activities of which include the carriage, or the related packing, loading, filling or unloading, of dangerous goods by inland waterways shall appoint one or more safety advisers, hereinafter referred to as “advisers”, for the carriage of dangerous goods, responsible for helping to prevent the risks inherent in such activities with regard to persons, property and the environment.

1.8.3.2 The competent authorities of the Contracting Parties may provide that these requirements shall not apply to undertakings:

- (a) the activities of which concern:
 - (i) The carriage of dangerous goods fully or partially exempted according to the provisions of 1.7.1.4 or of chapters 3.3, 3.4 or 3.5;
 - (ii) Quantities per transport unit, wagon or container smaller than those referred to in 1.1.3.6 of ADR or RID;
 - (iii) When (ii) above is not relevant, quantities per vessel smaller than those referred to in 1.1.3.6 of these Regulations.
- (b) the main or secondary activities of which are not the carriage or the related loading or unloading of dangerous goods but which occasionally engage in the national carriage

or the related loading or unloading of dangerous goods posing little danger or risk of pollution.

1.8.3.3

The main task of the adviser shall be, under the responsibility of the head of the undertaking, to seek by all appropriate means and by all appropriate action, within the limits of the relevant activities of that undertaking, to facilitate the conduct of those activities in accordance with the requirements applicable and in the safest possible way.

With regard to the undertaking's activities, the adviser has the following duties in particular:

- monitoring compliance with the requirements governing the carriage of dangerous goods;
- advising his undertaking on the carriage of dangerous goods;
- preparing an annual report to the management of his undertaking or a local public authority, as appropriate, on the undertaking's activities in the carriage of dangerous goods. Such annual reports shall be preserved for five years and made available to the national authorities at their request.

The adviser's duties also include monitoring the following practices and procedures relating to the relevant activities of the undertaking:

- the procedures for compliance with the requirements governing the identification of dangerous goods being transported;
- the undertaking's practice in taking account, when purchasing means of transport, of any special requirements in connection with the dangerous goods being transported;
- the procedures for checking the equipment used in connection with the carriage, loading or unloading of dangerous goods;
- the proper training of the undertaking's employees, including on the changes to the Regulations, and the maintenance of records of such training;
- the implementation of proper emergency procedures in the event of any accident or incident that may affect safety during the carriage, loading or unloading of dangerous goods;
- investigating and, where appropriate, preparing reports on serious accidents, incidents or serious infringements recorded during the carriage, loading or unloading of dangerous goods;
- the implementation of appropriate measures to avoid the recurrence of accidents, incidents or serious infringements;
- the account taken of the legal prescriptions and special requirements associated with the carriage of dangerous goods in the choice and use of sub-contractors or third parties;
- verification that employees involved in the carriage, loading or unloading of dangerous goods have detailed operational procedures and instructions,
- the introduction of measures to increase awareness of the risks inherent in the carriage, loading and unloading of dangerous goods;

- the implementation of verification procedures to ensure the presence on board means of transport of the documents and safety equipment which must accompany transport and the compliance of such documents and equipment with the regulations;
- the implementation of verification procedures to ensure compliance with the requirements governing loading and unloading;
- the existence of the security plan indicated in 1.10.3.2.

1.8.3.4 The safety adviser may also be the head of the undertaking, a person with other duties in the undertaking, or a person not directly employed by that undertaking, provided that that person is capable of performing the duties of adviser.

1.8.3.5 Each undertaking concerned shall, on request, inform the competent authority or the body designated for that purpose by each Contracting Party of the identity of its adviser.

1.8.3.6 Whenever an accident affects persons, property or the environment or results in damage to property or the environment during carriage, loading or unloading carried out by the undertaking concerned, the safety adviser shall, after collecting all the relevant information, prepare an accident report to the management of the undertaking or to a local public authority, as appropriate. That report shall not replace any report by the management of the undertaking which might be required under any other international or national legislation.

1.8.3.7 A safety adviser shall hold a vocational training certificate, valid for transport by inland waterways. That certificate shall be issued by the competent authority or the body designated for that purpose by each Contracting Party.

1.8.3.8 To obtain a certificate, a candidate shall undergo training and pass an examination approved by the competent authority of the Contracting Party.

1.8.3.9 The main aims of the training shall be to provide candidates with sufficient knowledge of the risks inherent in the carriage of dangerous goods, of the laws, regulations and administrative provisions applicable to the modes of transport concerned and of the duties listed in 1.8.3.3.

1.8.3.10 The examination shall be organized by the competent authority or by an examining body designated by the competent authority. The examining body shall not be a training provider.

The examining body shall be designated in writing. This approval may be of limited duration and shall be based on the following criteria:

- competence of the examining body;
- specifications of the form of the examinations the examining body is proposing;
- measures intended to ensure that examinations are impartial;
- independence of the body from all natural or legal persons employing safety advisers.

1.8.3.11 The aim of the examination is to ascertain whether candidates possess the necessary level of knowledge to carry out the duties incumbent upon a safety adviser as listed in 1.8.3.3, for the purpose of obtaining the certificate prescribed in subsection 1.8.3.7, and it shall cover at least the following subjects:

- (a) Knowledge of the types of consequences which may be caused by an accident involving dangerous goods and knowledge of the main causes of accidents;

- (b) Requirements under national law, international conventions and agreements, with regard to the following in particular:
- classification of dangerous goods (procedure for classifying solutions and mixtures, structure of the list of substances, classes of dangerous goods and principles for their classification, nature of dangerous goods transported, physical, chemical and toxicological properties of dangerous goods);
 - general packing provisions, provisions for tanks and tank-containers (types, code, marking, construction, initial and periodic inspection and testing);
 - marking and labelling, placarding and orange plates marking (marking and labelling of packages, placing and removal of placards and orange plates);
 - particulars in transport documents (information required);
 - method of consignment and restrictions on dispatch (full load, carriage in bulk, carriage in intermediate bulk containers, carriage in containers, carriage in fixed or demountable tanks);
 - transport of passengers;
 - prohibitions and precautions relating to mixed loading;
 - segregation of goods;
 - limitation of the quantities carried and quantities exempted;
 - handling and stowage (loading and unloading - filling ratios - stowage and segregation);
 - cleaning and/or degassing before loading and after unloading;
 - crews, vocational training;
 - vehicle documents (transport documents, instructions in writing, vessel approval certificate, ADN dangerous goods training certificate, copies of any derogations, other documents);
 - instructions in writing (implementation of the instructions and crew protection equipment);
 - supervision requirements (berthing);
 - traffic regulations and restrictions;
 - operational discharges or accidental leaks of pollutants;
 - requirements relating to equipment for transport (vessel).

1.8.3.12 *Examinations*

1.8.3.12.1 The examination shall consist of a written test which may be supplemented by an oral examination.

1.8.3.12.2 The use in the written test of documentation other than international or national regulations is not permitted.

1.8.3.12.3 Electronic media may be used only if provided by the examining body. There shall be no means of a candidate introducing further data to the electronic media provided; the candidate may only answer to the questions posed.

1.8.3.12.4 The written test shall consist of two parts:

(a) Candidates shall receive a questionnaire. It shall include at least 20 open questions covering at least the subjects mentioned in the list in 1.8.3.11. However, multiple choice questions may be used. In this case, two multiple choice questions count as one open question. Amongst these subjects particular attention shall be paid to the following subjects:

- general preventive and safety measures;
- classification of dangerous goods;
- general packing provisions, including tanks, tank-containers, tank-vehicles, etc.;
- danger markings and labels;
- information in the transport document;
- handling and stowage;
- crew, vocational training;
- vehicle documents and transport certificates;
- instructions in writing;
- requirements concerning equipment for transport by vessel;

(b) Candidates shall undertake a case study in keeping with the duties of the adviser referred to in 1.8.3.3, in order to demonstrate that they have the necessary qualifications to fulfil the task of adviser.

1.8.3.13 The Contracting Parties may decide that candidates who intend working for undertakings specializing in the carriage of certain types of dangerous goods need only be questioned on the substances relating to their activities. These types of goods are:

- Class 1;
- Class 2;
- Class 7;
- Classes 3, 4.1, 4.2, 4.3, 5.1, 5.2, 6.1, 6.2, 8 and 9;

- UN Nos. 1202, 1203, 1223, 3475, and aviation fuel classified under UN Nos. 1268 or 1863.

The certificate prescribed in 1.8.3.7 shall clearly indicate that it is only valid for one type of the dangerous goods referred to in this subsection and on which the adviser has been questioned under the conditions defined in 1.8.3.12.

Certificates of training as safety advisers issued before 1 January 2009 for UN Nos. 1202, 1203 and 1223 are also valid for UN No. 3475 and aviation fuel classified under UN Nos. 1268 or 1863.

1.8.3.14 The competent authority or the examining body shall keep a running list of the questions that have been included in the examination.

1.8.3.15 The certificate prescribed in 1.8.3.7 shall take the form laid down in 1.8.3.18 and shall be recognized by all Contracting Parties.

1.8.3.16 *Validity and renewal of certificates*

1.8.3.16.1 The certificate shall be valid for five years. The period of validity of a certificate shall be extended from the date of its expiry for five years at a time where, during the year before its expiry, its holder has passed an examination. The examination shall be approved by the competent authority.

1.8.3.16.2 The aim of the examination is to ascertain that the holder has the necessary knowledge to carry out the duties set out in 1.8.3.3. The knowledge required is set out in 1.8.3.11 (b) and shall include the amendments to the Regulations introduced since the award of the last certificate. The examination shall be held and supervised on the same basis as in 1.8.3.10 and 1.8.3.12 to 1.8.3.14. However, holders need not undertake the case study specified in 1.8.3.12.4 (b).

1.8.3.17 The requirements set out in 1.8.3.1 to 1.8.3.16 shall be considered to have been fulfilled if the relevant conditions of Council Directive 96/35/EC of 3 June 1996 on the appointment and vocational qualification of safety advisers for the transport of dangerous goods by road, rail and inland waterway¹ and of Directive 2000/18/EC of the European Parliament and of the Council of 17 April 2000 on minimum examination requirements for safety advisers for the transport of dangerous goods by road, rail or inland waterway² are applied.

¹ *Official Journal of the European Communities, No. L145 of 19 June 1996, page 10.*

² *Official Journal of the European Communities, No. L118 of 19 May 2000, page 41.*

1.8.3.18 *Form of certificate*

Certificate of training as safety adviser for the transport of dangerous goods

Certificate No:

Distinguishing sign of the State issuing the certificate:

Surname:

Forename(s):

Date and place of birth:

Nationality:

Signature of holder:

Valid until for undertakings which transport dangerous goods and for undertakings which carry out related loading or unloading:

by road by rail by inland waterway

Issued by:

Date:

Signature:

Extended until:

By:

Date:

Signature:

1.8.4 List of competent authorities and bodies designated by them

The Contracting Parties shall communicate to the secretariat of the United Nations Economic Commission for Europe the addresses of the authorities and bodies designated by them which are competent in accordance with national law to implement ADN, referring in each case to the relevant requirement of ADN and giving the addresses to which the relevant applications should be made.

The secretariat of the United Nations Economic Commission for Europe shall establish a list on the basis of the information received and shall keep it up-to-date. It shall communicate this list and the amendments thereto to the Contracting Parties.

1.8.5 Notifications of occurrences involving dangerous goods

1.8.5.1 If a serious accident or incident takes place during loading, filling, carriage or unloading of dangerous goods on the territory of a Contracting Party, the loader, filler, carrier or consignee, respectively, shall ascertain that a report conforming to the model prescribed in 1.8.5.4 is made to the competent authority of the Contracting Party concerned at the latest one month after the occurrence.

1.8.5.2 The Contracting Party shall in turn, if necessary, make a report to the secretariat of the United Nations Economic Commission for Europe with a view to informing the other Contracting Parties.

1.8.5.3 *An occurrence subject to report* in accordance with 1.8.5.1 has occurred if dangerous goods were released or if there was an imminent risk of loss of product, if personal injury, material or environmental damage occurred, or if the authorities were involved and one or more of the following criteria has/have been met:

Personal injury means an occurrence in which death or injury directly relating to the dangerous goods carried has occurred, and where the injury

- (a) requires intensive medical treatment,
- (b) requires a stay in hospital of at least one day, or
- (c) results in the inability to work for at least three consecutive days.

Loss of product means the release of dangerous goods of:

- (a) Classes 1 or 2 or packing group I or other substances not assigned to a packing group in quantities of 50 kg or 50 litres or more;
- (b) Packing group II in quantities of 333 kg or 333 litres or more; or
- (c) Packing group III in quantities of 1,000 kg or 1,000 litres or more.

The loss of product criterion also applies if there was an imminent risk of loss of product in the above-mentioned quantities. As a rule, this has to be assumed if, owing to structural damage, the means of containment is no longer suitable for further carriage or if, for any other reason, a sufficient level of safety is no longer ensured (e.g. owing to distortion of tanks or containers, overturning of a tank or fire in the immediate vicinity).

If dangerous goods of Class 6.2 are involved, the obligation to report applies without quantity limitation.

In occurrences involving Class 7 material, the criteria for loss of product are:

- (a) Any release of radioactive material from the packages;
- (b) Exposure leading to a breach of the limits set out in the regulations for protection of workers and members of the public against ionizing radiation (Schedule II of IAEA Safety Series No. 115 – "International Basic Safety Standards for Protection Against Ionizing Radiation and for Safety of Radiation Sources"); or
- (c) Where there is reason to believe that there has been a significant degradation in any package safety function (containment, shielding, thermal protection or criticality) that may have rendered the package unsuitable for continued carriage without additional safety measures.

NOTE: See the provisions of 7.1.4.14.7.7 for undeliverable consignments.

Material damage or *environmental damage* means the release of dangerous goods, irrespective of the quantity, where the estimated amount of damage exceeds 50,000 Euros. Damage to any directly involved means of carriage containing dangerous goods and to the modal infrastructure shall not be taken into account for this purpose.

Involvement of authorities means the direct involvement of the authorities or emergency services during the occurrence involving dangerous goods and the evacuation of persons or closure of public traffic routes (roads/railways/inland waterways) for at least three hours owing to the danger posed by the dangerous goods.

If necessary, the competent authority may request further relevant information.

1.8.5.4 *Model report on occurrences during the carriage of dangerous goods*

Report on occurrences during the carriage of dangerous goods in accordance with ADN, section 1.8.5

Report No.:

Carrier/Filler/Consignee/Loader:

Official number of vessel:

Dry cargo vessel (single-hull, double-hull):

Tank vessel (type):

Address:

Contact name: Telephone:

Fax/e-mail:

(The competent authority shall remove this cover sheet before forwarding the report)

1. Mode						
Inland waterway				Official number of vessel/name of vessel (optional)		
2. Date and location of occurrence						
Year: Month: Day: Time:						
<input type="checkbox"/> Port <input type="checkbox"/> Loading/unloading/transshipment facility Location/Country: or <input type="checkbox"/> Free sector Name of sector: Kilometre point: or <input type="checkbox"/> Structure such as bridge or guide wall				Comments concerning description of location:		
3. Conditions of inland waterway						
Water level (reference gauge): Estimated speed through water:						
<input type="checkbox"/> High water <input type="checkbox"/> Low water						
4. Particular weather conditions						
<input type="checkbox"/> Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Thunderstorm <input type="checkbox"/> Storm Temperature: °C						
5. Description of occurrence						
<input type="checkbox"/> Collision with bank, structure or berthing installation <input type="checkbox"/> Collision with another cargo vessel (collision/impact) <input type="checkbox"/> Collision with a passenger vessel (collision/impact) <input type="checkbox"/> Contact with the waterway bed, whether or not vessel has run aground <input type="checkbox"/> Fire <input type="checkbox"/> Explosion <input type="checkbox"/> Leak/Location and extent of damage (with additional description) <input type="checkbox"/> Shipwreck <input type="checkbox"/> Capsizing <input type="checkbox"/> Technical fault (optional) <input type="checkbox"/> Human error (optional) Additional description of occurrence:						
6. Dangerous goods involved						
UN Number ⁽¹⁾ or Identification number	Class	Packing group if known	Estimated quantity of loss of products (kg or l) ⁽²⁾	Means of containment in accordance with ADN, 1.2.1 ⁽³⁾	Means of containment material	Type of failure of means of containment ⁽⁴⁾
⁽¹⁾ For dangerous goods assigned to collective entries to which special provision 274 applies, also the technical name shall be indicated.				⁽²⁾ For class 7, indicate values according to the criteria in 1.8.5.3.		
⁽³⁾ Indicate the appropriate number: 1 Packaging 2 IBC 3 Large packaging 4 Small container 5 Wagon 6 Vehicle 7 Tank-wagon 8 Tank-vehicle 9 Battery-wagon				⁽⁴⁾ Indicate the appropriate number: 1 Loss 2 Fire 3 Explosion 4 Structural failure		

CHAPTER 1.9

TRANSPORT RESTRICTIONS BY THE COMPETENT AUTHORITIES

- 1.9.1 In accordance with Article 6, paragraph 1 of ADN, the entry of dangerous goods into the territory of Contracting Parties may be subject to regulations or prohibitions imposed for reasons other than safety during carriage. Such regulations or prohibitions shall be published in an appropriate form.
- 1.9.2 Subject to the provisions of 1.9.3, a Contracting Party may apply to vessels engaged in the international carriage of dangerous goods by inland waterways on its territory certain additional provisions not included in ADN, provided that those provisions do not conflict with Article 4, paragraph 2 of ADN, and are contained in its domestic legislation applying equally to vessels engaged in the domestic carriage of dangerous goods by inland waterways on the territory of that Contracting Party.
- 1.9.3 Additional provisions falling within the scope of 1.9.2 are as follows:
- (a) Additional safety requirements or restrictions concerning vessels using certain structures such as bridges or tunnels, or vessels entering or leaving ports or other transport terminals;
 - (b) Requirements for vessels to follow prescribed routes to avoid commercial or residential areas, environmentally sensitive areas, industrial zones containing hazardous installations or inland waterways presenting severe physical hazards;
 - (c) Emergency requirements regarding routing or parking of vessels carrying dangerous goods resulting from extreme weather conditions, earthquake, accident, industrial action, civil disorder or military hostilities;
 - (d) Restrictions on movement of vessels carrying dangerous goods on certain days of the week or year.
- 1.9.4 The competent authority of the Contracting Party applying on its territory any additional provisions within the scope of 1.9.3 (a) and (d) above shall notify the secretariat of the United Nations Economic Commission for Europe of the additional provisions, which secretariat shall bring them to the attention of the Contracting Parties.

CHAPTER 1.10

SECURITY PROVISIONS

NOTE: For the purposes of this Chapter, "security" means measures or precautions to be taken to minimise theft or misuse of dangerous goods that may endanger persons, property or the environment.

1.10.1 General provisions

- 1.10.1.1 All persons engaged in the carriage of dangerous goods shall consider the security requirements set out in this Chapter commensurate with their responsibilities.
- 1.10.1.2 Dangerous goods shall only be offered for carriage to carriers that have been appropriately identified.
- 1.10.1.3 Holding areas in trans-shipment zones for dangerous goods shall be secured, well lit and, where possible and appropriate, not accessible to the general public.
- 1.10.1.4 For each crew member of a vessel carrying dangerous goods, means of identification, which includes a photograph, shall be on board during carriage.
- 1.10.1.5 Safety checks in accordance with 1.8.1 shall also concern the implementation of security measures.
- 1.10.1.6 The competent authority shall maintain up-to-date registers of all valid certificates for experts stipulated in 8.2.1 issued by it or by any recognized organization.

1.10.2 Security training

- 1.10.2.1 The training and the refresher training specified in Chapter 1.3 shall also include elements of security awareness. The security refresher training need not be linked to regulatory changes only.
- 1.10.2.2 Security awareness training shall address the nature of security risks, recognising security risks, methods to address and reduce such risks and actions to be taken in the event of a security breach. It shall include awareness of security plans (if appropriate) commensurate with the responsibilities and duties of individuals and their part in implementing security plans.
- 1.10.2.3 Such training shall be provided or verified upon employment in a position involving dangerous goods transport and shall be periodically supplemented with refresher training.
- 1.10.2.4 Records of all security training received shall be kept by the employer and made available to the employee or competent authority, upon request. Records shall be kept by the employer for a period of time established by the competent authority.

1.10.3 Provisions for high consequence dangerous goods

1.10.3.1 Definition of high consequence dangerous goods

1.10.3.1.1 High consequence dangerous goods are those which have the potential for misuse in a terrorist event and which may, as a result, produce serious consequences such as mass casualties, mass destruction or, particularly for Class 7, mass socio-economic disruption.

1.10.3.1.2 High consequence dangerous goods in classes other than Class 7 are those listed in Table 1.10.3.1.2 below and carried in quantities greater than those indicated therein.

Table 1.10.3.1.2: List of high consequence dangerous goods

Class	Division	Substance or article	Quantity		
			Tank or cargo tank (litres) ^c	Bulk ^{*/} (kg) ^d	Goods in packages (kg)
1	1.1	Explosives	a	a	0
	1.2	Explosives	a	a	0
	1.3	Compatibility group C explosives	a	a	0
	1.5	Explosives	0	a	0
1	1.4	Explosives of UN Nos. 0104, 0237, 0255, 0267, 0289, 0361, 0365, 0366, 0440, 0441, 0455, 0456 and 0500	a	a	0
2		Flammable gases (classification codes including only letter F)	3000	a	b
		Toxic gases (classification codes including letter(s) T, TF, TC, TO, TFC or TOC) excluding aerosols	0	a	0
3		Flammable liquids of packing groups I and II	3000	a	b
		Desensitized explosives	0	a	0
4.1		Desensitized explosives	a	a	0
4.2		Packing group I substances	3000	a	b
4.3		Packing group I substances	3000	a	b
5.1		Oxidizing liquids of packing group I	3000	a	b
		Perchlorates, ammonium nitrate, ammonium nitrate fertilisers and ammonium nitrate emulsions or suspensions or gels	3000	3000	b
6.1		Toxic substances of packing group I	0	a	0
6.2		Infectious substances of Category A (UN Nos. 2814 and 2900, except for animal material)	a	0	0
8		Corrosive substances of packing group I	3000	a	b

**/ Bulk means bulk in the vessel, or bulk in a vehicle or a container.*

a Not relevant.

b The provisions of 1.10.3 do not apply, whatever the quantity is.

c A value indicated in this column is applicable only if carriage in tanks is authorized according to chapter 3.2, table A, column (10) or (12) of ADR or RID or if letter "T" is indicated in chapter 3.2, table A, column (8) of ADN. For substances which are not authorized for carriage in tanks, the instruction in this column is not relevant.

d A value indicated in this column is applicable only if carriage in bulk is authorized according to chapter 3.2, table A, column (10) or (17) of ADR or RID, or if letter "B" is indicated in chapter 3.2, table A, column (8) of ADN. For substances which are not authorized for carriage in bulk, the instruction in this column is not relevant.

- 1.10.3.1.3 For dangerous goods of Class 7, high consequence radioactive material is that with an activity equal to or greater than a transport security threshold of 3 000 A₂ per single package (see also 2.2.7.2.2.1) except for the following radionuclides where the transport security threshold is given in Table 1.10.3.1.3 below.

Table 1.10.3.1.3: Transport security thresholds for specific radionuclides

Element	Radionuclide	Transport security threshold (TBq)
Americium	Am-241	0.6
Gold	Au-198	2
Cadmium	Cd-109	200
Caesium	Cs-137	1
Californium	Cf-252	0.2
Curium	Cm-244	0.5
Cobalt	Co-57	7
Cobalt	Co-60	0.3
Iron	Fe-55	8000
Germanium	Ge-68	7
Gadolinium	Gd-153	10
Iridium	Ir-192	0.8
Nickel	Ni-63	600
Palladium	Pd-103	900
Promethium	Pm-147	400
Polonium	Po-210	0.6
Plutonium	Pu-238	0.6
Plutonium	Pu-239	0.6
Radium	Ra-226	0.4
Ruthenium	Ru-106	3
Selenium	Se-75	2
Strontium	Sr-90	10
Thallium	Tl-204	200
Thulium	Tm-170	200
Ytterbium	Yb-169	3

- 1.10.3.1.4 For mixtures of radionuclides, determination of whether or not the transport security threshold has been met or exceeded can be calculated by summing the ratios of activity present for each radionuclide divided by the transport security threshold for that radionuclide. If the sum of the fractions is less than 1, then the radioactivity threshold for the mixture has not been met nor exceeded.

This calculation can be made with the formula:

$$\sum_i \frac{A_i}{T_i} < 1$$

Where:

A_i = activity of radionuclide *i* that is present in a package (TBq)

T_i = transport security threshold for radionuclide *i* (TBq).

1.10.3.1.5 When radioactive material possess subsidiary risks of other classes, the criteria of Table 1.10.3.1.2 shall also be taken into account (see also 1.7.5).

1.10.3.2 Security plans

1.10.3.2.1 Carriers, consignors and other participants specified in 1.4.2 and 1.4.3 engaged in the carriage of high consequence dangerous goods (see Table 1.10.3.1.2) or high consequence radioactive material (see 1.10.3.1.3) shall adopt, implement and comply with a security plan that addresses at least the elements specified in 1.10.3.2.2.

1.10.3.2.2 The security plan shall comprise at least the following elements:

- (a) specific allocation of responsibilities for security to competent and qualified persons with appropriate authority to carry out their responsibilities;
- (b) records of dangerous goods or types of dangerous goods concerned;
- (c) review of current operations and assessment of security risks, including any stops necessary to the transport operation, the keeping of dangerous goods in the vessel, tank or container before, during and after the journey and the intermediate temporary storage of dangerous goods during the course of intermodal transfer or transshipment between units;
- (d) clear statement of measures that are to be taken to reduce security risks, commensurate with the responsibilities and duties of the participant, including:
 - training;
 - security policies (e.g. response to higher threat conditions, new employee/employment verification, etc.);
 - operating practices (e.g. choice/use of routes where known, access to dangerous goods in intermediate temporary storage (as defined in (c)), proximity to vulnerable infrastructure etc.);
 - equipment and resources that are to be used to reduce risks;
- (e) effective and up to date procedures for reporting and dealing with security threats, breaches of security or security incidents;
- (f) procedures for the evaluation and testing of security plans and procedures for periodic review and update of the plans;
- (g) measures to ensure the physical security of transport information contained in the security plan; and
- (h) measures to ensure that the distribution of information relating to the transport operation contained in the security plan is limited to those who need to have it. Such measures shall not preclude the provision of information required elsewhere in ADN.

***NOTE:** Carriers, consignors and consignees should co-operate with each other and with competent authorities to exchange threat information, apply appropriate security measures and respond to security incidents.*

1.10.3.3 Operational or technical measures shall be taken on vessels carrying high consequence dangerous goods (see Table 1.10.3.1.2) or high consequence radioactive material (see 1.10.3.1.3) in order to prevent the improper use of the vessel and of the dangerous goods. The application of these protective measures shall not jeopardize emergency response.

***NOTE:** When appropriate and already fitted, the use of transport telemetry or other tracking methods or devices should be used to monitor the movement of high consequence dangerous goods (see Table 1.10.3.1.2 or 1.10.3.1.3).*

- 1.10.4 Except for Class 7, the requirements of 1.10.1, 1.10.2 and 1.10.3 do not apply when the quantities carried in packages on a vessel do not exceed those referred to in 1.1.3.6.1. In addition the provisions of this Chapter do not apply to the carriage of UN No. 2912 RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I) and UN No. 2913 RADIOACTIVE MATERIAL, SURFACE CONTAMINATED OBJECTS (SCO-I).
- 1.10.5 For radioactive material, the provisions of this Chapter are deemed to be complied with when the provisions of the Convention on Physical Protection of Nuclear Material¹ and the IAEA circular on "The Physical Protection of Nuclear Material and Nuclear Facilities"² are applied.

¹ IAEACIRC/274/Rev.1, IAEA, Vienna (1980).

² IAEACIRC/225/Rev.4 (Corrected), IAEA, Vienna (1999).

CHAPTERS 1.11 to 1.14

(Reserved)

CHAPTER 1.15

RECOGNITION OF CLASSIFICATION SOCIETIES

1.15.1 General

In the event of the conclusion of an international agreement concerning more general regulations or the navigation of vessels on inland waterways and containing provisions relating to the full range of activities of classification societies and their recognition, any provision of this Chapter in contradiction with any of the provisions of the said international agreement would, in the relations among Parties to this Agreement which had become parties to the international agreement and as from the day of the entry into force of the latter, automatically be deleted and replaced ipso facto by the relevant provision of the international agreement. This Chapter would become null and void once the international agreement came into force if all Parties to this Agreement became Parties to the international agreement.

1.15.2 Procedure for the recognition of classification societies

1.15.2.1 A classification society which wishes to be recommended for recognition under this Agreement shall submit its application for recognition, in accordance with the provisions of this Chapter, to the competent authority of a Contracting Party.

The classification society shall prepare the relevant information in accordance with the provisions of this Chapter. It shall produce it in, at least, an official language of the State where the application is submitted and in English.

The Contracting Party shall forward the application to the Administrative Committee unless in its opinion the conditions and criteria referred to in 1.15.3 have manifestly not been met.

1.15.2.2 The Administrative Committee shall appoint a Committee of Experts and determine its composition and its rules of procedure. This Committee of Experts shall consider the proposal; it shall determine whether the classification society meets the criteria set out in 1.15.3 and shall make a recommendation to the Administrative Committee within a period of six months.

1.15.2.3 The Administrative Committee shall examine the report of the experts. It shall decide in accordance with the procedure set out in Article 17, 7(c), within one year maximum, whether or not to recommend to the Contracting Parties that they should recognize the classification society in question. The Administrative Committee shall establish a list of the classification societies recommended for recognition by the Contracting Parties.

1.15.2.4 Each Contracting Party may or may not decide to recognize the classification societies in question, only on the basis of the list referred to in 1.15.2.3. The Contracting Party shall inform the Administrative Committee and the other Contracting Parties of its decision.

The Administrative Committee shall update the list of recognitions issued by Contracting Parties.

1.15.2.5 If a Contracting Party considers that a classification society no longer meets the conditions and criteria set out in 1.15.3, it may submit a proposal to the Administrative Committee for withdrawal from the list of recommended societies. Such a proposal shall be substantiated by convincing evidence of a failure to meet the conditions and criteria.

1.15.2.6 The Administrative Committee shall set up a new Committee of Experts following the procedure set out under 1.15.2.2 which shall report to the Administrative Committee within a

period of six months. The classification society shall be informed and invited by the Committee of Experts to comment on the findings.

1.15.2.7 The Administrative Committee may decide, in case of a failure(s) to meet the conditions and criteria in 1.15.3, that the classification society shall have the opportunity to present a plan to address the identified failure(s) within a deadline of six months and to avoid any reoccurrence or, in accordance with Article 17, 7 (c), to withdraw the name of the society in question from the list of societies recommended for recognition.

1.15.3 Conditions and criteria for the recognition of a classification society applying for recognition under this Agreement

A classification society applying for recognition under this Agreement shall meet all the following conditions and criteria:

1.15.3.1 A classification society shall be able to demonstrate extensive knowledge of and experience in the assessment of the design and construction of inland navigation vessels. The society should have comprehensive rules and regulations for the design, construction and periodical inspection of vessels. These rules and regulations shall be published and continuously updated and improved through research and development programmes.

1.15.3.2 Registers of the vessels classified by the classification society shall be published annually.

1.15.3.3 The classification society shall not be controlled by shipowners or shipbuilders, or by others engaged commercially in the manufacture, fitting out, repair or operation of ships. The classification society shall not be substantially dependent on a single commercial enterprise for its revenue.

1.15.3.4 The headquarters or a branch of the classification society authorized and entitled to give a ruling and to act in all areas incumbent on it under the regulations governing inland navigation shall be located in one of the Contracting Parties.

1.15.3.5 The classification society and its experts shall have a good reputation in inland navigation; the experts shall be able to provide proof of their professional abilities.

1.15.3.6 The classification society:

- shall have sufficient professional staff and engineers for the technical tasks of monitoring and inspection and for the tasks of management, support and research, in proportion to the tasks and the number of vessels classified and sufficient to keep regulations up to date and develop them in the light of quality requirements;
- shall have experts in at least two Contracting Parties.

1.15.3.7 The classification society shall be governed by a code of ethics.

1.15.3.8 The classification society shall have prepared and implemented and shall maintain an effective system of internal quality based on the relevant aspects of internationally recognized quality standards and conforming to the standards EN ISO/IEC 17020:2004 (inspection bodies) and ISO 9001 or EN 29001:1997. The classification society is subject to certification of its quality system by an independent body of auditors recognized by the administration of the State in which it is located.

1.15.4 Obligations of recommended classification societies

- 1.15.4.1 Recommended classification societies shall undertake to cooperate with each other so as to guarantee equivalence from the point of view of safety of their technical standards which are relevant to the implementation of the provisions of the present Agreement.
- 1.15.4.2 They shall exchange experiences in joint meetings at least once a year. They shall report annually to the Safety Committee. The secretariat of the Safety Committee shall be informed of those meetings. The opportunity will be given to Contracting Parties to attend the meetings as observers.
- 1.15.4.3 Recommended classification societies shall undertake to apply the present and future provisions of the Agreement taking into account the date of their entry into force. In response to requests from the competent authority, recommended classification societies shall provide all relevant information regarding their technical requirements.

CHAPTER 1.16

PROCEDURE FOR THE ISSUE OF THE CERTIFICATE OF APPROVAL

1.16.1 Certificate of approval

1.16.1.1 *General*

1.16.1.1.1 Dry cargo vessels carrying dangerous goods in quantities greater than exempted quantities, the vessels referred to in 7.1.2.19.1, tank vessels carrying dangerous goods and the vessels referred to in 7.2.2.19.3 shall be provided with an appropriate certificate of approval.

1.16.1.1.2 The certificate of approval shall be valid for not more than five years, subject to the provisions of 1.16.11.

1.16.1.2 *Format of the certificate of approval, particulars to be included*

1.16.1.2.1 The certificate of approval shall conform to the model 8.6.1.1 or 8.6.1.3 and include the required particulars, as appropriate. It shall include the date of expiry of the period of validity.

1.16.1.2.2 The certificate of approval shall attest that the vessel has been inspected and that its construction and equipment comply with the applicable provisions of this Regulation.

1.16.1.2.3 All particulars for amendments to the certificate of approval provided for in these Regulations and in the other regulations drawn up by mutual agreement by the Contracting Parties may be entered in the certificate by the competent authority.

1.16.1.2.4 The competent authority shall include the following particulars in the certificate of approval of double-hull vessels meeting the additional requirements of 9.1.0.80 to 9.1.0.95 or 9.2.0.80 to 9.2.0.95:

“The vessel meets the additional requirements for double-hull vessels of 9.1.0.80 to 9.1.0.95” or “The vessel meets the additional requirements for double-hull vessels of 9.2.0.80 to 9.2.0.95.”

1.16.1.2.5 For tank vessels, the certificate of approval shall be supplemented by a list of all the dangerous goods accepted for carriage in the tank vessel, drawn up by the recognized classification society which has classified the vessel (vessel substance list). To the extent required for safe carriage, the list shall contain reservations for certain dangerous goods regarding:

- the criteria for strength and stability of the vessel; and
- the compatibility of the accepted dangerous goods with all the construction materials of the vessel, including installations and equipment, which come into contact with the cargo.

Classification societies shall update the vessel substance list at each renewal of the class of a vessel on the basis of the annexed Regulations in force at the time. Classification societies shall inform the owner of the vessel about amendments to Table C of chapter 3.2 which have become relevant in the meantime. If these amendments require an update of the vessel substance list, the owner of the vessel shall request this from a classification society. This updated vessel substance list shall be issued within the period referred to in 1.6.1.1.

The entire vessel substance list shall be withdrawn by the recognized classification society within the period referred to in 1.6.1.1 if, due to amendments to these Regulations or due to changes in classification, goods contained in it are no longer permitted to be carried in the vessel.

The recognized classification society shall without delay transmit a copy of the vessel substance list to the authority responsible for issuing the certificate of approval and without delay inform it about amendments or withdrawal.

NOTE: When the substance list is available electronically, see 5.4.0.2.

1.16.1.2.6 (Deleted)

1.16.1.3 Provisional certificate of approval

1.16.1.3.1 For a vessel which is not provided with a certificate of approval, a provisional certificate of approval of limited duration may be issued in the following cases, subject to the following conditions:

- (a) The vessel complies with the applicable provisions of these Regulations, but the normal certificate of approval could not be issued in time. The provisional certificate of approval shall be valid for an appropriate period but not exceeding three months;
- (b) The vessel does not comply with every applicable provision of these Regulations after sustaining damage. In this case the provisional certificate of approval shall be valid only for a single specified voyage and for a specified cargo. The competent authority may impose additional conditions.

1.16.1.3.2 The provisional certificate of approval shall conform to the model in 8.6.1.2 or 8.6.1.4 or a single model certificate combining a provisional certificate of inspection and the provisional certificate of approval provided that the single model certificate contains the same information as the model in 8.6.1.2 or 8.6.1.4 and is approved by the competent authority.

1.16.2 Issue and recognition of certificates of approval

1.16.2.1 The certificate of approval referred to in 1.16.1 shall be issued by the competent authority of the Contracting Party where the vessel is registered, or in its absence, of the Contracting Party where it has its home port or, in its absence, of the Contracting Party where the owner is domiciled or in its absence, by the competent authority selected by the owner or his representative.

The other Contracting Parties shall recognize such certificates of approval.

The period of validity shall not exceed five years subject to the provisions of 1.16.11.

1.16.2.2 The competent authority of any of the Contracting Parties may request the competent authority of any other Contracting Party to issue a certificate of approval in its stead.

1.16.2.3 The competent authority of any of the Contracting Parties may delegate the authority to issue the certificate of approval to an inspection body as defined in 1.16.4.

1.16.2.4 The provisional certificate of approval referred to in 1.16.1.3 shall be issued by the competent authority of one of the Contracting Parties for the cases and under the conditions referred to in these Regulations.

The other Contracting Parties shall recognize such provisional certificates of approval.

1.16.3 Inspection procedure

1.16.3.1 The competent authority of the Contracting Party shall supervise the inspection of the vessel. Under this procedure, the inspection may be performed by an inspection body designated by the Contracting Party or by a recognized classification society. The inspection body or the recognized classification society shall issue an inspection report certifying that the vessel conforms partially or completely to the provisions of these Regulations.

1.16.3.2 This inspection report shall be drawn up in a language accepted by the competent authority and shall contain all the necessary information to enable the certificate to be drawn up.

1.16.4 Inspection body

1.16.4.1 Inspection bodies shall be subject to recognition by the Contracting Party administration as expert bodies on the construction and inspection of inland navigation vessels and as expert bodies on the transport of dangerous goods by inland waterway. They shall meet the following criteria:

- Compliance by the body with the requirements of impartiality;
- Existence of a structure and personnel that provide objective evidence of the professional ability and experience of the body;
- Compliance with the material contents of standard EN ISO/IEC 17020:2004 supported by detailed inspection procedures.

1.16.4.2 Inspection bodies may be assisted by experts (e.g. an expert in electrical installations) or specialized bodies according to the national provisions applicable (e.g. classification societies).

1.16.4.3 The Administrative Committee shall maintain an up-to-date list of the inspection bodies appointed.

1.16.5 Application for the issue of a certificate of approval

The owner of a vessel, or his representative, who requests a certificate of approval, shall deposit an application with the competent authority referred to in 1.16.2.1. The competent authority shall specify the documents to be submitted to it. In order to obtain a certificate of approval a valid vessel certificate shall accompany the request.

1.16.6 Particulars entered in the certificate of approval and amendments thereto

1.16.6.1 The owner of a vessel, or his representative, shall inform the competent authority of any change in the name of the vessel or change of official number or registration number and shall transmit to it the certificate of approval for amendment.

1.16.6.2 All amendments to the certificate of approval provided for in these Regulations and in the other regulations drawn up by mutual agreement by the Contracting Parties may be entered in the certificate by the competent authority.

1.16.6.3 When the owner of the vessel, or his representative, has the vessel registered in another Contracting Party, he shall request a new certificate of approval from the competent authority of that Contracting Party. The competent authority may issue the new certificate for the remaining period of validity of the existing certificate without making a new inspection

of the vessel, provided that the state and the technical specifications of the vessel have not undergone any modification.

1.16.7 Presentation of the vessel for inspection

1.16.7.1 The owner, or his representative, shall present the vessel for inspection unladen, cleaned and equipped; he shall be required to provide such assistance as may be necessary for the inspection, such as providing a suitable launch and personnel, and uncovering those parts of the hull or installations which are not directly accessible or visible.

1.16.7.2 In the case of a first, special or periodical inspection, the inspection body or the recognized classification society may require a dry-land inspection.

1.16.8 First inspection

If a vessel does not yet have a certificate of approval or if the validity of the certificate of approval expired more than six months ago, the vessel shall undergo a first inspection.

1.16.9 Special inspection

If the vessel's hull or equipment has undergone alterations liable to diminish safety in respect of the carriage of dangerous goods, or has sustained damage affecting such safety, the vessel shall be presented without delay by the owner or his representative for further inspection.

1.16.10 Periodic inspection and renewal of the certificate of approval

1.16.10.1 To renew the certificate of approval, the owner of the vessel, or his representative, shall present the vessel for a periodic inspection. The owner of the vessel or his representative may request an inspection at any time.

1.16.10.2 If the request for a periodic inspection is made during the last year preceding the expiry of the validity of the certificate of approval, the period of validity of the new certificate shall commence when the validity of the preceding certificate of approval expires.

1.16.10.3 A periodic inspection may also be requested during a period of six months after the expiry of the certificate of approval.

1.16.10.4 The competent authority shall establish the period of validity of the new certificate of approval on the basis of the results of the inspection.

1.16.11 Extension of the certificate of approval without an inspection

By derogation from 1.16.10, at the substantiated request of the owner or his representative, the competent authority may grant an extension of the validity of the certificate of approval of not more than one year without an inspection. This extension shall be granted in writing and shall be kept on board the vessel. Such extensions may be granted only once every two validity periods.

1.16.12 Official inspection

1.16.12.1 If the competent authority of a Contracting Party has reason to assume that a vessel which is in its territory may constitute a danger in relation to the transport of dangerous goods, for the persons on board or for shipping or for the environment, it may order an inspection of the vessel in accordance with 1.16.3.

1.16.12.2 When exercising this right to inspect, the authorities will make all possible efforts to avoid unduly detaining or delaying a vessel. Nothing in this Agreement affects rights relating to compensation for undue detention or delay. In any instance of alleged undue detention or delay the burden of proof shall lie with the owner or operator of the vessel.

1.16.13 Withholding and return of the certificate of approval

1.16.13.1 The certificate of approval may be withdrawn if the vessel is not properly maintained or if the vessel's construction or equipment no longer complies with the applicable provisions of these Regulations.

1.16.13.2 The certificate of approval may only be withdrawn by the authority by which it has been issued.

Nevertheless, in the cases referred to in 1.16.2.1 to 1.16.9 above, the competent authority of the State in which the vessel is staying may prohibit its use for the carriage of those dangerous goods for which the certificate is required. For this purpose it may withdraw the certificate until such time as the vessel again complies with the applicable provisions of these Regulations. In that case it shall notify the competent authority which issued the certificate.

1.16.13.3 Notwithstanding 1.16.2.2 above, any competent authority may amend or withdraw the certificate of approval at the request of the vessel's owner, provided that it so notifies the competent authority which issued the certificate.

1.16.13.4 When an inspection body or a classification society observes, in the course of an inspection, that a vessel or its equipment suffers from serious defects in relation to dangerous goods which might jeopardize the safety of the persons on board or the safety of shipping, or constitute a hazard for the environment, it shall immediately notify the competent authority to which it answers with a view to a decision to withhold the certificate.

If this authority which decided to withdraw the certificate is not the authority which issued the certificate, it shall immediately inform the latter and, where necessary, return the certificate to it if it presumes that the defects cannot be eliminated in the near future.

1.16.13.5 When the inspection body or the classification society referred to in 1.16.13.1 above ascertains, by means of a special inspection according to 1.16.9, that these defects have been remedied, the certificate of approval shall be returned by the competent authority to the owner or to his representative.

This inspection may be made at the request of the owner or his representative by another inspection body or another classification society. In this case, the certificate of approval shall be returned through the competent authority to which the inspection body or the classification society answers.

1.16.13.6 When a vessel is finally immobilized or scrapped, the owner shall send the certificate of approval back to the competent authority which issued it.

1.16.14 Duplicate copy

In the event of the loss, theft or destruction of the certificate of approval or when it becomes unusable for other reasons, an application for a duplicate copy, accompanied by appropriate supporting documents, shall be made to the competent authority which issued the certificate.

This authority shall issue a duplicate copy of the certificate of approval, which shall be designated as such.

1.16.15 Register of certificates of approval

- 1.16.15.1 The competent authorities shall assign a serial number to the certificates of approval which they issue. They shall keep a register of all the certificates issued.
- 1.16.15.2 The competent authorities shall keep copies of all the certificates which they have issued, as well as of the associated vessel substance lists of the recognised classification societies and of all amendments, withdrawals, new issuances and declarations of cancellation of these documents.