



Government of **Western Australia**
Department of **Mines and Petroleum**
Resources Safety

Dangerous Goods Safety Guidance Note

Transport of explosives on roads and at mines

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Introduction

Stringent criteria apply to the transport of explosives to ensure people transporting explosives do so without creating an unacceptable risk to the community.

This guidance note assists in identifying the regulatory requirements for the transport of explosives in Western Australia on both public roads and mine sites. The information is derived from requirements specified in the *Dangerous Goods Safety Act 2004* (the Act), the Dangerous Goods Safety (Explosives) Regulations 2007 (the Explosives Regulations) and the *Australian Code for the Transport of Explosives by Road and Rail, Third Edition, 2009*, which is more commonly known as the “Australian Explosives Code” (AEC). Operators of mine sites should also be aware of the requirements of the *Mines Safety and Inspection Act 1994* and associated regulations that may apply.

Note: The term “road” is used here for a road or other place, whether or not on private property, that is open to or used by the public for vehicle movement. It does not include roads on mine sites, unless specified as such.

This guidance note does not address the specific details of mixed load segregation requirements or road transport of explosives in freight containers.

With few exceptions, licences are required for the road transport of explosives and driving of explosives transport vehicles in Western Australia, as prescribed by the Explosives Regulations. The exceptions include small quantities of some low-risk explosives commonly used within the community for business or personal purposes (e.g. nail gun cartridges, sparklers, emergency devices, ammunition).

A Western Australian dangerous goods security clearance is a prerequisite for obtaining explosives driver’s licences and explosives transport licences. The licence application forms contain detailed information about security clearance requirements and how to obtain a security card.

A licence holder may authorise a person to have either *supervised* or *unsupervised* access to explosives, provided the appropriate requirements are satisfied (Table 1). A person is considered a *secure nominee* if the requirements are met for unsupervised access.

Further information on the licensing system, security clearance requirements and applying for a licence is available on the Resources Safety website.

An explosives management plan (EMP) is an additional requirement for obtaining an explosives transport licence. These are submitted to Resources Safety for assessment.

Table 1 Requirements for supervised and unsupervised access to explosives

Supervised access	Unsupervised access (secure nominee)
<ul style="list-style-type: none"> • Person must be authorised by licence holder to access and possess explosives in the course of their duties • Person must be supervised by licence holder while having access to explosives, <i>or</i> be supervised by a secure nominee of the licence holder acting in the course of their duties 	<ul style="list-style-type: none"> • Secure nominee must be authorised by licence holder to access and possess explosives in the course of their duties • Secure nominee must have a valid WA dangerous goods security clearance • Licence holder must be satisfied the person is suitably trained to safely handle the explosives • Licence holder must keep a record of secure nominees

Transport of low-risk explosives exempt from requiring a licence

The explosives listed in Table 2 are considered low risk and do *not* require a licence for transport provided they are transported in accordance with the Explosives Regulations. The exemption only applies if these explosives are transported alone, or with other explosives listed in Table 2.

Table 2 Explosives that may be transported without a licence

Explosives not requiring a transport licence	Transport requirements
Unrestricted fireworks (e.g. containing small quantities of explosives and generally for personal entertainment – party poppers, bonbons, Christmas crackers, starter pistol caps)	No specific requirements
Model rocket motors with NEQ* of 62.5 g or less	No specific requirements
Smoke generators if there is not more than 250 kg (gross weight) with a classification code of 1.4S or 1.4G	No specific requirements
Thermite igniters with a classification code of 1.4S or 1.4G and the person is engaged or employed to weld rails for railways, or is an employee of such a person, while undertaking the transport, possession, supply and use of the igniters	No specific requirements
Sparklers	Any quantity of classification code 1.4G or 1.4S where combustible part is not more than 300 mm long
Power device cartridges (e.g. deployment devices for air bags and parachutes)	May transport any quantity
Power tool cartridges (e.g. nail gun cartridges)	May transport any quantity
Emergency devices if, in the vehicle, there is not more than: <ul style="list-style-type: none"> • 50 kg (gross weight) of emergency devices with a classification code of 1.3G • 250 kg (gross weight) of emergency devices with a classification code of 1.4 	No specific requirements
Ammunition (any quantity)	May transport any quantity
Ammunition propellant or black powder if, in the vehicle: <ul style="list-style-type: none"> • the NEQ of any ammunition propellant (excluding that in ammunition) is not more than 50 kg • there is not more than 4 kg of black powder 	No specific requirements

NEQ = net explosive quantity; i.e. net quantity of explosive in the article or substance, excluding other constituents

Limited transport under a “user” licence

The licences for shotfirers, pyrotechnics (special use), fireworks contractors and fireworks operators authorise the holder to transport limited quantities of explosives (Table 3) for their *own* use without the need for a separate explosives transport licence. An explosives transport licence, explosives driver’s licence or both, as applicable, is required if these quantities are exceeded.

For example, a separate transport licence would not be required for a licensed shotfirer operating a small shotfiring business if explosives were transported for use on jobs, as long as the requirements in Table 3 were satisfied.

Table 3 “User” licences authorising limited transport of explosives

Requirements for transport under a “user” licence
<ul style="list-style-type: none">• Not more than a Risk Category 2 load is transported• The holder is authorised to possess the explosive under a “user” licence• The explosive will be used by the licence holder, or:<ul style="list-style-type: none">– a licensed firework contractor may transport an explosive if it will be used by an employee of the contractor in the course of his or her duties– a licensed firework operator employed by a firework contractor (authorised to possess the explosive) may transport an explosive if it will be used by the fireworks contractor or an employee of the contractor (including the operator) in the course of his or her duties

Note: See Table 5 for Risk Category quantities

Requirements for explosives transport and driver licences

Explosives transport and explosives driver licences are required for the transport of explosives by road. An explosives transport licence authorises the transport of explosives by road, and is applicable for both businesses and individuals. A single explosives transport licence may cover one or more vehicles owned by the same licence holder. An explosives driver licence authorises an individual to drive a vehicle transporting explosives by road, and only individuals, not businesses, may apply for explosives driver licences.

In addition to the exemptions for the transport of low-risk explosives (Table 2), transport and licensing exemptions may apply where other authorisations exist for the particular circumstances (Table 4).

Explosives transport and driver licences are not required for the transport of explosives at a mine site. However, licences are needed for transport on a public road. See the section *Transport at mines* for more details.

Licence applications for explosives transport and explosives driver licences are available from the Resources Safety website.

Table 4 Exemptions for explosives transport and explosives driver’s licences

Exemptions to requiring an explosives transport licence
<ul style="list-style-type: none">• Transporting an exempt explosive as per Table 2• Prime contractor holds a “user” licence in accordance with the requirements of Table 3• Prime contractor holds a current interstate licence authorising road transport of the explosive
Exemptions to requiring an explosives driver licence
<ul style="list-style-type: none">• Transporting an exempt explosive as per Table 2• Explosive is part of a Risk Category 1 load of explosives on the vehicle <i>and</i> the person:<ul style="list-style-type: none">– holds an explosives transport licence; <i>or</i>– is a secure nominee of a person who holds an explosives transport licence and transports the load in the course of his or her duties as an employee• Person holds a “user” licence in accordance with requirements of Table 3• Person holds a current interstate explosives driver licence or equivalent• Person is:<ul style="list-style-type: none">– an employee of a prime contractor who holds a current interstate explosives transport licence; <i>and</i>– is authorised to drive the vehicle transporting the explosive on a road in that State or Territory; <i>and</i>– is acting in the course of his or her duties as an employee

Note: “Prime contractor” means a person who, through the conduct of his or her business, takes responsibility for the transport of explosives.

Explosives management plan

An EMP must be prepared for the purpose of an explosives transport licence. An EMP is *not* required to obtain an explosives driver licence. Resources Safety has prepared a guide to assist in preparation of an EMP, covering the types of documents, procedures or actions to be considered. Completion of the associated template will satisfy the requirement to submit an EMP with the licence application. If further evidence is required for assessment, verification of the measures in place may be requested. The guide and template are available on the Resources Safety website.

The EMP describes how the licence holder ensures safe and secure operations in relation to the transport of explosives. The EMP must consider the entire journey, including vehicle stops, in-transit storage and warehouses. These operations must be documented, communicated to all relevant persons, implemented, enforced and reviewed regularly and when circumstances change.

EMPs should be based on the risk management approach and provide details of the hazards identified, risks assessed and risk control measures adopted. Set procedures should be prepared for routine operations.

The EMP includes:

- general matters (including emergency management plans, incident reporting, training, monitoring and record keeping);
- security matters (including the assessment, minimisation and monitoring of security risks);
- what measures will be taken to ensure that any explosives loaded and unloaded at a place will be kept secure;
- what measures will be taken to monitor at all times the location of any explosive while being transported (e.g. vehicle GPS tracking system or other means, explosives not left unattended);
- what measures will be taken to ensure that any:
 - unlawful entry to or use of a vehicle used to transport any explosive; and
 - attempted unlawful entry or use, theft, attempted theft or unexplained loss of explosive is investigated and reported to the Chief Officer;
- what measures will be taken to ensure that the required details of any explosive being transported are recorded at the beginning and end of the journey and reconciled;
- what measures will be taken to ensure that no explosive is consigned for transport by or to a person unless the person is an authorised person; and
- what measures will be taken to ensure that a record is kept of the details of the consignor and consignee of any explosive being transported, their authority under the regulations to possess the explosive, and the required details of the explosive supplied.

Transport at mine sites

There are similarities in the requirements for transporting explosives at mine sites and the transport of explosives on roads used by the public — this guidance note should be read in its entirety to ensure all obligations are understood. Clarification is provided where explosives transport requirements are different for a mine site versus a publicly accessible road.

The transport of explosives on a mine site does not require an explosive transport licence or an explosives driver licence. However, if explosives are transported on a publicly accessible road, such as transporting between mine sites, then the appropriate licences and authorisations are required.

“User” licences, such as a shotfirer licence, provide for limited transport of explosives. A shotfirer employed by the mine may transport the mine’s explosives on a publicly accessible road provided the explosives are for use within the course of his or her duty. The quantity of explosives transported must be within the authorised limits for a shotfirer licence, and appropriate level of security clearance is also required. If the quantity of explosives is greater than what may be transported by a licensed shotfirer on a publicly accessible road, then explosives driver and explosives transport licences are necessary. See the section *Limited transport under a “user” licence* for more information on transport under a shotfirer or other “user” licence.

The determination of Risk Category quantities is standard for all transport of explosives, whether on a publicly accessible road or mine site. Many of the requirements for transporting a particular Risk Category quantity of explosives on a mine site are similar to those for road transport. This guidance note identifies the common requirements applicable to mine sites (e.g. general transport requirements, vehicle design requirements, stowage requirements, some basic vehicle placards and markings, fire extinguishers), and those requirements specific to transport on a publicly accessible road (e.g. emergencies on a road, situations involving stopping or refuelling).

Risk Category types and quantities

The AEC categorises explosives by type and quantity into three risk categories that are applied to the loads of explosives on a vehicle. The inherent risk of the explosives being carried increases with each Risk Category, as do the requirements (Table 5).

Table 5 Risk Category 1, 2 and 3 types and quantities of explosives

Explosive Class	Quantity (NEQ) per vehicle			Examples
	Risk Category 1 (Low risk)	Risk Category 2 (Moderate risk)	Risk Category 3 (High risk)	
Division 1.1A	<i>Transport must be specifically approved by the Chief Officer</i>			
Detonators of 1.1B	125 items or less	> 125 – 5,000 items	> 5,000 items	Detonators
All other Division 1.1	5 kg or less	> 5 – 250 kg	> 250 kg	Blasting explosives
Division 1.2	5 kg or less	> 5 – 250 kg	> 250 kg	Military explosives
Division 1.3	50 kg or less	> 50 – 1,000 kg	> 1,000 kg	Propellant powders and some fireworks
Detonators of 1.4B or 1.4S	125 items or less	> 125 items	Not applicable	Detonators
All other Division 1.4 (except 1.4S)	250 kg or less	> 250 kg	Not applicable	Marine distress flares
All other Division 1.4S (other than detonators) [‡]	Any quantity	Not applicable	Not applicable	Some fireworks such as sparklers and bonbons
Division 1.5	25 kg or less	> 25 - 250 kg	> 250 kg	Sensitised bulk emulsions
Division 1.6	25 kg or less	> 25 kg	Not applicable	Very insensitive military explosives
Mixed Loads	See AEC chapter 7	See AEC chapter 7	See AEC Chapter 7	Mixed loads

[‡] Shaped charges of Class 1.4S have special security requirements
See requirements of AEC table 2.1

Maximum load limits apply to the transport of explosives by road for all vehicle configurations (Table 6).

Table 6 Load limits for road transport of explosives

Division	Load limit
1.1,1.2 and 1.3	25 tonnes
1.5 and 1.6	40 tonnes
1.4	Unlimited

See requirements of AEC section 7.4.1

High security risk loads of explosives

Risk Category 3 loads with an NEQ over a certain quantity are considered high security risk loads of explosives (Table 7).

Most explosives constitute a security risk, and some are considered to present a high security risk (e.g. detonators, boosters). Provisions for implementing and maintaining appropriate security requirements throughout the transport process are required.

A relatively small (NEQ) load of even high security risk explosives does not constitute a high security risk load because of its relatively low direct potential consequences. A high security risk load is one where the load is the risk — that is, the load has the potential to be used directly for illegal purposes with high consequence, rather than simply being a load containing explosives, which present a risk of theft and other subsequent illegal purposes.

In addition to the requirements applicable to the transport of a Risk Category 3 load, the prime contractor transporting high security risk loads must develop and maintain a written security plan covering the arrangements and procedures for the transport of high security risk loads of explosives. If desired, the security plan may be included in the prime contractor's explosives management plan.

The prime contractor must provide, upon request, the security plan for inspection by a dangerous goods officer. A person who transports high security risk loads of explosives must comply with all the requirements of a security plan that apply to that person.

The owner of a vehicle and the prime contractor must have a system, independent of the driver, to monitor and record the location of vehicles transporting high security risk loads of explosives.

Anyone who drives or rides in a vehicle that is transporting high security risk loads of explosives, or is escorting such a vehicle (passengers included), must be security cleared. Only those people operating under a relevant security plan may be involved in the transport and security of a high security risk load of explosives.

At a minimum, the security plan for the transport of high security risk loads of explosives must include:

- a description of the measures for preventing the theft of the explosives being transported and for preventing unauthorised people from having access to those explosives;
- a statement setting out the vehicle design requirements for vehicles used to transport the explosives, and the load securing requirements for securing and protecting those explosives;
- a description of the arrangements for emergency communications in the event of an emergency involving those explosives;
- a statement setting out the requirements for training of persons involved in the transport of the explosives (including dealing with security emergencies and transporting explosives safely);
- a statement setting out the requirements for ensuring that vehicles transporting the explosives travel by the safest practicable route, considering the risk and including the procedures for planning transport routes;
- the procedures for testing, evaluating, reviewing and updating the security plan;
- details of the responsible person or security manager nominated to implement and maintain the security plan, including the instruction of workers in the relevant access controls, recording procedures and reporting security incidents; and
- a list of all those, including any contractors, who will have unsupervised access to explosives, and who have been appropriately security cleared, including provisions for amending the list.

In determining if a load is a high security risk load, the quantities of all explosives on the vehicle are aggregated and the resulting Division determined in accordance with the AEC requirements for mixed loads.

For the purposes of determining the total explosives load, where explosives are transported with:

- ammonium nitrate (AN) or AN mixtures, half the mass of the AN or AN mixtures must be treated as explosives of Division 1.1 or Division 1.5 accordingly; and

- AN emulsions, suspensions or gels (UN 3375), the total mass of the AN emulsions, suspensions or gels (UN 3375) must be treated as explosives of Division 1.1 or Division 1.5 accordingly.

Table 7 High security risk loads of explosives

Type of explosive	Quantity
Division 1.1	Exceeding 1,000 kg
Division 1.2	Exceeding 5,000 kg
Division 1.3	Exceeding 1,000 kg
Division 1.4	Not applicable
Division 1.5	Exceeding 1,000 kg
Division 1.6	Not applicable

The quantity is based on load per transport unit or the total load in a combination vehicle

If the resultant load of explosives is of Division 1.4 or Division 1.6, it will generally not be a high security risk load

For mixed loads containing explosives and ammonium nitrate, see text above

For more information, see AEC sections 2.4 and 8.8

Transport requirements for Risk Category 1, 2 and 3 quantities of explosives

The requirements for transporting explosives vary depending on the Risk Category assigned to the load, and include specifications for vehicle design, placarding, documentation, safety equipment and precautions for vehicle operation. Both the prime contractor and driver need to be aware of the obligations applicable to the explosives they are transporting.

Explosives of Classification Code 1.4S are designed or packaged to minimise the hazardous effects of the explosive. However, the security requirements must be commensurate with the nature of the explosive item, regardless of its packaging. For example, sparklers and some packaged shaped charges may both be Classification Code 1.4S, but while the design of the sparklers makes them minimally hazardous, the shaped charges are significantly hazardous once the packaging is removed. Consequently, the more hazardous shaped charges require greater security than sparklers.

The requirements listed in Table 8 apply to all Risk Categories, **including** the explosives of the type and quantity exempted in Table 2, if the transporter is the prime contractor. The requirements of Table 8 do not apply to individuals transporting explosives of the type and quantity exempted in Table 2, provided the individual is transporting it for personal purposes (i.e. not commercial transport). If the requirements apply to a mine site then the details in the corresponding Risk Category column apply to the load being transported.

Note: Not all requirements are listed in Table 8. Refer to the regulations and AEC for all requirements.

Table 8 Selected specific requirements for Risk Categories 1, 2 and 3 quantities of explosives

Requirement	Risk Category 1	Risk Category 2	Risk Category 3	Requirement applicable to a mine site?
General requirements (AEC chapter 8)				
<ul style="list-style-type: none"> Smoking or lighting matches or cigarette lighters in any part of transport vehicle is not permitted (cigarettes, cigarette lighters and matches may be carried only in passenger cabin glove box inside a sealed container that would prevent the spread of fire), and ignition sources should be kept more than 6 m from explosives Mobile phones or other radio transmitters are not allowed in an explosives-carrying compartment, and should be separated as far as possible from explosives All practicable precautions to be taken to ensure explosives or packages of explosives are not dropped, thrown or mishandled Loading and unloading must not take place during thunderstorms <p><i>See requirements of AEC sections 8.2.10 and 8.2.11, and section 8 of the Act</i></p>	Yes	Yes	Yes	<p>Recommended</p> <p>Smoking and naked lights are prohibited within 8 m of an explosive</p> <p>Work associated with charging and firing must cease if an electric storm is a danger</p> <p><i>See regulations 8.13 and 8.38 of Mines Safety and Inspection Regulations 1995 (MSIR)</i></p>
<p>Insurance policy or indemnity required covering property damage, personal injury and other damage arising out of fire, explosion, leakage or spillage of explosives in, on or from the vehicle or container transported on the vehicle</p> <p><i>See requirements of AEC section 8.3.5</i></p>	No specific requirement	Yes – insurance must not be less than \$2,500,000 per event	Yes – insurance must not be less than \$5,000,000 per event	No

Requirement	Risk Category 1	Risk Category 2	Risk Category 3	Requirement applicable to a mine site?
Vehicle design requirements (AEC chapter 6)				
<p>All vehicles must be suitable for the transport of explosives, including:</p> <ul style="list-style-type: none"> passenger compartment must not be used for transporting explosives explosives must not be accessible from the cabin of the vehicle** vehicle is roadworthy and in sound mechanical repair interior surface of vehicle is in clean, good condition such that packages will not be damaged load securing devices in good condition and effective for their designed purpose carry boxes and enclosed vehicle bodies are securely fastened to vehicle such that, when loaded, they are capable of withstanding a horizontal force of 2G <p><i>See requirements of AEC section 6.4.1</i></p>	Yes	Yes	Yes	Yes – see the requirements of applicable Risk Category <i>See regulation 110 of Explosives Regulations, and regulations 13.2 and 13.3 of MSIR</i>
<p>When transporting explosives in a vehicle:</p> <ul style="list-style-type: none"> the carry box is securely attached to the vehicle, unless it is contained within an enclosed vehicle body a carry box is not required if explosives are in sealed packages and within an enclosed vehicle body, provided the packages are stowed such that they are incapable of movement within the vehicle <p><i>See requirements of AEC section 6.2(1)</i></p>	Yes	Yes [∞]	No – require purpose-built carry box or enclosed vehicle body (see below)	Yes – see the requirements of applicable Risk Category <i>See regulation 110 of Explosives Regulations</i>
<p>Transport of explosives in a vehicle with either a carry box or enclosed vehicle body that:</p> <ul style="list-style-type: none"> is lockable (<i>as required by AEC section 6.1.1</i>) has an inner surface of box or body made of wood or other approved material has been constructed strong enough to maintain its integrity during transport and adequately protects and secures the goods is weatherproof is closed and has continuous floors <p><i>See requirements of AEC sections 6.1 and 6.2</i></p>	Yes <i>Note: These requirements are not applicable to Classification Code 1.4S, excluding detonators</i>	Yes <i>Note: These requirements are not applicable to Classification Code 1.4S, excluding detonators</i>	Yes <i>See detailed requirements in AEC chapter 6</i>	Yes – see the requirements of applicable Risk Category <i>See regulation 110 of Explosives Regulations</i> <i>Note: AEC sections 6.1.1 “Requirements for locks”, 6.2(1)(a) and 6.2(2)(d)(i) for lockable carry boxes and 8.3.6(3)(b) for removing or concealing markings do not apply</i>

Requirement	Risk Category 1	Risk Category 2	Risk Category 3	Requirement applicable to a mine site?
Vehicle design requirements (AEC chapter 6) continued				
Carry boxes and enclosed vehicle bodies must have the following special features: <ul style="list-style-type: none"> • steel or aluminium outer surface • closures and doors have overlapping openings and are sparkproof • heat resistant walls • designed to incorporate vertical and horizontal firescreens • enclosed vehicle body must not be accessible from cabin of vehicle while transporting explosives <i>See requirements of AEC sections 6.2(2) and 6.2(3)</i>	No	No	Yes <i>See detailed requirements in AEC chapter 6</i>	Yes – see the requirements of applicable Risk Category <i>See regulation 110 of Explosives Regulations</i>
Vehicles must have the following features: <ul style="list-style-type: none"> • vertical and horizontal firescreens • acid resistant, ventilated and electrically insulated battery cover • wiring carried in approved conduit • fuse protected circuits • battery isolation switch • compression engine (e.g. diesel) • fuel tank located to the front or rear of the vertical firescreen, but if located to the rear it must be mounted below the horizontal firescreen and protected from damage and spilt fuel <i>See requirements of AEC section 6.4.2</i>	No	No	Yes <i>See detailed requirements in AEC chapter 6</i>	Only diesel engines are permitted in underground mines <i>See regulation 10.48 of MSIR</i>

Requirement	Risk Category 1	Risk Category 2	Risk Category 3	Requirement applicable to a mine site?
Stowage requirements (AEC chapters 7 and 8)				
Explosives of Classification Code 1.1A must not be transported without specific approval from Chief Officer <i>See requirements of AEC section 8.2.2(1)</i>	Yes	Yes	Yes	Recommended
<p>Stowage on vehicles includes the following requirements:</p> <ul style="list-style-type: none"> • be appropriately segregated from other divisions of explosives and classes of dangerous goods as required under the AEC • explosives must be in approved packaging and be correctly labelled • packages must be stowed such that they remain in position regardless of vehicle movement (e.g. starting, stopping, jolting, swaying) • all due precautions are to be taken to avoid both theft of explosives and accidents caused by inadvertent initiation of explosives • packages must be stowed and secured in accordance with the Load Restraint Guide (published by Australian Government Publishing Service) • loads of explosives must not extend horizontally past the periphery of the vehicle • packages must be stowed such that they do not damage one another, and must be kept away from heavy goods or articles likely to cause damage (items such as pallet jacks and rollers must not be transported with fireworks or detonators) • if some of the contents of the vehicle are unloaded, the remaining packages must be rearranged such that they comply with all stowage and segregation requirements <p><i>See requirements of AEC sections 7.2.1 and 7.3.2</i></p>	Yes	Yes	Yes	Yes – see the requirements of applicable Risk Category <i>See regulation 110 of Explosives Regulations and regulation 8.14 of MSIR</i>

Requirement	Risk Category 1	Risk Category 2	Risk Category 3	Requirement applicable to a mine site?
Stowage requirements (AEC chapters 7 and 8) continued				
<p>Explosives must not be transported:</p> <ul style="list-style-type: none"> on the same vehicle or combination vehicle as other classes of dangerous goods or fire risk substances, except where permitted under the provisions of the AEC in the same compartment of the vehicle as domestic, commercial or industrial refuse or waste <p><i>Note: The requirements above do not apply to if the aggregate of explosives and other dangerous goods carried does not trigger the requirements for marking of the vehicle, and the explosives are of the following types and quantities:</i></p> <ul style="list-style-type: none"> Classification Codes 1.2G – 5 kg or less Classification Codes 1.3G, 1.3C – 50 kg or less Classification Code 1.4G – 250 kg or less Classification Code 1.4S, excluding detonators – unlimited <p>See requirements of AEC chapter 7 and specifically section 7.3.1</p>	Yes	Yes	Yes	Yes – see the requirements of applicable Risk Category See regulation 110 of Explosives Regulations and 8.14 of MSIR
<p>Detonators of Classification Code 1.1B must be separated from other explosives by an effective means of segregation demonstrated to prevent sympathetic detonation of the incompatible explosives (e.g. solid separation wall)</p> <p>See requirements of AEC section 7.3.2(6)</p>	Yes – if other segregation requirements cannot be satisfied [†]	Yes – if other segregation requirements cannot be satisfied [†]	Yes	Yes – see the requirements of applicable Risk Category See regulation 110 of Explosives Regulations
<p>Detonators of Classification Code 1.4B or 1.4S to be in separate carry box or compartment if they are carried with other explosives</p> <p>See requirements of AEC section 7.3.2(7)</p>	Yes	Yes	Yes	Yes – see the requirements of applicable Risk Category See regulation 110 of Explosives Regulations
<p>Explosives must not be transported on any road vehicle that is carrying passengers for hire or reward (e.g. taxi)</p> <p>See requirements of AEC section 8.2.2(2)</p>	Yes	Yes	Yes	No

Requirement	Risk Category 1	Risk Category 2	Risk Category 3	Requirement applicable to a mine site?
Vehicle placards and marking requirements (AEC chapter 3)				
Front and rear reflective class placard and subsidiary risk placard, not less than 250 mm square <i>See requirements of AEC section 3.4.1</i>	No	Yes	Yes – where a rear emergency information panel is required, it may serve as a rear class label	Yes – see the requirements of applicable Risk Category <i>See regulation 110 of Explosives Regulations</i>
“EXPLOSIVES” reflective placard with red lettering 150 mm high on white background attached to front, rear and both sides of vehicle, and for a trailer combination, also on each side of each trailer or rigid vehicle carrying explosives in the combination <i>See requirements of AEC sections 3.4.1 and 3.4.2</i>	No	Yes	Yes	Yes – see the requirements of applicable Risk Category <i>See regulation 110 of Explosives Regulations</i>
Emergency information panels on both sides and rear <i>See requirements of AEC section 3.4.1(3)(c)</i>	No	No	Required if transporting 1,000 kg or more of explosives, or 20,000 or more detonators (Division 1.4 exempted) <i>See requirements of AEC chapter 3</i>	No
Placards and markings to be removed from vehicle, or concealed, when the vehicle is not transporting explosives <i>See requirements of AEC section 8.2.13</i>	n/a	Yes	Yes	Recommended

Requirement	Risk Category 1	Risk Category 2	Risk Category 3	Requirement applicable to a mine site?
Documentation requirements (AEC chapters 4 and 8)				
Transport documents required <i>See requirements of AEC chapter 4</i>	Yes [∞]	Yes	Yes	No
Transport documents must be given to the driver of the explosives transport vehicle <i>See requirements of AEC section 8.2.8(1)</i>	Yes – if transport documents are required	Yes	Yes	No

Requirement	Risk Category 1	Risk Category 2	Risk Category 3	Requirement applicable to a mine site?
Emergency equipment and procedural requirements (AEC chapter 8 and legislative requirements)				
Emergency procedure guide to be written and provided to driver of vehicle and attached, or located adjacent to, the inside of the driver's door in a conspicuous position <i>See requirements of AEC section 8.3.8</i>	No – however, driver must have emergency information for the explosives and this should be kept inside driver's door pocket	Yes <i>See requirements of AEC chapter 8</i>	Yes <i>See requirements of AEC chapter 8</i>	No
A telephone service to be provided and attended at all times while explosives are aboard a road vehicle so that technical advice about the hazards and management of the explosives is readily available, and a suitably trained person can attend the scene if requested by a dangerous goods officer or an officer of the emergency services <i>See requirements of AEC section 8.4.6</i>	No	No	Yes	No
Fire extinguishers to be carried on vehicle, outside the explosives carrying compartment (extinguishers must comply with Australian Standards AS 1841.1 and AS1841.5) <i>See requirements of AEC sections 8.3.9(1) and 8.3.9(2)</i>	No	1 x 30B powder-type extinguisher	1 x 10B (in cabin) and either one 80B or two 40B powder-type extinguishers	Yes – see the requirements of applicable Risk Category <i>See regulation 110 of Explosives Regulations</i>
Reflector signals (minimum of three, double sided), pair of wheel chocks <i>See requirements of AEC section 8.3.9(3)</i>	No	Yes	Yes	No
Extra emergency equipment to include: <ul style="list-style-type: none"> • 250 mL eye wash • goggles or full face shield • chemically resistant suit or overalls, gloves and boots • intrinsically safe electric torch (compliant with AS/NZS 60079.11) <i>See requirements of AEC section 8.3.9(4)</i>	No	Required if transporting bulk explosives	Required if transporting bulk explosives	No
Explosives must be securely locked in the receptacle, carry box or enclosed vehicle body whenever explosives are on the transport vehicle (except during loading and unloading) <i>See requirements of AEC section 8.2.14</i>	Yes	Yes	Yes	Appropriate means must be taken to ensure the security of the explosives at all times

Requirement	Risk Category 1	Risk Category 2	Risk Category 3	Requirement applicable to a mine site?
Emergency equipment and procedural requirements (AEC chapter 8 and legislative requirements) continued				
Recorded checks must be performed during journey to ensure that no security breach of the receptacle, carry box or enclosed vehicle body has occurred <i>See requirements of AEC section 8.2.15</i>	Yes	Yes	Yes	No
Vehicles containing explosives must: <ul style="list-style-type: none"> be attended, guarded or alarmed if left stationary be secured at temporary stops, preferably within view of the driver and inaccessible to public be parked at least 5 m away from combustible material, including tall, dry vegetation, fuel and LP gas storage be attended for at least 15 minutes after the engine has been stopped to recognise any delayed brake or tyre fire not be parked in the same place for consecutive days or nights unless the local police and emergency services have been notified <i>See requirements of AEC sections 8.2.18 and 8.3.11(3), and regulation 52 of Explosives Regulations</i>	Yes	Yes <i>Note: Vehicle must be attended or guarded if stationary</i> <i>Note: Protected works distances apply for fuel and LP storages, see Table 9</i>	Yes <i>Note: Vehicle must be attended or guarded if stationary</i> <i>Note: Protected works distances apply for fuel and LP storages, see Table 9</i>	No - appropriate means must be taken to ensure the security and safety of the explosives at all times
Refuelling requirements include: <ul style="list-style-type: none"> must be in remote location; vehicle engine must be shut down ignition sources must be at least 6 m away from vehicle do not refuel during thunderstorms do not use mobile phones or radio transmitters during refuelling <i>See requirements of AEC section 8.3.11(1)</i>	Recommended but not required	Yes	Yes	No
Except where required by law or vehicle breakdown, drivers are not permitted to: <ul style="list-style-type: none"> stop in a public place within a city or town make temporary stops (< 1 hour) within 100 m of a protected works (except for refuelling as per requirements) make stops for long periods of time (> 1 hour) within 10 m of a road, street, source of ignition or railway or within specified distances of other protected works (see Table 9) <i>See requirements of AEC section 8.3.11(2)</i>	No	Yes – exempt if carrying only Division 1.4 explosives	Yes	No

Requirement	Risk Category 1	Risk Category 2	Risk Category 3	Requirement applicable to a mine site?
Emergency equipment and procedural requirements (AEC chapter 8 and legislative requirements) continued				
Passengers are not permitted in the vehicle, unless they are: <ul style="list-style-type: none"> • an employee of, or other adult person authorised to ride in the vehicle by the owner of the vehicle or the prime contractor • a dangerous goods officer • a police or emergency services officer • a person authorised to ride in the vehicle by a dangerous goods officer, police officer or emergency services personnel <i>See requirements of AEC section 8.3.11(5)</i>	Yes	Yes	Yes	No
A competently trained attendant or suitable mobile communication system must accompany the driver, and a telephone service for technical advice be provided and attended at all times <i>See requirements of AEC sections 8.4.4 and 8.4.6</i>	No	No	Yes	No
The driver or the prime contractor of a vehicle transporting explosives must report any theft, fire, accident, explosion or accidental leakage or escape involving the explosives to the applicable police or fire authority as soon as practicable <i>See requirements of AEC sections 8.2.12 and 8.3.14, and regulation 109 of Explosives Regulations</i>	Yes	Yes	Yes	Follow mine site emergency reporting procedures Recommended that theft be reported to police
Prior to transport, the consignor must ensure arrangements are in place such that any special equipment or supplies needed for recovering explosives in the event of a fire, leakage or spillage will be available at the incident scene within a reasonable time period <i>See requirements of AEC section 8.3.14(2)</i>	No	Yes	Yes	Follow mine site procedures
Prior to transport, the prime contractor must ensure arrangements are in place such that any special equipment or supplies needed for recovering the transport vehicle in the event of an explosives fire, leakage or spillage will be available at the incident scene within a reasonable time period <i>See requirements of AEC section 8.3.14(3)</i>	No	Yes	Yes	Follow mine site procedures

Requirement	Risk Category 1	Risk Category 2	Risk Category 3	Requirement applicable to a mine site?
Emergency equipment and procedural requirements (AEC chapter 8 and legislative requirements) continued				
<p>In the case of an emergency, the driver of a vehicle transporting explosives must:</p> <ul style="list-style-type: none"> • take all safe and practicable steps to carry out any emergency procedures recommended in the emergency information and in any emergency plan • assist emergency personnel if requested • in the event of an escape of explosives, warn people who may be at risk and prevent other vehicles, dangerous goods or sources of ignition from coming within 15 m of the vehicle (or greater, if specified in the emergency information) • prevent or minimise theft and escape of the explosives and their entry into drains, sewers or natural watercourses, if safe to do so. <p>The consignor must ensure that supplies or equipment necessary to manage an emergency incident are readily available</p> <p><i>See requirements of AEC sections 8.2.12 and 8.3.14</i></p>	Yes	Yes	Yes	No – mine site requirements for emergency response should be followed

Requirement	Risk Category 1	Risk Category 2	Risk Category 3	Requirement applicable to a mine site?
Emergency equipment and procedural requirements (AEC chapter 8 and legislative requirements) continued				
<p>As soon as practicable after an incident, a dangerous goods officer must be notified of the details of the incident, including:</p> <ul style="list-style-type: none"> • when and where the situation occurred • nature of the situation • details of the explosives that were present at the situation when it happened • details of any death or harm to a person • details of any damage or harm to property or the environment • what was the likely cause of the situation • measures taken to control any leaks, spills, fires or explosions, arising from the incident • measures taken after the situation in relation to the explosives involved in the situation • measures taken to prevent a similar situation from happening again • name of each person who had the control and management of the explosive when the situation happened • details of the licence or permit of the person who had control and management of the explosive when the situation when it happened • name of the individual who was responsible for the security of the explosive when the situation occurred <p><i>See section 9 of the Act and regulation 44 of Explosives Regulations</i></p>	Yes	Yes	Yes	<p>Yes – see the requirements of applicable Risk Category</p> <p><i>See section 9 of the Act and regulation 44 of Explosives Regulations</i></p>

Requirement	Risk Category 1	Risk Category 2	Risk Category 3	Requirement applicable to a mine site?
High security risk requirements(AEC chapter 8)				
Transport of high security risk loads of explosives require: <ul style="list-style-type: none"> • development, implementation and compliance with security plans • a system, independent of the driver, that monitors and records the location of vehicles • people involved in the transport and security of the explosives to operate under the relevant security plan • people driving or riding in the vehicle transporting explosives, or is escorting such a vehicle (passengers included), to be security cleared See requirements of AEC section 8.8	No	No	Yes – see the section “High security risk loads of explosives” and Table 7	No

** Vehicles with backseats with release mechanisms inside the passenger compartment that allow the seats to be folded down, thereby permitting access to the boot, are not suitable for the transport of explosives.

∞ A shipping document is **not** required for the transport of explosives **only** if the following requirements are satisfied:

- 1) the quantity of explosives does not exceed Risk Category 1 quantities, and
- 2) the explosives are **not** being transported by the person in the course of a business of transporting explosives, and
- 3) the explosives are being transported by the person in a passenger vehicle.

† The effective segregation (e.g. solid separation wall) is not required if:

- 1) the quantities of detonators does not exceed the upper Risk Category 1 limit, and
- 2) the total quantity of explosives does not exceed the upper Risk Category 2 limit which applies for the Division assigned to the load, and
- 3) the detonators are separated from the explosives by at least 2 m (see AEC section 7.3.2(6) for less than 2 m separation requirements).

Table 9 applies to a requirement referenced in Table 8 under *Emergency equipment and procedural requirements*. It lists the distances required between protected works and vehicles transporting Risk Category 2 and 3 quantities of explosives that are stopped for extended periods of time.

Table 9 Distances between protected works and stationary road vehicles carrying Risk Category 2 or 3 quantities of explosives

Division assigned to load	Quantity of explosives on vehicle						
	> 5 – 25 kg	> 25 – 250 kg	> 250 – 1,000 kg	> 1,000 – 5,000 kg	> 5,000 – 10,000 kg	> 10,000 – 20,000 kg	> 20,000 – 40,000 kg
1.1	100 m	150 m	200 m	400 m	500 m	600 m	750 m
1.2	150 m	200 m	200 m	250 m	300 m	300 m	350 m
1.3	n/a	60 m	60 m	100 m	150 m	200 m	200 m
1.5	n/a	150 m	200 m	400 m	500 m	600 m	750 m
1.6	100 m	150 m	200 m	400 m	500 m	600 m	750 m

*Risk from articles of Division 1.6 is determined by largest NEQ of any article of the load
See requirements of AEC table 8.1*

Further information

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