Summary of changes in edition 7.7 of the ADG Code

Introduction

The new 7.7 edition of the ADG Code (the Code) is available on the NTC website – https://www.ntc.gov.au/codes-and-guidelines/australian-dangerous-goods-code

The new edition of the Code will take effect in most jurisdictions on 1 October 2020. The transport industry may then choose to adopt any of the changes immediately, or continue to comply with the current 7.6 edition for one year. From 1 October 2021, the new edition alone will be mandatory everywhere in Australia.

The Code adopts all the changes appearing in Revision 21 of the *UN Model Regulations on the Transport of Dangerous Goods* (UN 21) and contains important Australian-specific changes.

On 10 October 2020 the WA amendments to the *Dangerous Goods Safety (Road and Rail Transport of Non-explosives) Regulations 2007* took effect and gave effect to edition 7.7 of the ADG Code at the same time.

This information sheet summaries the Code changes.

A good summary of the changes in ADG 7.7 is also available from the NTC – https://www.ntc.gov.au/sites/default/files/assets/files/ADGC-key-changes-7.7.pdf

The United Nations has made numerous changes to the 20th edition of the UN Model Regulations. The UN website contains a comprehensive document capturing the numerous technical amendments including many amendments to the packing instructions and to Section 3.3.2 - *UN Special Provisions.*

It is worth noting that both UN 21 and the Code reference the new edition of the *Manual of Tests and Criteria of Tests and Criteria seventh revised edition* (UN Manual) when referring to the classification tests for dangerous goods.

Please note the abbreviated new title of the UN Manual. The previous reference in the title to the "*Recommendations on the Transport of Dangerous Goods*" was deleted, because the UN Manual now serves two purposes: the classification of Dangerous Goods and the classification of chemicals presenting physical hazards according to the "*Globally Harmonised System of Classification and Labelling of Chemicals* (GHS)*".*

Notable changes to the Manual of Tests and Criteria are the introduction of:

- the Minimum Burning Pressure (MBP) Test in sub-section 18.8;
- the expansion of Section 28 – "Test Series H" to incorporate the testing of polymerising substances of hazard division 4.1; and
- the Bergmann-Junk test to determine stable mixtures of nitrocellulose;

Table A - Significant Australian-specific changes

Reference to the ADG Code	Description
Section 3.3.2 – Special Australian Provision AU08 – Transport of automotive batteries	AU08 has been simplified and amended to allow the acid volume to be used when calculating the aggregate quantity of dangerous goods in the load. Where the acid volume is not known, a nominal figure of 25% of the gross weight of the battery may be used.

Chapter 3.4 and Table 5.3 regarding limited quantities (LQ) provision were amended	After many years of discussions, Australia has finally fully adopted the UN requirements for the transport of dangerous goods packed in limited quantities (LQ) in a very similar way as they are applied in Europe.
	
	The new Code simplifies the existing requirements relating to the transport of dangerous goods in Limited Quantities (LQ) by removing the Australian-specific sub categories of LQ.
	
	<u>The new provisions include:</u>
	
	• Removal of the following Australian-specific sub-categories:
	  ○ *concessional limited quantities;*
	  ○ *mixed packet (low risk) dangerous goods;* and
	  ○ *personal care products in consumer pack*aging;
	• A *dangerous goods transport document* is no longer required for LQ dangerous goods;
	• Prior to transport, the consignor must inform the prime contractor in a traceable form:
	  ○ of the total gross mass of limited quantities/domestic consumable dangerous goods to be consigned; and
	  ○ If the goods to be consigned include an aggregate quantity of 2000 kg(L) or greater of any one UN number: the UN number , proper shipping name and total aggregated quantity for that UN number.
	• Two applicable placarding thresholds, depending on the makeup of the limited quantities/domestic consumable load of either 8 tonnes gross mass, or 2 tonnes aggregate quantity for LQs containing a single UN number, see new Table 5.3.2.
	• A new NTC guidance note explains the changes in detail and will be published on the NTC website in October 2020.

Section 6.1.4.21 - *Inner packaging* was deleted	Section 6.1.4.21 – “Inner packagings” has been deleted, because these Australian specific requirements were seen as being largely redundant. This section contained additional requirements for inner packaging filled in Australia and created an unacceptable inconsistency that provided an advantage to overseas manufacturers. UN construction, performance testing and approvals apply to all packaging in Australia, regardless of where they are manufactured or filled. These requirements include the need for inner packaging to be tested and approved as part of a combination package and to be manufactured under a quality assurance system.

Chapter 7.2 – *Transport of empty packagings and container*	The following sections are covered elsewhere in the Code and have been deleted from Chapter 7.2: • 7.2.5 – Transport of pre-labelled packagings, IBCs and cylinders • 7.2.6 – Transport of nominally empty receptacles
Part 11 – *Documentation*	Part 11 has been reviewed and several clauses renumbered to provide a better flow of information and to align with chapter 5.4 (Documentation) of UN21.
Amendment to Table 12.1*: Minimum fire extinguisher requirements for road vehicles transporting a placard load of dangerous goods*	The NTC added two new notes to Table 12.1 to allow for the (conditional) use of water/foam-based extinguishers, both portable and on-board suppression systems may be used. Fire incident data has shown, that a large percentage of vehicle fires are initiated by brake or wheel fires. Dry powder extinguishers are ineffective on these types of fires as they do not sufficiently reduce the heat to prevent re-ignition. The vehicles will still be required to carry at least one dry powder extinguisher.
Amendment to Table 12.2 – *Minimum personal protective equipment on road vehicles transporting a placard load*	A performance standard for respiratory PPE has been introduced, requiring certification of compliance to AS/NZS 1716. Respiratory protection for escape purposes is a vital item of safety equipment to assist a driver in escaping from an incident. The introduction of a mandatory performance standard is expected to ensure equipment functions as intended. It is also anticipated the mandatory standard will put pressure on suppliers to provide evidence of certification for the equipment they supply.

Table B – Some significant changes adopted from the UN Recommendation

Reference in the ADG Code edition 7.7	Description
Table 3.2.3 - *Dangerous Goods List* introduces new UN entries.	I. UN 0511, 0512 and 0513 – DETONATORS, ELECTRONIC, programmable for blasting for HD 1.1B, 1.4B and 1.4S respectively; II. UN 3549 – MEDICAL WASTE, CATEGORY A, AFFECTING HUMANS, solid or MEDICAL WASTE, CATEGORY A, AFFECTING ANIMALS, HD 6.2;
Section 3.3.2. – *UN Special Provisions* regarding Lithium metal and Lithium ion batteries was amended.	• SP 360 – additional sentence; • SP 376 – amended note; • SP388 – additional paragraph; • SP 390 – new provision;
Section 3.3.2. – *UN Special Provisions* accommodates the introduction of the	SP 393 and 394 have been amended so that the now preferred quantitative Bergmann-Junk test introduced into the latest 7th edition of the *Manual of Tests and Criteria* can be applied. The older qualitative methyl violet paper test may still be used.

Bergmann-Junk test to determine stable mixtures of nitrocellulose.	All four class 1 entries for nitrocellulose require SP 393 and two of the HD 4.1 entries for nitrocellulose require SP 394. They all must pass the stability tests before transport.
Section 3.3.2. – *UN Special Provisions* accommodates the introduction of the Minimum Burning Pressure (MBP) Test in sub-section 18.8 of the Manual of Tests and Criteria.	Section 18.8 of the *Manual of Tests and Criteria* introduces a new test – *Test 8 (e): CanmetCERL minimum burning pressure (MBP) Test* into test series 8. Test 8 (e) determines the sensitiveness of a candidate substance, for classification into UN 3375 - *ammonium nitrate emulsion or suspension or gel, intermediate for blasting explosives*, to the effect of intense localised thermal ignition under high confinement or pressure. The introduction of Test 8 (e) required an amendment to the last sentence of SP 309 and simply requires classification as an ANEW of Test Series 8. It therefore avoids the previous specific reference to Tests (a), (b) and (c) of Test Series 8 to accommodate the presence of Test 8 (e). MBP Test was developed by the Canadian Explosives Research Laboratories and introduced to be used in case of false positive (explosions) in the Koenen test – Test 8 (c). Test 8 (e) may only be used in case Test 8 (c) exceeded the time to reaction by 60 seconds or longer, and the candidate substance has a water content greater than 14%. The result of *Test 8 (e)* is considered positive, and the substance should not be classified in Division 5.1, if an explosion occurs when the MBP is less than 5.6 MPa. The Manual of Tests and Criteria has a new flow chart at Figure 10.4 on page 22 to illustrate its use.
Section 4.1.4 – List of Packing Instructions was amended in regard to packing instruction P801 for the transport of batteries.	The new wording at P801 paragraph (2) is reserved for used batteries and unambiguously allows the transport of used batteries in stainless steel or plastic bins under six specific conditions.
Section 5.5.4 – *Dangerous Goods in equipment in use or intended for use during transport* was inserted.	Dangerous goods (e.g. lithium batteries, fuel cell cartridges) contained in equipment such as data loggers and cargo tracking devices, attached to packages or containers are not subject to the Code. When such equipment is transported as a consignment (unattached to packages or containers) the relevant entry applies and the Code has to be complied with. See applicable UN entries for “Fuel Cell Cartridges contained in Equipment” at UN 3473, 3476, 3477, 3478 and 3479. See UN 3481 for “Lithium Ion Batteries contained in Equipment”.
Section 6.5.5.1.6 - *Minimum wall thickness* regarding metal IBCs was amended	The requirement for minimum wall thickness for metal IBCs of ≤ 1500 l has been removed relying on the adequacy of performance testing. Existing requirements for wall thickness have been retained for metal IBCs more than 1500 L.

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