

# Australian Dangerous Goods Code Comprehensive Review

Working group paper #6



## Consignment procedures for dangerous goods transport

June 2023

# Report outline

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<b>Title</b>	Consignment procedures for dangerous goods transport
<b>Type of report</b>	Discussion paper
<b>Purpose</b>	For public consultation
<b>Abstract</b>	<p>In November 2020, transport and infrastructure ministers approved the NTC’s recommendation to conduct a comprehensive review of the Australian Code for the Transport of Dangerous Goods by Road &amp; Rail (the Code)</p> <p>This paper is the sixth of a series of topic specific discussion papers. This paper should be read in conjunction with Part 5 – Consignment procedures of the draft code. Part 5 of the draft code is based on part 5 of the ADR, amended to incorporate several current Australian practices.</p>
<b>Submission details</b>	<p>The NTC will accept submissions until 24 July 2023 online at <a href="http://www.ntc.gov.au">www.ntc.gov.au</a> or by email to: <a href="mailto:dkirk@ntc.gov.au">dkirk@ntc.gov.au</a></p>
<b>Attribution</b>	<p>This work should be attributed as follows, Source: National Transport Commission, consignment procedures for dangerous goods transport – discussion paper #6.</p> <p>If you have adapted, modified or transformed this work in anyway, please use the following, Source: based on National Transport Commission, consignment procedures for dangerous goods transport – discussion paper #6.</p>
<b>Key words</b>	Dangerous goods, ADG Code review, transport, ADR, transport documentation, placarding, marking and labelling, consignment procedures
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# Have your say

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## What to submit

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This paper examines the benefits of the redrafted Part 5 – ‘Consignment procedures’ of the draft code. This paper should be read in conjunction with Part 5 – ‘Consignment procedures’ of the draft code.

We are seeking stakeholder views on the consultation questions in the Executive Summary and throughout the document. We are also interested in any additional information submitters could provide to support their views.

## When to submit

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We are seeking submissions on this discussion paper by 24 July 2023.

## How to submit

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Any individual or organisation can make a submission to the NTC.

### Making a submission

 Visit [www.ntc.gov.au](http://www.ntc.gov.au) and select ‘Have your say’ on the homepage.

Or

 email your submission to [dkirk@ntc.gov.au](mailto:dkirk@ntc.gov.au)

Where possible, you should provide evidence, such as data and documents, to support the views in your submission.

### Publishing your submission

Unless you clearly ask us not to, we publish all the submissions we receive online. We will not publish submissions that contain defamatory or offensive content.

The *Freedom of Information Act 1982* (Cwlth) applies to the NTC.

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# Purpose of this paper

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The National Transport Commission (NTC) is conducting a comprehensive review of the Australian Code for the Transport of Dangerous Goods by Road & Rail (the Code).

In conducting the review, the NTC will seek to achieve greater alignment with the internationally recognised land mode-specific requirements contained in the Agreement for the International Transport of Dangerous Goods by Road (ADR) and the Agreement for the International Transport of Dangerous Goods by Rail (RID).

The review is focused on outcomes that serve the best interest of all parties involved in the transport of dangerous goods. This includes those parties on which the requirements are imposed, those who regulate and administer the requirements, and those who must maintain them.

This paper is the sixth of a series of topic specific discussion papers. This paper should be read in conjunction with Part 5 – ‘Consignment procedures’ of the draft code. Part 5 of the draft code is based on part 5 of the ADR, amended to incorporate several current Australian practices.

The purpose of this discussion paper is to discuss the benefits of the redrafted Part 5 – ‘Consignment procedures’ of the draft code. It examines the key differences between the way the current code presents information on consignment procedures for dangerous goods transport with how this is done in the draft code. More specifically it provides information relating to:

- simplification of the sections relating to placarding
- relocation of exemptions, e.g., small (non-placard) loads, import/export, to Part 1
- removal of the concept of a ‘placardable unit’
- alignment of marking and labelling of IBCs to current world practice to facilitate compliance with both dangerous goods and requirements of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
- inclusion of Instructions in Writing
- incorporation of requirements for dangerous goods transport documentation and emergency information (relocated from Part 11 of the current ADG Code)

This paper is accompanied by a Part 5 – ‘Consignment procedures’ of the draft code.

This paper relates to:

the Code – Part No.	<input checked="" type="checkbox"/>	Working group	<input type="checkbox"/>	Discrete issue	<input type="checkbox"/>
Part 5 – consignment procedures					

# Executive summary

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Part 5 of the code contains the procedures for preparing a consignment of dangerous goods for transport. These procedures include the marking and labelling of packages, the placarding of tanks, vehicles, etc. and transport documentation, including emergency procedures.

This paper explains the differences between part 5 of the current code and the redrafted part 5. This paper should be read in conjunction with the draft part 5 of the future code.

## Context

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A full review of the Australian Dangerous Goods Code (the Code) has not been conducted for over a decade.

The Code is applicable across Australia, and adherence to it by all relevant parties ensures specific risks posed through transport of dangerous goods by land are effectively managed.

In 2020, transport and infrastructure ministers agreed for the NTC to conduct a full review of the Code. The NTC's responsibility for the Code's content and stakeholder engagement over several years, highlighted that the road and rail specific requirements of the Code in particular, do not fully support the smooth and safe movement of dangerous goods across borders and transport modes.

The purpose of the review, therefore, is to ensure that the Code is reflective of the Australian transport environment, draws upon road and rail mode specific concepts used elsewhere in the world where appropriate, and considers inclusion of explosives as regulated dangerous goods under the Code's requirements.

Given the scale of the review, the content of the code has been broken into a series of topics. This paper focuses on the consignment procedures contained in Part 5 of the code.

## Themes

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### **Chapters 2 and 3 – content and structure of part 5 of the code**

The content and structure of part 5 have been aligned to the transport process. The structure remains much the same as the current code but is much simplified. In better aligning to the transport process, exemption provisions which appear in part 5 of the current code have been relocated to part 1 of the future code. Requirements relating to the preparation of transport documentation and emergency information are now included in part 5, as opposed to part 11 of the current code.

Requirements for marking and labelling of packages remain as per the current code. Provisions relating to placarding have been significantly simplified. The look of Australian placards and emergency information panels has been retained.

### **Chapter 4 – key differences from the current code**

Placarding thresholds have been recast as small load thresholds and relocated to part 1 of the code. This reflects that these thresholds are used to trigger considerably more than placarding.

Exemptions relating to carriage in a transport chain including maritime or air carriage (imports and exports) have been relocated to part 1 of the code.

Marking and labelling requirements for segregation devices have been included in part 5 and combined with marking and labelling of overpacks.

Unique Australian concepts that are out of step with the United Nations Model Regulations on the Transport of Dangerous Goods (UN MR) and international practices have not been retained in the draft part 5. The most significant of these being the concept of a 'placardable unit' and the requirement to placard an IBC with an EIP. These changes will provide a significant reduction in the cost burden on Australian industry and remove current cross border and cross mode barriers.

## Chapter 5

Options are provided in relation to EIPs for multi compartment tanks transport petroleum products of more than one UN number. A key aim of the options is to remove the use of UN 1270 which was removed from the dangerous goods list in the UN MR prior to 2001.

Options are also provided in relation to transport emergency response plans and the appropriate location for these in the futures code.

## Next steps

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Consultation on this paper will end at 5:00 pm 24 July 2023.

Submissions received will help inform the final draft of Part 5 of the code.

Opportunities to comment on other provisions in the code will be provided over the next 12 months. A complete draft code will be released for public comment in early 2024.

### List of questions

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**Question 14:** Do you have data that can help quantify the additional costs for reflective backgrounds for EIPs, or the improved safety benefits of them? Please provide details.....27

**Question 15:** Should handwriting on EIPs be specifically prohibited? Please provide your reasons. ....27

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**Question 18:** Are there consequential impacts that you believe have been missed? Please provide details.....29

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# 1 About this project

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## Key points

- In November 2020, transport and infrastructure ministers approved the NTC's recommendation to conduct a comprehensive review of the Australian Code for the Transport of Dangerous Goods by Road and Rail (the Code).
- Mode-specific requirements of the current code consist of a repository of often disjointed, contradictory requirements that fail to make sense when closely examined.
- The review seeks to better align Australia with international practices as set out in the ADR and RID.
- The review will focus on outcomes that serve the best interest of all parties involved in the transport of dangerous goods.
- Given the scale of the review, the content of the code has been broken into a series of topics, each allocated to a topic specific working group.

## 1.1 Project objectives

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In November 2020, transport and infrastructure ministers approved the NTC's recommendation to conduct a comprehensive review of the Australian Code for the Transport of Dangerous Goods by Road and Rail (the Code). Ministers also supported the proposal to incorporate into the Code principles from both:

- the Agreement for the International Transport of Dangerous Goods by Road (ADR)
- the Agreement for the International Transport of Dangerous Goods by Rail (RID).

The ADR and RID are used extensively throughout Europe, Africa and Asia. As with the Australian code, both the ADR and RID are based on the United Nations Recommendations on the Transport of Dangerous Goods - Model Regulations (UN Model Regulations). In general, the requirements of the ADR and RID are the same. They only differ where requirements need to apply specifically to either road transport or rail transport.

Stakeholder feedback over the years and a literature review of relevant materials suggests that the mode-specific requirements of the current code consist of a repository of often disjointed, contradictory requirements that fail to make sense when closely examined. In many instances, there was no supporting evidence or data for their introduction and there is no evidence that they have contributed to safer outcomes. The lack of consistency and cohesiveness in these requirements coupled with a lack of a framework for maintaining the mode-specific requirements results in a continuing cycle of ad-hoc, random amendments without consideration of the consequential inconsistencies or contradictions.

### Goal of the review

The goal of the review is to deliver a code that:

- addresses the specific risks of transport by land, while also recognising any risks unique to the Australian transport environment
- remains contemporary

- is aligned to international practices that support the smooth and safe movement of dangerous goods across borders and transport modes.

The review is focused on outcomes that serve the best interest of all parties involved in the transport of dangerous goods. This includes:

- parties that must meet the requirements
- parties that regulate and administer the requirements
- parties that must maintain the requirements.

The aim of the review is to deliver more than just a cohesive and contemporaneous code. We also aim to deliver a framework for making sure the Code remains up to date and aligned with international standards.

## 1.2 Background

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In 2020, the NTC released an issues paper on the land transport of dangerous goods. The paper focused on the legislative framework that supports the dangerous goods code. However, the responses we received highlighted several problems with the code itself.

A major concern raised in submissions centred on the Australia-specific chapters of the current code. The biennial maintenance cycle of the Code, which keeps it aligned to the UN Model Regulations, is appreciated. However, many submissions noted the Australia-specific chapters have not been reviewed or revised. Many of these chapters were carried over from the sixth edition of the Code (ADG 6), either in full or in part, without examination. They have not been critically reviewed for over 15 years and are now outdated. In the case of some requirements, no evidence base, or justification can be found to support their original introduction.

Industry and regulators also noted the Australian Explosives Code is outdated and has no responsible agency. They expressed a strong preference for the dangerous goods code to be expanded to include Class 1 Explosives, and for the Australian Explosives Code to be made obsolete.

After analysing the submissions received, the NTC made recommendations to infrastructure and transport ministers. All recommendations were endorsed, including the following:

### **Recommendation 4:**

Conduct a full review of the Australian Dangerous Goods Code to update outdated chapters, identify and correct translation errors, incorporate relevant ADR concepts and incorporate requirements for Class 1 and Division 6.2. Note: the technical requirements for Class 1 and Division 6.2 will be incorporated into the [ADG] Code but the legal requirements will not be incorporated into the regulations.

## 1.3 Approach

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A set of Review Principles has been developed to guide the review and give it the best chance of delivering the right outcome. These principles were developed with regard to the following key considerations:

- Impacts and benefits

- stakeholder engagement
- maintaining currency of the Code and associated model laws.

Given the scale of the review, the content of the code has been broken into a series of topics, each allocated to a topic specific working group.

This discussion paper deals specifically with part 5 of the code, which contains the provisions relating to consignment procedures. It should be read in conjunction with part 5 – Consignment procedures of the draft code. part 5 of the draft code is based on part 5 of the ADR, amended to incorporate several current Australian practices.

Previous consultation papers for this review include:

- Classification of dangerous goods – Working group paper #1, January 2023
- Dangerous Goods List – UN entries – Working group paper #2, February 2023
- Tank provisions in ADR – Terminology – Supplementary paper #S1, March 2023
- Approval of tanks, bulk containers and vehicles – Working group paper #3, March 2023
- Safety equipment for dangerous goods transport – Working group paper #4, May 2023
- Fire extinguishers for dangerous goods transport – Working group paper #5, May 2023

## 2 Context of issues

### Key points

- Correct marking, labelling and placarding requirements, along with appropriate transport documentation is vital for ensuring the hazards of the dangerous goods are communicated to everyone in the transport chain.
- Aligning the marking and labelling requirements with those in the UN MR and mode specific codes enables smooth cross border and cross mode movement of dangerous goods.
- The contents and structure of part 5 have been aligned to the transport process.

### Importance of consignment procedures

Part 5 of the code contains the requirements for preparing a load of dangerous goods for transport. These provisions include the marking and labelling of packages and containers, placarding requirements, and preparation and provision of transport documentation, including actions to take in the event of an emergency. This information is critical in communicating the hazards to those further along the transport chain, such as those who load or unload the dangerous goods. It also provides vital information to emergency responders when attending an incident.

The marking and labelling in part 5 relate to communicating the hazards of the dangerous goods in the package, tank, container, vehicle, etc. Markings relating to design approvals, compliance plates, etc. are contained in part 6 of the code.

### Following the transport process

One of the key benefits of the overall structure of the proposed code is how the structure parallels the transport process. Stakeholders have consistently raised problems with the complexity and structure of the current code. The logical grouping of requirements makes it easier for duty holders to find requirements relevant to the tasks they perform. It significantly reduces the need to jump back and forth to find scattered requirements.

Table 1 provides a simplified overview of the structure of the code and its parallel to the transport process. As can be seen, the requirements of part 5 are the natural step between preparing (packing the dangerous goods) and the actual transport of them. A single duty holder, for example a consignor, may also be responsible for classifying and or packing dangerous goods but these are separate processes and must be completed prior to completing the requirements in part 5. Likewise, a driver or vehicle crew has responsibilities relating to placarding and for carrying of documents. These duties differ from those in part 5 and are covered in part 8 - requirements for vehicle crews, equipment, operation and documentation.

**Table 1. Overview of the transport process against the structure of the code**

Transport Stage	ADR Part	Requirements
Scope	Part 1	Scope and applicability, including exemptions and transitional arrangements
Classify	Part 2	Classification

Identify	Part 3	Identify applicable special provisions and requirements
Prepare (pack) dangerous goods	Part 4	Packing and tank provisions
Prepare for transport	<b>Part 5</b>	<b>Consignment procedures</b> <ul style="list-style-type: none"> <li>• <b>marking and labelling</b></li> <li>• <b>placarding</b></li> <li>• <b>documentation</b></li> <li>• <b>communicate special requirements</b></li> </ul>
Transport	Part 7	Follow instructions for transport
Drive	Part 8	Driver and vehicle crew requirements

### **Relocation of some provisions**

In keeping with the above structure, several requirements in part 5 of the current code have been omitted from the draft of part 5 and will be more appropriately located in the future code. As an example, requirements relating to exemptions will be placed in part 1 and grouped with all other exemptions. This will help duty holders to quickly identify all exemptions or concessions that apply in their circumstances. Likewise, the preparation of transport documentation, which is in part 11 of the current code, has been relocated to part 5. The preparation of transport documentation is a duty of the consignor and part of the preparation for transport.

Additionally, the requirement to mark and label segregation devices has been included in part 5, grouping it with all other marking and labelling requirements.

### **Retaining Australian practices**

Part 5 of the ADR has been used as the starting document for part 5 of the draft code. Non-mode specific requirements, for example marking and labelling, have been aligned to the requirements in the United Nations Model Recommendations (UN MR). While the structure, numbering and flow of the ADR has been retained as much as possible, current road and rail specific Australian methodologies have been retained. A prime example of this is the look of placards and emergency information panels (EIP).

### **Interconnection of requirements in the dangerous goods code**

In reviewing part 5 of the draft code, it's important to understand the interconnectedness of requirements throughout the code. Any modifications to structure, numbering, and so on, will impact the cohesiveness and completeness of the overall code. It will also make future updating of the code unnecessarily difficult and introduce unintended consequences to the usability of code itself.

### **Scope of this paper**

This paper looks at the key differences between part 5 of the current code and that of the draft code.

This paper is accompanied by Part 5 – 'Consignment procedures' of the draft code.

## 3 Content and structure of Part 5

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### Key points

- The structure of Part 5 of the draft code has been aligned to that of the ADR and to the transport process.
- The requirements in Part 5 of the draft code, particularly in relation to placards, retain the methodologies in the current code.

### 3.1 Content of Part 5 Consignment procedures

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Part 5 of the code contains the detailed requirements for the consignment procedures to be followed when preparing a load of dangerous goods for transport. The requirements include:

- marking and labelling of packages
- placarding and marking of containers, bulk containers, MEGCs, MEMUs, tank-containers, portable tanks, vehicles and wagons
- documentation, including dangerous goods transport document, container packing certificates and emergency information.

This aligns not only with the ADR but also the UN MR. This is a departure from the current code, which includes some exemptions in part 5, and places requirements for documentation in part 11.

Labels referred to in part 5 relate specifically to the dangerous goods Class diamonds.

Marks referred to in part 5 include marking with the UN number, proper shipping name and contact details of the consignor or their agent. Other marks in part 5 include the lithium battery mark, orientation arrows, environmentally hazardous substance mark and elevated temperature substance mark. These marks are all intended to communicate the hazards of the associated dangerous goods.

### 3.2 Structure of Part 5 of the draft code

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Part 5 of the draft code follows the same basic flow as the current code while removing repetition and omitting requirements that are better located in other parts of the code. Relocating certain requirements maintains the alignment between the code and the transport process.

Requirements such as marking and labelling of packages, including IBCs and large packagings are drawn from the UN MR. It's important to retain this alignment with the UN MR requirements to assist in smooth multi modal and cross border transport. Major deviations from these requirements can pose significant cost and burden on Australian importers and manufacturers.

This is less critical for requirements that impact land transport only, for example the placarding of vehicles and rail wagons.

Changes made to the structure and general content of part 5 remove some of the complexity and support the NTC's aim of making the code easier for all stakeholders to navigate and for duty holders to identify applicable requirements.

A table comparing the chapter and section headings of the current code and those of the draft code can be found in appendix A.

There are several key differences in the draft of part 5 that are expected to better align Australia with international standards and provide a more level playing field for Australian industry, ultimately providing benefits to all Australians. Each of these key differences is discussed in detail in section 4 of this discussion paper.

The structure and numbering in part 5 follows as close as possible to that of the ADR. Where relevant, the content of provisions has been replaced with content that reflects methodologies currently used in Australia. For example, the provisions in the ADR relating to the placarding of vehicles with orange plates have been amended to reflect the use of class/division labels for placarding vehicles within Australia. Provisions in the ADR relating to displaying emergency information have been amended to reflect the use of EIPs.

The following provides a high-level overview of part 5 of the draft code.

**Chapter 5.1: General provisions** – This chapter contains the general provisions, including application of part 5.

**Chapter 5.2: Marking and labelling** – this chapter contains the general and specific requirements for the marking and labelling of packages, including IBCs. It includes specifications for labels (class/division diamonds) including when they are required, size, type and location. Specifications and requirements for marking include requirements for UN number, proper shipping name and contact details. This chapter also includes requirements relating to the following additional marks:

- lithium battery mark
- environmentally hazardous mark
- marking of outlets on multi-compartment tanks
- orientation marks
- elevated temperature mark
- salvage packagings
- segregation devices
- special marking for radioactive material.

**Note:** The ADR does not include the word ‘IBC’ in the headings of Chapter 5.2. WP.15 does not see the need to specifically call out IBCs as the definition of ‘packaging’ in the UN MR, and all mode specific codes, includes IBCs. This was further confirmed by the UN Sub-Committee of Experts on the Transport of Dangerous Goods, at its 61<sup>st</sup> meeting in December 2022. The International Maritime Dangerous Goods code (IMDG code) does include the word ‘IBC’ in the heading to reiterate this. As with the IMDG code, it has also been specifically included in the heading in the draft of part 5 to provide clarity that IBCs are considered packaged dangerous goods.

**Question 1:** Will specifically including ‘EIP’ in the headings in Chapter 5.2 help clarify that an IBC is considered by the UN MR and mode specific codes to be a package?

**Chapter 5.3: Placarding** – Placarding refers to the use of class/division warning diamonds.

This chapter starts with general provisions and then moves to what, when and where, placards are required. It includes specifications for the size of the placards, the use of mixed class placards and the placarding of multi-compartment tanks.

The next section in chapter 5.3 (section 5.3.2) contains requirements relating to the display of emergency information. This includes when emergency information is required, and the use of EIPs that incorporate the required placard and the required emergency information. Except for placardable units, the actual requirements in this section are the same as the current code but the structure has been simplified into a single set of rules.

The concept of a placardable unit is uniquely Australian and was introduced as a compromise when ADG 7 was first introduced. This is discussed in greater detail in section 4.3 of this paper.

**Chapter 5.4 Documentation** – This chapter contains requirements relating to documentation that must be prepared and provided to the carrier and driver, prior to transport. Requirements relating to the transport document closely replicate the requirements in chapter 11.1 of the current code.

Other documentation requirements in chapter 5.4 include requirements relating to container / vehicle packing certificates and emergency information. Emergency information includes requirements from chapter 11.2 of the current code and Instructions in Writing. Instructions in Writing were discussed in detail in working group papers #4 and #5.

The relocation of requirements relating to documentation aligns with the UN MR and the mode specific codes. Most importantly, it delineates the requirements of each party in the process and places the relevant requirements in the correct Part of the code. Requirements relating to the carrying of documentation are contained in Part 8 – Requirements for vehicle crews, equipment, operation and documentation. This flow of information simplifies navigation of the code, allowing each responsible party to easily locate the requirements relevant to their task.

**Chapter 5.5: Special provisions** – this chapter contains requirements for the following:

- special provisions applicable to fumigated cargo transport units (UN 3359)
- Special provisions applicable to the carriage of dry ice (UN 1845) and to packages and vehicles and wagons and containers containing substances presenting a risk of asphyxiation when used for cooling or conditioning purposes (such as dry ice (UN 1845) or nitrogen, refrigerated liquid (UN 1977) or argon, refrigerated liquid (UN 1951) or nitrogen)
- Dangerous goods contained in equipment in use or intended for use during carriage, attached to or placed in packages, overpacks, containers or load compartments

## 4 Key differences from the current code

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### Key points

- Provisions relating to exemptions have been relocated from Part 5 to Part 1 of the draft code, locating them with all other exemptions.
- Requirements for marking and labelling of segregation devices has been included in Part 5 of the draft code and combined with those for overpacks.
- The concept of 'placardable unit' has not been carried over to the draft code.
- The requirement for standard size IBCs to display EIPs has been removed but the requirement for EIPs on vehicles transporting IBCs has been retained.
- The requirements relating to the preparation and provision of documents, including emergency response information are now in Part 5 of the draft code.
- A review of the proposal to remove the requirement for EIPs on standard size IBCs against relevant provisions in the model WHS regulations has not identified any adverse impacts.

### 4.1 Exemptions

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In keeping with the ADR approach of aligning the requirements of the code to the transport process, all exemptions are in Part 1. Grouping all exemptions in the one location has the advantage of enabling a duty holder to identify all relevant exemptions in a single location prior to identifying and undertaking compliance activities. In aligning to the transport process, identifying what does or doesn't apply is the logical first step. The two key exemptions in part 5 of the current code that have been relocated to part 1 in the draft code are:

- small loads (previously referred to as placard quantities); and
- marking, labelling and placarding exemptions relating to imports and exports.

#### 4.1.1 Small loads (placard quantities)

##### Problem with the current code

The current code uses placard thresholds to determine when certain requirements apply to a load of dangerous goods. These requirements are considerably broader than placarding. For example, segregation, emergency information, safety equipment, additional fire protection, etc. all depend on the placarding thresholds. These requirements are in various parts of the code and are unrelated to the process of placarding.

Calling these thresholds 'placard thresholds' is misleading and doesn't reflect the true nature of them.

The approach of the current code is to individually specify when requirements apply only to placard loads. This leads to confusion about the application of some requirements. It also leads to difficulty in finding associated concessions and exemptions.

The following example demonstrates the problem.

Example – exemptions relating to dangerous goods packed in limited quantities.

A load of dangerous goods that includes dangerous goods packed in limited quantities may be a placard load, depending on the total quantity in the load and whether other dangerous goods are present.

Provision 3.4.6 of the current code specifically states that segregation requirements elsewhere in the code do not apply to dangerous goods packed in limited quantities. However, provision 9.2.1.1(a) states:

9.2.1.1 The segregation requirements of this chapter apply only to placard loads of dangerous goods, except:

(a) where, in the explanatory text at the foot of Table 9.1, it is indicated that particular goods are incompatible in all quantities;

Note 8 of Table 9.1 in the code requires that all quantities of dangerous goods of Class 2.3, 6.1 or 8 be segregated from food and food packagings, except where 9.1.2.3 applies. Provision 9.1.2.3 relates to Class 8 products that are food products.

This can be seen as a contradiction between provisions 3.4.6 and 9.2.1.1, causing confusion for duty holders.

### **Draft code**

The draft code uses the term 'small loads' as the threshold for concessions relating to the total content of the load (types of dangerous goods and aggregate quantity), under which concessions may be applied. As with all other exemptions, the thresholds and related exemptions are contained in part 1 of the code. While the drafting of part 1 is still ongoing, and the specific thresholds have not yet been determined, the exemption provision will include a complete list of related provisions. The following excerpt from ADR 23 is provided as an example.

Where the quantity of dangerous goods carried on a transport unit does not exceed the values (*small load*) they may be carried in packages in one transport unit without application of the following provisions:

- Chapter 1.10 except for high consequence dangerous goods of Class 1 (in accordance with 1.10.3.1) and except for Class 7 excepted packages of UN Nos. 2910 and 2911 if the activity level exceeds the A<sub>2</sub> value;
- Chapter 5.3;
- Section 5.4.3;
- Chapter 7.2, except for V5 and V8 of 7.2.4;
- CV1 of 7.5.11;
- Part 8 except for
  - 8.1.2.1 (a),
  - 8.1.4.2 to 8.1.4.5,
  - 8.2.3,
  - 8.3.3,
  - 8.3.4,
  - 8.3.5,
  - Chapter 8.4,
  - S1(3) and (6),
  - S2(1),
  - S4; S5,
  - S14 to S21 and
  - S24 of Chapter 8.5;
- Part 9.

### **4.1.2 Imports and exports**

#### **Problem with the current code**

When imported dangerous goods or dangerous goods prepared for export, have been marked, labelled and/or placarded in accordance with the IMDG Code or IATA DG Regulations, the marking, labelling and placarding may be different than that required in the code. To allow for such instances, the code provides conditional exemptions for the journey immediately before export or after import.

The primary exemption is detailed in 5.3.8.1 of the code but the application of the exemption is also contained in following provisions: 5.2.1.1.2, 5.3.3.6, 5.3.4.1, 5.3.5.2.1, 5.3.5.2.2, 5.3.5.2.3, 5.3.6.4.3, 5.3.7.2.1 and 5.3.8.2. A further exemption permitting the use of an inter-modal dangerous goods transport document, suitable for sea or land transport, is contained in 11.1.1.2.5.

### **5.3.8 PLACARDING INTERMODAL LOADS**

- 5.3.8.1 A freight container, portable tank or bulk container in which dangerous goods are being transported does not need to be placarded with emergency information panels, despite a requirement in this chapter, if:
- (a) the tank or container has been:
    - (i) placarded outside Australia and imported into Australia; or
    - (ii) filled or packed for export from Australia, or for transport between Australian locations by sea or air; or
    - (iii) placarded outside Australia and imported into Australia, emptied, and is being returned overseas while containing residues; and
  - (b) the tank or container is marked and placarded fully in accordance with the applicable modal code (IMDG Code, IATA Regulations or ICAO Rules); and
  - (c) no goods (dangerous or not) have been removed from or added to the tank or container:
    - (i) if imported: since its arrival in Australia; or
    - (ii) if to be exported: since the load was first consigned for transport to the place from which it is to be exported; or
    - (iii) if loaded for transport between Australian locations by sea or air: the duration of the complete journey including road or rail transport to and from the nominated ports or airports.

There are several gaps in the exemption that can result in transport providers and drivers having to choose between non-compliance or performing unsafe acts to be able to comply. Additionally, the exemption in 11.1.1.2.5 does not permit the use of the IATA Shipper's Declaration for Dangerous Goods, which is the mandatory document for transport by air. The following examples demonstrate the current problems.

#### Example 1 – Imported dangerous goods shipped via airfreight.

Consignments of dangerous goods shipped via airfreight are generally packed on pallets, which are loaded directly into the cargo hold. When they arrive in Australia, the pallets are then transferred to a vehicle for the land component of the journey.

The marking and labelling requirements in 5.1.1.1 of the code require the name and address of the manufacturer or consignor, or their agent to be displayed on the package. Other than for Class 1 or Class 7, the UN MR and mode specific codes do not require this. An exemption from 5.1.1.1 is provided in 5.1.1.2 but it applies only when the dangerous goods are being transported in a closed freight container that has been imported into or is to be exported from Australia. This exemption also places restrictions on adding or removing items from the freight container.

In this example, the packages are not in a closed freight container and therefore must be removed from the pallet, the contact details added to each package and then the packages re palletised before they can be transported by road. A new dangerous goods transport document must also be prepared before transport.

## Example 2 – Import of non-containerised placardable units.

**Note:** see also the discussion on placardable units and EIPs on IBCs in 4.3 and 4.4 of this paper.

It is not uncommon for placardable units, particularly flexible IBCs (FIBCs) to be loaded directly into the cargo hold of a ship. The exemption in 5.3.8 does not apply for such loads, as they are not in a freight container. The unique Australian requirements for placardable units to be placarded with an EIP results in the driver being faced the following choices:

- transport the placardable units without EIPs, making them non-compliant; or
- relabel the placardable units with EIPs before leaving the port area. In many instances, the only option for relabelling at the port area is to undertake this task after the dangerous goods have been loaded onto the road vehicle. This may mean working ‘under hook’ which is both dangerous and illegal under workplace safety legislation.

One way of avoiding this situation is to require the overseas manufacturer or exporter of the dangerous goods to label to the ADG Code prior to export. With a few minor exceptions, the Australian market is not of sufficient importance to overseas parties for them to do this.

### **Draft code**

The exemption relating to carriage in a transport chain including maritime or air carriage has been relocated to part 1 of the draft code, keeping it with all other exemptions. The exemption is also more complete, in that it includes provisions relating to transport documentation for both air and sea transport.

Part 1 of the code is still being drafted but will include an exemption based on the following

#### **1.1.4.2 Carriage in a transport chain including maritime or air carriage**

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

- (a) If the packages are not marked and labelled in accordance with this Code, they shall bear marks and danger labels in accordance with the requirements of the IMDG Code or the ICAO Technical Instructions;
- (b) For carriage in a transport chain including maritime carriage, if the containers, bulk-containers, portable tanks, tank-containers or MEGCs are not marked and placarded in accordance with Chapter 5.3 of this Code, they shall be marked and placarded in accordance with Chapter 5.3 of the IMDG Code. In such case, the requirements in Chapter 5.3 of this Code are applicable only to placarding of the vehicle itself. For empty, uncleaned portable tanks, tank-containers and MEGCs, this requirement shall apply up to and including the subsequent transfer to a cleaning station.

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

1.1.4.2.2 Transport units composed of a vehicle or vehicles other than those carrying containers, portable tanks, tank-containers or MEGCs as

provided for in 1.1.4.2.1 (b), which are not placarded in accordance with the provisions of 5.3.1 of this Code but which are marked and placarded in accordance with Chapter 5.3 of the IMDG Code, shall be accepted for carriage in a transport chain including maritime transport provided that the placarding provisions of 5.3.2 of this Code are complied with.

- 1.1.4.2.3 For carriage in a transport chain including maritime or air carriage, the information required under 5.4.1 and 5.4.2 and under any special provision of Chapter 3.3 may be substituted by the transport document and information required by the IMDG Code or the ICAO Technical Instructions respectively provided that any additional information required by ADR is also included.

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

**Question 2:** Are you aware whether Australia currently ships vehicles carrying dangerous goods by sea, e.g., across Bass Strait?

## 4.2 Segregation devices and overpacks

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### Problem with the current code

The requirements relating to the marking and labelling of overpacks and segregation devices are scattered throughout the code and often contradict each other.

### Marking and labelling of overpacks

The requirements for marking of an overpack are set out in sub-section 5.1.2.1 of the code.

Paragraph 5.1.2.1.1 requires markings and labels required by 5.2.1 and 5.2.2 to be displayed on an overpack unless they are already visible.

Paragraph 5.1.2.1.1 also requires an overpack to be marked with the word 'OVERPACK'. However, 5.1.2.1.2 then goes on to say that the 'OVERPACK' mark is not required on an overpack intended only for transport by road or rail within Australia. The condition specified in this requirement is unnecessary as the scope of the code only extends to transport by road and rail within Australia.

### Marking and labelling of segregation devices

A segregation device is a uniquely Australian concept. It is a device that may be used to segregate dangerous goods of packing group II or III from incompatible goods by packing either the dangerous goods or the incompatible goods in the segregation device.

Requirements relating to marking and labelling of segregation devices are specified in part 4 of the code. The rationale for placing these requirements in part 4 rather than part 5 with all other marking and labelling requirements is not known.

Paragraph 4.4.5.1.3 permits the use of the following segregation devices:

- (a) an Overpacking Drum Segregation Device as described in 6.11.2; or
- (b) a Type I Segregation Device as detailed in 6.11.3; or
- (c) a Type II Segregation Device in accordance with 6.11.4; or

(d) a Non-Type I Underslung Segregation Device in accordance with 6.11.7

Paragraph 4.4.5.3.1 specifies that an 'Overpacking Drum' when used as a segregation device is required to be marked and labelled as required for an Overpack in Section 5.1.2. The result of this is that an overpacking drum when used as a segregation device does not need to be identified as an 'overpack'. There is also no requirement for it to be marked or otherwise identified as a segregation device. The effect of this is that, on face value, it can appear that incompatible dangerous goods have not been correctly segregated. This can be a particular problem during roadside enforcement activities.

Paragraph 4.4.5.3.2 requires type I and II segregation devices and Non – Type I underslung segregation devices in which dangerous goods are transported to be labelled in accordance with Section 5.2.2. There are no marking requirements for type I and II segregation devices or Non – Type I underslung segregation devices. The lack of marking for these segregation devices means the actual contents of the segregation device are unknown.

### Draft code

The draft code relocates the marking and labelling of segregation devices to part 5 of the code, combining them with the requirements for overpacks and locating them with all other marking and labelling requirements.

The draft code also treats all types of segregation devices equally, in that they are all required to be marked and labelled for their contents. They are also required to be clearly marked as a segregation device.

The requirements relating to marking an overpack with the word "OVERPACK" have been omitted.

The requirements for marking and labelling of overpacks and segregation devices in the draft code are:

- 5.1.2.1 (a) Unless marks and labels required in Chapter 5.2, except 5.2.1.3 to 5.2.1.6, 5.2.1.7.2 to 5.2.1.7.8 and 5.2.1.10, representative of all dangerous goods in the overpack or segregation device are visible, the overpack or segregation device shall be:
- (i) labelled and marked with the UN number and other marks, as required for packages in Chapter 5.2 except 5.2.1.3 to 5.2.1.6, 5.2.1.7.2 to 5.2.1.7.8 and 5.2.1.10, for each item of dangerous goods contained in the overpack or segregation device. Each applicable mark or label only needs to be applied once; and
  - (ii) a segregation device shall additionally be marked with the words "**SEGREGATION DEVICE**". The lettering of the words "**SEGREGATION DEVICE**" shall be at least 12 mm high.

Labelling of overpacks containing radioactive material shall be in accordance with 5.2.2.1.11.

- (b) Orientation arrows illustrated in 5.2.1.10 shall be displayed on two opposite sides of overpacks containing packages which shall be marked in accordance with 5.2.1.10.1, unless the marks remain visible.

Design and construction requirements for segregation devices will be contained in part 6 of the draft code.

**Question 3:** Is it reasonable to require overpacks and segregation devices to be marked with the UN Number and proper shipping name for each of the dangerous goods in the overpack or segregation device? Please provide your reasons.

**Question 4:** What potential safety implications could result if the UN numbers and proper shipping names are not displayed?

### 4.3 Placardable unit

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The term 'Placardable Unit' is used in the current code to define any receptacle that individually has a capacity of more than 500 kg(l).

The concept of a placardable unit is unique to Australia and is used as the threshold to trigger the following requirements:

- The container is required to be 'placarded' with an EIP. The UN number and hazard label components of dangerous goods marking and labelling must appear in the EIP. All other required marks are still required on the package.
- Any load containing one or more placardable units is considered a 'Placard Load'. Many of the requirements in the ADG Code, e.g., vehicle placarding, emergency information, safety equipment, specific load restraint, etc. apply only to placard loads.
- Vehicles transporting one or more placardable units must be placarded with an EIP, as opposed to just hazard diamonds
- Driver and vehicle licensing (there are some jurisdictional variations to this, e.g., WA)

#### Problem with the current code

The concept of a placardable unit was introduced to the code during the transition from ADG 6 to ADG 7, more than 15 years ago. The term was used to enable Australia to retain the long-standing concept of bulk versus packaged dangerous goods. Retaining a previous concept without a comprehensive review of the code for any unintended impacts or consequential amendments has led to several issues and ad-hoc amendments over the life of ADG 7. The concept also adds significant costs to the Australian industry, particularly for IBCs. Most if not all containment types, other than IBCs, that have an individual capacity greater than 500 kg/l are already distinguished from packaged dangerous goods by the UN MR. In effect, this leaves IBCs as the primary target of placardable unit. Matters specific to IBCs are discussed in the next section of this paper.

#### Example – contradictory definitions

The definition of placardable unit includes multiple-element gas containers (MEGCs) and excludes Cargo Transport Units.

Cargo Transport Unit is an international concept that underpins many of the requirements in the ADG Code. Its definition also includes MEGCs.

The circular reference makes MEGCs both included and excluded in the definition of Placardable Unit.

This contradiction has been corrected in the most recent version of ADG 7 (ADG 7.8). However, this only happened because the contradiction was identified in the process of incorporating another long-standing exemption for placarding of bundles of cylinders into the

ADG Code. That exemption was issued many years ago to address another unintended consequence from the introduction of placardable units.

### **Draft code**

The concept of a placardable unit has been omitted from the draft code. The rationale for retaining this concept when transitioning from ADG 6 to ADG 7 is no longer valid. The requirements in the code are based on the type and size of the containment, rather than an arbitrary cut-off. The communication of additional information such as emergency action codes and contacts is required for all non-packaged dangerous goods, for example, tanks.

The concessions for small loads (see 4.1.1 above) apply only to dangerous goods carried in packages. As a result, any load containing non-packaged dangerous goods automatically requires placarding.

### **Discussion**

Emergency services have long argued that EIPs are required to so that they can tell from a distance that a vehicle is transporting dangerous goods in large capacity containers. The draft code addresses this by retaining the requirements for a vehicle transporting such containers to display an EIP.

The requirements in ADG 6 were built around the concept of bulk versus packaged dangerous goods. The Road Transport Reform (Dangerous Goods) Regulations contained the following definitions.

**2.11** Dangerous goods are *packaged dangerous goods* if:

- (a) they are dangerous goods of Class 2 in a container with a capacity of not more than 500 litres; or
- (b) they are dangerous goods of another Class in:
  - (i) a container with a capacity of not more than 450 litres; and
  - (ii) a container with a net mass of not more than 400 kilograms.

**2.12** *Dangerous goods in bulk* are dangerous goods that are not packaged dangerous goods.

The above definitions aligned with what was being used in dangerous goods storage and handling regulations at the time.

The requirements in ADG 7 were based on the UN MR, which did not include this concept, as noted in Regulatory Impact Statement at the time.

The UN Model Regulations take a container-based approach whereas the Australian Dangerous Goods Code 6th Edition is based on quantity with a distinction made between 'bulk' and 'packaged dangerous goods'. Definitions and concepts between the international and the domestic model regulations vary and the concept of 'bulk' does not exist in the UN Model Regulations with subsequent implications for packaging, placarding, marking and labelling.

As previously noted, retaining the ADG 6 concept of bulk vs packaged, by introducing 'placardable units', was in conflict with the concepts and risk profiles that underpinned the requirements in the UN MR. This has resulted in confusion and contradictions, with several ad-hoc amendments being made over the past 15 years to address issues as they've been identified.

**Question 5:** Will removing the concept of a placardable unit from the code have other impacts that this paper has not addressed? Please provide details.

## 4.4 Placarding of Intermediate Bulk Containers

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### Draft code

The requirement to placard standard size IBCs with EIPs has not been carried forward in the draft code. This decision aligns the code with the UN MR definition and recent sub-committee reiteration, that IBCs are packages. It also aligns the code with international best practice and with the requirements for transport by sea or by air. This change removes the current roadblocks for cross border or cross mode transport, reduces unnecessary red tape and provides a significant reduction in costs to industry, while still providing the information necessary in the event of an incident.

The requirement for EIPs on standard size IBCs will not be carried forward to the new code without evidence that:

- the requirement has contributed to safer outcomes, than will be provided by the proposed changes; and
- any improved safety outcomes outweigh the costs imposed.

### Previous consultations

The issue of EIPs on IBCs has been a contentious issue since the commencement of ADG 7. The practice is unique to Australia, adding significant costs to Australian industry and leading to intermodal interface difficulties. The original draft of ADG 7 and the accompanying regulatory impact statement did not include this requirement. Following submissions from emergency services and regulators, the Dangerous Goods Steering Group reincorporated the requirements, from ADG 6, relating to the placarding of IBCs. No further public consultation occurred in relation to this change.



The principal concern raised by emergency services and regulators during the transition from ADG 6 to ADG 7 was the lack of full and ready identification of the load and emergency response advice on the outside of the vehicle. To address this concern, the draft code retains the requirement for a vehicle transporting IBCs to display EIPs. Chapter 5 of this paper also includes a discussion on potentially requiring an EIP on an IBC with a capacity exceeding 1500 kg/L.

Another key issue that has previously been raised by emergency services is the lack of time critical information on the hazards of the contents of an IBC if it does not display an EIP. Since those concerns were raised, requirements for GHS marking and labelling have been introduced. GHS marking and labelling provides specific health and risk information, aimed at persons who handle or use the dangerous good. Standard dangerous goods package marking and labelling, when combined with GHS requirements, provides considerably more hazard information than provided by an EIP.

### Examples of marking and labelling for EIPs

Figures 1 and 2 below provide a comparison of vehicle placarding and IBC marking and labelling at the time ADG 7 commenced vs those under the draft code.



Figure 1. Vehicle placarding, and IBC marking and labelling at the commencement of ADG 7 (pre-GHS).

<b>Flammosol</b> <b>FLAMMABLE LIQUID, TOXIC N.O.S</b> <small>(aliphatic hydrocarbons, toxicole)</small>		 
UN No.	<b>1992</b>	
HAZCHEM	<b>•3W</b>	
IN EMERGENCY DIAL <b>000, POLICE or FIRE BRIGADE</b>	SPECIALIST ADVICE <b>AUSTRALIAN CHEMICALS LTD.</b> (XX) XXXX XXXX	



A: Vehicle placard

B: IBC marking and labelling

Figure 2. Vehicle placarding, and IBC marking and labelling in the draft code.

<b>Flammosol</b> <b>FLAMMABLE LIQUID, TOXIC N.O.S.</b> <small>(aliphatic hydrocarbons, toxicole)</small> UN 1992		 
UN No.	<b>1992</b>	
HAZCHEM	<b>•3W</b>	
IN EMERGENCY DIAL <b>000, POLICE or FIRE BRIGADE</b>	SPECIALIST ADVICE <b>AUSTRALIAN CHEMICALS LTD.</b> (XX) XXXX XXXX	

<b>Flammosol</b> <b>FLAMMABLE LIQUID, TOXIC N.O.S.</b> <small>(aliphatic hydrocarbons, toxicole)</small> UN 1992		 
Madeup Chemical Company, 999 Chemical Street, Chemical Town, My State.		
<b>Flammosol</b> Contains: Aliphatic hydrocarbon 95% Toxicole 5%	<b>XXXX L</b>	
<b>DANGER</b> Highly flammable liquid and vapour Toxic if swallowed Causes skin irritation		
IF ON SKIN (or hair): Take off contaminated clothing and wash before re-use. Rinse skin using plenty of soap and water. If skin irritation occurs: Get medical advice/attention. IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician. Rinse mouth		
In case of fire: Use powder for extinction. Keep away from sparks and open flames. – No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves and eye and face protection. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.		
Store locked up in a well-ventilated place. Keep cool.		
Dispose of contents/container in accordance with Jurisdictional Regulations.		
Madeup Chemical Company, 999 Chemical Street, Chemical Town, My State. Telephone: 1300 000 000 <a href="http://www.madeup-chemical-company.com.au">www.madeup-chemical-company.com.au</a>		

2A: Vehicle placard

2B: IBC marking and labelling (inc. GHS)

As can be seen by the IBC marking and labelling example in figure 2B, the introduction of GHS requirements has also led to GHS and dangerous goods requirements competing for the limited available space on an IBC. IBCs are not generally manufactured with sufficient space for both GHS labelling and an EIP. Affixing an extra plate to an IBC to provide additional space leads to further costs and increases the potential for damage to the IBC.

### Costs

WorkSafe Victoria's regulatory impact statement (RIS) for dangerous goods (transport by road or rail) regulations 2018, prepared by Deloitte Access Economics, estimated that removing the requirement for EIPs on IBCs would decrease costs by \$20,000 per year, per business. When multiplied by the number of chemical businesses in Australia, this represents a total cost of \$101 million. <https://www.vic.gov.au/sites/default/files/2019-10/Dangerous-Goods-RIS-PDF.pdf>

As there was no proposal for the requirement to be amended at the national level at that time, Victoria chose not to pursue the matter further, believing that the costs associated with the reduction in national consistency could outweigh the potential benefits.

The estimated cost burden in WorkSafe Victoria's 2018 RIS, aligns with a cost analysis conducted by Chemistry Australia in 2018, which estimated the cost burden to industry at \$96 million. Full details of the methodology and data used can be found in the Chemical Industry Cost Impact on the Emergency Information Panels in relation to IBCs, Industry Analysis from December 2017 – January 2018, prepared by Chemistry Australia. [http://www.chemistryaustralia.org.au/Library/PageContentVersionAttachment/f05888e3-1dea-4d38-8322-d12d55881539/chemistry\\_australia\\_eip\\_cost\\_analysis.pdf](http://www.chemistryaustralia.org.au/Library/PageContentVersionAttachment/f05888e3-1dea-4d38-8322-d12d55881539/chemistry_australia_eip_cost_analysis.pdf)

It's expected that these costs will have increased since 2018.

- Question 6:** Are you able to provide updated costs or data that support the removal of EIPs from IBCs? Please provide details and supporting evidence.
- Question 7:** Do you have data and evidence showing that EIPs on IBCs (as opposed to vehicle placarding) have led to safer outcomes than would be provided by the marking and labelling shown in Figure 2? Please provide details.
- Question 8:** Should the requirement to placard an IBC with an EIP retained for larger IBCs, e.g., capacity greater than 1500 kg/l?
- Question 9:** If your answer to question 8 is yes, please provide the suggested capacity and your justification for it.

## Work Health and Safety legislation

Whilst the code is specific to transport of dangerous goods, the use of the ADG Code in Work Health and Safety (WHS) regulations is recognised. A preliminary review has been undertaken against the model WHS regulations to identify any potential impacts on storage and handling. The review focussed on the following provisions of the WHS regulations:

- Regulation 350 Placard – requirement to display
- Schedule 9 Classification, packaging and labelling requirements, Part 3 Correct labelling.
- Schedule 12 Manifest requirements
- Schedule 13 Placard requirements

No adverse impacts on the WHS regulations were identified.

- Question 10:** Are you aware of any potential impacts on WHS regulations that we have not identified? Please provide details.

## 4.5 Documentation

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### Draft code

Documentation requirements include requirements relating to the documentation that must be prepared and provided prior to transport. This includes a dangerous goods transport document and emergency procedures. Requirements relating to a container/ vehicle packing certificate, where relevant, are also included. These requirements are specified in Chapter 5.4 of the draft code, as opposed to Part 11 of the current code. This aligns with the transport process and is in keeping with the UN MR and mode specific codes.

Section 5.4.3 of the draft code specifies the emergency information required to be provided for the load. This information is divided into:

- sub-section 5.4.3.1 – Instructions in writing; and
- sub-section 5.4.3.2 – emergency information.

The emergency information specified in sub-section 5.4.3.2 has been relocated from Part 11 of the current code. A detailed discussion on instructions in writing and emergency information is contained in working group papers #4 and #5. Chapter 5.4 of the draft code will be further revised following receipt of submission on these working group papers.

Requirements that a driver carry documentation are specified in Part 8 of the draft code.

## 5 Issues needing resolution

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### Key points

- The draft code contains several unresolved provisions where additional information is required from stakeholders.
- Several consequential amendments are required in other Parts of the code to support the functionality of Part 5 and maintain alignment to the transport process.

There are a number of specific unresolved issues in Part 5 of the draft code where we are seeking your input.

### 5.1 Mixed loads EIP - Refined petroleum products (5.3.2.1.3)

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#### Problem with the current code

Australia currently permits the use of UN 1270 for a multi-compartment tank transporting different refined petroleum products. UN1270 was discontinued internationally some time prior to 2001 but has been retained in Australia '*specifically because of the continued use of tankers carrying mixed loads of petroleum fuels*', (see 3.2.5.4.1 of ADG 7.8).


The proper shipping name for UN1270 is PETROLEUM FUELS [AUST.]. The proper shipping name and the wording of 3.2.5.4.2 indicate that UN1270 is specifically intended for fuels.

The permitted use of UN 1270 is specified in 3.2.5.4 of the code and is restricted to the substances listed in Table 3.1. Table 3.1 is headed 'List of petroleum-based products', indicating that UN 1270 can be interpreted as including non-fuel products. This interpretation is further supported by 5.3.1.3.3 which is headed 'Mixed Load (Refined Petroleum Product) Emergency Information Panel.

The list of substances in Table 3.1 includes Diesel Oil, Diesel Fuel, Gas Oil, Heating Oil Light or Distillate with a flashpoint  $> 60^{\circ}\text{C} < 93^{\circ}\text{C}$  (category 4 flammable liquids). Diesel meets the classification criteria for UN 3082 Environmentally Hazardous Substance, Liquid. However, due to the unique Australian special provision AU02, diesel is exempt from being classified as a dangerous goods for the code. Consultation on the future classification of diesel will be the subject of a future discussion paper. To help us better understand the potential impacts of regulating diesel and to inform the discussion paper we are seeking responses to the four questions **in this survey**.


A mixed load containing substances listed in Table 3.1 and no other dangerous goods is required to display a 'MIXED LOAD' EIP, as per the example in figure 3.

Figure 3. MIXED LOAD EIP example

PETROLEUM FUEL		
UN No.	<b>1270</b>	
HAZCHEM	<b>•3W</b>	
IN EMERGENCY DIAL <b>000, POLICE or FIRE BRIGADE</b>	SPECIALIST ADVICE <b>AUSTRALIAN CHEMICALS LTD. (XX) XXXX XXXX</b>	

A mixed load that contains substances not included in Table 3.1 is required to display a 'MULTI LOAD' EIP. It is not uncommon for a multi compartment road tank to be loaded with one or substances that are included in Table 3.1 and substances that classified as UN 3082 but are also a combustible liquid. Such loads are not permitted to use UN 1270 and must display a 'MULTI LOAD' EIP. As can be seen by the example in figure 4, a 'MULTI LOAD' EIP does not adequately communicate the hazards of the load.

Figure 4. MULTI LOAD EIP example

		
UN No.	<b>MULTI LOAD</b>	
HAZCHEM	<b>3WE</b>	
IN EMERGENCY DIAL <b>000, POLICE or FIRE BRIGADE</b>	SPECIALIST ADVICE <b>AUSTRALIAN CHEMICALS LTD. (XX) XXXX XXXX</b>	

### Draft code

The MULTI LOAD EIP has been retained for use where the load contains multiple different UN numbers, including of different Classes.

The MIXED LOAD EIP for refined petroleum products has been replaced with requirements modelled on those that apply in the United Kingdom. The requirements in the draft code are:

- 5.3.2.1.3 For tank-vehicles, tank-wagons, transport units or wagons having one or more tanks carrying substances with UN Nos. 1202, 1203 or 1223, or aviation fuel classified under UN Nos. 1268 or 1863, but no other dangerous substance, the emergency information panel prescribed in 5.3.2.1.1 and 5.3.2.1.2 shall bear the emergency action code and the UN number and proper shipping name prescribed for the substance with the lowest flash-point.

We are looking for stakeholder input on the following three options for further developing this requirement.

### **Option 1**

Continue the use of UN 1270 as per the current code. Potentially expanding the list in Table 3.1 to include other refined petroleum products classified as UN 3082 that are category 4 flammable liquids.

### **Option 2**

Follow the requirements of 5.3.2.1.3 as currently drafted but expand the list of UN numbers to include other refined petroleum products of Class 3.

### **Option 3**

Follow the requirements of 5.3.2.1.3 as currently drafted but expand the list of UN numbers to include other refined petroleum products of Class 3 and category 4 flammable liquids classified as UN 3082.

**Question 11:** Which of the above three options do you prefer? Please provide your reasons.

**Question 12:** If you transport different flammable liquids (Class 3 or category 4) in multi compartment tanks, please provide a list of commonly transported UN numbers and substance names.

## **5.2 Specifications for Emergency Information Panels**

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Two key concerns have been raised in recent years in relation to the readability of EIPs. One being the ability to read an EIP, particularly in low light; and the other relating to the durability and legibility of writing on them.

To address the first concern, paragraph 5.3.2.2.1 of the draft code specifies that the EIP is to have a reflective background. The concerns regarding durability and legibility of the information on an EIP stem from the practice of handwriting this information. The wording in both the current code and the draft code do not explicitly prohibit handwriting but it must be questioned as to whether a handwritten EIP would be able to meet the EIP requirements.

The specifications in 5.3.2.2.3(a) of the draft code require the proper shipping name to be black, 15 mm thickness. The specification contains a suggestion that the thickness be reduced to 10 mm if displayed on two lines.

**Question 13:** If the draft requirement that EIPs have a reflective background is retained, what transition period should be allowed? Please provide your reasons.

**Question 14:** Do you have data that can help quantify the additional costs for reflective backgrounds for EIPs, or the improved safety benefits of them? Please provide details.

**Question 15:** Should handwriting on EIPs be specifically prohibited? Please provide your reasons.

**Question 16:** Is 10 mm an appropriate thickness for the proper shipping name when displayed over two lines?

## 5.3 Transport Emergency Response Plans

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A transport emergency response plan (TERP) is a mandatory requirement for placard loads of dangerous goods.

The requirement to have a TERP is specified in the regulations, the only mention of it in the current code is in AU03 which relates to the transport of unodourised LP Gas or Propane or Butane.

Requirements relating to a TERP, both the requirement to have one and the mandatory contents, will be incorporated into the future code. The primary intent of this is to make the requirement more transparent. The key question is the most appropriate location in the code for these requirements.

### Option 1

Specify the requirements relating to a TERP in Chapter 5.4 of the code, grouping it with other document requirements.

### Option 2

Create a new Chapter in Part 8 – Requirements for vehicle crews, equipment, operation and documentation, for TERP requirements.

**Question 17:** Which option do you prefer? Please provide details.

## 5.4 Consequential amendments required

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### Definitions

To support the draft of Part 5, the following definitions will be added in Part 1.

Term	Source document
Telephone advisory service	ADG 7.8
Tube-wagon	RID
Closed wagon	RID
Open wagon	RID
Sheeted wagon	RID
Tank-wagon	RID
Railway vehicle	RID

### Corresponding requirements in other Parts of the code

To support the restructuring of the code to align with the transport process, corresponding requirements will be included in other Parts of the draft code, as follows.

Part 1:

- Concession/exemptions for small loads and transport in a chain with more than one mode.

Part 4:

- Packing instructions for segregation devices.

Part 6:

- Design requirements, performance standards and approval requirements for segregation devices.

Part 7:

- Fitting of an emergency information holder.

Part 8:

- Location of transport documents in the vehicle or railway vehicle.
- Permission relating to use of a rail manifest in lieu of a transport document.

### Interrelationship with other consultation papers or working group activities

The drafting of some provisions in Part 5 of the draft code are dependent on current consultations or work being undertaken by other topic specific working groups. Relevant provisions will be amended to reflect the results of these consultations or work. The main provisions expected to be impacted are those relating to:

- Class 1 Explosives
- instructions in writing
- emergency information.

**Question 18:** Are there consequential impacts that you believe have been missed? Please provide details.

**Question 19:** Have you identified any contradictory, conflicting or incorrect cross-references in the draft of Part 5 that accompanies this working group paper? Please provide details.

## 6 Expected impacts of changes to Part 5 Consignment procedures

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### Key points

- Improving the structure and content of Part 5 to align with the transport process will simplify the code and make navigation easier.
- Changes to the marking and labelling of IBCs will remove an estimated \$100 million cost burden from industry whilst continuing to provide an appropriate level of hazard communication to emergency services.

### Benefits of the proposed changes

For the most part, the draft changes discussed in this paper represent no real change to requirements. Instead, they provide clarity and improve the readability of the code, which has been a key concern raised by stakeholders during previous consultations. Stakeholders have also raised issues with understanding which requirements apply in their circumstance. The proposed changes are aimed at improving the readability of the code.

Changes made to the structure and general content of Part 5 remove some of the complexity and support the NTC's aim of making the code easier for all stakeholders to navigate and for duty holders to identify applicable requirements.

Alignment of the requirements for marking and labelling of packages, including IBCs and large packagings, with the UN MR and mode specific codes will assist in smooth multi modal and cross border transport.

In keeping with the ADR approach of aligning the requirements of the code to the transport process, all exemptions are in Part 1. Grouping all exemptions in the one location is expected to make it easier for duty holders to identify all relevant exemptions in a single location prior to identifying and undertaking compliance activities.

Removing the outdated concept of a 'placardable unit' will remove unnecessary complexity from the code and modernise the code.

Removing the unique Australian requirement to display an EIP on an IBC is expected to remove a \$101 million dollar cost burden from industry (based on 2018 data). The combined GHS and DG marking and labelling on IBCs will ensure an appropriate level of communication of the hazards is maintained. The retention of EIPs on vehicles transporting IBCs means there is no degradation of safety information for emergency services. The requirement for EIPs to have a reflective background will further enhance communication of the hazards to emergency services.

### Anticipated costs

If the requirement for the background of an EIP, as proposed in the draft code, is retained, a small increase in compliance costs per EIP is anticipated. This will be mitigated to some degree by implementing a suitable transition time for changeover of current EIPs. Neither the costs for compliance nor the improved safety benefits can be quantified at this time. This paper contains questions to assist with obtaining the necessary data.

No other costs are anticipated.

## 7 Next steps

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Consultation on this paper will end at 5:00 pm 24 July 2023.

Submissions received will help inform the final draft of Part 5 of the code.

Opportunities to comment on other provisions in the code will be provided over the coming months. A complete draft code will be released for public comment in early 2024.

# Appendix A Comparison of Chapter and Section headings

The following table provides an outline of chapter and section headings in Part 5 of the draft code as compared to Part 5 of the current code.

Draft Part 5	Current code
Chapter 5.1 – General provisions 5.1.1 Application and general provisions 5.1.2 Use of overpacks and segregation devices 5.1.3 Empty uncleaned packagings (including IBCs and large packagings), tanks, MEMUs, vehicles and containers for carriage in bulk 5.1.4 Mixed packing 5.1.5 General provisions for Class 7	Chapter 5.1 – General provisions 5.1.1 Application and general provisions 5.1.2 Use of overpacks 5.1.3 Empty packagings 5.1.4 Mixed packing 5.1.5 General provisions for Class 7
Chapter 5.2 – Marking and labelling 5.2.1 Marking of packages, including IBCs 5.2.2 Labelling of packages, including IBCs	Chapter 5.2 – Marking and labelling 5.2.1 Marking 5.2.2 Labelling
Chapter 5.3 – Placarding and marking of containers, bulk containers, MEGCs, MEMUs, tank-containers, portable tanks, vehicles and wagons 5.3.1 Placarding 5.3.2 Emergency Information Panels 5.3.3 Elevated temperature substance mark 5.3.4 <i>Reserved</i> 5.3.5 <i>Reserved</i> 5.3.6 Environmentally hazardous substance mark	Chapter 5.3 – Placarding and marking of cargo transport unit, placardable units and bulk containers 5.3.1 General placarding requirements 5.3.2 Marking 5.3.3 Placarding portable tanks and bulk containers 5.3.4 Placarding freight containers 5.3.5 Placarding road vehicles 5.3.7 Placarding rail wagons 5.3.8 Placarding intermodal loads 5.3.9 Placard removal
Chapter 5.4 – Documentation 5.4.0 General 5.4.1 Dangerous goods transport document and related information 5.4.2 Container/vehicle packing certificate 5.4.3 Emergency information and instructions in writing 5.4.4 Retention of dangerous goods transport information 5.4.5 Example of a multimodal dangerous goods form	Chapter 5.4 – <i>Reserved</i>  Note: Requirements for documentation are in Part 11
Chapter 5.5 – Special provisions 5.5.1 <i>Deleted</i> 5.5.2 Special provisions applicable to fumigated cargo transport units (UN 3359) 5.5.3 Special provisions applicable to the carriage of dry ice (UN 1845) and to packages, vehicles and wagons and containers containing substances presenting a risk of asphyxiation when	Chapter 5.5 – Special provisions 5.5.1 <i>Deleted</i> 5.5.2 Special provisions applicable to fumigated cargo transport units (UN 3359) 5.5.3 Special provisions applicable to packages and cargo transport units containing substances presenting a risk of asphyxiation when used for cooling or conditioning purposes

<p>used for cooling or conditioning purposes (such as dry ice (UN 1845) or nitrogen, refrigerated liquid (UN 1977) or argon, refrigerated liquid (UN 1951) or nitrogen)</p> <p>5.5.4 Dangerous goods contained in equipment in use or intended for use during carriage, attached to or placed in packages, overpacks, containers or load compartments</p>	<p>(such as dry ice (UN 1845) or nitrogen, refrigerated liquid (UN 1977) or argon, refrigerated liquid (UN 1951) or nitrogen)</p> <p>5.5.4 Dangerous goods contained in equipment in use or intended for use during transport</p>
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# Glossary

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<b>Term</b>	<b>Definition</b>
the Code	Refers to the Australian Code for the Transport of Dangerous Goods by Road & Rail – np specific edition
current code	Refers to edition of 7.8 of the code
future code	Refers to the revised code
ADR	Agreement concerning the International Carriage of Dangerous goods by Road
RID	Agreement concerning International Carriage of Dangerous Goods by Rail
WHS	Work Health and Safety
MEGC	Multiple-element gas container
MEMU	Mobile explosives manufacturing unit (known in Australia as a mobile processing unit (MPU))
TERP	Transport Emergency Response Plan
UN MR	United Nations Model Regulations on the Transport of Dangerous Goods

# References

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Chemistry Australia, 2018, *Chemical Industry Cost Impact on the Emergency Information Panels in relation to IBCs, Industry Analysis from December 2017 – January 2018*  
[http://www.chemistryaustralia.org.au/Library/PageContentVersionAttachment/f05888e3-1dea-4d38-8322-d12d55881539/chemistry\\_australia\\_eip\\_cost\\_analysis.pdf](http://www.chemistryaustralia.org.au/Library/PageContentVersionAttachment/f05888e3-1dea-4d38-8322-d12d55881539/chemistry_australia_eip_cost_analysis.pdf)

Deloitte Access Economics, 2018, *Regulatory Impact Statement for Dangerous Goods (Transport by Road or Rail) Regulations 2018*  
<https://www.vic.gov.au/sites/default/files/2019-10/Dangerous-Goods-RIS-PDF.pdf>

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