

Australian Code for the Transport of Dangerous Goods by Road & Rail: key changes between edition 7.7 and edition 7.8

Edition 7.8 of the *Australian Code for the Transport of Dangerous Goods by Road & Rail* (the Code) includes UN and Australian based changes.

Below is a summary of the substantive changes from edition 7.7 of the Code along with a high level overview of the drivers for the change and expected impacts.

GENERAL - Throughout

- Inclusion of UN 22 amendments, including new Chapter 6.9 for fibre-reinforced plastics portable tanks.
- Inclusion of UN 21 Corrigendum
- Extensive minor amendments aimed at correcting typographical and translation errors that have occurred when incorporating past UN amendments
- Update of terminology, particularly in relation to pressure vessels and their components.
- Update of references, definitions, etc., as relevant

DEFINITIONS – 1.2.1

Problem

The MSI defines terms that are used for the purpose of requirements relating to the transport of dangerous goods. Several of these terms are fundamental to the requirements in both the MSI and the Australian Code for the transport of dangerous goods by road and rail (ADG Code). The primary requirements and principles in the ADG Code are a reproduction of international requirements, as specified in the United National Model Regulations (UN MR). To ensure the requirements in the ADG Code remain aligned to international requirements and can be applied as intended, it is essential that the terms taken from the UN MR remain as written in the UN MR. There are several instances where the ADG Code defines a UN MR derived term differently, but no action has been taken to identify or address any flow on implications to the requirements.

Additionally, the original policy was to list all terms in the ADG Code, not defined in the MSI, as a single alphabetical list in clause 1.2.1.1 of the Code, while all MSI terms would each be listed separately in the ADG Code and provided their own clause number. Overtime, this policy has not been followed and the definitions have become intermingled, making it difficult to locate a given definition.

Action Taken

1. Definitions that have been taken from the UN MR have been re written to remain faithful to the source definition.
2. All definitions, whether also in the MSI or not, have been collated as a single alphabetical list under clause 1.2.1 of the ADG Code. Definitions that are also defined in the MSI are identified with an asterisk *.

FURTHER EXEMPTION FOR VERY SMALL CONSIGNMENTS – 1.1.1.2

Problem

Provision 1.1.1.2(3) (MSI Reg 1.1.6(2)) provides an exemption from all requirements of the ADG Code for very small consignments, where the aggregate quantity of the consignment is no more than the quantities specified in Table 1.1.1.2. Consignments exempted under Table 1.1.1.2 are exempt from **all** requirements of the ADG Code.

The exempted quantities in the Table were assigned at the commencement of ADG 7. In the time since the table was first introduced, there have been significant changes to both the UN Model Regulations and the ADG Code. These changes include, among other matters, the introduction of concessions for dangerous goods packed in limited quantities and the introduction of new UN entries for Lithium batteries. Table 1.1.1.2 has not been updated to reflect these changes, resulting in several deficiencies and conflicts between the current table and other requirements in the Code. In addition, the table lacks clarity for classes/divisions that do not have packing groups assigned.

Action taken

In order to resolve the identified deficiencies and conflicts, while continuing to allow industry to benefit from the exemptions for very small quantities, clause 1.1.1.2(3) and Table 1.1.1.2 have been amended to:

1. Remove the conflict with Chapter 3.4 of the Code by excluding dangerous goods with an LQ value of '0' in column 7a of the Dangerous Goods List.
2. Remove the column in Table 1.1.1.2 for Division 4.2. Division 4.2 substances are not permitted to be transported as LQ so the column is redundant.
3. Update the quantities for Division 5.2 to distinguish between organic peroxides type B or C and organic peroxides D, E or F, and liquids vs solids, in line with the UN Guiding Principles for assigning LQ limits.
4. Ensure these exemptions are not used to allow the transport of quantities that were not foreseen at the time the exemption was initially introduced.

Amended provisions

Deleted text shown in strikethrough, new text shown bold and underlined

1.1.1.2

(3) Regulation 1.1.6(2) provides further exemptions for:

(a) very small consignments, where:

- i. the aggregate quantity of dangerous goods is not more than the following limits **specified in Table 1.1.1.2; and**
- ii. **The consignment does not include dangerous goods with an LQ value of '0' in column 7a of the dangerous goods list:**

Packing Group	Class or Division													
	2.1	2.2	2.3	3	4.1	4.2	4.3	5.1	5.2	<u>5.2</u>	6.1	6.2	8	9
									<u>Liquid</u>	<u>Solid</u>				

I				20 ml	20 g	20 g	20 g	20 g(ml)			20 g(ml)	20 g(ml)	—
II	50 ml	100 ml	50 ml	150 ml					150 g(ml)		500 g(ml)	500 g(ml)	2kg(L)
III				300 m ^{ja}	2 kg	500 g	150 g	1 kg(L)					
Types B or C									25 ml	100 gm			
Types D, E or F									125 ml	500 gm			
Table notes: a 2 L if the Class 3, packing group III substance is Manufactured Product													

TRANSITION PERIOD FOR REFERENCED STANDARDS

Problem

Section 1.2.3.2 – “References to other codes, standards and international rules” of the ADG Code deals with how referenced standards are to be applied and enforced.

Section 1.2.3.2 of ADG 7.7 is confusing and flawed in explaining to industry which edition of a standard or code referenced in the ADG Code is applicable. The question of which edition of a standard or code is legally required at any point in time is important because of safety and economic issues inherent in the selection of a particular edition.

Amended provisions

1.2.3.2.2 of the code has been updated to include a 12 month transition period, deleted text show in strikethrough, new text shown bold and underlined:

1.2.3.2.2 *In this Code, ~~unless the contrary intention appears~~, a reference to a code, standard or international rule is a reference to **the latest edition of** that code, standard or international rule ~~as amended from time to time~~. **However, the previous edition of a code, standard or international rule may continue to be used for 12 months after the date of publication of the latest edition unless a defined transition period is specified.***

Australian Standards continue to have effect despite an announcement by Standards Australia that a particular standard has been withdrawn as an aged standard.

BUNDLES OF CYLINDERS AS PLACARDABLE UNITS

Problem

In 2010 the Victorian competent authority made a Determination that:

Multiple gas cylinders that are manifolded so that the contents of all the cylinders can be discharged through a single or dual outlet, and are fastened together for handling and transported as a unit are a 'Bundles of Cylinders' in accordance with the definition of 'Bundles of Cylinders' as set out in chapter 1.2, clause 1.2.1 of the Australian Dangerous Goods Code edition 7, and are not 'Multiple Element Gas Containers' (MEGC) or 'Placardable Units' and therefore not subject to vehicle and driver licensing, provided that the:

- Internal water capacity of each cylinder does not exceed 50L; and
- Gas within each cylinder is not Division 2.1 or 2.3; and
- Total internal water capacity of all gas cylinders does not exceed 800L.

The Determination was endorsed by the GAP as being applicable Australia wide.

The intent of the Determination was to allow bundles of cylinders that meet the conditions specified in the Determination to be treated as individual cylinders for the purpose of determining capacity, rather than the total combined capacity of all cylinders in the bundle. The capacity of a bundle of cylinders is generally considered to be the total of cylinders in the bundle due to the ability to lose the entire contents if the valve is damaged. The result of the Determinations is that the capacity is retained below 500 kg/l and is therefore not considered a 'Placardable Unit' and therefore does not require placarding with an EIP. Keeping the capacity below 500 kg/l also means that the load is not automatically a placard load under criterion (a) of Table 5.3 of the ADG Code and that neither the vehicle nor the driver requires licensing under Part 18 of the MSI.

The WA Department of Mines, Industry Regulation and Safety requested that this Determination be incorporated into ADG 7.8.

Amended provisions

New text shown bold and underlined.

1. The definition of 'Bundle of cylinders' has been amended as follows:

Bundle of cylinders means an assembly of cylinders that are fastened together and which are interconnected by a manifold and transported as a unit. The total water capacity must not exceed 3000 litres except that bundles intended for the transport of gases of Division 2.3 must be limited to 1000 litres water capacity.

NOTE: A bundle of cylinders that meets all of the following conditions may be treated as individual cylinders for the purpose of determining capacity

- The internal water capacity of each cylinder does not exceed 50L;
- None of the cylinders contain gases of Division 2.1 or 2.3; and
- The total internal water capacity of all gas cylinders does not exceed 800L.

2. The definition of 'Capacity' has been amended as follows:

Capacity means the total internal volume of the receptacle at a temperature of 15 degrees Celsius expressed in litres or cubic metres. **For receptacles that are manifolded together (e.g. MEGCs), the capacity is the internal volume of all spaces connected during transport.**

RENUMBERING AND RELOCATION OF CHAPTERS 6.9 AND 6.10

Problem

A new chapter (6.9) has been added to the UN MR to specify the requirements for the design, construction, inspection, and testing of portable tanks with shells made of fibre reinforced plastics (FRP) materials. Part 9 of the UN MR editions prior to UN 22 concluded with Chapter 6.8. Existing chapters 6.9, 6.10 and 6.11 of the ADG Code are unique Australian chapters. Incorporating the new chapter for FRP portable tanks as Chapter 6.9 to replicate the UN MR is necessary to ensure cross references throughout the Code are accurate and maintainable.

Action taken

To accommodate the new chapter, 6.9, for FRP portable tanks, the following chapters have been relocated and renumbered.

Chapter	ADG 7.8	ADG 7.8
Design, construction, testing and approval of tank containers	Chapter 6.9	Chapter 6.10
Freight Containers	Chapter 6.10	Chapter 6.12
Segregation Devices	Chapter 6.11	Chapter 6.11

USE OF CERTIFIED LOAD RESTRAINT CURTAIN SYSTEMS – 8.1.3

Problem

The ADG Code (8.1.3) specifies the use of gates when transporting a placard load of unpackaged dangerous articles or dangerous goods in packages in a curtain sided vehicle.

There have been significant advancements in load restraint methodologies and legislative requirements since this requirement was first written. In particular, the introduction of ‘certified load restraint curtain (CLRC) systems’. CAP have been requested, and have granted, one exemption from 8.1.3 where a CLRC system is used. The blanket requirement for gates is therefore no longer justified.

CLRC systems are tested and certified to provide load restraint meeting the performance standards specified in the Heavy Vehicle (Mass, Dimension & Loading) National Regulations. A rated CLRC system, when used as specified in the certification, provides the same protection as a similarly rated gate.

The requirement for gates, as currently written in 8.1.3 provides no qualification that the gates must be rated or that the load must not exceed that rating. Nor does it specify that the gates must form part of a complete load restraint methodology or system. As such, the blanket requirements for gates could be seen as potentially providing an inferior level of safety.

Action taken

8.1.3.2 of the Code has been amended to:

1. Allow the use of either rated gates or a certified load restraint curtain system
2. Specify that where rated gates are used, they must form part of a complete load restraint system that complies with the load restraint guide
3. Specify that where a certified load restraint curtain system is used, it must be used as specified in the certification

Amended provisions

New text shown bold and underlined.

8.1.3.2 *Except where 8.1.3.4 or 8.1.3.5 applies, if unpackaged dangerous articles or dangerous goods in packages are transported on a vehicle or container described in 8.1.3.1, **they must be restrained using one of the following methods:***

- (1) ~~they must be stowed and restrained within rigid sides or~~ **load-rated** gates, **provided the following conditions are met:** ~~and~~
 - (a) *no dangerous article or package containing dangerous goods may protrude above the sides or gates by more than 30% of the height of the article or package; and*
 - (b) *no parts of an article or package may protrude horizontally beyond the sides or gates; **and***
 - (c) **the dangerous goods are stowed and restrained to ensure the rated capacity of the gates is not exceeded.**
- (2) **In accordance with a Certified Load Restraint Curtain System**

PART 11 – EMERGENCY INFORMATION

Problem

Chapter 11.2 of the ADG Code requires 'Emergency information;' to be carried on any vehicle transporting a placard load of dangerous goods. The ADG Code currently defines Emergency Information as the *Dangerous Goods - Initial Emergency Response Guide (HB:76)*, published by Standards Australia. The most recent version of HB:76 is 2010, making it very outdated and misaligned to current emergency procedures.

In 2019, the Competent Authorities Panel (CAP) approved the Australian Emergency Response Guide Book (AERG2018) for use as emergency information satisfying the requirements of Chapter 11.2 of the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code).

AERG2018 was substantially based on the CANUTEC 2016 Emergency Response Guidebook developed jointly by Transport Canada (TC), the U.S. Department of Transport (DOT), the Secretariat of Transport and Communications of Mexico (SCT) and with the collaboration of CIQUIME (Centro de Información Química para Emergencias) of Argentina. The life of the CAP Approval for the use of AERG2018 was tied to the life of CANUTEC2016

Since AERG2018 was first approved and published, CAUNTEC have published updated 2020 guidebook. To ensure the AERG remains up to date, a process has been established to ensure the AERG is updated each time CANUTEC is updated. Use of the AERG has also been extended to New Zealand. This has been reflected in the name of AERG being updated to the Australian and New Zealand Emergency Response Guide Book (ANZ-ERG). ANZ-ERG2021 (aligned to CANUTEC2020) is expected to be approved and publicly available mid 2021

With the establishment of a process for ongoing updating of the ANZ-ERG to ensure it remains up to date, it's use should now be embedded into the ADG Code, eliminating the need for obtaining a CAP Approval each time the guide book is updated.

The ANZ-ERG is free to download and can also be purchased in hard copy from Canprint, at a cost of around \$20 per copy. This compares to an approximate cost of \$110 per copy for the HB:76. HB:76 is also tightly copy right controlled and no part is permitted to be replicated without written permission

It's understood that once the definition in the ADG Code is amended to mean the ANZ-ERG and remove any reference to HB:76, that a request will be made to Standards Australia to discontinue HB:76.

Action taken

The definition of Emergency Information in the ADG Code has been amended to reflect the shift to the ANZ-ERG. Provision has also been made to allow for the use of individual Emergency Procedure Guides (EPG). EPGs for the more common substances transported as a single load will be prepared by a CAP working party and made free to download from the NTC website. A blank template EPG, with instructions, will also be free to download, allowing duty holders to prepare their own substance specific EPGs.

Amended provisions

The definitions in 11.2.1 of the ADG Code are amended as follows. Deleted text shown in strikethrough, new text shown bold and underlined.

11.2.1 DEFINITIONS

In this Chapter:

Emergency information, in relation to dangerous goods transported on a vehicle, means:

- (a) ~~the Dangerous Goods—Initial Emergency Response Guide~~ **the Australian & New Zealand Emergency Response Guidebook (ANZ-ERG), as current at the time this edition of the ADG Code comes into force or a subsequent published version¹**; ~~or~~
- (b) ~~an emergency procedure guide for the dangerous goods transported on the vehicle and the emergency procedure guide in relation to vehicle fire;~~ ~~or~~
- (c) ~~for use on trains transporting dangerous goods, the rail operator's Dangerous Goods Emergency Instructions for train crews which provides contact numbers for dangerous goods emergencies;~~ ~~or~~
- (d) ~~a relevant international or foreign standard, legible and in English, that is equivalent to the information provided by Standards Australia publication HB763. Any use of an international or foreign standard must be approved by the Competent Authority.~~

Note 1: An example of a relevant international or foreign standard is the 2012 Emergency Response Guidebook (ERG2016) developed jointly by Transport Canada (TC), the U.S. Department of Transportation (DOT), the Secretariat of Transport and Communications of Mexico (SCT) and with the collaboration of CIQUIME (Centro de Información Química para Emergencias) of Argentina.

Note 2: Such international or foreign standards that are acceptable must be supplemented by correct Australian emergency contact information.

Emergency procedure guide, in relation to particular dangerous goods, is a guide outlining procedures to be taken in the event of an emergency involving the goods which is either:

- (a) **in the form, or substantially in the form, of the relevant guide from the ANZ-ERG, provided that all relevant information referred to in that guide, e.g. information in Table 1, is included**
- (b) *in the form, or substantially in the form, of an emergency procedure guide for the goods published by Standards Australia; or*
- (c) *in a form approved by a Competent Authority in relation to goods of that kind.*

¹ The ANZ-ERG is published on the NTC website'.

Emergency procedure guide, in relation to vehicle fire, means a guide outlining procedures to be taken in the event of a fire on a road vehicle which is either:

- (a) **in the form, or substantially in the form of Vehicle Fire Guide 00 in the ANZ-ERG**
- (b) in the form, or substantially in the form, of the emergency procedure guide for vehicle fire published by Standards Australia; or
- (b) in a form approved by a Competent Authority.