



PACKAGING STANDARD FOR USED LEAD ACID BATTERIES (ULAB)





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DISCLAIMER: The information provided here is general in nature and provided for educational purposes only. Organisations must do their own research to understand their legal obligations and to ensure that they are fully compliant with the Australian Dangerous Goods Code. ABRI does not accept responsibility for any loss or damage occasioned by any person acting or refraining from action as a result of reliance on this document.

PACKAGING STANDARD FOR USED LEAD ACID BATTERIES (ULAB)

1. INTRODUCTION

This is a voluntary industry standard for packaging used lead acid batteries (ULAB) for transport to a recycling facility. Meeting the standard will ensure acceptance by the carrier and the recycling facility and avoid the inconvenience and cost of consignments being rejected. Consignments could be rejected by the carrier at the point of pick up or by the ULAB recycling facility staff at the point of delivery. Rejected consignments will be returned to the supplier at their expense or remediated at the supplier's expense.

2. GENERAL HANDLING REQUIREMENTS

Before handling battery/cell(s), please read and adhere to all of the following requirements:

- Wear the appropriate personal protection equipment.
- Handle all returned batteries with the same responsible care as new batteries.
- Keep batteries upright at all times. Do not tip over on side or upside down.
- Do not drop batteries. Put batteries carefully down on the pallet.
- Only lead acid batteries may be returned.
- The total height of the package must not exceed 900mm.
- Any damaged or cracked cell must be free of electrolyte and placed in a clear heavyweight polyethylene plastic bag (min. 0.6mm) that is securely closed.
- All vent caps must be in place.
- Motive and standby batteries need to be separated from automotive batteries for processing reasons.

3. AUTOMOTIVE BATTERIES

- See 'General handling', 'Pallets' and 'Packaging and Strapping' sections.
- Automotive batteries must be separated into similar sizes.
- All batteries forming the outer rows of each layer must be of similar height. Lower height batteries can be stacked in the inner rows on each layer.
- All batteries must be stacked in an upright orientation so that acid is not spilled.



- Slip sheets must be used between the layers to minimise the potential for short circuit and post penetration. Heavy duty cardboard slip sheets are preferable to Masonite or chipboard because they are recyclable, and small spills can be absorbed and are visible. Polystyrene slip sheets are not to be used as they are difficult and costly to recycle (suppliers may incur an environmental disposal levy to cover the costs of disposing of any polystyrene received).
- Remove all battery cables or connections.
- Automotive batteries can be stacked up to a maximum of 3 layers, provided they are on hardwood or CHEP pallets, a maximum weight of 1500 kg is not exceeded, and the stacks remain square. Two layers is preferred.
- Automotive batteries in boxes, crates, or drums will not be accepted or unloaded.
- Truck size batteries, often labelled N200, should be stacked on separate pallets where feasible.
- Nickel-cadmium, Aluminium-cadmium, Lithium Ion and Nickel Metal Hydride batteries will not be accepted or unloaded (See Appendix 1). Any of these battery types packed with lead acid batteries will be sent to a responsible recycler at the cost of the supplier and the cost offset against any value owed to the supplier.



4. STANDBY POWER BATTERIES (SEALED)

- See 'General handling', 'Pallets' and 'Packaging and Strapping' sections.
- Standby power batteries should not be mixed with automotive batteries.
- Standby power batteries should be separated into similar size groups so that they can be stacked evenly across the pallet.
- All batteries forming the outer rows of each layer must be of similar height. Lower height batteries can be stacked in the inner rows on each layer.
- Slip sheets must be used between the layers to minimise the potential for short circuit and post penetration. Heavy duty cardboard slip sheets are preferable to Masonite or chipboard because they are recyclable, and small spills can be absorbed and are visible. Polystyrene slip sheets are not to be used as they are difficult and costly to recycle (suppliers may incur an environmental disposal levy to cover the costs of disposing of any polystyrene received).
- Remove all battery cables or connections.
- Small standby power batteries can be stacked up to a maximum of 3 layers provided a maximum height of 900mm and maximum weight of 1500kg is not exceeded and stacks remain square.
- Large standby power batteries must only be stacked up to a maximum of 2 layers and a maximum height of 900mm and weight of 1500kg must not be exceeded.
- Crates and cages cause OHS and handling issues at the recycling facility and can only be used with the prior approval of the recycler.

5. MOTIVE POWER (FORKLIFT) AND FLOODED STANDBY POWER BATTERIES

- See 'General handling', 'Pallets' and 'Packaging and Strapping' sections.
- Multiple batteries can be banded together to consolidate a shipment to a standard pallet size.
- Forklift battery cells and large flooded standby power cells must be stacked on separate pallets in an upright orientation so that acid is not spilled.
- Cells should be separated into similar heights so that the stack height is even and the pallet can accept a top load.
- If cells are left in their tray or steel case, disconnect all cables as they are a fire risk during transit and storage.
- All cells forming the outer rows on the pallet load must be of similar height. Lower height cells may be stacked in the centre.
- Only one layer of cells is to be used on each pallet.
- Pallet weights must not exceed 1500kg.
- Industrial batteries will be accepted in steel cases or trays but only when shipped separately.
- Industrial Perspex-cased industrial batteries must be stacked on separate pallets. They must not be mixed with Polypropylene-cased batteries.
- Batteries and cells must be banded with plastic strapping and stretch wrapped (See 'Packaging and strapping').
- Cells that are more than 500 mm high should be packed in a way that prevents them falling over and spilling acid, e.g. in a crate or other suitable designed container/packaging system. Crates and cages may cause OHS and handling issues at the recycling facility and can only be used with the prior approval of the recycler.
- Pallets must be properly blocked, braced, or otherwise secured in the trailer to prevent shifting of the load during transport.



6. PALLETS

- Pallets must be strong, in good condition and of heavy duty construction. Hardwood or plastic pallets are preferred because softwood is not strong enough to withstand stacking more than two pallets high.
- Plastic pallets are also accepted but must be in good condition.
- The maximum size of the pallet must not exceed 1200 mm square.
- Pallets that are damaged with broken or missing timbers will not be accepted.

7. PACKAGING AND STRAPPING

- Strapping must be high strength polypropylene, polyester or nylon plastic. The preferred strapping is 19mm wide with a combined break strength of 1500kg.
- Friction welding is preferred; otherwise non-plastic clips.
- Strapping must be tight enough to prevent battery movement in transit.
- Steel strapping is not acceptable, due to the potential risk of fire from short-circuits.
- Automotive and standby power batteries must have one horizontal strap around each layer of batteries.
- Forklift and flooded standby power cells must have at least 3 horizontal straps around the load.
- In addition to the above all pallet loads must have at least 2 cross straps tying the load to the pallet.
- In addition to the above all pallet loads must be either stretch wrapped or shrink wrapped in clear plastic to the full height of the pallet stack. The plastic wrap should not completely enclose the batteries due to the potential for gas build-up.
- The plastic wrap should secure the batteries to the pallet by wrapping around the pallet at least once.
- Plastic wrapping alone is not acceptable, except with the prior consent of the recycler. The supplier must be able to demonstrate that the batteries are packed or secured to prevent inadvertent movement, in accordance with the Australian Dangerous Goods Code (P801) and relevant state and territory legislation.
- Vertical strapping alone is not acceptable.
- ULAB must have all vent caps firmly in place prior to wrapping and strapping, as missing or loose vent caps are the major cause of acid spills during transport.

8. LABELLING

- All pallets or bulk containers must be labelled with a “Class 8 Corrosive” sticker to comply with Dangerous Goods Regulations. The sticker must have minimum size of 100 x 100mm with minimum lettering size of 7mm.
- All pallets or bulk containers must be labelled with the proper shipping name, the associated UN number, and the name and address in Australia of the manufacturer or consigner, or their agent.
- The label must be placed on at least two opposing sides. In storage it is important that the label is visible to incoming trucks and emergency services.
- For more information refer to the Australian Dangerous Goods Code (chapter 5.2).



9. TRANSPORT APPROVAL AND DOCUMENTATION

AUSTRALIA

- The **interstate** movement of ULAB **must** be undertaken with appropriate regulatory approval and documentation
 - The supplier **must** obtain an approved Consignment Authorisation issued by the destination state Environmental Protection Authority prior to transportation.
 - Waste Transport Certificate documentation **must** accompany the ULAB load in transit and be presented at the receiving facility upon delivery.
- A waste transport licence and a waste transport certificate are also required for intrastate transport of ULAB in some jurisdictions. Contact your local environmental authority for more information.
- Lead acid batteries are classified as a Dangerous Good under the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code) - UN No. 2794, Class 8 (corrosive). Any organisation involved in transporting ULAB must comply with the Code.
- A summary of regulatory requirements is available at www.batteryrecycling.org.au/recycling/automotive-batteries.

NEW ZEALAND

- Transporters must ensure compliance to all rules and regulations as set out by the Environment Risk Management Authority, NZ Transport Agency, Maritime New Zealand and the Ministry of Agriculture and Forestry.

10. HOW TO IDENTIFY A LEAD ACID BATTERY

Lead acid batteries are generally labelled with the chemical symbol for lead (Pb) and the crossed out wheelie bin (see below).



11. FREQUENTLY ASKED QUESTIONS

Q) Why is it so important to pack ULAB to a standard?

A) Under the Chain of Responsibility the Consignor (you) is responsible and you can be held liable for any non-compliance with legislative requirements.

Q) What is Chain of Responsibility?

A) Chain of Responsibility requirements under road transport laws now mean that everyone involved in the road transport supply chain - the consignor, consignee, packer, loader and receiver, as well as the driver and operator - can be held responsible for breaches of road laws and may be legally liable. These parties must take all reasonable steps to prevent their conduct from causing or contributing to a breach. New laws have been introduced to ensure that those who are responsible for conduct, which affects compliance, are accountable for failure to discharge that responsibility (chain of responsibility).

Q) Why should I separate different battery types?

A) To ensure the safe transport of ULAB, batteries should be of similar size by layer with largest and heaviest on the bottom layer. Due to size restrictions on recycling equipment large motive power cells or N200 type automotive batteries may require manual disassembly prior to introduction to the battery breaker. All steel cased batteries must be disassembled prior to introduction to the breaker and any foreign material must be removed from the process prior to material separation.

Q) Why should I use hardwood or plastic pallets?

A) For the health and safety of facility personnel and to meet Chain of Responsibility obligations the facility prefers hardwood or plastic pallets. Hardwood and plastic pallets permit the safe storage of ULAB as they can bear the loads associated with ULAB.

Q) Why can't the transport company just be responsible for accepting pallets?

A) The transport company is responsible for accepting pallets (consignments), however the driver cannot see into all pallets nor can they be expected to understand the product content or make up. Therefore, all pallets are subject to final inspection by the ULAB recycling facility staff. They will make the final decision on all consignments. Under Chain of Responsibility obligations the original consignor cannot pass on its obligations to another party and therefore remains liable for any issues arising from the transport of consignments regardless of acceptance by another party.

Q) Can I use black plastic to wrap ULAB?

A) No. Black plastic impedes inspection by the transport driver and facility staff, who will make a judgment on compliance with environmental and dangerous goods regulations, and this standard, based on observation. For example, any liquid on or leaking from the consignment could be deemed as leaking battery acid (electrolyte). Clear plastic wrap is the best option.

AUSTRALIAN BATTERY RECYCLING INITIATIVE

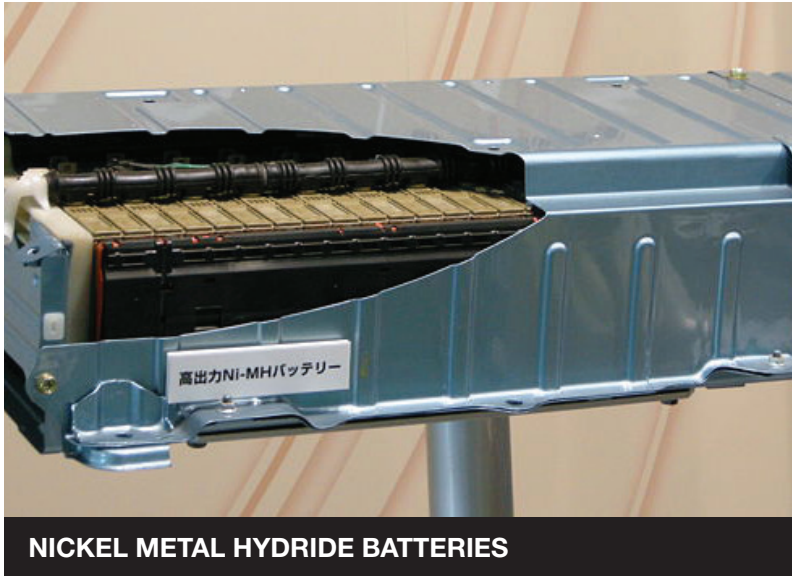
Ph: 02 4268 6629

info@batteryrecycling.org.au

www.batteryrecycling.org.au

APPENDIX 1: EXAMPLES OF BATTERIES THAT CAN NOT BE PROCESSED

ULAB recyclers will not accept the following battery types. Visit www.batteryrecycling.org.au to find a recycler for these.



APPENDIX 2: EXAMPLES OF GOOD AND BAD PACKAGING

GOOD EXAMPLES

- Each layer of batteries has a horizontal strap.
- Two vertical straps secure the load to the pallet.
- Clear plastic stretch wrap.
- Sturdy pallet in good condition.



GOOD EXAMPLE



GOOD EXAMPLE

APPENDIX 2: EXAMPLES OF GOOD AND BAD PACKAGING

BAD EXAMPLES



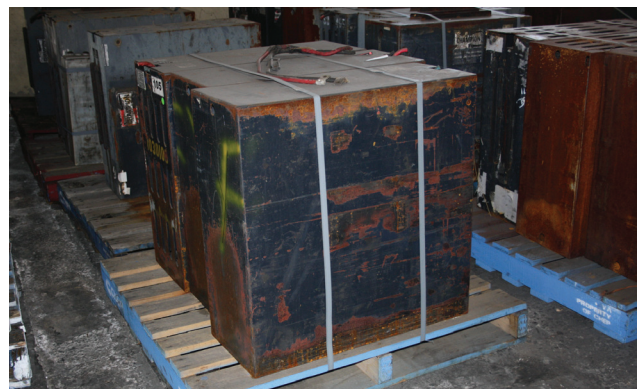
BLACK PLASTIC WRAP IS NOT ACCEPTABLE



POLYSTYRENE SLIP SHEETS ARE NOT ACCEPTABLE



THERE MUST BE AT LEAST TWO VERTICAL STRAPS TYING THE LOAD TO THE PALLET



BATTERIES NEED TO BE WRAPPED AS WELL AS STRAPPED



BROKEN PALLET IS UNACCEPTABLE



THE PALLET LOAD NEEDS HORIZONTAL AS WELL AS VERTICAL STRAPPING

