

# Freight Handling and Packaging Guideline





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# Freight Handling and Packaging Guideline

## 1. Purpose

The purpose of this document is to articulate Thiess' policy with respect to the minimum packaging standard required for freight being transport to or from Thiess mining operations. This policy covers the preparing of materials, equipment and machinery for dispatch via a third-party logistics provider, external transport provider or any Thiess owned and operated vehicles.

This includes the approach taken with regards to:

- » compliance with legal obligations of consignors/receivers and loader/packers under Chain of Responsibility legislation; and
- » duty of care as defined by the relevant Australian State/Territory and the Occupational Safety & Health Act.
- » Thiess intra site transport and the Australian road network.

#### 1.1. Aim

The aim of the Freight Preparation and Packaging Standard policy is to:

- Protect our staff, environment, contractors and members of the public from the risk of accidents, incidents and ill health occurring as a result of non-compliance by Thiess and our suppliers of goods and services with existing relevant Australian Standards, Legislation and guidelines;
- Take all reasonable steps to ensure that Thiess personnel, when consigning goods from sites, comply with this policy;
- » Ensure that staff and contractors of Thiess comply with all heavy vehicle laws, including those relating to mass, dimension and load restraint;
- » Take all reasonable steps to ensure that our suppliers of goods and services comply with the above; and
- » Assist Thiess and its suppliers to comply with the Chain of Responsibility Laws in Australia.

#### **1.2. Scope**

The scope of this document covers all freight that moves to or from a Thiess mining operation. It is to be read and followed by suppliers, transporters and requisitioners, particularly by staff involved in packing and securing items for transportation.

**Note**: Individual mining operation may from time to time, issue requirements which are additional and more prescriptive than those described in this policy. In these cases the requirement of both this policy and the additional requirement will need to be complied with, however this document sets the minimum standards.

### **1.3. Principles**

Central to this document is the acceptance of the accountability of all parties in managing risks and the demonstration of a high level of personal accountability and duty of care in accordance with Chain of Responsibility legislation.

### 1.4. Chain of responsibility

Chain of Responsibility (COR) is legislation either in place, or pending, in all Australian States and Territories.

Amongst other aims, the COR legislation aims to improve road safety and minimise negative impact on the environment, road infrastructure and traffic management associated with breaches of heavy vehicle road laws. By recognising the parties within the chain and making these parties responsible for their actions the COR legislation aims to encourage 'effective and efficient compliance with heavy vehicle road transport law.'





If a person plays a role in the transport of goods (or passengers) by road, then they are part of the "Chain of Responsibility" (COR).

#### Control = Responsibility = Legal Liability

Under the COR laws, all parties with some control in the transport chain now have legal responsibilities to ensure compliance with relevant heavy vehicle road laws, including compliance with mass, dimension and load restraint obligations. This includes people involved in consigning, loading, packing and receiving freight (or managing those activities), as well as drivers of those vehicles (including, for example, in relation to speeding and fatigue management).

## 2. Key Deliverables

Freight destined for Thiess sites in Australia and road freight returning from Thiess sites typically travels significant distances and passes through several points of handling before reaching its final destination. What may be considered sufficient preparation for a metro or short distance delivery will not always suffice for freight dispatched to regional or remote areas of Australia. 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 when it reaches its final destination.

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

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

- » Can withstand road transport over long distances and rough terrain
- » Can be safely lifted on and off transport vehicles
- » Minimises the risk of injury to those involved in freight and handling
- » Minimises the risk of damage to that particular item; and
- » Minimises the risk of damage to other freight, other road users or the general public.

This document states Thiess' minimum requirements for the presentation and packaging of inbound and outbound goods and equipment for delivery into or within Australia.

It is the consignor's responsibility to comply with the requirements of this document and the specific requirements of the relevant Australian Standards and legislation for the goods, equipment or materials being transported.

The requirements for the documentation, marking and protection that must be observed for all freight to and from Thiess sites within Australia are also included in this document.



## Guideline

### 1. Documentation

#### 1.1. General

Shipping documentation and delivery dockets 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 should also be placed inside the packaging in the event the external documents are misplaced.

### **1.2. Delivery Dockets**

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

- » purchase order number
- » type of package (for example, box, bundle or unit of measure)
- » a full description, the quantity and exact contents of each package
- » weight (kg) and/or dimensions
- » "ship to" address
- » stock item part number
- » contact name
- » dangerous goods classification (if applicable); and
- » MSDS 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.

### 1.3. Material Safety Data Sheet (MSDS)

The person/s responsible for the packaging of any goods or materials requiring an MSDS are to ensure a copy of the MSDS is securely attached to:

- 1. The item
- 2. The paperwork

#### 1.4. Markings

The supplier must ensure that all packages dispatched as part of a Purchase Order are marked in a clearly legible manner.

To avoid confusion, markings and references from previous freight movements must, where practicable, be covered, made illegible or removed.

#### 1.5. Markings of all items

Items that will be handled as parcel freight must be clearly marked, in English on at least one side.

All items packaged in boxes or crates, palletised goods and unit items must be clearly marked, in English on two sides, as follows:

» purchase order number (as quoted to be marked externally on all packages)



- » "ship to" address
- » item description
- » supplier name
- » case / box / package number (for example, 1 of 4)
- » dimensions: length x width x height (metric)
- » weight (kg); and
- » Dangerous goods classification (if applicable) and placarding.

# Fragile or heavy items must be clearly marked or labelled 'fragile' or 'heavy' or 'Handle with Care' for ease of handling

Where items are above 1.5m high, markings must be in a position so as to permit visibility to forklift operators.

- The marking shall be durable, waterproof, fade resistant and able to withstand prolonged storage in bright sunlight and harsh conditions. The colour shall be in sharp contrast to the background on which it is marked
- » Any tags used shall be non-rusting or durable plastic to avoid wear and tear.

## 2. Packing

#### 2.1. General

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 listed:

- » All packaging must be capable of withstanding road transport over long distances and rough terrain.
- » 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.
- » All packaging must be capable of being safely lifted on and off transport vehicles and being safely transported without rolling, tipping, sliding or spilling
- » All packaging materials should be environmentally friendly. Substitutes for polystyrene foam and plastic beads are to be used whenever possible.
- » 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.
- » No employee or contractor may be called on or permitted to manually handle an item likely to affect his or her health or safety. Any package deemed unable to be handled by one person must be packaged suitable for either crane, forklift handling or other means of approved mechanical assistance. If safe forklift handling is not possible, approved lifting and slinging lugs must be fitted by the supplier to facilitate safe crane handling.
- » All items that require mechanical lifting must have forklift access points, lifting lugs that must be approved or have suitable access for slings. For standard forklifts access points must be sufficient to allow the use of tines that are a minimum of 210mm wide x 80mm high.
- » For 20 tonne forklifts access points must be sufficient to allow the use of tines that are a minimum of 250mm wide x 120mm high.
- » Where multiple items are packaged in the one package (carton, crate or skid), heavy items must be packed at the bottom of the package.
- » Heavy or large/awkward items that do not fit in a case or crate must be strapped with steel 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.
- » Securing devices applied to articles packed shall not abrade or otherwise damage the equipment and/or materials
- » Consignments of multiple packages wherever possible must be either:
- » placed in a secure cage; or
- » palletised for ease of handling.



- » Shrink-wrapping of heavy items onto a pallet is not considered to be suitable.
- » We recommend the use of a Freight preparation checklist for all large items.(see appendix 1)

## **3. Packaging Methods**

#### 3.1. Cases, boxes, and crates

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, the top edges must be sufficiently reinforced to withstand loads applied by slinging.
- » Where timber is used, either internally and externally, it must be free of bark and insect infestation. Plastic or steel cases, boxes or crates are a preferred option.
- » 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 or cardboard.
- » 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.

#### 3.2. Timber crates/cases

All timber crates and cases must be of close-jointed, solid timber, preferably hardwood, suitable to adequately support the item.

- » All timber crates and cases must have an 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 an authorized Thiess representative.
- 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 utilize crimped steel seal or nylon and propylene straps must be secured using either crimping or appropriate heat technology.
- » Wherever possible, screws, not nails, should be used when sealing timber crates/cases.

### 3.3. 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. If there are specific packaging requirements these are to be placed on the Purchase Order. In the event of no specific requirements the following guidelines apply:

- » 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
- Where applicable all bearings must be protected against "brinelling" by suitable locking of shafts or false bearings used to relieve bearings of the load during transportation
- 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
- » All painted items must be packed and handled in such a way that minimises damage to the surface.
- » All openings must be sealed. Engines, drivelines, pumps, valves and similar should be plugged or capped and filters replaced where appropriate prior to dispatch. This is to avoid wind sucking fluid from items while on the back of trucks
- » 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 to absorb moisture within the package. The packaging of this type of equipment and the application of desiccants must comply with AS2400.18 SAA Packaging code-Part18-Use of desiccants in packaging



- » Openings in electric motors, generators and other electrical equipment must be sealed with waterproof tape or in some equally effective manner
- Where possible, goods containing oils or lubricants such as gearboxes, hydraulic components or transmissions, should be drained before transport, and carry a tag stating "NO OIL"
- 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 tag stating "NO OIL"
- Searboxes, 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
- » 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
- » Goods contaminated with grease, waste oil, solid lubricants or other process contaminants and that are being consigned from mine sites must be cleaned before transport to prevent environmental damage during the entire supply chain.

#### 3.4. Fragile/sensitive components

All instruments, protection relays or 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.

- » Polystyrene foam alternatives 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.
- » The sensitive nature of the freight must be clearly marked on the outside of the packaging.

#### 3.5. Contents

To minimise the risk of theft or loss, small packages and components and those considered attractive must be packaged separately or consolidated into larger containers; NOT packed inside equipment such as pumps, electrical cubicles or other items.

### 3.6. Shelf life

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

### 3.7. Freight containers

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.

- » For further information refer The IMO/ILO/ UN ECE Guidelines for Packing of Cargo Transport Units
- » Prior to international shipping of containers, the supplier must provide a packing plan to the Freight Forwarding agent for review.

#### 3.8. Air shipments

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

#### 3.9. Palletised items

It is preferred that pallets are non-returnable; however some delivery points may choose to accept returnable/hire pallets. In these cases the pallets will be made available for return and the return of hire pallets is to be managed by the transport service provider.



- » 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.
- » Pallets must be, preferably hardwood, suitable to adequately support the item and with an SWL exceeding the weight of the item. Pallets must be two-way, flush sided and under railed.
- » European and American style pallets which are suitable for use in containers may not be robust enough to withstand Australian road conditions. These pallets should be replaced with Australian standard hardwood pallets.

Items that require mechanical lifting during handling must be palletised. Pallets are to be used for items that:

- » Cannot be handled manually by one person or designed to be lifted by a forklift
- » Have dimensions that allow stable loading on the pallet
- » Do not exert excessive point loads on the pallet.

Palletised items must be secure on the pallet to prevent movement.

- » Cylindrical items and items likely to roll or fall must be chocked and strapped with steel straps capable of bearing the unrestrained weight of the item to the pallet. Chocks should be fixed directly onto the pallet.
- » 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.
- » Loads must not overhang the forklift entry points of the pallet. Individual contents of each pallet must be clearly marked.
- » Where timber is used, either internally and externally, it must be free of bark and insect infestation.
- » Where possible steel pallets and skids should be used for the packaging of large and heavy items.

#### 3.10. Skids

Skids are small pallets without under rails; they are usually made of wood less often of metal.

- » 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.
- » Items over 1.0 m 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.

### 3.11. Sacks

Where protection from dust, dirt or moisture is necessary, liners must be used on the inside of the sacks and bags.

#### 3.12. Bundling

Each bundle must be treated as an individual package and marked accordingly.

» All items must be segregated in accordance with length and size and bundled into units using steel straps capable of bearing the unrestrained weight of the item.

### 3.13. Special handling instructions

Packages must be conspicuously marked with: "Handle with Care"; "Right Side Up"; "Keep Dry" and others in English and with the appropriate international standard symbols to prevent possible damage.

- » Pictorial markings complying with AS 2852 Packaging Pictorial marking for the handling of packages must be used to fully convey information regarding specific handling requirements.
- » Lifting and slinging requirements must be clearly marked on goods

### 3.14. Centre of gravity

Equipment and materials must be packed to ensure an even weight distribution within the package.



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.

### 3.15. Large equipment

Large equipment requiring disassembly before transport must be clearly match-marked prior to disassembly to facilitate efficient reassembly on Site.

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.

#### 3.16. Furniture

Furniture and office equipment shall be transported in covered vans fitted with trolleys and blankets designed for the purpose.

- » Where possible, furniture deliveries are to be consolidated by the transport service provider and delivered to the delivery point in a dedicated furniture vehicle.
- » Furniture with readily detachable components shall be disassembled for packing and transportation to minimise damage in transit and for ease of handling

### 3.17. Freight in frames

If the item to be transported requires a frame the vendor is to liaise with the respective Thiess representative to confirm the type and specifications of the frame.

- » The specifications and associated costs of the frame are to be reflected on the purchase order
- Purpose-built transport frames must be designed, checked and manufactured to Australian Standard AS4991 (Lifting Devices). They must also incorporate load restraints and lashing points as described in the National Transport Commission publication "Load Restraint Guide" 2004 edition. Spreader beams or transport frames incorporating lifting beams must also conform to AS1418 (Cranes Hoists & Winches).

Wherever possible manufacture and structural integrity of all transport frames must conform to AS3990 (Mechanical Steelwork) including non-destructive testing of lifting lugs.

If frames appear not to have been manufactured to the above standards, or there is doubt regarding the adequacy of a transport frame, the transport service provider is empowered to act on behalf of Thiess and request a formal inspection and verification certificate.

If the frame is assessed to be non-compliant with the standard the transport service provide is empowered to reject the freight, and contact the respective Thiess representative.

### 3.18. Modification to frames

No modifications must be carried out to Original Equipment Manufacturers (OEM) frames other than by the OEM themselves.

No modifications must be carried out to Thiess owned frames unless it is approved by an authorised and qualified Thiess Maintenance or Engineering representative.

#### 3.19. Single-use frames

Packing that typically accompanies equipment delivered from overseas OEM to local vendors in containers will not normally suffice for long distance road haulage.

- If the supplier chooses to use a single-use frame, it must be built to a standard that will safely transport goods from point of origin to final destination.
- » If a suitable single-use frame is not available, a multiple-use frame must be used.
- » These frames must conform to the Australian Standards described above.



#### 3.20. Mutliple-use frames

Whenever an item is placed in a frame, an independent inspection is to be carried out by a Supervisor, or person deemed to be competent, to ensure that the item has been prepared correctly for transport, the item is secure that a Frame Checklist or similar (see Appendix 1) has been completed.

Suppliers using frames intended for multiple use must maintain a Transport Frame Procedure that, as a minimum, should include the following information:

- » Design standard
- » Frame register
- » Engineering calculations
- » Engineering drawings.

All transport frames must be engineered and fit for purpose. Inspection regimes for frame integrity must be implemented by the Supplier and should be auditable by an authorized Thiess employee.

- » Freight retained in supporting frames should be secured using washers combined with an appropriate minimum torque on the stud or nut to retain the item in the frame.
- » Nylok nuts, castellated nuts or similar must be used to ensure the retaining nuts do not vibrate loose in transit.
- » Lifting and tie-down points must be clearly indicated on the frame.
- » Frames are to be made available for inspection as part of the Scope of Works (SOW) and their fit-for-purpose condition.

#### **Dangerous Goods**

The packaging and transport requirements for the carriage of dangerous goods by road, rail and air shall be in accordance with the latest issues of the relevant Dangerous Goods transport legislation and codes.

All Dangerous Goods shall be identified by correct shipping name, labelled, packaged and packed in full compliance with the directives of the appropriate authority.

#### **3.21. Load restraints**

Correct restraint of packages and items onto transport vehicles is critical.

The National Transport Commission (NTC) Load Restraint Guide should be used as a reference to assist with material specific packaging and restraint guidelines.

- » Load restraint equipment such as Loadbinders, 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.
- » Due to safety risks associated with the use of 'overcentre' loadbinders (dog and chain), this type of load restraint equipment must not be used. Ratchet tie down devices such as the "Ausbinder" or "Ev-Cam" should be used in their place,
- » Any lengths of steel should be correctly secured to its own dunnage for ease of loading and transportation.

## 3. Appendix 1 – Freight preparation checklist

Freight Preparation Checklist	Yes	No	N/A
Pallet/crate/stand selection appropriate			
Free of bends/buckles/cracked welds			
Forklift access points not damaged			



Freight Preparation Checklist	Yes	No	N/A
All boards present			
Load secure on pallet/frame			
washers/lock nuts used			
Nuts torqued to required level			
Oils/lubricants			
drained			
plugged			
Pressure cleaned			
Transportation documentation accurate			
All items listed on connote			
< 250kg accurate to +/- 20kg			
>250kg <1000kg accurate to +/- 50kg			
>1000kg accurate to +/- 3%			
Comments:	·		
Prepared By:			
Date:			





## 4. Appendix 2 – Examples of Correct Freight Preparation



A well packaged consignment on a good sturdy pallet. Metal banding is under the bearers







Wooden crates are acceptable as long as the items inside are properly blocked and do not exceed the weight capacity of the crates.





These drums are well packed the banding prevents movement during transit and handling







A very well packaged consignment, you can see the alternators have been bolted to the metal pallet and the cartons metal strapped. Can be easily loaded and unloaded.





These drill rods are suitably packed for transport and handling







Well secured with metal banding that goes under the bearers of the pallet. The consignment has been protected to prevent the metal banding causing any damage.





5. Appendix 3 – Examples of unacceptable freight preparation







These rams should have all been in transport frames





Rope is not to be used to secure freight







One time frame's are not too use for transport in Western Australia.







It's very important that the skid/palled is capable of carrying the weight of the consignment





This bag contained mixed fittings and was unmarked





OTR Wheel Rims inadequately restrained, unsecure dunnage, potential for metal on metal slippage.