**John Readings Online Division**

**Freight Preparation and Packaging Policy**

Revised December 2015

|  |  |  |  |
| --- | --- | --- | --- |
| **Approved by** | Director Logistics | **Next Revision Due** | December 2016 |
| **Department** | Warehouse | **Division** | Logistics |

[1. Introduction 2](#_Toc13221988)

[2. Purpose 3](#_Toc13221989)

[3. Chain of Responsibility 3](#_Toc13221990)

[4. Hazards of Transportation 4](#_Toc13221991)

[5. Inner Packaging Materials 6](#_Toc13221992)

[6. Documentation 8](#_Toc13221993)

[a) General 8](#_Toc13221994)

[b) Consignment Notes 8](#_Toc13221995)

[c) Material Safety Data Sheet (MSDS) 8](#_Toc13221996)

[7. Marking 9](#_Toc13221997)

[a) Marking of all items 9](#_Toc13221998)

[8. Packaging Methods 10](#_Toc13221999)

[9. Shrink Wrapping Techniques 12](#_Toc13222000)

[10. Cases, Boxes and Crates 14](#_Toc13222001)

[a) Timber Crates/Cases 14](#_Toc13222002)

[11. Special Handling Instructions 15](#_Toc13222003)

[12. Centre of Gravity 15](#_Toc13222004)

[13. Large Equipment 16](#_Toc13222005)

[14. Furniture 16](#_Toc13222006)

[15. Freight in Frames 16](#_Toc13222007)

[a) Modifications to Frames 17](#_Toc13222008)

[b) Single-Use Frames 17](#_Toc13222009)

[c) Multiple-Use Frames 17](#_Toc13222010)

[16. Dangerous Goods 18](#_Toc13222011)

[17. Load Restraint 19](#_Toc13222012)

[18. Relevant Standards and Other Related Documents 20](#_Toc13222013)

# **Introduction**

John Readings moves freight destined for locations spread right across Australia. Much of the freight travels significant distances and can pass 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 areas of Australia.

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

* Can withstand road transport over long distances,
* 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,
* Minimises the risk of damage to the environment, and
* Minimises the risk of damage to other freight, other road users or the general public.

This policy covers the minimum requirements for the presentation and packaging of goods consigned with John Readings Pty Ltd for delivery anywhere in Australia.

# **Purpose**

The purpose of this document is to articulate the policy and procedure for customers and consignors using John Readings Freight. This policy and procedure covers the preparing of materials, equipment and machinery for dispatch via John Readings.

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 New Zealand Occupational Safety & Health Act.

# **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).

# **Hazards of Transportation**

Below are the most common hazards present in freight transportation. These are “normal” hazards of distribution and therefore must always be considered when preparing a goods.

**Punctures and Abrasion:**

Occurs when the package shifts or comes in contact with other packages or material handling equipment during transportation. They can also be the result of improper or insufficient internal packaging that does not prevent the contents from shifting.

**Compression:**

Occurs when external forces are applied to the sides, faces or corners of a package. Stacking, shock, vibration, material handling equipment and tie-down straps all generate compression forces that may result in package or product damage. Proper packaging will prevent damage due to normal compression.

**Environmental exposures:**

High and low humidity can result in condensation or corrosion, and it can greatly reduce the rigidity and compression resistance of paper-based products such as cardboard packaging. Temperature extremes can range and dramatically affect the performance characteristics of packaging material. Other common environmental exposures include, but are not limited to, dirt, dust, odours and precipitation. If a product or package would be considered damaged if exposed to these hazards, the shipper must take extra measures to ensure the packaging can protect the shipment.

**Handling:**

Proper cushioning can reduce damage caused by the shock incurred during handling and over transportation. It is important to note that consignments will most likely be handled with a forklift at some point during distribution. Proper packaging must protect the contents from the drops and impacts commonly associated with handling operations.

**Shock:**

Occurs during handling and transportation as a result of impacts with mechanical handling or road/rail conditions. Proper cushioning can reduce damage caused by shock. Most products will require some level of shock protection to prevent damage during normal handling and transportation.

**Vibration:**

Is normal occurrence over road/rail transportation. Proper cushioning can absorb and reduce the negative effects vibration can have on products.

# **Inner Packaging Materials**

**Bubble Wrap**

Bubble wrap is a light and flexible packaging material, ideal to protect fragile and irregularly shaped products. This gives a very good surface protection and prevention against shocks.



**Foam Cushioning**

When products need protection from vibrations and shocks, a wide range of different materials is available. Many packaging vendors can design foam cushioning specific to the needs of a product.



**Honeycomb Packaging**

Honeycomb is a packaging material consisting of paper formed into continuous uniform hexagonal cells. Due to the wide range of applications, the honeycomb can be considered as both inner and outer packaging.



**Loose Fill**

Loose fill is a void filling and shock absorbing packaging material. Polystyrene is traditionally used as a raw material but loose fill can be made of different materials. This packaging material is very flexible. It fills the empty spaces in the outer packaging and depending on the shape of the loose fill it can also protect against shock.



**Paper Pad**

Paper pad is a blocking, filling and wrapping material that is suitable for irregular shaped products and fragile parts.



# **Documentation**

## **General**

Consignment 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. Address or labels 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.

## **Consignment Notes**

The Consignments notes are to be filled out according to John Readings procedure on “Filling out a Consignment Note”.

John Readings consignment notes are preferred, but customer consignment notes can be used prior to approval.

## **Material Safety Data Sheet (MSDS)**

If the items are classed a dangerous goods – then the person/s responsible for the packaging of goods or materials requires a MSDS with the items. Ensure a copy of the MSDS is attached to:

1. The item,
2. The paperwork,
3. A dg declaration is made on the John Readings connote.

# **Marking**

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

## **Marking of all items**

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

* “Ship to” address,
* Supplier name,
* Case/box/package number (for example, one of four),
* 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.

# **Packaging Methods**

**Stacking and Palletising**

Pallet overhang, wide gaps between pallet boards, misalignments within a column stack and incorrect weight and size distribution all contribute to loss of container strength and poor palletisation resulting in product damage.

**Column Stack (RECOMMENDED)**



A common misconception is that interlocking cartons on a pallet is a good practice and helps to stabilise the palletised load. Interlocking stacking can reduce the carton’s top-to-bottom compression strength up to 50%. Column-stacking is the recommended method. Stack boxes in columns, corner-to-corner and edge-to-edge for the greatest stacking strength. The pallet can be stabilised and secured with banding or stretch wrap.

**Overhang (NOT RECOMMENDED)**



Cartons that overhang the pallet edge can have their compression strength reduced by as much as 32%. Overhang also exposes the packages to tears, punctures and impacts during normal handling and sorting operations.

**Misaligned (NOT RECOMMENDED)**



Misaligning cartons can reduce the boxes’ compression strength by as much as 30%.

**Degrading**



Long-term storage can degrade corrugated and other paper-based products. Cartons sitting in a warehouse can lose up to 50% of their strength. High Humidity. Do not store corrugated or other paper-based packaging material in high humidity. A relative humidity of 90 percent could reduce the packages’ resistance to compression by 60%.

**Pyramid-Shaped Loads Overhang (NOT RECOMMENDED)**



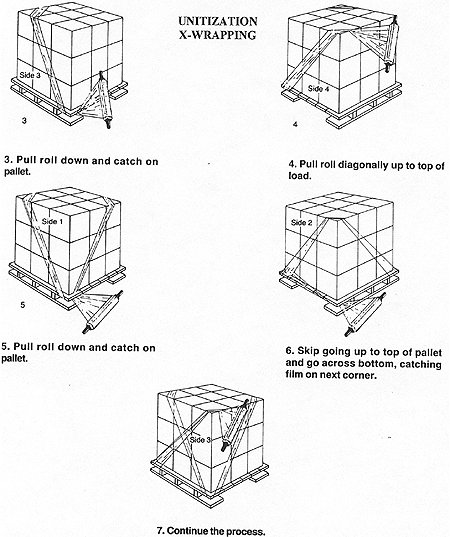
Pyramid-shaped pallet loads are one of the biggest packaging problems confronting the transport industry. Since pyramid pallet loads don’t provide a level surface, the top cartons are exposed to potential damage from other shipments. A level surface will provide maximum strength and stability, and ensures that the load, to the extent practicable, will remain intact.



# **Shrink Wrapping Techniques**

**a) X-Wrapping**

X-wrapping keeps the pallet tight, helping to prevent load shift and gives extra support to heavy loads. The technique pulls the load from diagonal corners, locking the freight to the pallet. This makes the freight and the pallet one unit.

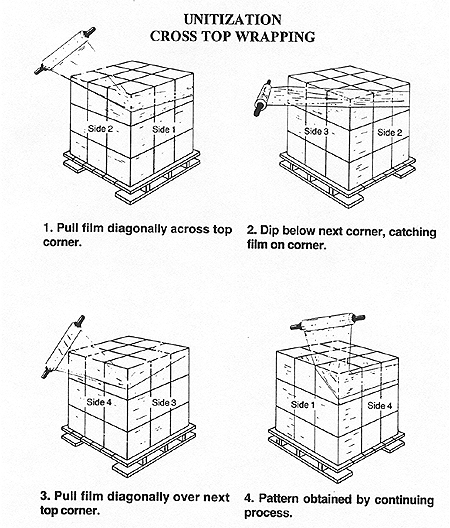


Method: Anchor the shrink wrap to the bottom of the pallet by sliding it between the load and the pallet (diagram 3). Then pull the shrink wrap diagonally up to the top corner of the load (diagram 4). Bring the shrink wrap down and catch it on the diagonal pallet corner (diagram 5). Once the shrink wrap is caught on the pallet, bring it diagonally up to the top of the load. (Diagram 6). Then bring the shrink wrap down diagonally to the next pallet corner (diagram 7). Repeat as needed to assure the load is safely secured to the pallet.

To complete the X pattern on the remaining two corners, skip a top corner and take the shrink wrap along the bottom of the pallet (diagram 6). After catching the shrink wrap on the pallet, proceed diagonally up to the next top corner (diagram 7.) Continuing this process on the remaining corners forms an X pattern on all four sides of the pallet, securely holding the freight during transit. For further security, apply shrink wrap traditionally to the sides of the pallet.

**b) Cross Top Wrapping**

Cross top wrapping pulls the top of the palletised load together and provides additional stabilisation during transit. Cross top wrapping also provided additional security.



Method: Pull the shrink wrap diagonally across the top of the pallet, holding the roll tight. (Diagram 1). Once the wrap is over the top corner, dip the roll below the next corner (diagram 2). Raise the roll over the following corner (diagram 3) and dip it below the next corner. Continue this process, each time moving toward the centre of the pallet until the top complete wrapped (diagram 4).

Once the palletised load is secured to the pallet and top crossed – the pallet can be stabilised by simply wrapping the sides of the load.

# **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.

## **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 the Northline 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 utilise 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.

# **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.

# **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.

# **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, names of accessories, quantity and its position number on assembly drawings.

# **Furniture**

Furniture and office equipment shall be packaged and wrapped to a high quality standard. There should be no exposed surfaces, and items need to be heavily wrapped in blankets, felt or approved bubble wrap. Items are to be transported in covered vans fitted with trolleys and blankets designed for the purpose. Furniture is to be packaged in accordance with the standards set out above.

Furniture with readily detachable components shall be disassembled for packing and transportation to minimise damage in transit and for ease of handling.

# **Freight in Frames**

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.

(RECOMMENDED)

If frames appear not to have been manufactured to the above standards, or there is doubt regarding the adequacy of a transport frame, then Northline may reject the consignment at any point through its journey.

If the frame is assessed to be non-compliant with the standard then Northline reserves the right to reject the freight.

## **Modifications to Frames**

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

## **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 and New Zealand Standards described above.

## **Multiple-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.

Suppliers and BUs 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, and
* Tag system (for repair agency and BU use).

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 Northline.

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.

# **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, UN number, quantity, type, packaging group, etc., packed in full compliance with the directives of the appropriate authority.



# **Load Restraint**

Correct restraint of packages within crates, or frames and the items onto transport vehicles is critical.

The National Transport Commission (NTC) Load Restraint Guide (2004) should be used as a reference to assist with material specific packaging and restraint guidelines.

Load restraint equipment such as loadbinders, chains, ropes, etc, 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 ‘over-centre’ 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” are to be used in preference.

Any lengths of steel should be correctly secured to its own dunnage for ease of loading and transportation.

# **Relevant Standards and Other Related Documents**

In preparing this document, the following documents have been used as resources:

* AS 2852 Packaging – Pictorial marking for the handling of packages,
* AS4068 - Flat pallets for materials handling,
* AS4762 – General-purpose flat pallets – Principal dimensions and tolerances (International Pallet sizes),
* AS2400.1 Packaging-Part1: Glossary of packaging terms,
* AS2400.6 – SAA Packaging code-Part6-Paper and Paperboard,
* AS2400.7 – Packaging-Part7: Timber boxes,
* AS2400.10 – Packaging-Part10: Protection against shock and vibration (cushioning),
* AS2400.18 – SAA Packaging code-Part18-Use of desiccants in packaging,
* AS4991 - Lifting Devices,
* AS1418 - Cranes Hoists and Winches,
* Relevant Australian State/Territory and New Zealand Occupational Safety & Health Regulations,
* Australian and New Zealand WorkSafe - General Duty of Care Guidance Notes,
* Australian National Transport Commission - Load Restraint Guide (2004),
* Australian and New Zealand Code for the transport of Dangerous Goods by Road, Rail or Air,
* Emergency Procedure Guides (EPG) Australian Standard 1678,
* NZ55.020 – Packaging and Distribution of Goods,
* NZ55.040 – Packaging Materials and Accessories,
* NZ55.180.10 – General Purpose Containers,
* NZ55.180.20 – General Purpose Pallets,
* NZ55.180.99 – Other Standards related to freight distribution of Goods,
* NZ53.020 – Materials Handling Equipment, and
* NZ5444. – Load Anchorage Points for Vehicles,
* The IMO/ILO/ UN ECE Guidelines for Packing of Cargo Transport Units,
* John Readings Pty Ltd Standard Terms and Conditions.