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REPORT OF THE SESSION*

held in Geneva from 1st to 10 September 2003 and in Bonn from 13 to 17 October 2003

Addendum 6

Annex 1 (cont'd.)

Proposals of amendments of RID/ADR/ADN adopted by the Joint Meeting in 2003 (cont'd.)

Proposals of amendments to Part 6 of RID/ADR/ADN

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PART 6

Chapter 6.1

6.1.3.1 (a) (ii) Replace "6.1.5.3.4 (c)" with "6.1.5.3.5 (c)".

6.1.3.11 In the examples, replace:
"4G/Y145/S/83" with "4G/Y145/S/02"
"1A1/Y1.4/150/83" with "1A1/Y1.4/150/98"
"1A2/Y150/S/83" with "1A2/Y150/S/01"
"4HW/Y136/S/83" with "4HW/Y136/S/98"
"1A2/Y/100/91" with "1A2/Y/100/01"

6.1.3.12 In the examples, replace:
"1A1/Y1.4/150/83 NL/RB/85 RL" with "1A1/Y1.4/150/97 NL/RB/01 RL"
"1A2/Y150/S/83 USA/RB/85 R" with "1A2/Y150/S/99 USA/RB/00 R"

6.1.3.13 In the example, replace:
"1A2T/Y300/S/94" with "1A2T/Y300/S/01"

6.1.4.1.1 Add a NOTE to read as follows:
"NOTE: In the case of carbon steel drums, "suitable" steels are identified in ISO 3573:1999 "Hot rolled carbon steel sheet of commercial and drawing qualities" and ISO 3574:1999 "Cold-reduced carbon steel sheet of commercial and drawing qualities".

For carbon steel drums below 100 litres "suitable" steels in addition to the above standards are also identified in ISO 11949:1995 "Cold-reduced electrolytic tinplate", ISO 11950:1995 "Cold-reduced electrolytic chromium/chromium oxide-coated steel" and ISO 11951:1995 "Cold-reduced blackplate in coil form for the production of tinplate or electrolytic chromium/chromium-oxide coated steel".

6.1.4.8.7 Replace "6.1.5.8" with "6.1.5.7"

6.1.5.1.11 (a) Replace "6.1.5.3.4 (b)" with "6.1.5.3.5 (b)".
(b) Replace "6.1.5.9" with "6.1.5.8".

6.1.5.2.1 In the second sentence, insert "other than bags" after "packagings".
Insert the following new third sentence: "Bags shall be filled to the maximum mass at which they may be used."

6.1.5.2.2 Replace "6.1.5.3.4" with "6.1.5.3.5".

6.4.5.2.6 Amend 6.1.5.2.6 as follows:
"6.1.5.2.6 For high molecular mass polyethylene drums and jerricans in accordance with 6.1.4.8 and if necessary, composite packagings of high molecular mass polyethylene in accordance with 6.1.4.19, conforming to the following specifications:

- relative density at 23° C after thermal conditioning for one hour at 100 °C \geq 0.940, in accordance with ISO Standard 1183,

- melt flow rate at 190° C/21.6 kg load ≤ 12 g/10 min, in accordance with ISO Standard 1133,

and for jerricans in accordance with 6.1.4.8 and, if necessary, for composite packagings in accordance with 6.1.4.19 in medium molecular mass polyethylene meeting to the following specifications:

- relative density at 23 °C after thermal conditioning for one hour at 100 °C ≥ 0.940 , in accordance with ISO Standard 1183,
- melt flow rate at 190 °C/2.16 kg load ≤ 0.5 g/10 min and ≥ 0.1 g/10 min, in accordance with ISO Standard 1133,
- melt flow rate at 190 °C/5 kg load ≤ 3 g/10 min and ≥ 0.5 g/10 min, in accordance with ISO Standard 1133,

chemical compatibility with filling liquids assimilated in accordance with 4.1.1.19 may be verified as follows with standard liquids (see 6.1.6).

The standard liquids are representative for the processes of deterioration on high or medium molecular mass polyethylene, as there are softening through swelling, cracking under stress, molecular degradation and combinations thereof. The sufficient chemical compatibility of the packagings may be verified by storage of the required test samples for three weeks at 40 °C with the appropriate standard liquid(s); where this standard liquid is water, storage in accordance with this procedure is not required.

For the first and last 24 hours of storage, the test samples shall be placed with the closure downwards. However, packagings fitted with a vent shall be so placed on each occasion for five minutes only. After this storage, the test samples shall undergo the tests prescribed in 6.1.5.3 to 6.1.5.6.

The compatibility test for tert-Butyl hydroperoxide with more than 40% peroxide content and peroxyacetic acids of Class 5.2 shall not be carried out using standard liquids. For these substances, sufficient chemical compatibility of the test samples shall be verified during a storage period of six months at ambient temperature with the substances they are intended to carry.

Results of the procedure in accordance with this paragraph from high density, high or medium mass polyethylene packagings can be approved for an equal design type, the internal surface of which is fluorinated."

6.1.5.2.7 Amend 6.1.5.2.7 as follows:

"6.1.5.2.7 For packagings made of high or medium molecular mass polyethylene, as specified in 6.1.5.2.6, which have passed the test in 6.1.5.2.6, filling substances other than those assimilated in accordance with 4.1.1.19 may also be approved. Such approval shall be based on laboratory tests¹ verifying that the effect of such filling substances on the test

¹ *Laboratory tests for the proof of the chemical compatibility of high molecular mass polyethylene according to 6.1.5.2.6 proving that the effect of filling substances (substances, mixtures and preparations) is less than that of the standard liquids set out in 6.1.6 see guidelines in the non-legally binding part of*

specimens is less than that of the appropriate standard liquid(s) taking into account the relevant processes of deterioration. The same conditions as those set out in 4.1.1.19.2 shall apply with respect to relative density and vapour pressure."

- 6.1.5.3.3 Add a new 6.1.5.3.3 to read as follows:
"6.1.5.3.3 Removable head packagings for liquids shall not be dropped until at least 24 hours after filling and closing to allow for any possible gasket relaxation."

Renumber subsequent paragraphs and subparagraphs accordingly.

- 6.1.5.3.5 (former 6.1.5.3.4) Replace the sentence: "For liquids if the test is performed with water:" with "For liquids in single packagings and for inner packagings of combination packagings, if the test is performed with water:"

Add the following NOTE before the table:

NOTE: *The term water includes water/antifreeze solutions with a minimum specific gravity of 0.95 for testing at - 18 °C.*

- 6.1.5.3.6.2 (former 6.1.5.3.5.2) Insert the words "while retaining its containment function," after "closure".

- 6.1.5.7 Delete this paragraph and renumber subsequent paragraphs and subparagraphs accordingly.

- 6.1.6 Amend heading of 6.1.6 as follows:
"6.1.6 Standard liquids for verifying the chemical compatibility testing of high or medium molecular mass polyethylene packagings and IBCs in accordance with 6.1.5.2.6 and 6.5.4.3.5, respectively".

Text of 6.1.6.1 unchanged;
6.1.6.2 deleted (replaced by 4.1.1.19).

- 6.1.6.2 Under Class 6.1, classification code TC1, replace "Cresols" with "Cresols, liquid".
Under Class 8, classification code C1, replace "Phosphoric acid" with "Phosphoric acid, solution".

Chapter 6.2

Delete "certified" in relation to "UN certified" in paragraphs: 6.2.5, 6.2.5.2.1, 6.2.5.2.2, 6.2.5.2.3, 6.2.5.5, 6.2.5.7, 6.2.5.7.1 (a), and 6.2.5.8.

- 6.2.1.1.1 Insert ",including fatigue," after "to withstand all conditions".
Delete the sentence after the four dashes ("Any additional thickness ... of the wall").

- 6.2.1.1.2 Replace "material" with "mass" in the first sentence.
In (b), insert "porous" before "mass".

- 6.2.1.1.3 Renumber the first sentence of this paragraph as 6.2.1.1.5 and amend as follows:
Insert "additional" before "requirements"

- 6.2.1.1.3 (a) Renumber as 6.2.1.1.5.1 and delete "at the initial inspection".
- 6.2.1.1.3 (b) Renumber as 6.2.1.1.5.2 and amend as follows:
2nd sentence: replace "continuous sheathing" with "a jacket".
3rd sentence: replace "sheathing" and "protective sheathing" with "jacket" and amend the end of the sentence to read as follows: "... (1 bar) calculated in accordance with a recognized technical code or a calculated critical collapsing pressure of not less than 200 kPa (2 bar) gauge pressure."
4th sentence: replace "sheathing" with "jacket".
- 6.2.1.1.4 Renumber as 6.2.1.1.3. In the last sentence, insert "toxic liquefied" before "gases".
- 6.2.1.1.4 Insert a new paragraph 6.2.1.1.4 to read as follows:
"6.2.1.1.4 Contact between dissimilar metals which could result in damage by galvanic action shall be avoided."
- 6.2.1.1.5.3 and
6.2.1.1.5.4 Add the following two new paragraphs:
"6.2.1.1.5.3 Closed cryogenic receptacles intended for the carriage of refrigerated liquefied gases having a boiling point below -182 °C at atmospheric pressure shall not include materials which may react with oxygen or oxygen enriched atmospheres in a dangerous manner, when located in parts of the thermal insulation where there is a risk of contact with oxygen or with oxygen enriched liquid.
6.2.1.1.5.4 Closed cryogenic receptacles shall be designed and constructed with suitable lifting and securing arrangements."
- 6.2.1.3.2 e) Replace "4.1.6.4" par "4.1.6.8".
- 6.2.1.3.3 Amend to read as follows:
"6.2.1.3.3 *Additional requirements for closed cryogenic receptacles*
- 6.2.1.3.3.1 Each filling and discharge opening in a closed cryogenic receptacle used for the carriage of flammable refrigerated liquefied gases shall be fitted with at least two mutually independent shut-off devices in series, the first being a stop-valve, the second being a cap or equivalent device.
- 6.2.1.3.3.2 For sections of piping which can be closed at both ends and where liquid product can be trapped, a method of automatic pressure-relief shall be provided to prevent excess pressure build-up within the piping.
- 6.2.1.3.3.3 Each connection on a closed cryogenic receptacle shall be clearly marked to indicate its function (e.g. vapour or liquid phase).
- 6.2.1.3.3.4 Pressure-relief devices
- 6.2.1.3.3.4.1 (existing text of 6.2.1.3.3).

- 6.2.1.3.3.4.2 Closed cryogenic receptacles may, in addition, have a frangible disc in parallel with the spring loaded device(s) in order to meet the requirements of 6.2.1.3.3.5.
- 6.2.1.3.3.4.3 Connections to pressure-relief devices shall be of sufficient size to enable the required discharge to pass unrestricted to the pressure-relief device.
- 6.2.1.3.3.4.4 All pressure-relief device inlets shall under maximum filling conditions be situated in the vapour space of the closed cryogenic receptacle and the devices shall be so arranged as to ensure that the escaping vapour is discharged unrestrictedly.
- 6.2.1.3.3.5 Capacity and setting of pressure-relief devices

***NOTE:** In relation to pressure-relief devices of closed cryogenic receptacles, maximum allowable working pressure (MAWP) means the maximum effective gauge pressure permissible at the top of a loaded closed cryogenic receptacle in its operating position including the highest effective pressure during filling and discharge.*

- 6.2.1.3.3.5.1 The pressure-relief device shall open automatically at a pressure not less than the MAWP and be fully open a pressure equal to 110% of the MAWP. It shall, after discharge, close at a pressure not lower than 10% below the pressure at which discharge starts and shall remain closed at all lower pressures.
- 6.2.1.3.3.5.2 Frangible discs shall be set to rupture at a nominal pressure which is the lower of either the test pressure or 150% of the MAWP.
- 6.2.1.3.3.5.3 In the case of the loss of vacuum in a vacuum-insulated closed cryogenic receptacle the combined capacity of all pressure-relief devices installed shall be sufficient so that the pressure (including accumulation) inside the closed cryogenic receptacle does not exceed 120% of the MAWP.
- 6.2.1.3.3.5.4 The required capacity of the pressure-relief devices shall be calculated in accordance with an established technical code recognized by the competent authority ¹.

- 6.2.1.5.1 Insert ", other than closed cryogenic receptacles," after "New pressure receptacles".

In subparagraph (c), delete "and". The sentence "Inspection of the external and internal conditions of the pressure receptacles" becomes new subparagraph (d).
Rename subsequent subparagraphs accordingly.

In the NOTE under new (g), replace "inspection body" with "competent authority".

In (h), add the following sentence at the end: "In the case of welded pressure receptacles, particular attention shall be paid to the quality of the welds."

In (j), replace "material" with "mass" and add ",if applicable," before "the quantity of solvent".

- 6.2.1.5.2 Renumber existing 6.2.1.5.2 as 6.2.1.5.3 and add the following new paragraph:
"6.2.1.5.2 On an adequate sample of closed cryogenic receptacles, the inspections and tests specified in 6.2.1.5.1 (a), (b), (d), and (f) shall be performed. In addition, welds shall be inspected by radiographic, ultrasonic or another suitable non-destructive test method on a sample of

¹ See for example CGA Publications S-1.2-1995 and S-1.1-2001.

closed cryogenic receptacles according to the applicable design and construction standard. This weld inspection does not apply to the jacket.

Additionally, all closed cryogenic receptacles shall undergo the initial inspections and tests specified in 6.2.1.5.1 (g), (h), and (i), as well as a leakproofness test and a test of the satisfactory operation of the service equipment after assembly."

6.2.1.6.1 Replace "under the supervision of a testing and certifying" with "by a".

In (b), delete "by weighing," and replace "checks of" with "verification of minimum".

In (c), delete "neck".

In **NOTE 2**, replace "and" with "or" before "tubes".

6.2.2 Add the following Note after the Table:

"Persons or bodies identified in standards as having responsibilities in accordance with ADR/RID shall meet the requirements of RID/ADR."

Table:

Replace the sub-heading "cylinders" with "design and construction" and create a new subheading "periodic inspection and test". Standard EN 1251-3:2000 presently under the sub-heading cylinders should be moved in this newly created sub-heading "periodic inspection and test".

Amend as follows:

Add under "for design and construction"

Reference	Title of document	Applicable sub-sections and paragraphs
EN 12257:2002	Transportable gas cylinders – Seamless, hoop wrapped composite cylinders – Specification	6.2.1.1 and 6.2.1.5
EN 12807:2001 (except Annex A)	Transportable refillable brazed steel cylinders for liquefied petroleum gas (LPG) – Design and construction	6.2.1.1 and 6.2.1.5
EN 12205:2001	Transportable gas cylinders – Non refillable metallic gas cylinders	6.2.1.1, 6.2.1.5 and 6.2.1.7
EN 1964-2:2002	Transportable gas cylinders – Specification for the design and construction of refillable transportable seamless steel gas cylinders of capacity from 0,5 litre up to 150 litre – Part 2: Tensile strength ($R_m \max > 1100 \text{ N/mm}^2$)	6.2.1.1 and 6.2.1.5
EN 13293:2002	Transportable gas cylinders – Specification for the design and construction of refillable transportable seamless normalised carbon manganese steel gas cylinders of water capacity up to 0,5 litre for compressed, liquefied and dissolved gases and up to 1 litre for carbon dioxide	6.2.1.1 and 6.2.1.5

Reference	Title of document	Applicable sub-sections and paragraphs
EN 13322-1:2003	Transportable gas cylinders – Refillable welded steel gas cylinders – Design and construction – Part 1: Welded steel	6.2.1.1 and 6.2.1.5
EN 13322-2:2003	Transportable gas cylinders – Refillable welded stainless steel gas cylinders – Design and construction – Part 2: Welded stainless steel	6.2.1.1 and 6.2.1.5
EN 12245:2002	Transportable gas cylinders. Fully wrapped composite cylinders	6.2.1.1 and 6.2.1.5
EN 1975:1999 +A1:2003	Transportable gas cylinders - Specification for the design and construction of refillable transportable seamless aluminium and aluminium alloy gas cylinders of capacity from 0,5 litre up to 150 litre	6.2.1.1 and 6.2.1.5
EN12205:2001	Transportable gas cylinders - Non-refillable metallic gas cylinders	6.2.1.1, 6.2.1.5 and 6.2.1.7
EN 13110:2002	Transportable refillable welded aluminium cylinders for liquefied petroleum gas (LPG). Design and construction	6.2.1.1, 6.2.1.5 and 6.2.1.7
EN 14427:2004	Transportable refillable fully wrapped composite cylinders for liquefied petroleum gases - Design and construction	6.2.1.1, 6.2.1.5 and 2.1.7
EN 14208:2004	Transportable gas cylinders - Specification for welded pressure drums up to 1000 litre capacity for the transport of gases - Design and construction	6.2.1.1, 6.2.1.5 and 6.2.1.7
EN 14140:2003	Transportable refillable welded steel cylinders for Liquefied Petroleum Gas (LPG) - Alternative design and construction	6.2.1.1, 6.2.1.5 and 6.2.1.7
EN 13769:2003	Transportable gas cylinders - Cylinder bundles - Design, manufacture, identification and testing	6.2.1.1, 6.2.1.5 and 6.2.1.7

Add under "*for periodic inspection and test*":

EN 1968:2002 (except Annex B)	Transportable gas cylinders –Periodic inspection and testing of seamless steel gas cylinders (excluding LPG)	6.2.1.6
EN 1802:2002 (except Annex B)	Transportable gas cylinders – Periodic inspection and testing of seamless aluminium gas cylinders	6.2.1.6
EN 12863:2002	Transportable gas cylinders – Periodic inspection and maintenance of dissolved acetylene cylinders <i>NOTE: In this standard "initial inspection" is to be understood as the "first periodic inspection" after final approval of a new acetylene cylinder.</i>	6.2.1.6
EN 1803:2002 (except Annex B)	Transportable gas cylinders – Periodic inspection and testing of welded steel gas cylinders (excluding LPG)	6.2.1.6
EN ISO 11623:2002 (except clause 4)	Transportable gas cylinders – Periodic inspection and testing of composite gas cylinders	6.2.1.6

EN 14189:2003	Transportable gas cylinders - Inspection and maintenance of cylinder valves at time of periodic inspection of gas cylinders	6.2.1.6
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Add under "for closures":

EN 13152:2001	Specifications and testing for liquefied petroleum gas (LPG) – cylinder valves-self closing	6.2.1.1
EN 13153:2001	Specifications and testing for liquefied petroleum gas (LPG) – cylinder valves-manually operated	6.2.1.1

- 6.2.4.1.5 Insert new 6.2.4.1.5 to read:
 "6.2.4.1.5 The internal pressure at 50 °C shall exceed neither two-thirds of the test pressure nor 1.32 MPa (13.2 bar). Aerosols dispensers and small receptacles containing gas shall be so filled that at 50°C the liquid phase does not exceed 95% of their capacity."
- 6.2.4.2 Amend the title to read: "Hydraulic pressure test".
- 6.2.4.3 Renumber existing 6.2.4.3 as 6.2.4.4 and insert new sub-section 6.2.4.3 to read:
"6.2.4.3 Tightness (leakproofness) test"
- 6.2.4.3.1 Each aerosol dispenser and small receptacle containing gas shall satisfy a tightness (leakproofness) test in a hot-water bath.
- 6.2.4.3.2 The temperature of the bath and the duration of the test shall be such that the internal pressure of each receptacle reaches at least 90% of the internal pressure that would be reached at 55°C. However, if the contents are sensitive to heat or if the receptacles are made of a plastics material which softens at this temperature, the temperature of the bath shall be from 20°C to 30°C. In addition, one receptacle out of every 2000 shall be tested at 55 °C.
- 6.2.4.3.3 No leakage or permanent deformation of a receptacle shall occur, except that a plastics receptacle may be deformed through softening provided that it does not leak."
- 6.2.4.4 In 6.2.4.4 (former 6.2.4.3), replace "EN 471:1992" with "EN 471:2003".
 The amendment concerning the title of the standard does not apply to the English text.
- 6.2.5.1.1 Replace "4.1.6.4 (a) to (e)" with "4.1.6.8 (a) to (d)".
- 6.2.5.1.2 In the first sentence, delete "approved", replace "as specified by the competent authority of the country of use" with "6.2.1.3.6.4 and 6.2.1.3.6.5".

Insert the following new second sentence: "Pressure-relief devices shall be designed to prevent the entry of foreign matter, the leakage of gas and the development of any dangerous excess pressure."

In the last sentence of the second paragraph replace "receptacles" with "receptacle itself", before "under normal conditions of carriage."

- 6.2.5.2.1 Amend the end of the sentence before the table as follows: "...and test of UN cylinders, except that inspection requirements related to the conformity assessment system and approval shall be in accordance with 6.2.5.6:"

Add the following standards to the current table:

ISO 11119-1:2002	Gas cylinders of composite construction – Specification and test methods – Part 1: Hoop wrapped composite gas cylinders
ISO 11119-2:2002	Gas cylinders of composite construction – Specification and test methods – Part 2: Fully wrapped fibre reinforced composite gas cylinders with load-sharing metal liners

Add the following **NOTES** at the end of the table:

NOTE 1: *In the above referenced standards composite cylinders shall be designed for unlimited service life.*

NOTE 2: *After the first 15 years of service, composite cylinders manufactured according to these standards, may be approved for extended service by the competent authority which was responsible for the original approval of the cylinders and which will base its decision on the test information supplied by the manufacturer or owner or user."*

- 6.2.5.2.2 Amend the end of the sentence before the table as follows: "...and test of UN tubes, except that inspection requirements related to the conformity assessment system and approval shall be in accordance with 6.2.5.6:"
- 6.2.5.2.3 Amend the end of the sentence before the table as follows: "... and test of UN acetylene cylinders, except that inspection requirements related to the conformity assessment system and approval shall be in accordance with 6.2.5.6:"

6.2.5.5 Add the following standard to the table:

ISO 11623:2002	Transportable gas cylinders – Periodic inspection and testing of composite gas cylinders
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- 6.2.5.6 In the title, insert "for manufacture" after "approval".
- 6.2.5.6.2.1 Replace "6.2.5.7 and 6.2.5.8" with "6.2.5.8 and 6.2.5.9".
- 6.2.5.6.2.4 In (d), Insert "commercial" after "ensure".
- 6.2.5.6.3.1 (i) Insert "and qualification procedures" after " training programmes".
- 6.2.5.7 Insert the following text as new sub-section 6.2.5.7
- "6.2.5.7 Approval system for periodic inspection and test of pressure receptacles**
- 6.2.5.7.1 *Definition*

For the purposes of this section:

"Approval system" means a system for competent authority approval of a body performing periodic inspection and test of pressure receptacles (hereinafter referred to as "periodic inspection and test body"), including approval of that body's quality system.

6.2.5.7.2 *General requirements*

Competent authority

6.2.5.7.2.1 The competent authority shall establish an approval system for the purpose of ensuring that the periodic inspection and test of pressure receptacles conform to the requirements of RID/ADR. In instances where the competent authority that approves a body performing periodic inspection and test of a pressure receptacle is not the competent authority of the country approving the manufacture of the pressure receptacle, the marks of the approval country of periodic inspection and test shall be indicated in the pressure receptacle marking (see 6.2.5.8).

The competent authority of the country of approval for the periodic inspection and test shall supply, upon request, evidence demonstrating compliance to this approval system including the records of the periodic inspection and test to its counterpart in a country of use.

The competent authority of the country of approval may terminate the approval certificate referred to in 6.2.5.7.4.1, upon evidence demonstrating non-compliance with the approval system.

6.2.5.7.2.2 The competent authority may delegate its functions in this approval system, in whole or in part.

6.2.5.7.2.3 The competent authority shall ensure that a current list of approved periodic inspection and test bodies and their identity marks is available.

Periodic inspection and test body

6.2.5.7.2.4 The periodic inspection and test body shall be approved by the competent authority and shall:

- (a) have a staff with an organizational structure, capable, trained, competent, and skilled, to satisfactorily perform its technical functions;
- (b) have access to suitable and adequate facilities and equipment;
- (c) operate in an impartial manner and be free from any influence which could prevent it from doing so;
- (d) ensure commercial confidentiality;
- (e) maintain clear demarcation between actual periodic inspection and test body functions and unrelated functions;
- (f) operate a documented quality system accordance with 6.2.5.7.3;
- (g) apply for approval in accordance with 6.2.5.7.4;
- (h) ensure that the periodic inspections and tests are performed in accordance with 6.2.5.7.5; and

- (i) maintain an effective and appropriate report and record system in accordance with 6.2.5.7.6.

6.2.5.7.3 *Quality system and audit of the periodic inspection and test body*

6.2.5.7.3.1 Quality system

The quality system shall contain all the elements, requirements, and provisions adopted by the periodic inspection and test body. It shall be documented in a systematic and orderly manner in the form of written policies, procedures, and instructions.

The quality system shall include:

- (a) a description of the organizational structure and responsibilities;
- (b) the relevant inspection and test, quality control, quality assurance, and process operation instructions that will be used;
- (c) quality records, such as inspection reports, test data, calibration data and certificates;
- (d) management reviews to ensure the effective operation of the quality system arising from the audits performed in accordance with 6.2.5.7.3.2;
- (e) a process for control of documents and their revision;
- (f) a means for control of non-conforming pressure receptacles; and
- (g) training programmes and qualification procedures for relevant personnel.

6.2.5.7.3.2 Audit

The periodic inspection and test body and its quality system shall be audited in order to determine whether it meets the requirements of RID/ADR to the satisfaction of the competent authority.

An audit shall be conducted as part of the initial approval process (see 6.2.5.7.4.3). An audit may be required as part of the process to modify an approval (see 6.2.5.7.4.6).

Periodic audits shall be conducted, to the satisfaction of the competent authority, to ensure that the periodic inspection and test body continues to meet the requirements of RID/ADR.

The periodic inspection and test body shall be notified of the results of any audit. The notification shall contain the conclusions of the audit and any corrective actions required.

6.2.5.7.3.3 Maintenance of the quality system

The periodic inspection and test body shall maintain the quality system as approved in order that it remains adequate and efficient.

The periodic inspection and test body shall notify the competent authority that approved the quality system, of any intended changes, in accordance with the process for modification of an approval in 6.2.5.7.4.6.

6.2.5.7.4 *Approval process for periodic inspection and test bodies*

Initial approval

6.2.5.7.4.1 A body desiring to perform periodic inspection and test of pressure receptacles in accordance with a pressure receptacle standard and RID/ADR shall apply for, obtain, and retain an Approval Certificate issued by the competent authority.

This written approval shall, on request, be submitted to the competent authority of a country of use.

6.2.5.7.4.2 An application shall be made for each periodic inspection and test body and shall include:

- (a) the name and address of the periodic inspection and test body and, if the application is submitted by an authorized representative, its name and address;
- (b) the address of each facility performing periodic inspection and test;
- (c) the name and title of the person(s) responsible for the quality system;
- (d) the designation of the pressure receptacles, the periodic inspection and test methods, and the relevant pressure receptacle standards met by the quality system;
- (e) documentation on each facility, the equipment, and the quality system as specified under 6.2.5.7.3.1;
- (f) the qualifications and training records of the periodic inspection and test personnel; and
- (g) details of any refusal of approval of a similar application by any other competent authority.

6.2.5.7.4.3 The competent authority shall:

- (a) examine the documentation to verify that the procedures are in accordance with the requirements of the relevant pressure receptacle standards and RID/ADR; and
- (b) conduct an audit in accordance with 6.2.5.7.3.2 to verify that the inspections and tests are carried out as required by the relevant pressure receptacle standards and RID/ADR, to the satisfaction of the competent authority.

6.2.5.7.4.4 After the audit has been carried out with satisfactory results and all applicable requirements of 6.2.5.7.4 have been satisfied, an approval certificate shall be issued. It shall include the name of the periodic inspection and test body, the registered mark, the address of each facility, and the necessary data for identification of its approved activities (e.g. designation of pressure receptacles, periodic inspection and test method and pressure receptacle standards).

- 6.2.5.7.4.5 If the periodic inspection and test body is denied approval, the competent authority shall provide written detailed reasons for such denial.

Modifications to periodic inspection and test body approvals

- 6.2.5.7.4.6 Following approval, the periodic inspection and test body shall notify the issuing competent authority of any modifications to the information submitted under 6.2.5.7.4.2 relating to the initial approval. The modifications shall be evaluated in order to determine whether the requirements of the relevant pressure receptacle standards and RID/ADR will be satisfied. An audit in accordance with 6.2.5.7.3.2 may be required. The competent authority shall accept or reject these modifications in writing, and an amended approval certificate shall be issued as necessary.

- 6.2.5.7.4.7 Upon request, the competent authority shall communicate to any other competent authority, information concerning initial approvals, modifications of approvals, and withdrawn approvals.

- 6.2.5.7.5 *Periodic inspection and test and certification*

The application of the periodic inspection and test marking to a pressure receptacle shall be considered a declaration that the pressure receptacle complies with the applicable pressure receptacle standards and the requirements of RID/ADR. The periodic inspection and test body shall affix the periodic inspection and test marking, including its registered mark, to each approved pressure receptacle (see 6.2.5.8.7).

A record certifying that a pressure receptacle has passed the periodic inspection and test shall be issued by the periodic inspection and test body, before the pressure receptacle is filled.

- 6.2.5.7.6 *Records*

The periodic inspection and test body shall retain records of pressure receptacle periodic inspection and tests (both passed and failed) including the location of the test facility, for not less than 15 years.

The owner of the pressure receptacle shall retain an identical record until the next periodic inspection and test unless the pressure receptacle is permanently removed from service."

Renumber existing 6.2.5.7 and 6.2.5.8 as 6.2.5.8 and 6.2.5.9 respectively.

- 6.2.5.8 (former 6.2.5.7) Amend the title to read: "Marking of refillable UN pressure receptacles".

Amend the first sentence to read as follows: "Refillable UN pressure receptacles shall be marked clearly and legibly with certification, operational and manufacturing marks."

In the third sentence, insert "or corrosion resistant plate welded on the outer jacket of a closed cryogenic receptacle" after "welded collar".

Replace "'UN" mark" with "UN packaging symbol" (twice).

Consequential amendment in 6.2.1.7:

Amend the first sentence to read as follows: "Refillable pressure receptacles shall be marked clearly and legibly with certification, operational and manufacturing marks."

In the third sentence, insert "or corrosion resistant plate welded on the outer jacket of a closed cryogenic receptacle" after "welded collar".

6.2.5.8.1(a) (former 6.2.5.7.1 (a)) Delete "certified".

6.2.5.8.2 (former 6.2.5.7.2) In (g), amend the beginning of the first sentence to read: "the mass of the empty pressure receptacle...". In the third sentence, delete "empty" before "mass".

In (h), add at the end: "or for closed cryogenic receptacles;"

In (i), In the first sentence, delete "intended" and "the transport of". Add the following sentence at the end: "In the case of closed cryogenic receptacles, the maximum allowable working pressure preceded by the letters "MAWP";"

In (j), amend the beginning of the sentence to read: "In the case of pressure receptacles for liquefied gases and refrigerated liquefied gases, the water..." and replace "digits" with "figures", in the first sentence.

In (k) insert "pressure receptacles for" before "UN No. 1001" and replace "material" with "mass" after "porous".

In (l) insert "pressure receptacles for" before "UN No. 3374" and replace "material" with "mass" after "porous".

Consequential amendment in 6.2.1.7.2

In (f), amend the beginning of the first sentence to read: "the mass of the empty pressure receptacle...". In the third sentence, delete "empty" before "mass".

In (g), add at the end: "or for closed cryogenic receptacles;"

In (h), In the first sentence, delete "intended" and "the transport of". Add the following sentence at the end: "In the case of closed cryogenic receptacles, the maximum allowable working pressure preceded by the letters "MAWP";"

In (i), amend the beginning of the sentence to read: "In the case of pressure receptacles for liquefied gases and refrigerated liquefied gases, the water..." and replace "digits" with "figures", in the first sentence.

In (j) insert "pressure receptacles for" before "UN 1001" and replace "material" with "mass" after "porous".

In (k) insert "pressure receptacles for" before "UN 3374" and replace "material" with "mass" after "porous".

6.2.5.8.3 (former 6.2.5.7.3) In (m), add the following sentence at the end: "This mark is not required for closed cryogenic receptacles;"

Consequential amendment in 6.2.1.7.3 (I):

Add "and for closed cryogenic receptacles" at the end.

6.2.5.8.4 (former 6.2.5.7.4) In the first sentence, delete "as shown in the example below:".

In the first indent, replace "6.2.5.7.3" with "6.2.5.8.3".

In the second indent, amend the beginning to read: "The operational marks in 6.2.5.8.2 shall be the middle grouping and the test pressure (f) shall be immediately ...".

Consequential amendment in 6.2.1.7.4:

Amend the beginning of the second indent to read: "The operational marks in 6.2.1.7.2 shall be the middle grouping and the test pressure (e) shall be immediately ...".

In the third indent, replace "6.2.5.7.1" with "6.2.5.8.1".

Add the following sentence immediately before the diagram: "The following is an example of the markings applied to a cylinder.".

6.2.5.8.5 (former 6.2.5.7.5) Insert the following new second sentence: "In the case of closed cryogenic receptacles, such marks may be on a separate plate attached to the outer jacket.".

Consequential amendment in 6.2.1.7.5:

Insert the following new second sentence: "In the case of closed cryogenic receptacles, such marks may be on a separate plate attached to the outer jacket.".

6.2.5.8.6 (former 6.2.5.7.6) Replace current text with the following:
"In addition to the preceding marks, each refillable pressure receptacle that meets the periodic inspection and test requirements of 6.2.5.5 shall be marked indicating:

- (a) The character(s) identifying the country authorizing the body performing the periodic inspection and test. This marking is not required if this body is approved by the competent authority of the country approving manufacture;
- (b) The registered mark of the body authorized by the competent authority for performing periodic inspection and test;
- (c) The date of the periodic inspection and test, the year (two digits) followed by the month (two digits) separated by a slash (i.e. "/"). Four digits may be used to indicate the year.

The above marks shall appear consecutively in the sequence given.".

Consequential amendment for 6.2.1.7.6:

Replace current text with the following:

"In addition to the preceding marks, each refillable pressure receptacle that meets the periodic inspection and test requirements of 6.2.1.6 shall be marked indicating:

- (a) The character(s) identifying the country authorizing the body performing the periodic inspection and test. This marking is not required if this body is approved by the competent authority of the country approving manufacture;
- (b) The registered mark of the body authorized by the competent authority for performing periodic inspection and test;
- (c) The date of the periodic inspection and test, the year (two digits) followed by the month (two digits) separated by a slash (i.e. "/"). Four digits may be used to indicate the year.

The above marks shall appear consecutively in the sequence given."

6.2.5.9 (former 6.2.5.8) Wherever it appears throughout this subsection, replace "UN-non refillable" with "non-refillable UN". Replace "UN" mark" with "UN packaging symbol".

6.2.5.9.1 (former 6.2.5.8.1) Replace "6.2.5.7.1 to 6.2.5.7.3" with "6.2.5.8.1 to 6.2.5.8.3".

6.2.5.9.2 (former 6.2.5.8.2) Replace "6.2.5.7.4" with "6.2.5.8.4". In the NOTE, delete "(see 5.2.2.2.1.2)".

Consequential amendment in 6.2.1.8.2:

In the NOTE, delete "(see 5.2.2.2.1.2)".

Chapter 6.3

6.3.1.2 In the example, replace:
"4G/CLASS 6.2/92" with "4G/CLASS 6.2/01"

Chapter 6.4

Replace "Industrial package Type 1 (Type IP-1)", "Industrial package Type 2 (Type IP-2)" and "Industrial package Type 3 (Type IP-3)" with "Type IP-1 package", "Type IP-2 package" and "Type IP-3 package" respectively, all throughout this chapter.

6.4.6.1 Add the following new first sentence: "Packages designed to contain uranium hexafluoride shall meet the requirements prescribed elsewhere in RID/ADR which pertain to the radioactive and fissile properties of the material."

Amend the beginning of the second sentence to read as follows: "Except as allowed in 6.4.6.4, uranium hexafluoride in quantities of 0.1 kg or more shall also be packaged..."

Delete the current last sentence ("The package shall also meet ... fissile properties of the material.").

6.4.6.2 In (b), insert "free drop" before "test" and in (c), insert "thermal" before "test".

6.4.6.4 Amend (a) to read as follows:

"(a) The packages are designed to international or national standards other than ISO 7195:1993 provided an equivalent level of safety is maintained;"

In (b), insert "of" after "test pressure".

Add the following sentence after the subparagraphs (a) to (c): "In all other respects the requirements specified in 6.4.6.1 to 6.4.6.3 shall be satisfied."

6.4.7.16 (a) Replace "6.4.7.14" with "6.4.7.14 (a)".

6.4.8.5 Replace the existing table with the following one:

Case	Form and location of surface	Insolation for 12 hours per day (W/m ²)
1	Flat surfaces carried horizontally-downward facing	0
2	Flat surfaces carried horizontally-upward facing	800
3	Surfaces carried vertically	200 ^a
4	Other downward facing (not horizontal) surfaces	200 ^a
5	All other surfaces	400 ^a

Note "a" under the table remains unchanged.

6.4.11.1 (b) (i) Amend to read as follows: "of 6.4.7.2 for packages containing fissile material;"

6.4.11.2 (a) Amend the sentence after subparagraphs (i) to (iii) to read as follows:
"Neither beryllium nor deuterium in hydrogenous material enriched in deuterium shall be present in quantities exceeding 1% of the applicable consignment mass limits provided in Table 6.4.11.2;"

6.4.11.5 Replace "packaging" with "package".

6.4.14 Replace "6.4.17.2" with "6.4.17.2 and 6.4.20.2".

6.4.17.2 (b) In the last but one sentence, replace "edges" with "edge".

6.4.20.2 (a) Amend the end of the last but one sentence to read: "...at the top with its edge rounded off to a radius of not more than 6 mm".

6.4.20.4 Amend the end of the last sentence to read: "... as defined in 6.4.14, except that the target surface may be at any orientation as long as the surface is normal to the specimen path."

Chapter 6.5

6.5.2.1.1 Assign paragraph number "6.5.2.1.2" to the list of examples under the heading "Examples of markings for various types of IBC in accordance with (a) to (h) above:" and in the examples, replace:

"11A/Y/02 89"	with	"11A/Y/02 99"
"13H3/Z/03 89"	with	"13H3/Z/03 01"
"31H1/Y/04 89"	with	"31H1/Y/04 99"
"31HA1/Y/05 19"	with	"31HA1/Y/05 01"
"11C/X/01 93"	with	"11C/X/01 02"

6.5.2.1.2 (former examples of 6.5.2.1.1) In the heading, replace "(a) to (h)" with "6.5.2.1.1 (a) to(h)"

6.5.4.2.2 Add a new paragraph 6.5.4.2.2 as follows and renumber the subsequent paragraphs.
"6.5.4.2.2 To prove sufficient chemical compatibility with the contained goods or standard liquids in accordance with 6.5.4.3.3 or 6.5.4.3.5 for rigid plastics IBCs of type 31H2 and for composite IBCs of types 31HH1 and 31HH2, a second IBC can be used when IBCs are designed to be stacked. In such case both IBCs shall be subjected to a preliminary storage."

6.5.4.3.5 to 6.5.4.3.7 Add the following new paragraphs 6.5.4.3.5 to 6.5.4.3.7 and renumber subsequent paragraphs and subparagraphs accordingly:

"6.5.4.3.5 For high molecular mass polyethylene rigid plastics IBCs (types 31H1 and 31H2) in accordance with 6.5.3.3 and composite IBCs (types 31HZ1 and 31HZ2) in accordance with 6.5.3.4, conforming to the following specifications:

- relative density at 23° C after thermal conditioning for one hour at 100 °C ≥ 0.940 , in accordance with ISO Standard 1183,
- melt flow rate at 190 °C/21.6 kg load ≤ 12 g/10 min, in accordance with ISO Standard 1133,

chemical compatibility with filling liquids assimilated in accordance with 4.1.1.19 may be verified as follows with standard liquids (see 6.1.6).

The standard liquids are representative for the processes of deterioration on high or medium molecular mass polyethylene, as there are softening through swelling, cracking under stress, molecular degradation and combinations thereof. The sufficient chemical compatibility of the IBCs may be verified by storage of the required test samples for three weeks at 40 °C with the appropriate standard liquid(s); where this standard liquid is water, storage in accordance with this procedure is not required.

After this storage, the test samples shall undergo the tests prescribed in 6.5.4.4 to 6.5.4.9.

The compatibility test for tert-Butyl hydroperoxide with more than 40% peroxide content and peroxyacetic acids of Class 5.2 shall not be carried out using standard liquids. For these substances, proof of sufficient chemical compatibility of the test samples shall be provided during a storage period of six months at ambient temperature with the substances they are intended to carry.

Results of the procedure in accordance with this paragraph from high density, high mass polyethylene IBCs can be approved for an equal design type, the internal surface of which is fluorinated.

6.5.4.3.6 For IBC design types, made of high molecular mass polyethylene, as specified in 6.5.4.3.5, the chemical compatibility with filling substances may also be verified by laboratory tests² proving that the effect of such filling substances on the test specimens is

² *Laboratory tests for the proof of the chemical compatibility of high molecular mass polyethylene according to 6.1.5.2.6 proving that the effect of filling substances (substances, mixtures and preparations) is less than that of the standard liquids set out in 6.1.6 see guidelines in the non-legally binding part of the RID published by the Central Office for the International Carriage by Rail (printed at the end of Chapter 6.1).*

less than that of the appropriate standard liquid(s) taking into account the relevant processes of deterioration. The same conditions as those set out in 4.1.1.19.2 shall apply with respect to relative density and vapour pressure.

6.5.4.3.7 Replace "3rd" by "3rd^f" in lines 5 and 7 of column "Stacking" and add the following note **f** under the table:

^f *The second IBC in accordance with 6.5.4.2.2 can be used out of the sequential order direct after the preliminary storage.*

6.5.4.6.3 (a) Amend to read as follows:

"(a) The IBC shall be placed on its base on level hard ground and subjected to a uniformly distributed superimposed test load (see 6.5.4.6.4). For rigid plastics IBCs of type 31H2 and composite IBCs of types 31HH1 and 31HH2, a stacking test shall be carried out with the original filling substance or a standard liquid (see 6.1.6) in accordance with 6.5.4.3.3 or 6.5.4.3.5 using the second IBC in accordance with 6.5.4.2.2 after the preliminary storage. IBCs shall be subjected to the test load for a period of at least:"

Chapter 6.6

6.6.3.2 In the examples, replace:

"96/N/PQRS"	with	"01/N/PQRS"
"95/D/ABCD 987"	with	"02/D/ABCD 987"
"06 97/S/1999"	with	"0601/S/1999"

Chapter 6.7

6.7.2 Insert "Class 1 and" before "Classes 3 to 9".

6.7.2.1 In the definition of "*Design pressure*", replace "dynamic" with "static" in b)iii).

In the definition of "*Design temperature range*", insert "the other" before "substances" at the beginning of the second sentence.

In the definition of "*portable tank*" insert "Class 1 and" before "Classes 3 to 9" and delete the words "having a capacity of more than 450 litres" in the first sentence.

Insert the following definitions in alphabetical order:

"*Fine grain steel*" means steel which has a ferritic grain size of 6 or finer when determined in accordance with ASTM E 112-96 or as defined in EN 10028-3, Part 3;

"*Fusible element*" means a non-reclosable pressure relief device that is thermally actuated;

"*Offshore portable tank*" means a portable tank specially designed for repeated use for carriage of dangerous goods to, from and between offshore facilities. An offshore portable tank is designed and constructed in accordance with the guidelines for the approval of containers handled in open seas specified by the International Maritime Organization in document MSC/Circ.860;"

- 6.7.2.2.10 Insert the following text after the second sentence:
- "A shell used for the transport of substances in the solid state (powdery or granular) of packing groups II or III only, which do not liquefy during transport, may be designed for a lower external pressure, subject to the approval of the competent authority.
- In this case, the vacuum valve shall be set to relieve at this lower pressure."
- 6.7.2.12.2 Amend the beginning of the first sentence to read as follows:
- "The combined delivery capacity of the pressure relief system (taking into account the reduction of the flow when the portable tank is fitted with frangible-discs preceding spring-loaded pressure-relief devices or when the spring-loaded pressure-relief devices are provided with a device to prevent the passage of the flame), in condition of complete fire engulfment...".
- 6.7.2.13.1 (e) Replace "of the device" with "of the spring-loaded pressure relief devices, frangible discs or fusible elements".
- 6.7.2.13.2 Insert "spring-loaded" before "pressure-relief devices".
- 6.7.2.19.1, 6.7.3.15.1, 6.7.4.14.1 and
6.7.5.12.1 Replace the reference for the Canadian and German standards, respectively, with the following:
- "National Standard of Canada, CAN/CGSB-43.147-2002, "Construction, Modification, Qualification, Maintenance, and Selection and Use of Means of Containment for the Handling, Offering for Transport or Transporting of Dangerous Goods by Rail", March 2002, published by the Canadian General Standards Board (CGSB).
- Deutsche Bahn AG
DB Systemtechnik, Minden
Verifikation und Versuche, TZF 96.2
Portable tanks, longitudinal impact test"
- 6.7.3.1 In the definition of "*Design pressure*" replace "dynamic" with "static" in b) ii).
- 6.7.5.2.1 Replace "loaded" with "filled" in the first sentence.

Chapter 6.8

- 6.8.2.1.7 Add a new third sentence to read as follows:
- "Shells used for the transport of substances in the solid state (powdery or granular) of packing groups II or III only, which do not liquefy during transport, may be designed for a lower external pressure but not less than 5 kPa (0.05 bar)."
- 6.8.2.2.3 (ADR) Replace the current text with the following:
- "Tanks that are not hermetically closed may be fitted with vacuum valves to avoid an unacceptable negative internal pressure; these vacuum-relief valves shall be set to relieve at a vacuum setting not greater than the vacuum pressure for which the tank has been designed (see 6.8.2.1.7). Hermetically closed tanks may not be fitted with vacuum valves unless otherwise prescribed in the provisions of 6.8.4."

- 6.8.2.2.3 (RID) Replace the current text with the following:
"Tanks that are not hermetically closed may be fitted with vacuum valves or with self-operating ventilation valves to avoid an unacceptable negative internal pressure; these vacuum-relief valves shall be set to relieve at a vacuum setting not greater than the vacuum pressure for which the tank has been designed (see 6.8.2.1.7)."
- 6.8.2.4.2 In the third paragraph, add "at an effective internal pressure, at least equal to the maximum working pressure," before "in accordance with".
- 6.8.2.4.3 In the second paragraph, add "or solids in granular or powdery state" after "carriage of liquids".
- 6.8.2.5.2 (RID) Amend both columns as follows:
Replace the indent before "tank code according to 4.3.4.1.1" with:
"- for the substances according to 4.3.4.1.3, the proper shipping name of the substance(s) accepted for carriage in the tank."
After "tank code according to 4.3.4.1.1", insert a new indent to read as follows:
"- for the other substances than those according to 4.3.4.1.3, all applicable special provisions TC, TE and TA according to 6.8.4."
Delete footnote 13 and renumber subsequent footnotes accordingly..
- 6.8.2.5.2 (ADR) Amend the right column as follows:
Replace the indent before "tank code according to 4.3.4.1.1" with:
"- for the substances according to 4.3.4.1.3, the proper shipping name of the substance(s) accepted for carriage."
After "tank code according to 4.3.4.1.1", insert a new indent to read as follows: "- for the other substances than those according to 4.3.4.1.3, all applicable special provisions TC, TE and TA according to 6.8.4."
Delete footnote 13 and renumber subsequent footnotes accordingly.
- 6.8.2.6
and 6.8.3.6 Add the following Note after the Table:
"NOTE: Persons or bodies identified in standards as having responsibilities in accordance with ADR/RID shall meet the requirements of RID/ADR."
- 6.8.2.6 (RID) Add a new sub-heading before existing entries to read:
"For testing and inspection".

6.8.2.6 (ADR only) Reads as follows:

"The requirements of Chapter 6.8 are considered to have been complied with if the following standards are applied:

Applicable sub-sections and paragraphs	Reference	Title of document
<i>For all tanks</i>		
6.8.2.1	EN 14025:2003	Tanks for the transport of dangerous goods - Metallic pressure tanks - Design and construction
<i>For testing and inspection</i>		
6.8.2.4 6.8.3.4	EN 12972:2001 (with the exception of annexes D and E)	Tanks for transport of dangerous goods - testing, inspection and marking of metallic tanks
<i>For tanks for substances of class 2</i>		
6.8.2.1 (with the exception of 6.8.2.1.17); 6.8.2.4.1 (with the exclusion of the leakproofness test); 6.8.2.5.1, 6.8.3.1 and 6.8.3.5.1	EN 12493:2001 (except Annex C)	Welded steel tanks for liquefied petroleum gas (LPG) – Road tankers – Design and manufacture Note: Road tankers is to be understood in the meaning of "fixed tanks" and "demountable tanks" as per ADR
6.8.3.2 (with the exception of 6.8.3.2.3)	EN 12252:2000	Equipping of LPG road tankers Note: Road tankers is to be understood in the meaning of "fixed tanks" and "demountable tanks" as per ADR
6.8.2.1 (with the exception of 6.8.2.1.17), 6.8.2.4, 6.8.3.1 and 6.8.3.4	EN 13530-2:2002	Cryogenic vessels – Large transportable vacuum insulated vessels – Part 2: Design, fabrication, inspection and testing
6.8.2.1 (with the exception of 6.8.2.1.17, 6.8.2.1.19 and 6.8.2.1.20), 6.8.2.4, 6.8.3.1 and 6.8.3.4	EN 14398-2:2003 (except Table 1)	Cryogenic vessels - Large transportable non-vacuum insulated vessels - Part 2: Design, fabrication, inspection and testing
<i>For tanks intended for the transport of liquid petroleum products and other dangerous substances of Class 3 which have a vapour pressure not exceeding 110 kPa at 50 °C and petrol, and which have no-sub-classification as toxic or corrosive</i>		
6.8.2.1	EN 13094:2004	Tanks for the transport of dangerous goods – Metallic tanks with a working pressure not exceeding 0.5 bar – Design and construction
6.8.2.2 and 6.8.2.4.1	EN 13308: 2002	Tanks for transport of dangerous goods – Service equipment – Non pressure balanced footvalve
6.8.2.2 and 6.8.2.4.1	EN 13314: 2002	Tanks for transport of dangerous goods – Fill hole cover

6.8.2.2 and 6.8.2.4.1	EN 13316: 2002	Tanks for transporting dangerous goods – Service equipment – Pressure balanced footvalve
6.8.2.2 and 6.8.2.4.1	EN 13 317:2002	Tanks for transporting dangerous goods – Service equipment – Manhole cover assembly

6.8.2.6 (RID only)

Add the following standards to the current table:

Applicable sub-sections and paragraphs	Reference	Title of document
<i>For tanks intended for the transport of liquid petroleum products and other dangerous substances of Class 3 which have a vapour pressure not exceeding 110 kPa at 50 °C and petrol, and which have no-sub-classification as toxic or corrosive</i>		
6.8.2.1	EN 13094:2004	Tanks for the transport of dangerous goods – Metallic tanks with a working pressure not exceeding 0.5 bar – Design and construction
<i>For all tanks</i>		
6.8.2.1	EN 14025:2003	Tanks for the transport of dangerous goods - Metallic pressure tanks - Design and construction

6.8.2.7

After "in 6.8.2.6", replace the end of the first sentence with:

"shall be designed, constructed and tested in accordance with the provisions of a technical code providing the same level of safety and recognised by the competent authority."

Add a new sentence after the second paragraph:

"For testing, inspection and marking, the applicable standard as referred to in 6.8.2.6 may also be used."

6.8.3.2

Insert the following new paragraphs:

"6.8.3.2.18

Service and structural equipment shall be configured or designed to prevent damage that could result in the release of the pressure receptacle contents during normal conditions of handling and carriage. When the connection between the frame of the battery-vehicle/wagon or MEGC and the elements allows relative movement between the sub-assemblies, the equipment shall be so fastened as to permit such movement without damage to working parts. Manifold piping leading to shut-off valves shall be sufficiently flexible to protect the valves and the piping from shearing, or releasing the pressure receptacle contents. Manifold piping leading to shut-off valves shall be sufficiently flexible to protect the valves and the piping from shearing, or releasing the pressure receptacle contents. The filling and discharge devices (including flanges or threaded plugs) and any protective caps shall be capable of being secured against unintended opening.

6.8.3.2.19

In order to avoid any loss of content in the event of damage, the manifolds, the discharge fittings (pipe sockets, shut-off devices), and the stop-valves shall be protected or arranged from being wrenched off by external forces or designed to withstand them."

Re-number existing paragraphs 6.8.3.2.18 to 6.8.3.2.26 as 6.8.3.2.20 to 6.8.3.2.28

6.8.3.4.13 Replace "6.2.1.5" with "6.2.1.6".

6.8.3.5.11 (ADR only) In right column, replace the fifth indent with the two following indents:
 "- the tank code according to the certificate of approval (see 6.8.2.3.1) with the actual test pressure of the MEGC;
 - the proper shipping name of the gases, and in addition for gases classified under an n.o.s. entry, the technical name¹⁹ of the gases for whose carriage the MEGC is used."

6.8.3.6 (ADR only) Reads as follows:

"The requirements of Chapter 6.8 are considered to have been complied with if the following standard is applied:

Applicable sub-sections and paragraphs	Reference	Title of document
6.8.3.1.4/5, 6.8.3.2.18-26, 6.8.3.4.10/11/12 and 6.8.3.5.10/11/12/13	EN 13807: 2003	Transportable gas cylinders - Battery vehicles - Design, manufacture, identification and testing

6.8.4 b) TE6: Amend as follows:
 "Tanks may be equipped with a device of a design which precludes its obstruction by the substance carried and which prevents leakage and the build-up of excess overpressure or underpressure inside the shell."

TE10: Replace "solidified ammonium nitrate" with "the solidified substance".

TE14 : Delete the second sentence.

TE15 : Add at the end :
 " For shells for the transport of substances in the solid state (powdery or granular) of packing groups II or III only, which do not liquefy during transport, the negative pressure may be reduced to not less than 5 kPa (0.05 bar)."

Add the new special provision TE23:

"TE23 Tanks may be equipped with a device of a design which precludes its obstruction by the substance carried and which prevents leakage and the build-up of excess overpressure or underpressure inside the shell."

Add the new special provision TE24:

¹⁹ *Instead of the proper shipping name of the n.o.s. entry followed by the technical name, the use of one of the following names is permitted:*

- *for UN No. 1078 refrigerant gas, n.o.s: mixture F1, mixture F2, mixture F3;*
- *for UN No. 1060 methylacetylene and propadiene mixtures, stabilized: mixture P1, mixture P2;*
- *for UN No. 1965 hydrocarbon gas mixture, liquefied, n.o.s: mixture A, mixture A01, mixture A02, mixture A0, mixture A1, mixture B1, mixture B2, mixture B, mixture C.*

The names customary in the trade and mentioned in 2.2.2.3, Classification code 2F, UN No. 1965, Note 1 may be used only as a complement.

"TE24 If tanks, intended for the carriage and handling of bitumen, are equipped with a spray bar at the end of the discharge pipe, the closing device, as required by 6.8.2.2.2, may be replaced by a shut off valve, situated on the discharge pipe and preceding the spray bar."

6.8.4 c) Add the new special provision TA3:

"TA3 This substance may be carried only in tanks with the tank code LGAV(+) or SGAV(+); the hierarchy in 4.3.4.1.2 is not applicable."

6.8.5.1.1 a) The second indent is amended to read as follows:

"- UN Nos. 1366, 1370, 1380, 2005, 2445, 2845, 2870, 3051, 3052, 3053, 3076, 3194, 3391 to 3394 and 3433 of Class 4.2; and"

Chapter 6.9

6.9.5.2 Add:

"In addition, the inspection in accordance with 6.8.2.4.3 shall include an examination of the internal condition of the shell."

Chapter 6.10

6.10.3.6 Delete "allowed" before "working pressure" (twice).

6.10.3.8 Paragraphs (c) and (f) (iii), delete "allowed" before "working pressure".

6.10.3.9 Reads as follows:

"The shells of vacuum-operated waste tanks shall be fitted with a safety valve preceded by a bursting disc.

The valve shall be capable of opening automatically at a pressure between 0.9 and 1.0 times the test pressure of the tank to which it is fitted. The use of dead weight or counterweight valves is prohibited.

The bursting disc shall burst at the earliest when the initial opening pressure of the valve is reached and at the latest when this pressure reaches the test pressure of the tank to which it is fitted.

Safety devices shall be of such a type as to resist dynamic stresses, including liquid surge.

The space between the bursting disc and the safety valve shall be provided with a pressure gauge or suitable tell-tale indicator for the detection of disc rupture, pinholing or leakage which could cause a malfunction of the safety valve."

6.10.4 Reads as follows:

"Vacuum-operated waste tanks shall be subject (ADR only: every three years for fixed tanks or demountable tanks and at least) every two and a half years for tank-containers and tank swap bodies to an examination of the internal condition in addition to the tests according to 6.8.2.4.3."

Chapter 6.11

Add a new chapter 6.11 as follows:

"CHAPTER 6.11

REQUIREMENTS FOR THE DESIGN, CONSTRUCTION, INSPECTION AND TESTING OF BULK CONTAINERS

6.11.1 Definitions

For the purposes of this section:

"Closed bulk container" means a totally closed bulk container having a rigid roof, sidewalls, end walls and floor (including hopper-type bottoms). The term includes bulk containers with an opening roof, side or end wall that can be closed during carriage. Closed bulk containers may be equipped with openings to allow for the exchange of vapours and gases with air and which prevent under normal conditions of carriage the release of solid contents as well as the penetration of rain and splash water;

"Sheeted bulk container" means an open top bulk container with rigid bottom (including hopper-type bottom), side and end walls and a non-rigid covering;

6.11.2 Application and general requirements

6.11.2.1 Bulk containers and their service and structural equipment shall be designed and constructed to withstand, without loss of contents, the internal pressure of the contents and the stresses of normal handling and carriage.

6.11.2.2 Where a discharge valve is fitted, it shall be capable of being made secure in the closed position and the whole discharge system shall be suitably protected from damage. Valves having lever closures shall be able to be secured against unintended opening and the open or closed position shall be readily apparent.

6.11.2.3 *Code for designating types of bulk container*

The following table indicates the codes to be used for designating types of bulk containers:

Types of bulk containers	Code
Sheeted bulk container	BK1
Closed bulk container	BK2

6.11.2.4 In order to take account of progress in science and technology, the use of alternative arrangements which offer at least equivalent safety as provided by the requirements of this chapter may be considered by the competent authority.

6.11.3 Requirements for the design, construction, inspection and testing of containers conforming to the CSC used as bulk containers

6.11.3.1 *Design and construction requirements*

6.11.3.1.1 The general design and construction requirements of this sub-section are deemed to be met if the bulk container complies with the requirements of ISO 1496-4:1991 "Series 1 Freight containers- Specification and testing – Part 4: Non pressurized containers for dry bulk" and the container is siftproof.

6.11.3.1.2 Containers designed and tested in accordance with ISO 1496-1:1990 "Series 1 Freight containers- Specification and testing - Part 1: General cargo containers for general purposes" shall be equipped with operational equipment which is, including its connection to the container, designed to strengthen the end walls and to improve the longitudinal restraint as necessary to comply with the test requirements of ISO 1496-4:1991 as relevant.

6.11.3.1.3 Bulk containers shall be siftproof. Where a liner is used to make the container siftproof it shall be made of a suitable material. The strength of material used for, and the construction of, the liner shall be appropriate to the capacity of the container and its intended use. Joins and closures of the liner shall withstand pressures and impacts liable to occur under normal conditions of handling and transport. For ventilated bulk containers any liner shall not impair the operation of ventilating devices.

6.11.3.1.4 The operational equipment of bulk containers designed to be emptied by tilting shall be capable of withstanding the total filling mass in the tilted orientation.

6.11.3.1.5 Any movable roof or side or end wall or roof section shall be fitted with locking devices with securing devices designed to show the locked state to an observer at ground level.

6.11.3.2 *Service equipment*

6.11.3.2.1 Filling and discharge devices shall be so constructed and arranged as to be protected against the risk of being wrenched off or damaged during carriage and handling. The filling and discharge devices shall be capable of being secured against unintended opening. The open and closed position and direction of closure shall be clearly indicated.

6.11.3.2.2 Seals of openings shall be so arranged as to avoid any damage by the operation, filling and emptying of the bulk container.

6.11.3.2.3 Where ventilation is required bulk containers shall be equipped with means of air exchange, either by natural convection, e.g. by openings, or active elements, e.g. fans. The ventilation shall be designed to prevent negative pressures in the container at all times. Ventilating elements of bulk containers for the carriage of flammable substances or substances emitting flammable gases or vapours shall be designed so as not to be a source of ignition.

6.11.3.3 *Inspection and testing*

6.11.3.3.1 Containers used, maintained and qualified as bulk containers in accordance with the requirements of this section shall be tested and approved in accordance with the CSC.

6.11.3.3.2 Containers used and qualified as bulk containers shall be inspected periodically according to the CSC.

6.11.3.4 *Marking*

6.11.3.4.1 Containers used as bulk containers shall be marked with a Safety Approval Plate in accordance with the CSC.

6.11.4 Requirements for the design, construction and approval of bulk containers other than containers conforming to the CSC

NOTE: When containers conforming to the provisions of this section are used for the carriage of solids in bulk, the following statement shall be shown on the transport document:

"Bulk container BK(x) approved by the competent authority of". (see 5.4.1.1.17)".

6.11.4.1 Bulk containers covered in this section include skips, offshore bulk containers, bulk bins, swap bodies, trough shaped containers, roller containers, and load compartments of wagons/vehicles.

NOTA 1: These bulk containers also include containers conforming to the UIC leaflets 590, 591 and 592-2 to 592-4 as mentioned in 7.1.3 which do not conform to the CSC.

6.11.4.2 These bulk containers shall be designed and constructed so as to be strong enough to withstand the shocks and loadings normally encountered during carriage including, as applicable, transshipment between modes of transport.

6.11.4.3 *(Reserved)*

6.11.4.4 These bulk containers shall be approved by the competent authority and the approval shall include the code for designating types of bulk containers in accordance with 6.11.2.3 and the requirements for inspection and testing as appropriate.

6.11.4.5 Where it is necessary to use a liner in order to retain the dangerous goods it shall meet the provisions of 6.11.3.1.3."
