



TS15 Technical Specification

Packaging and Transport of Warehousing Goods

Change Control Policy

Any amendment to this standard must be recorded in the table below.

If substantial changes are made a new version of the document shall be created to preserve an audit trail.

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1. Acronyms

Term	Meaning
AS	Australian Standard
AS/NZS	Australian / New Zealand Standard
AS ISO	Australian Standard / International Organisation for Standardization
ISO	International Organisation for Standardization
CBH	Co-Operative Bulk Handling Ltd
CBH Zone / Area	A Geographical Region that Contains a Number of CBH Areas and Sites
SDS/MSDS	Material Safety Data Sheet
COR	Chain of Responsibility
SOW	Scope of Work
Act	An ACT is legislation passed by the Parliament. Acts, (not including Schedules to Acts) can only be amended by another Act of Parliament. Acts set out the broad legal/policy principles.
Regulations, Rules, Codes	REGULATIONS, RULES, CODES are commonly known as "subsidiary legislation" and require publishing in the <i>Government Gazette</i> to become legal. These are the guidelines that dictate how the provisions of the Act are applied. They may also contain pro forma official forms that are required under the Act. Regulations and schedules to Acts can only be amended by a notice published in the <i>Government Gazette</i> .
PO	Purchase Order

2. Standards

Applicable standards but not limited to:

- AS2400: Packaging;
- AS2852: Packaging – Pictorial marking for the handling of packages; ISO 780:1997;
- AS:4068-1993 Flat pallets for materials handling;
- AS 4084: 2012 - Steel Storage Racking;
- AS4762 General-purpose flat pallets - Principal dimensions and tolerances (International Pallet Sizes); ISO 6780:1988;
- Heavy Vehicle National Law (HVNL); and
- Guidelines and performance standards for the safe carriage of loads on road vehicles - Load Restraint Guide, Second Edition 2004.

3. Scope

“This specification outlines the minimum requirements for packing, transport and storage of all materials and equipment for the Principal. “It includes:

- the preparation and preservation of Goods;
- the acceptable use of packaging materials; and
- the marking and required documentation for shipping.

This specification shall in no way supersede any specific instruction or requirement given by manufacturers for the packaging and transport of their equipment, or the Contractor's responsibility for the packaging of that equipment to the satisfaction of the Principal.

This specification is to be read in conjunction with the Scope of Work and General Provisions as outlined in the Contract.

4. General Conditions

The method of packing and the packaging materials shall be sufficient to protect the materials and equipment from all forms of damage associated with the handling, storage, loading and unloading conditions that will be encountered in transit. The method of marking packages shall be sufficient to distinguish each package and identify any particular lifting or handling instructions. Where international shipping is required, the documentation prepared for each shipment shall meet the requirements of international shipping and customs.

5. Documentation

5.1 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).

All items supplied as a Kit must have a component list and qty's included inside each kit to enable the receiver to account for all items that make up the kit.

5.2 Delivery Dockets

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

- Purchase order number and line reference;

- CBH material code;
- Full material description;
- Quantity, unit of measure;
- weight (kg) and dimensions (mm);
- “Ship to” address;
- Dangerous Goods classification (if applicable);
- MSDS paperwork (if applicable); and
- Receivers Contact name (if applicable).

If a delivery is shipped in more than one package, then the documents for the delivery must be forwarded with the first package.

5.3 Material Safety Data Sheet (MSDS)

Hazardous material shall be packed and identified on a separate packing list to non-hazardous materials.

All hazardous materials shall be packed, marked and labelled in accordance with the relevant regulatory requirements. All necessary Material Safety Data Sheets (MSDS) shall be attached to:

- The item;
- The paperwork; and
- With the driver.

5.4 Markings

All packages must be marked in a clearly legible manner, in English.

5.5 Markings of items

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

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

All items packaged in cases or crates, palletised goods must be clearly marked, in English on two sides.

Markings are as follows:

- Purchase order number;
- Full material description;
- Quantity, unit of measure;
- weight (kg) and dimensions (mm);
- “Ship to” address; and
- Dangerous Goods classification and placarding (if applicable).

Fragile or heavy items must be clearly marked or labelled ‘Fragile’ or ‘Heavy’ or ‘Handle with care’

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.

- 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.
- Special Lifting and slinging requirements must be clearly marked on goods if applicable.

5.6 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.
- Any tags used shall be non-rusting or durable plastic to avoid wear and tear.

6. Packaging

6.1 General

Prior to packing, all items must be prepared, protected and marked in accordance with the following :

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 tynes that are a minimum of 210mm wide x 80mm 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 to a skid or pallet. The skid or pallet must be strong enough to support the weight of the item and be capable of multiple handling movements.

Items may not protrude outside the skid or pallet on which the items are packed.

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, unsupported items onto a pallet as a primary means of restraint is not considered to be suitable.

6.2 Boxes (up to 25 kg)

An appropriate cardboard box size will be selected according to product quantity and weight. According to the specific product, the products will be lined with suitable dunnage to prevent damage to goods and to minimise boxes collapsing when stacked or strapped.

Any boxes over 10kg must be marked with a Heavy Items decal/sticker.

6.3 Timber crates/cases

- For the purpose of lifting by forklift, all boxes, crates and skids must be fitted with bearers having a height of no less than 100 mm high. Bearers are to permit forklift tyre access from two opposite sides.
- The base of the case/crate must be designed to allow safe and stable storage on a standard 1165mmx1165mm pallet if required.
- Where lifting 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.
- 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, or other items, 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.
- 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.
- Timber cases and crates must be secured with strapping capable of bearing the unrestrained weight of the item. Strapping must be secured in a manner consistent with the strapping material type.
- Wherever possible, screws, not nails, should be used when sealing the top of timber crates and cases.
- Open crates shall only be used for Goods which are virtually indestructible so that packing is required only to facilitate handling and stowage.

6.4 Pallets

All pallets must comply with relevant Australian standards.

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 and of stringer design. Block style pallets are not recommended.

6.5 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.

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 are not 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 secured on the pallet to prevent unwanted movement.
- Cylindrical items and items likely to roll or fall must be chocked and strapped with strapping capable of bearing the unrestrained weight of the item to the pallet. Chocks should be fixed directly onto the pallet to avoid slippage.
- 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 outer dimensions of the pallet. Individual contents of each pallet must be clearly marked.
- Multiple items packaged onto a single pallet must be evenly placed to ensure even weight distribution and packed as level as reasonably possible to aid in load restraint. Fragile items must be placed away from the outside of pallets where possible. Fragile items to be marked with fragile decals or stickers.

6.6 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.

6.7 Skids

Skids are usually long narrow pallets without under rails and are usually made of wood.

Skids have a very limited application being suitable only for relatively light and low-profile items.

Skids are typically not weight rated and without this certification there is a heightened risk in handling.

Items 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.

For the purpose of lifting by forklift, all skids must be fitted with bearers having a height of no less than 100 mm high. Bearers are to permit forklift tyre access from two opposite sides.

6.8 Sacks

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

Sacks must be sealed in such a way as to prevent any contents from spilling out during handling. Steel Tie Wire is not an acceptable form of sealing sacks.

Sacks weighing more than 25 kg need to be palletised or caged to allow for ease of handling.

6.9 Drums

All Drums over 25kg must be secured onto a skid or pallet to allow easy handling. Strapping must be capable of bearing the unrestrained weight of the item and be cross strapped. Shrink wrapping is not allowed as the primary restraint.

All drums supplied containing chemicals and/or hydrocarbons are to be new non-recycled drums.

Drums are to be palletised with a shock absorbing material (e.g. rubber, cardboard) to be placed under all drums to protect the base of the drum from wear whilst in transit. The addition of this material also reduces the flex of the drum base.

Further protection (such as cardboard) should be put between drums to prevent rubbing whilst in transit.

6.10 Bundling/Packs

Each bundle/ pack 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 strapping capable of bearing the unrestrained weight of the item.

Bundles weighing more than 25kg must be placed on a skid and strapped using strapping capable of bearing the unrestrained weight of the item.

6.11 Gluts & Dunnage

Any items that require Gluts or Dunnage to separate bundles or packs, such as corrugated iron sheeting, must have the glut strapped to the pack to minimise manual handling and the risk of placing hands in and around possible crush points.

All gluts must be a minimum of 100mm high.

All Gluts must be able to support the weight of the item and allow multiple movements.

6.12 Strapping or Banding

Steel/metal strapping is not an acceptable method of securing items for transport due to the increased risks of cutting injuries when handling.

ALL strapping must be Polyester type with appropriate load capacity to bear the unrestrained weight of the item/s with the correct securing hardware and must be tensioned with the correct equipment for the task.

6.13 Protection of Mechanical/Electrical Equipment

Equipment must be suitably protected and packaged to prevent damage or corrosion during transport and be protected from climatic damage during storage on site. In the event of no specific requirements the following guidelines apply:

- Waterproof packaging shall be used if the goods are susceptible to damage from moisture. 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 motors and equipment fitted with shaft locks or other restraining devices shall have adequate warning notices displayed clearly on the motor or equipment frame.
- 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.
- The Contractor shall supply adequate dunnage and packing to prevent damage to surfaces and/or finish of the material whilst in transit. Particular attention shall be paid to protection of material subject to damage by ropes and/or chains.
- All painted items must be packed and handled in such a way that minimises damage to the surface. Protective corners or padding must be used in between any painted or galvanised items that directly come into contact with strapping/chains or lifting equipment.
- 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 silica gel or comparable desiccant to absorb moisture within the package. Desiccants shall be bagged to avoid dispersing in containers. 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".
- Gearboxes, suitable hydraulic components and transmissions must contain in quantities sufficient to ensure effectiveness, the corrosion inhibitor "Shell VSI 8235" or a 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.
- Items susceptible to corrosion damage shall be coated with a suitable corrosion inhibitor such as VCI Paper/Film, Enviropeel, Shell Ensis, CRC Soft Seal, Balm Blue Parts Coater, Denso Tape or similar protectant and be packaged with desiccant materials to protect the goods against humidity.
- Exposed threads and high precision surfaces must be protected from knock damage by suitable caps, protection sleeves or netting.
- Goods contaminated with grease, waste oil, solid lubricants or other process contaminants and that are being consigned from sites must be cleaned before transport to prevent environmental damage during the entire supply chain.
- Projections from steelwork such as lugs and splice plates which may suffer damage during transport are required to be reinforced with timber packaging pieces or similar.

6.14 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.

6.15 Sea Containers

To protect personnel health and safety, CBH will not accept delivery of any goods in sea containers which require unloading or handling to receive goods. All Items must be delivered to warehouse/stores via alternative packaging and transport options.

6.16 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.

7. Special handling instructions

7.1 Food

Food is to be separated and packaged away from oils, mechanical/electrical components, flammable and dangerous goods, poisons and pesticides.

7.2 Kits and Assemblies

Any items manufactured or supplied as a kit , must be packaged so that all included items that make that kit are bundled/package as one unit.

7.3 Conveyor belting

All conveyor belting is to be packaged upright, and supported with dunnage to assist in stability, Belting cannot be laid down on sides.

All conveyor belting needs to be mounted either on belting frames suitable for lifting with forklift, or specially designed pallets/crating or frames to enable secure transport with maximum support for the item. All belting is to be wrapped in a UV stable weatherproof cover which provides maximum protection against the weather elements.

Frames or Palletised belting made of wood must be hardwood and must have a SWL exceeding the weight of the item. Chipboard, plywood type pallets and skids are not acceptable.

7.4 Rubber Skirting and Polyurethane Sheeting

Individual rolls of rubber skirting over 25kg need to be placed and secured on individual skids or pallets and secured with strapping capable of bearing the unrestrained weight of the item.

Rubber/poly Sheeting is to be laid flat on pallets, correctly sized to fully support the sheeting and secured appropriately.

Sheeting is not to protrude over the pallet's external dimensions.

Sheeting is to be strapped to pallets with strapping capable of bearing the unrestrained weight of the item. There must be a protective sheeting or safety edges/corners between strapping and sheeting to protect the sheeting from abrasion damage.

7.5 Hydraulic/Pneumatic cylinders

All Hydraulic/pneumatic cylinders must be mounted and supported in cradles.

All service ports are to be fitted with steel blanking plugs or plates and cylinders must be packaged in the fully closed position.

All cylinders must be wrapped in suitable protective packaging to keep out moisture, dust and vermin and be suitable for long term storage.

7.6 Furniture

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.

7.7 Prohibited Products

The following products due to their toxicity and health risk are not acceptable.

- Asbestos;
- Benzene;
- Benzidine derived dyes;
- Cadmium and antimony in paints, solders, or metals;

- Chloroform;
- Formaldehyde containing products or formaldehyde generating products;
- Lead and chromate in paints or lubricants;
- Mercury;
- Methylene Chloride;
- Methyl chloroform;
- Methyl and ethyl glycol ethers and their acetates;
- Nitrosamines and precursor compounds capable of forming nitrosamines;
- Petroleum derived oils which are not severely hydrotreated and solvent refined;
- Ortho toluidine;
- Perchloroethylene;
- Refractory ceramic fibres;
- Sensitizers (toluene diisocyanate and acrylates); and
- Trichloroethylene.

7.8 Structural Steelwork

Steelwork dismantled for transport shall be adequately marked with reference to the fabrication drawings to facilitate re-assembly on site.

Prepared and/or painted surfaces shall be fully protected using suitable packing materials and fabrics between lifting tackle and the work whilst loading is being carried out, to minimise damage to both the surface and the protective finish.

Steelwork and equipment shall be packed to prevent bending of components when tensioning trailer hold down straps.

8. Freight in frames

8.1 Single-use frames

If a single-use frame is used, 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.

8.2 Multiple-use frames

Multi-use purpose-built transport frames must be designed, checked and manufactured to Australian Standard AS:4991 (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).

Frames are to be made available for inspection as part of the Scope of Works (SOW) and their fit-for-purpose condition.

8.3 Modification to frames

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

8.4 Load restraints

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

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.

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.