

Global Freight Preparation, Packing and Movement Guidance Note – 2021

Version	Status	Date	Prepared by	Approval	Description of Change
A	Draft	Jan 2015	Jeff Webb		First Draft
B	Preliminary	Feb 2015	Jeff Webb		First Circulation
C	Review	May 2016	Phil Leyden		Review
D	Publish	June 2016	John Meaney		Published
E	Update	Feb 2021	Peter Garland Yi Heen Boey		Major structural changes and additional references

This document is a controlled document. The controlled copy is maintained electronically.

Any printed copy is an uncontrolled copy.

This document is the copyright property of Rio Tinto.

TABLE OF CONTENTS

PREAMBLE.....4

1. INTRODUCTION5

1.1 Purpose5

1.2 Aim.....5

1.3 Scope5

1.4 Principles5

1.5 Supply chain responsibility.....5

1.6 Training..... 6

2. STANDARDS6

2.1 Applicable Standards 6

2.2 Jurisdiction Requirements7

2.3 Specific Requirements7

3. DOCUMENTATION.....7

3.1 General.....7

3.2 Delivery dockets/packing lists.....7

3.3 Safety data sheet (SDS)7

3.4 Markings 8

4. PACKAGING.....8

4.1 General packaging requirements 8

4.2 Sustainable packaging..... 9

4.3 Goods specific..... 9

4.4 Equipment Protection 9

4.5 General Fragile and/or sensitive components10

4.6 Electronic goods10

4.7 Contents10

4.8 Shelf life10

5. PACKING10

6. FREIGHT MOVEMENT11

7. DANGEROUS GOODS.....11

8. LOAD RESTRAINT.....11

9. ANCILLARY REQUIREMENTS.....	11
10.GOLDEN RULES.....	11
11.DEFINITIONS.....	12
APPENDIX 1 – Regional Regulatory Requirements.....	13
APPENDIX 2 – Ancillary Freight Preparation Requirements	15
APPENDIX 3 – Rio Tinto Trucking 9 Golden Rules	21

PREAMBLE

Freight destined for Rio Tinto sites, and also returning from Rio Tinto, typically travels significant distances and passes through several points of handling before reaching its final destination. What may be considered sufficient preparation for a metropolitan or short distance delivery will not always suffice for freight dispatched to regional or remote areas. For example, where freight is transported over long distances, a metal strap over an item on a softwood pallet will often be in a poor state before reaching its final destination.

This, in turn, can present a hazard to supply staff, transport providers who handle the freight, other road users and the general public.

With this in mind, all freight must be presented in such a manner that it:

- (a) can withstand transportation over long distances and rough terrain;
- (b) can be safely lifted on and off transport vehicles;
- (c) minimises the risk of injury to those involved in freight and handling;
- (d) enables the goods to be restrained safely;
- (e) minimises the risk of damage to that particular item;
- (f) minimises the risk of damage to other freight, other road users or the general public; and
- (g) takes into account fragile/sensitive goods with steps taken to protect these goods.

This guidance note covers the minimum requirements for the presentation and packaging of inbound and outbound goods and equipment for delivery to Rio Tinto sites.

It is the Supplier's responsibility to comply with this guidance note and the specific requirements of the relevant country, state, province or territory standards and legislation for the goods, equipment or materials being transported. This guidance note is aligned with the *Rio Tinto C3 Vehicles and driving standard*, available on the ***Rio Tinto HSEC portal***.

This guidance note also states the requirements for documentation, marking and protection to be observed for all freight to and from Rio Tinto business units (**BU**s).

If the Supplier is in doubt about any aspect of this guidance note, they are to check with the respective Rio Tinto representative.

1. INTRODUCTION

1.1 Purpose

The purpose of this guidance note is to establish and articulate a standard framework of procedures which are to be applied globally for Rio Tinto by its suppliers and by its BUs. To the extent that any legislation, statute, code, regulation or other law that is in force in a country where the applicable good(s) is shipped, such obligations shall apply in addition to the requirements in this guidance note. This guidance note includes the preparation of goods, equipment and machinery for dispatch via a third-party logistics provider (3PL), external transport provider or Rio Tinto-owned and operated vehicle. This approach includes:

- (a) Addressing the diversity of Rio Tinto sites operating globally, where all relevant country, state, province and territory legislations and standards must be conformed with; and
- (b) Establishing a universal standard of care between Rio Tinto, respective suppliers, and transportation companies in the overall management of supply chain transport risks.

1.2 Aim

The aim of this freight preparation guidance note is to:

- (a) Aide Suppliers packaging and securing freight for transport in a manner that is appropriate for the planned modes of transport, and maintaining the integrity of freight throughout its journey until it reaches its final destination.
- (b) Protect employees, suppliers, contractors, members of the public, and the environment from the risk of accidents and incidents occurring as a result of freight being inappropriately prepared.
- (c) Reinforce, that in many jurisdictions there are regulatory requirements pertaining to heavy vehicle transport relating to mass, dimension and load restraint.

1.3 Scope

The scope of this guidance note covers all freight that is moved to or from a Rio Tinto site of operation. It is expected that suppliers, transporters and requisitioners will adhere to the requirements outlined in this guidance note.

Note: Individual BUs may, from time to time, issue requirements above the minimum requirements, which are additional and more prescriptive than those described in this guidance note. In these cases, the supplier must ensure that it complies with the requirements of **both** this guidance note and the additional requirements directed by the BU.

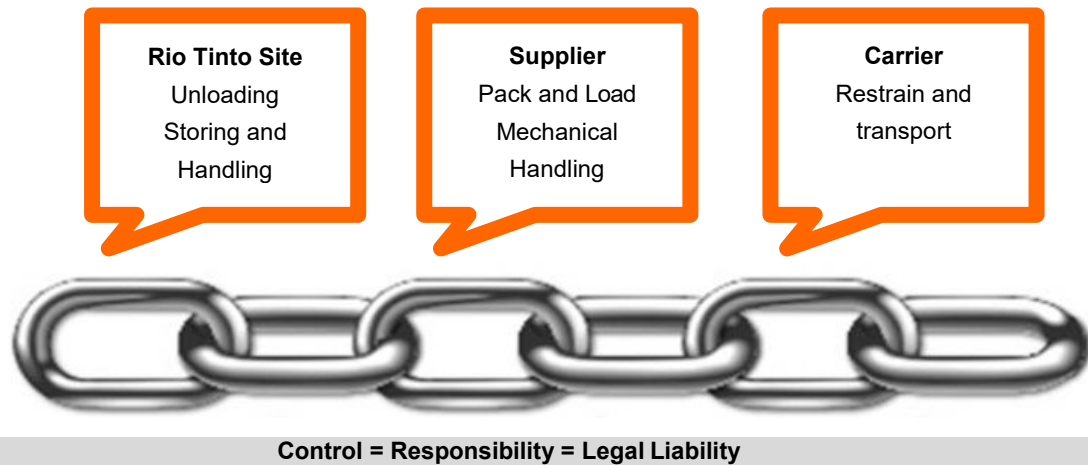
1.4 Principles

Central to this guidance note is the acceptance of the accountability of all parties involved throughout the supply chain in managing risks and critical controls, and the demonstration of a high level standard of care with all facets of the transportation of freight.

1.5 Supply chain responsibility

All parties involved throughout the supply chain have an obligation and duty of care to minimise potential employee/general public injury, negative impacts on both the environment and road infrastructure, and traffic management associated with the overall act of transportation.

If a person plays a role in the transport of goods then they form part of the chain:



1.6 Training

All persons who form part of the supply chain must have the appropriate training and depending on jurisdiction may need to hold applicable licences under country, state, province or territory requirements. This includes:

- (a) consignors and receivers of freight;
- (b) loaders and packers of freight;
- (c) drivers of heavy vehicles;
- (d) supervisors and managers of the above.

2. STANDARDS

2.1 Applicable Standards

This guidance note guides suppliers to identify and apply the required standards to be applied when packaging, preparing and moving freight to and from Rio Tinto's Business Units. The Supplier of the freight should ensure they are familiar and have been trained in the application of standards and regulations required whether administered by a global, national or local authority. References to the standards imposed by local authorities and regulations are given as a guide in good faith and non-exhaustive. Suppliers should always check for updated policies and regulations to ensure that their freight preparation and movement standards are up to date.

Suppliers should endeavour to conform to industry leading best practices even if it exceeds the prescribed standards wherever possible.

A non-exhaustive list of the regulatory requirements which are to apply in each jurisdiction are set out in Appendix 1.

2.2 Jurisdiction Requirements

The packaging, preparation and securing methods engaged must always comply with all standards as dictated by the physical delivery route for the freight from its origin through to the final destination.

When freight is to pass through multiple jurisdictions, the Supplier must ensure freight preparation and handling standards applied for the respective matters within their control meet the requirements of each jurisdiction through to the final destination.

2.3 Specific Requirements

Some Business Unit or sites may issue requirements which are in addition and more prescriptive than those described in this guidance note. These requirements are usually incorporated into purchase documents or BU site access requirements and must also be complied with. In these cases, the Freight must comply with both this guidance note and these additional requirements.

3. DOCUMENTATION

3.1 General

Shipping documentation and delivery dockets (as detailed below) must be securely attached to the outside of all packaged items in a weather-resistant, sealed envelope or, to the goods if packing is not required and must not be obscured. (Where a windowed envelope is used, the delivery address must remain visible.)

Freight containers must have delivery dockets and packing lists inside weather-resistant envelopes, attached to the internal wall.

Where packing is required, duplicate copies of shipping documentation, delivery dockets/invoices must also be placed inside the packaging in the event the external documents are misplaced.

3.2 Delivery dockets/packing lists

The following information as a minimum must be shown on the delivery docket with respect to each package:

- (a) purchase order number;
- (b) type of package (for example, box, bundle or unit of measure);
- (c) a full description, the quantity and exact contents of each package;
- (d) weight and/or dimensions;
- (e) "ship to" address;
- (f) dangerous goods classification (if applicable);
- (g) Dangerous Goods declaration/Safety Data Sheet (**SDS**) paperwork (if applicable).

If a unit of equipment has to be shipped in more than one package, then the documents for the equipment must be forwarded with the first package and must indicate the number of packages to be expected.

3.3 Safety data sheet (SDS)

The person(s) responsible for the packaging of any goods or materials requiring a Safety Data Sheet are to ensure a copy is attached to:

- (a) the item;
- (b) delivery documentation.

3.4 Markings

- (a) The supplier must ensure that all packages dispatched as part of a purchase order are marked in a clearly legible manner.
- (b) To avoid confusion, markings and references from previous freight movements must, where practicable, be covered, made illegible, painted over, or removed.
- (c) Fragile or heavy items must be clearly marked or labelled 'fragile' or 'heavy' if weight exceeds 20kg (44lb) or 'Handle with care' for ease of handling. Safe handling limitations are to be complied with and all freight exceeding 20kg (44lb) must be handled by mechanical handling equipment (MHE) when loading/unloading.
- (d) Where items are above 1.5m (5ft) high, markings must be in a position so as to permit visibility to forklift operators.
- (e) The marking must be durable, waterproof, fade resistant and able to withstand prolonged storage in bright sunlight and harsh conditions. The colour must be in sharp contrast to the background on which it is marked.
- (f) Any tags used must be non-rusting or durable plastic to avoid wear and tear.

4. PACKAGING

4.1 General packaging requirements

- (a) Without limiting the supplier's obligations under the Contract, prior to packing, the supplier must ensure that all items for the purchase order are prepared, protected and marked in accordance with the following clauses:
 - (i) All packaging must be capable of withstanding various modes of transport over long distances and potentially rough terrain.
 - (ii) All packaging must be suitable for multiple handling movements. Freight can be unloaded and reloaded as it is consolidated and/or trans-shipped through regional or capital city depots.
 - (iii) All packaging must be capable of being safely lifted on and off transport vehicles and being safely transported without rolling, tipping, sliding or spilling.
 - (iv) All packaging materials must be environmentally friendly. Substitutes for polystyrene foam and plastic beads are to be used whenever possible.
 - (v) Packaging methods used must ensure safe delivery of the goods to the site. They must take into account the value of the item and the weight and size limits of cargo that can be transported to the site.
 - (vi) No employee or contractor may be called on or permitted to manually handle an item likely to affect his or her health or safety. After a risk assessment and *Take 5* or similar (see **Section 11** (Definitions) for how to conduct a *Take 5*), any package deemed unable to be handled by one person must be packaged suitably for either crane or forklift handling. If safe forklift handling is not possible, supplier approved fit for purpose lifting and slinging lugs must be fitted by the supplier to facilitate safe crane handling.
 - (vii) As a precaution against hand or finger injuries, when heavy components are planned to be stored or placed on a pallet adequate dunnage must be placed between parts to ensure a safe forklift operation without intervention when splitting components for storage or consumption.
 - (viii) All items that require mechanical lifting must have forklift access points, lifting lugs that are supplier approved and fit for purpose or have suitable access for slings.

- (ix) Where multiple items are packaged in the one package (carton, crate or skid), heavy items must be packed at the bottom of the package.
- (x) Heavy or large/awkward items that do not fit in a case or crate must be strapped with steel or heavy duty polyester (**HDP**) strapping to a skid or pallet. The skid or pallet must be strong enough to support the weight of the item and multiple handling movements. Please check with the local site requirements, in regard to steel strapping as some sites will not allow it to be used.
- (xi) Securing devices applied to articles packed must not abrade or otherwise damage the equipment and/or goods.
- (b) All items must have two visible methods of hard restraint.
- (c) A consignment that comprises multiple packages wherever possible must be either:
 - (i) Placed in a secure cage; or
 - (ii) Palletised for ease of handling.
- (d) **Note:** Where stretch-wrapping is used, the preference is to use clear wrapping to allow visibility of contents when checking the goods upon receipt. Stretch wrapping of heavy items as a means of consolidation onto a pallet is not considered to be suitable, and is not considered a hard method of restraint.

4.2 Sustainable packaging

While ensuring that product protection requirements and safety are not compromised, Rio Tinto seeks to minimise the environmental impact of packaging and to reduce the total cost of ownership of packaging in the supply chain. Wherever possible suppliers must:

- (a) Eliminate unnecessary materials in packaging design, for example: by reducing the size, weight or thickness of packaging, and optimising void space.
- (b) Optimise packaging for freight, for example: by fitting more products onto each pallet, while conforming to specified inner and outer packaging specifications.
- (c) Reduce environmental impact and waste in packaging by:
 - (i) reducing non-recyclable components from packaging to zero;
 - (ii) increasing the recycled content of packaging components;
 - (iii) ensuring that virgin cardboard or paper is FSC or PEFC certified [**FSC** = *Forest Stewardship Council*, **PEFC** = *Programme for the Endorsement of Forest Certification*];
 - (iv) labelling all recyclable packaging components to assist customers with recycling.

4.3 Goods specific

Rio Tinto maintains an ongoing process of developing goods specific guidelines for selected material groups that are deemed to present a safety risk to handlers and transporters. These goods specific guidelines are meant as guidelines only. Wherever possible, Rio Tinto endeavours to work with suppliers to continue to develop better practices and, accordingly, suppliers are encouraged to contact Rio Tinto to develop guidelines for their goods.

4.4 Equipment Protection

Equipment must be suitably protected and packaged to prevent damage or corrosion during transport and be protected from climatic damage during storage on-site. Any specific packing requirements must be recorded on the relevant purchase order. Where sensitive/fragile goods are transported, the supplier of the goods must check with the Rio Tinto originator whether any specific packaging requirements are needed.

4.5 General Fragile and/or sensitive components

- (a) All instruments, protection relays and other fragile parts must be placed in sealed plastic bags and packed in plastic cushioning, or some equally effective shock absorbent material, in timber boxes (with the same properties as hardwood). Alternatives to polystyrene foam are to be used where available. All fragile components must be securely supported to prevent damage in transit and must be packed in separate crates and not with heavy items.
- (b) Whenever critical fragile/sensitive goods are packaged for transportation, an independent inspection is to be carried out by a marine surveyor, or person deemed to be competent, to ensure that the goods have been prepared correctly for transport and the goods are secured and protected against shock loads.
- (c) A report of the inspection carried out must be provided to Rio Tinto's appointed freight service provider and Rio Tinto. Once approval that the goods have been packaged appropriately has been provided by Rio Tinto's freight service provider and Rio Tinto, the goods can be transported.
- (d) The sensitive nature of the freight must be clearly marked on the outside of the packaging.
- (e) The supplier must confirm with Rio Tinto whether accelerometers must be installed to record all shock impacts during transit, if not specifically stated in the purchase order.

4.6 Electronic goods

- (a) Electronic goods must be packaged with antistatic packaging.
- (b) Electrical equipment such as transformers, rectifiers and rectiformers and all other goods sensitive to shock loads must be adequately secured within the crates with shock absorbent type packaging placed around the equipment to minimise shock loads.

4.7 Contents

Small packages and components, and those considered aesthetic, must be packaged separately or consolidated into larger containers; NOT packed inside equipment such as pumps, electrical cubicles or other items.

4.8 Shelf life

Any shelf life or preservation requirements must be clearly indicated on or with each applicable item.

5. PACKING

Suppliers are to ensure compliance with the relevant packing standards and regulations applicable to the movement of the freight, including but not limited to those set out in Appendix 1.

To select the appropriate packing configuration and equipment required to load and unload the freight from the container, transport unit, truck or rail car for the movement of the goods to the final destination, the Supplier shall ensure it is familiar with and have been adequately trained to perform the packing requirements.

Should the type, dimensions or any part of the freight required to be moved require technical support from the likes of a load restraint expert or engineer then the shipper and consignor must engage such services. In all cases the Supplier and consignor must be able to provide documentation and certification supporting the chosen packing method should it be required by Rio Tinto or any regulatory or governing body that is responsible for setting or monitoring compliance with standards or regulations.

6. FREIGHT MOVEMENT

The Supplier, provider must ensure that there is no breach of the required standards from the point of origin to the final destination. This includes adhering to the applicable maximum permissible load / configuration permitted for the journey, the necessary load restraint techniques and methods of application. In making such determination each party shall ensure they are familiar with and have been adequately trained representatives undertaking the work.

Suppliers are to ensure compliance with the relevant ocean, air, road and rail securing standards and regulations applicable to the movement of the freight, including but not limited to those set out in Appendix 1.

Suppliers must provide clear instructions and guidance must be provided to Carrier that the applicable standards and regulations noted in this guidance note must be understood and complied with at all times when undertaking the movement of Rio Tinto freight.

7. DANGEROUS GOODS

- (a) Dangerous goods are defined by the manufacturer's safety data sheets. Classification of dangerous goods is in accordance with the United Nations hazardous substance classification system. The packaging and transport requirements for the carriage of dangerous goods by road, ship, rail and air must be in accordance with the latest issues of the relevant dangerous goods transport legislation and codes applicable in the countries where the dangerous goods are transported.
- (b) All dangerous goods must be identified by correct shipping name, labelled, packaged and packed in full compliance with the directives of the appropriate local authority.

8. LOAD RESTRAINT

Correct restraint of packages and items onto transport vehicles is critical and the Supplier must ensure that all loads are restrained appropriately.

9. ANCILLARY REQUIREMENTS

In addition to the requirements for packaging, preparing and moving freight to and from Rio Tinto's Business Units as set out in this Guidance note and in Appendix 1, the Supplier must ensure it complies with the obligations set out in Appendix 2, to the extent such packaging requirements, equipment protection standards or methods of movement or freight handling equipment applies to the freight.

10. GOLDEN RULES

Each truck driver and/or transport operator that is required to support the movement of freight to or from a Rio Tinto BU shall ensure they comply with Rio Tinto's 9 Golden Rules for all trucks and drivers who are required enter and operate at or for a Rio Tinto BU. The Golden Rules are set out in Appendix 3.

11. DEFINITIONS

Term	Definition
Bearer	<i>A member separating the top and bottom decks of a pallet and providing space for entry of tines (forks). Bearers may consist of blocks or continuous beams.</i>
Blocking	<i>A method of interior packaging that builds up irregularly shaped articles to a regular shape to protect projections from damage, to reinforce weak parts and to maintain objects in fixed positions during transit, by bracing them against each other or against the sides of the container.</i> <i>An undesired adhesion between touching layers of material, such as might occur due to the effects of pressure, and sometimes temperature, during storage or use.</i>
Business Unit (BU)	<i>Any Rio Tinto operation.</i>
Box-shipping	<i>A re-usable non-collapsible container equipped to be handled by overhead hoist or forklift truck.</i>
Case	<i>A rigid, heavyweight timber box which has panels that are totally closed, as distinct from those of a crate.</i>
Case - timber framed	<i>A box consisting of substantial frame members designed to withstand the design load with sheathing applied to give strength and complete coverage.</i>
Climatic damage	<i>Damage caused by the effects of climate (for example, temperature, humidity, rain, wind or water immersions, solar radiation, sand, dust or salt spray and corrosive atmospheres).</i>
Quality assurance	<i>All activities and functions concerned with the attainment and proof of the required quality.</i>
Requisitioner	<i>Rio Tinto staff requesting goods and materials to be purchased.</i>
Rio Tinto	<i>The dual listed company structure incorporating Rio Tinto plc and Rio Tinto Limited and including:</i> <ul style="list-style-type: none"> <i>(a) any related Body Corporate of Rio Tinto plc or Rio Tinto Limited;</i> <i>(b) any unincorporated joint venture in which Rio Tinto plc or Rio Tinto Limited or any related Body Corporate of Rio Tinto plc or Rio Tinto Limited has a participating interest of not less than 50%;</i> <i>(c) any body corporate or unincorporated joint venture managed by Rio Tinto plc or Rio Tinto Limited or any related Body Corporate of Rio Tinto plc or Rio Tinto Limited.</i>
Rio Tinto Limited	<i>Rio Tinto Limited (ABN 96 004 458 404) having its registered office Level 8, 360 Collins Street, Melbourne, Victoria 3000.</i>
Rio Tinto plc	<i>Rio Tinto plc (Company No. 719885) of 6 St. James's Square, London SW1Y 4LD, United Kingdom.</i>
Safe Working Load (SWL)	<i>Is the breaking load of a component divided by an appropriate factor of safety giving a "safe" load that can be carried or lifted.</i>
Take 5	<i>Pre Task Hazard Assessment with the following steps:</i> <ul style="list-style-type: none"> <i>(a) think through the task</i> <i>(b) spot the hazard</i> <i>(c) assess the risk</i> <i>(d) make the changes</i> <i>(e) do job safely</i>

APPENDIX 1 – Regional Regulatory Requirements

1. Global Standards

No.	Document
Packaging, Packing & Freight Movement Standards	
1.	CTU Code
2.	IMDG Code for Dangerous Goods
3.	International Road Transport Union (IRU) guidelines on Safe Load Securing for Road Transport
4.	IATA Cargo Handling Manual (ICHM)
5.	ISPM15 Regulations

2. Australia

No.	Document
Packaging	
1.	AS4991 (Lifting Devices) - Purpose-built transport frames must be designed and manufactured to Australian Standard
2.	AS 2852 Packaging – Pictorial marking for the handling of packages;
3.	AS2400.1 Packaging-Part1: Glossary of packaging terms;
4.	AS2400.6 – SAA Packaging code-Part6-Paper and Paperboard;
5.	AS2400.7 – Packaging-Part7: Timber boxes;
6.	AS2400.18 – SAA Packaging code-Part18-Use of desiccants in packaging;
7.	AS4351.2 – 1996 Biodegradability-Organic Compounds in an aqueous medium
8.	Australian Code for the transportation of Dangerous Goods By Road and Rail
9.	Chain of Responsibility Regulations (All States)
Packing	
10.	Chain of Responsibility NHVR
11.	Australian National Transport Commission – Load Restraint Guide;
12.	Chain of Responsibility Regulations (All States)
Freight Movement	
13.	Australian and New Zealand Code for the transport of Dangerous Goods by Road, Rail or Air;
14.	Australian and New Zealand WorkSafe - General Duty of Care Guidance Notes;
15.	Chain of Responsibility NVHR
16.	Australian National Heavy Vehicle Laws
17.	Australian National Transport Commission - Load Restraint Guide;
18.	National Environment Protection (Movement of Controlled Waste between States and Territories) Measure 1998
19.	Emergency Procedure Guides (EPG) Australian Standard 1678;
20.	Australian Code for the Transport of Dangerous Goods by Road & Rail
21.	Chain of Responsibility Regulations (All States)
22.	Road Traffic Regulations (All States)
23.	Controlled Waste Regulations (All States)

3. Canada

No.	Document
Packaging	
1.	Canadian Council of Motor Transport Administrators – National Safety Code
Packing	
2.	Canadian National Safety Code standard for load securement
3.	Canadian Council of Motor Transport Administrators – National Safety Code
Freight Movement	
4.	Canadian Railway Safety Act 1985
5.	Canadian Council of Motor Transport Administrators – National Safety Code

4. United States

No.	Document
Packing	
1.	Driver's Handbook on Cargo Securement – North American Cargo Securement Standard
2.	AAR – Closed Car Loading Methods:
3.	AAR Circular 42: General Rules Governing the Loading of Carload Shipments of Commodities in Closed Cars
4.	AAR – Closed Car Loading Guide Part 1: Minimum Loading Standards for Freight in General Purpose Boxcars
5.	AAR Closed Car Loading Guide Part 7: Minimum Loading Standards for Intermediate Bulk Containers in Closed Cars
6.	AAR Closed Car Loading Guide Part 10: Minimum Loading Standards for Primary Metal Products in Closed Cars
7.	US Federal Regulations on Inspection of cargo, cargo securement devices and systems.
8.	US Federal Regulations on Protection Against Shifting and Falling Cargo
9.	Department of the California Highway Patrol - Cargo Securement Standards
10.	Federal Motor Carrier Safety Administration (FMCSA) - Cargo Securement Rules

APPENDIX 2 – Ancillary Freight Preparation Requirements

1. PACKAGING METHODS

1.1 Cases, boxes and crates

- (a) All boxes and crates must be fitted with skids suitable for lifting by forklifts. The design of timber boxes must take into consideration the method of lifting. Where slings are to be used on crates, particularly those weighing over 300kg (660 lb) the top edges must be sufficiently reinforced to withstand loads applied by slinging.
- (b) Where timber is used, either internally or externally, it must be free of bark and insect infestation. Plastic or steel cases, boxes or crates are a preferred option.
- (c) Contents must for purposes of handling and transportation, fit snugly inside the case and must be restrained from movement by blocking the items. Where metal or prepared paintwork may come into contact with the case timbers, it must be protected from abrasion by felt pads, foam rubber, plastic, cardboard or wood dunnage if handling heavy equipment.
- (d) Cases or cages must be used for delivery of bulk items and, if used, must be firmly secured on pallets. If the cases or cages are reusable, then arrangements must be made for their return to the supplier prior to subsequent order placements.

1.2 Timber crates/cases

- (a) All timber crates and cases must be of close-jointed, solid timber (with the same properties as hardwood), suitable to adequately support the item. All timber crates and cases must have a safe working load (**SWL**) exceeding the weight of the item. Cases must be fully closed (for example, not partially open-topped construction) and the base of all cases and crates must be constructed for lifting by forklift, unless otherwise approved by the Rio Tinto representative.
- (b) Timber cases, boxes and crates must be secured with straps capable of bearing the unrestrained weight of the item. Straps must be secured in a manner consistent with the strapping material type. For example, metal straps must utilise crimped steel seal or nylon and propylene straps must be secured using either crimping or appropriate heat technology.
- (c) Wherever possible, screws, not nails, should be used when sealing timber crates/cases.
- (d) Crating, if constructed properly from solid timber (with the same properties as hardwood), can help protect the product. Oriented strand board (**OSB**), medium-density fibreboard (**MDF**) or particleboard should not be used.
- (e) Knots should be limited, and fasteners must not be anchored in knots or other defective areas of the timber. Diagonal braces must be used on each panel to increase the strength and integrity of the crate when sensitive/fragile equipment is being transported.
- (f) Diagonal braces can have a dramatic effect on the strength of the relevant crate. But more often than not, the way the wood is used is more important than how much wood is used.
- (g) If softwoods are used they must be heat treated and identified according to local standards.

1.3 Cages

Where the amount of items in a cage is insufficient to effectively block the items from moving, then the items must either be restrained to the base of cage by way of straps or by blocking, using timber or similar to prevent movement.

1.4 Drums

- (a) In case of packaging of drums, these items must be secured to the pallets. Because of the potential safety hazard metal straps present while fastening and unfastening them it is preferred to use HDP straps or straps with similar performance capability to secure the drums to the pallets.
- (b) The drums must be secured three ways:
 - (i) running over the drums and securing it to the pallets;
 - (ii) running laterally to the first strapping for "*Strapping to Pallets*";
 - (iii) running across the drums and securing them together..
- (c) While using the straps the supplier must follow the manufacturer's safety guidelines.

2. EQUIPMENT PROTECTION

In the event of no specific equipment protection requirements are specified or required in accordance with the regulations in Appendix 1, the following requirements apply:

- (a) Where applicable all machined surfaces, bearings and electrical components must be protected against the ingress of salt air, water vapour, seawater, moisture and other corrosive and harmful substances.
- (b) Where applicable all bearings must be protected against "*brinelling*" (the permanent indentation of a hard surface) by suitable locking of shafts or false bearings used to relieve bearings of the load during transportation.
- (c) All doors on equipment must be locked, the keys labelled and securely taped to the door handles. Keys must not be left in locks during transport.
- (d) All painted items must be packed and handled in such a way that minimises damage to the surface.
- (e) All openings must be sealed. Engines, drivelines, pumps, valves and similar items must be plugged or capped and filters replaced where appropriate prior to dispatch. This is to avoid wind drawing fluid from items while on the back of trucks.
- (f) Equipment such as electrical switchboards and panels, office machines and precision instruments must be packed within a moisture/vapour-proof barrier with a suitable desiccant, e.g. silica gel, to absorb moisture within the package.
- (g) Openings in electric motors, generators and other electrical equipment must be sealed with waterproof tape or in some equally effective manner.
- (h) Where possible, goods containing oils or lubricants such as gearboxes, hydraulic components or transmissions, must be drained before transport, and carry a weatherproof tag stating "*NO OIL*" which is attached to the goods.
- (i) Where goods containing oils or lubricants such as gearboxes, hydraulic components or transmissions are being dispatched for repair and have leaking seals or can be expected to leak oil during transport, these must be drained before transport and carry a weatherproof tag stating "*NO OIL*" which is attached to the goods.
- (j) Gearboxes, exciters, suitable hydraulic components and transmissions must contain in quantities sufficient to ensure effectiveness, the corrosion inhibitor "Shell VSI 8235" or a site-specific equivalent, for internal corrosion protection for a shelf life of at least 6 months. A tag nominating the presence of corrosion inhibitor and the date it was applied must be clearly displayed. Ensure all vents, breathers and openings are plugged. Breathers to be attached to the gearbox in a clean plastic bag with a tag stipulating "attach to gearbox after installation". This is due to the corrosion inhibitor being effective only in a closed area.

- (k) Exposed machined surfaces must be coated with the corrosion inhibitor "Valvoline Tectyl 506" or a site-specific equivalent. Hydraulic and pneumatic cylinder rods must be in the fully retracted position.
- (l) Goods contaminated with grease, waste oil, solid lubricants or other process contaminants and that are being shipped from mine sites must be cleaned before transport to prevent environmental damage during the entire supply chain.
- (m) All Pipes / tubes must be packed in securely tied bundles with their ends protected with suitable caps. The supplier must protect pipe ends that are threaded or weld prepped.

3. PACKING

3.1 Freight containers

- (a) All suppliers must ensure that all containers carry a *current container safety compliance (CSC)* plate to ensure that their structural integrity meets the standards laid down by the Institute of International Container Lessors (*IICL*). Contractors providing second-hand containers as part of their equipment package must have the containers examined by a surveyor and repaired as necessary to Standard ICL 4 to confirm its structural and weather tight integrity.
- (b) The contractor must ensure that all cargo in the container is secure against movement from any reasonable cause; therefore, all cargo must be blocked tightly against adjacent goods or surfaces.
- (c) Where necessary, cargo must be separated using adequate dunnage (e.g. Plywood slip-sheets).
- (d) Heavy goods must not be placed on top of lighter goods.
- (e) Cargo compatibilities must be verified to eliminate damage from contamination or prejudicial characteristics. If necessary, non-compatible cargo must be segregated and separated by a physical barrier to limit risk of damage.
- (f) Damaged packaging of goods must not be loaded into a container unless the contents are inspected by the supplier and the packages are repaired, or the packaging recovered, when necessary to prevent further damage.
- (g) Weight in the container must be evenly distributed over the horizontal, longitudinal, and transverse planes of the container. The centre of gravity of the container when loaded must be lower than the mid height of the container whenever possible.
- (h) When packing of the container is completed, steps must be taken to ensure that the cargo will not fall out when the doors are opened. Wooden bracings or a proprietary dunnage system must be applied, where necessary.
- (i) Containerised items must be blocked, bracketed and/or bolted to prevent movement within the container. Items that cannot be anchored or blocked, or where size or weight prohibits containerisation, must be packed and shipped separately.
- (j) Prior to international shipping of containers, the supplier must provide a packing plan to the Freight Forwarding agent for review.

3.2 Air shipments

Items for air transport must be packed to acceptable airline industry standards (IATA) in such a way as to afford maximum mechanical protection, ease of handling and the minimisation of total weight of shipping units.

3.3 Palletised items

- (a) Items conducive to damage from moisture, dirt and dust and which can be conventionally secured to a pallet to facilitate handling, must be packed in this manner.
- (b) Wooden pallets should be constructed with solid timber, with the same properties as hardwood, and must be suitable to adequately support the item with a safe working load (SWL) exceeding the weight of the item. Pallets must be two-way, flush sided and under railed.
- (c) Items that require mechanical lifting during handling must be palletised. Pallets are to be used for items that:
 - (i) Cannot be handled safely by one person or are designed to be lifted by a forklift;
 - (ii) Have dimensions that allow stable loading on the pallet, and
 - (iii) Do not exert excessive point loads on the pallet.
- (d) Palletised items must be secure on the pallet to prevent movement.
- (e) Cylindrical items and items likely to roll or fall must be chocked and strapped with steel straps (in accordance with 3.1 (i) of this guidance note) capable of bearing the unrestrained weight of the item to the pallet. Chocks must be fixed directly onto the pallet.
- (f) The approved strapping method is secured to the bearers; not the boards. The strapping must ensure complete security and no chance of items falling off the pallet.
- (g) Loads must not overhang the forklift entry points of the pallet.
- (h) Individual contents of each pallet must be clearly marked.
- (i) Where possible steel pallets and skids must be used for the packaging of large and heavy items.

3.4 Skids

- (a) Skids are small pallets without under rails; they are usually made of wood, and less often of metal.
- (b) Skids have very limited application being suitable only for light and low profile items. An example of such an item would be small cylinders. Skids are typically not weight rated and without this certification there is a heightened risk in handling.
- (c) Items over 1.0 m (3ft) high need to be carefully assessed for stability. Some items will be unloaded on uneven ground which may increase the chance of the item becoming unstable during handling. It is essential that each individual load be assessed to ensure compliance.

3.5 Special handling instructions

- (a) Packages, where applicable, must be conspicuously marked with:
 - (i) *“Handle with Care”*;
 - (ii) *“Right Side Up”*;
 - (iii) *“Keep Dry”*; and/or
 - (iv) any other instruction or labels in English and with the appropriate international standard symbols to prevent possible damage
- (b) Pictorial markings for the handling of packages must be used to fully convey information regarding specific handling requirements.
- (c) Lifting and slinging requirements must be clearly marked on goods.
- (d) Items with special requirements for load restraint must use pictogram markings to indicate how the restraint must be positioned. This also applies to items that are protected by outer coverings which reduce the visibility of the item it protects.

- (e) Large or oversize items that may require specialised equipment to be safely unloaded must be brought to the attention of the Rio Tinto representative prior to despatch. This will allow the correct equipment to be available for unloading when the item arrives at its final destination.

3.6 Centre of gravity

- (a) Equipment and goods must be packed to ensure an even weight distribution within the package.
- (b) Where this is not possible, particularly in the instance where a case or crate conceals the internal goods, the supplier must ensure that the centre of gravity and hoisting position are marked on two sides to ensure loading, unloading and handling can be done in a safe manner. For example, top-heavy containers or unbalanced loads must be clearly marked with centre of gravity including sling marks to facilitate safe loading, unloading and handling.

3.7 Large equipment

- (a) Large equipment requiring disassembly before transport must be clearly match-marked prior to disassembly to facilitate efficient reassembly on site.
- (b) Loose accessories in each package must be identified individually by a metal or weather resistant label indicating the purchase order number, tag number, name of the main equipment, and names of accessories, quantity and its position number on assembly drawings.

4. FREIGHT IN FRAMES

4.1 Frames – general

- (a) If the item to be transported requires a frame, the supplier must liaise with the Rio Tinto Procurement representative to confirm the type and specifications of the frame.
- (b) Frames must be built to relevant country engineering standards and incorporate restraints and lashing points to allow effective restraint during transport.
- (c) If frames do not appear structurally sound, or there is doubt regarding the adequacy of a transport frame, the Rio Tinto-preferred 3PL is empowered to act on behalf of Rio Tinto and request a formal inspection and verification certificate.
- (d) If the frame is assessed to be non-compliant with the standard, the Rio Tinto preferred 3PL is empowered to reject the freight, and contact the Rio Tinto representative.

4.2 Modifications to frames

- (a) No modifications may be carried out to Original Equipment Manufacturers (**OEM**) frames other than by the OEM themselves.
- (b) No modifications may be carried out to BU-owned frames unless it is approved by an authorised and qualified Rio Tinto maintenance or engineering representative. Relevant BU management of change processes must also be followed.

4.3 Multiple-use frames

- (a) Whenever an item is placed in a frame, an independent inspection is to be carried out by a person deemed to be competent, to ensure that the item has been prepared correctly for transport, the item is secure and that a frame checklist or similar has been completed.
- (b) Suppliers and BUs using frames intended for multiple use must maintain a transport frame procedure that, as a minimum, must include the following information:
 - (i) design standard;
 - (ii) frame register;
 - (iii) engineering calculations;
 - (iv) engineering drawings;
 - (v) tag system (for repair agency and BU use).
- (c) All transport frames must be engineered and fit for purpose. Inspection regimes for frame integrity must be implemented by the supplier and must be auditable by Rio Tinto.
- (d) Freight retained in supporting frames must be secured using washers combined with an appropriate minimum torque on the stud or nut to retain the item in the frame.
- (e) Nylok nuts, castellated nuts or similar must be used to ensure the retaining nuts do not vibrate loose in transit.
- (f) Lifting and tie-down points must be clearly indicated on the frame.
- (g) Frames owned by Rio Tinto or its BUs must be inspected as part of the scope of works (SOW) and their fit-for-purpose condition, or otherwise, noted. The serial number must be noted in the relevant Purchase Order. If a frame is received that does not have a serial number, contact the person nominated on the purchase order to arrange the issuing of a number.

5. LOAD RESTRAINT

- (a) International Road Transport Union (IRU) guidelines on Safe Load Securing for Road Transport must be used as a reference to assist with goods specific packaging and restraint guidelines.
 - (i) Load restraint equipment such as load binders, chains, ropes, gates must be compliant and in suitable condition to perform the task. Dunnage is to be used to assist with the restraint of items. Loose dunnage is to be placed in an approved dunnage cage.
 - (ii) Due to safety risks associated with the use of 'over centre' load binders (dog and chain), this type of load restraint equipment must not be used. Ratchet tie down devices must be used in their place,
 - (iii) Any lengths of steel must be correctly secured to its own dunnage for ease of loading and transportation.

APPENDIX 3 – Rio Tinto Trucking 9 Golden Rules

1. I will always wear the required Personal Protective Equipment (PPE) when on Rio Tinto sites.
2. I will ensure my truck is parked fundamentally stable in designated parking areas.
3. I will not climb on my truck without the required fall protection.
4. I will obey all road rules and traffic signage while driving.
5. I will obey all directions given by my Rio Tinto designated escort.
6. I will maintain positive two-way communication on dedicated Ultra High Frequency (UHF) channel.
7. I will not access Rio Tinto sites without completing the required inductions.
8. I will ensure all equipment that I work with is in good working order including keeping insurance, registrations and licenses up to date.
9. I will adhere to Rio Tinto's fatigue management standards.