



International Civil Aviation Organization

WORKING PAPER

DGP/29-WP/14

1/8/23

Addendum

18/9/23

English only

DANGEROUS GOODS PANEL (DGP)

TWENTY-NINTH MEETING

Montréal, 13 to 17 November 2023

Agenda Item 1: Harmonizing ICAO dangerous goods provisions with UN Recommendations on the Transport of Dangerous Goods (Ref: REC-A-DGS-2025)

1.2: Develop proposals, if necessary, for amendments to the *Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284)* for incorporation in the 2025-2026 Edition

AMENDMENTS TO PART 4 OF THE TECHNICAL INSTRUCTIONS DEVELOPED BY DGP-WG/22 AND DGP-WG/23

(Presented by the Rapporteur of the DGP Working Group on UN Harmonization (DGP-WG/UN Harmonization))

SUMMARY

The DGP Working Group on UN Harmonization (DGP-WG/UN Harmonization) conducted a review of the amendments proposed to Part 4 of the Technical Instructions developed by DGP-WG/22 and DGP-WG/23 contained in DGP/29-WP/14. DGP-WG/UN Harmonization determined the need for revisions to the amendments proposed.

Action by the DGP: The DGP is invited to consider the amendments to Part 4 of the Technical Instructions contained in this working paper in conjunction with the amendments to Part 4 proposed in DGP/29-WP/14.

Amend DGP/29-WP/14 as follows:

Page 18, Packing Instruction 952:

- Sub-paragraph 2) ii) under the heading for “Batteries”, *amend* two references to “lithium or sodium ion batteries or cells” to read “lithium batteries or sodium ion batteries ~~or cells~~”.

Pages 21 and 23, Packing Instruction 965:

Page 21, Paragraph 2:

- *amend* “Lithium batteries forbidden from transport” to read “~~Lithium~~ Batteries forbidden from transport” in the heading.
- *amend* “Waste ~~lithium~~ batteries and ~~lithium~~ batteries” to read “Waste ~~lithium~~ cells or batteries and ~~lithium~~ cells or batteries” in the third sub-paragraph.

Page 23, Paragraph IB.2:

- *amend* “Division” to read “Division” in the second bullet point.
- *amend* “lithium battery mark” to read “~~lithium~~-battery mark” in the last bullet point.

Pages 24, 25 and 26, Packing Instruction 966:

Page 24, Paragraph 2:

- *amend* “Lithium batteries forbidden from transport” to read “~~Lithium~~ Batteries forbidden from transport” in the heading.

Page 24, paragraph I.1:

- *insert* “Table 966-I” as a title before the table.

Page 25, Section II:

- *insert* “batteries” after “lithium” in the second bullet point to read “Part 5;2.4.16 (Shipper’s responsibilities — Special marking requirements for lithium batteries or sodium ion batteries)”.

Page 25, paragraph II.1:

- *insert* “Table 966-II” as a title before the table.

Page 26, paragraph II.2:

- *strikeout* “lithium” before “battery mark (Figure 5-3)” in the sixth major bullet point.

Page 26, paragraph II.4:

- *strikeout* “lithium” before “battery mark (Figure 5-3)” in sub-paragraph c).

Pages 27, 28 and 29, Packing Instruction 967:

Page 27, Paragraph 2:

- *amend* “Lithium batteries forbidden from transport” to read “~~Lithium~~ Batteries forbidden from transport” in the heading.

Page 27, paragraph I.1:

- *insert* “Table 967-I” as a title before the table.

Page 28, Section II:

- *insert* “batteries” after “lithium” in the second bullet point to read “Part 5;2.4.16 (Shipper’s responsibilities — Special marking requirements for lithium batteries or sodium ion batteries)”

Page 28, paragraph II.1:

- *insert* "Table 967-II" as a title before the table.

Page 28, paragraph II.2:

- *strikeout* "lithium" before "battery mark (Figure 5-3)" in the fourth bullet point.

Page 29, paragraph II.4:

- *strikeout* "lithium" before "battery mark (Figure 5-3)" in sub-paragraph c).

Pages 30 and 31, Packing Instruction 976:

Page 30, Paragraph 2:

- *amend* "Sodium ion batteries forbidden from transport" to read "Batteries forbidden from transport" in the heading.
- *amend* "Waste batteries and batteries" to read "Waste cells or batteries and cells or batteries" in the third sub-paragraph.

Page 30, paragraph I.2, *amend* "Table 976-I-1" to read "Table 976".

Pages 32, 33 and 34, Packing Instruction 977:

Page 32, Paragraph 1:

- *delete* "lithium" before "cells or batteries will provide electrical power for its operation" in the fourth sub-paragraph.

Page 32, Paragraph 2:

- *amend* "Sodium ion batteries forbidden from transport" to read "Batteries forbidden from transport" in the heading.
- *strikeout* third sub-paragraph related to waste batteries and batteries being shipped for recycling or disposal.

Page 33, Section II:

- *insert* "batteries" after "lithium" in the second bullet point to read "Part 5:2.4.16 (Shipper's responsibilities — Special marking requirements for lithium batteries or sodium ion batteries)"

Page 33, paragraph II.1:

- *delete* "sodium ion" from the "Contents" column of Table 977-II.

Page 34, paragraph II.2:

- *delete* "sodium ion" before "battery mark (Figure 5-3)" in the sixth major bullet point.

Page 34, paragraph II.4:

- *delete* "sodium ion" before "battery mark (Figure 5-3)" in sub-paragraph c).

Pages 35, 36 and 37, Packing Instruction 978:

Page 35, Paragraph 1:

- *delete* "lithium" before "cells or batteries will provide electrical power for its operation" in the fourth sub-paragraph.

Page 35, Paragraph 2:

- *amend* "Sodium ion batteries forbidden from transport" to read "Batteries forbidden from transport" in the heading.
- *delete* third sub-paragraph related to waste batteries and batteries being shipped for recycling or disposal.

Page 36, Section II:

- *insert* "batteries" after "lithium" in the second bullet point to read "Part 5:2.4.16 (Shipper's responsibilities — Special marking requirements for lithium batteries or sodium ion batteries)"

Page 36, paragraph II.1:

- delete "sodium ion" from the "Contents" column of Table 978-II.

Page 37, paragraph II.2:

- delete "sodium ion" before "battery mark (Figure 5-3)" in the fourth bullet point.
- delete "sodium ion" before "battery mark" on the first line of the fifth major bullet point.

Page 37, paragraph II.4:

- delete "sodium ion" before "battery mark (Figure 5-3)" in sub-paragraph c).

Add Packing Instructions 968, 969 and 970 and the proposed amendments contained in them shown as redline and strikeout on the following pages:

Packing Instruction 968

Cargo aircraft only for UN 3090

1. Introduction

This entry applies to lithium metal or lithium alloy batteries. This packing instruction is structured as follows:

- Section IA applies to lithium metal cells with a lithium metal content in excess of 1 g and lithium metal batteries with a lithium metal content in excess of 2 g, which must be assigned to Class 9 and are subject to all of the applicable requirements of these Instructions; and
- Section IB applies to lithium metal cells with a lithium metal content not exceeding 1 g and lithium metal batteries with a lithium metal content not exceeding 2 g.

A single cell battery as defined in Part III, sub-section 38.3.2.3 of the UN *Manual of Tests and Criteria* is considered a “cell” and must be transported according to the requirements for “cells” for the purpose of this packing instruction.

2. ~~Lithium metal~~ Batteries forbidden from transport

The following applies to all ~~lithium metal~~ cells and batteries in this packing instruction:

Cells or batteries identified as being damaged or defective in accordance with Special Provision A154 are forbidden for transport.

Waste ~~lithium cells or~~ batteries and ~~lithium cells or~~ batteries being shipped for recycling or disposal are forbidden from air transport unless approved by the appropriate national authority of the State of Origin and the State of the Operator.

IA. SECTION IA

Each cell or battery must meet the provisions of 2;9.3.

IA.1 General requirements

Part 4;1 requirements must be met.

Table 968-IA

| UN number and proper shipping name | Net quantity per package | |
|--|--------------------------|-------|
| | Passenger | Cargo |
| UN 3090 Lithium metal batteries | Forbidden | 35 kg |

IA.2 Additional requirements

- ~~Lithium metal~~ Cells and batteries must be protected against short circuits.
- ~~Lithium metal~~ Cells and batteries must be placed in inner packagings that completely enclose the cell or battery, then placed in an outer packaging. The completed package for the cells or batteries must meet the Packing Group II performance requirements.
- ~~Lithium metal~~ Cells and batteries must not be packed in the same outer packaging with substances and articles of Class 1 (explosives) other than Division 1.4S, Division 2.1 (flammable gases), Class 3 (flammable liquids), Division 4.1 (flammable solids) or Division 5.1 (oxidizers).
- A ~~lithium metal~~ cell or battery with a mass of 12 kg or greater and having a strong, impact-resistant outer casing may be transported when packed in strong outer packagings or protective enclosures (e.g. in fully enclosed or wooden slatted crates) not subject to the requirements of Part 6 of these Instructions, if approved by the appropriate authority of the State of Origin. A copy of the document of approval must accompany the consignment.

Packing Instruction 968

IA.3 Outer packagings

Boxes

Aluminium (4B)
Fibreboard (4G)
Natural wood (4C1, 4C2)
Other metal (4N)
Plastics (4H1, 4H2)
Plywood (4D)
Reconstituted wood (4F)
Steel (4A)

Drums

Aluminium (1B2)
Fibre (1G)
Other metal (1N2)
Plastics (1H2)
Plywood (1D)
Steel (1A2)

Jerricans

Aluminium (3B2)
Plastics (3H2)
Steel (3A2)

IB. SECTION IB

~~Lithium metal~~ Cells or batteries prepared in accordance with this section are subject to all of the applicable provisions of these Instructions (including the requirements in paragraph 2 of this packing instruction and of this section) except for the provisions of Part 6.

~~Lithium metal~~ Cells or batteries shipped in accordance with the provisions of Section IB must be described on a dangerous goods transport document as set in Part 5;4. The packing instruction number "968" required by 5;4.1.5.8.1 a) must be supplemented with "IB". All other applicable provisions of Part 5;4 apply.

~~Lithium metal or lithium alloy~~ Cells and batteries may be offered for transport provided that each cell and battery meets the provisions of 2;9.3 a), e), f) (if applicable) and g) and the following:

- 1) for ~~lithium metal~~ cells, the lithium content is not more than 1 g;
- 2) for ~~lithium metal or lithium alloy~~ batteries, the aggregate lithium content is not more than 2 g.

IB.1 General requirements

Cells and batteries must be packed in strong outer packagings that conform to Part 4;1.1.1, 1.1.3.1 and 1.1.10 (except 1.1.10.1).

Table 968-IB

| <i>Contents</i> | <i>Net quantity per package</i> | |
|-----------------------------------|---------------------------------|--------------|
| | <i>Passenger</i> | <i>Cargo</i> |
| Lithium metal cells and batteries | Forbidden | 2.5 kg |

IB.2 Additional requirements

- Cells and batteries must be packed in inner packagings that completely enclose the cell or battery then placed in a strong rigid outer packaging.
- Cells and batteries must not be packed in the same outer packaging with substances and articles of Class 1 (explosives) other than ~~Division~~ ~~Division~~ 1.4S, Division 2.1 (flammable gases), Class 3 (flammable liquids), Division 4.1 (flammable solids) or Division 5.1 (oxidizers).
- Cells and batteries must be protected so as to prevent short circuits. This includes protection against contact with electrically conductive material within the same packaging that could lead to a short circuit.
- Each package must be capable of withstanding a 1.2 m drop test in any orientation without:
 - damage to cells or batteries contained therein;
 - shifting of the contents so as to allow battery to battery (or cell to cell) contact;
 - release of contents.
- Each package must be capable of withstanding, without damage to the cells or batteries contained therein and without any reduction of effectiveness, a force applied to the top surface equivalent to the total weight of identical packages stacked to a height of 3 m (including the test sample) for a duration of 24 hours.
- Each package must be marked with the ~~appropriate lithium~~ battery mark (Figure 5-3) in addition to the appropriate Class 9 hazard label (Figure 5-26) and the cargo aircraft only label (Figure 5-28).

Packing Instruction 968

IB.3 Outer packagings

Boxes

Aluminium
Fibreboard
Natural wood
Other metal
Plastics
Plywood
Reconstituted wood
Steel

Drums

Aluminium
Fibre
Other metal
Plastics
Plywood
Steel

Jerricans

Aluminium
Plastics
Steel

Packing Instruction 969

Passenger and cargo aircraft for UN 3091 (packed with equipment) only

1. Introduction

This entry applies to lithium metal or lithium alloy batteries packed with equipment.

Section I of this packing instruction applies to lithium metal and lithium alloy cells and batteries that are assigned to Class 9. Certain lithium metal and lithium alloy cells and batteries offered for transport and meeting the requirements of Section II of this packing instruction, subject to paragraph 2 below, are not subject to other additional requirements of these Instructions.

A single cell battery as defined in Part III, sub-section 38.3.2.3 of the UN *Manual of Tests and Criteria* is considered a "cell" and must be transported according to the requirements for "cells" for the purpose of this packing instruction.

For the purpose of this packing instruction, "equipment" means apparatus for which the ~~lithium~~ cells or batteries will provide electrical power for its operation.

2. Lithium batteries forbidden from transport

The following applies to all ~~lithium metal~~ cells and batteries in this packing instruction:

Cells or batteries identified as being damaged or defective in accordance with Special Provision A154 are forbidden for transport.

I. SECTION I

Each cell or battery must meet the provisions of 2;9.3.

I.1 General requirements

Part 4;1 requirements must be met.

Table 969-I

| <i>UN number and proper shipping name</i> | <i>Package quantity (Section I)</i> | |
|--|---|--|
| | <i>Passenger</i> | <i>Cargo</i> |
| UN 3091 Lithium metal batteries packed with equipment | 5 kg of lithium metal cells or batteries | 35 kg of lithium metal cells or batteries |

Packing Instruction 969

I.2 Additional requirements

- ~~Lithium metal~~ cells and batteries must be protected against short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to a short circuit.
- ~~Lithium metal~~ cells and batteries must:
 - be placed in inner packagings that completely enclose the cell or battery, then placed in a packaging of a type shown below that meets the Packing Group II performance requirements, then placed with the equipment in a strong, rigid outer packaging; or
 - be placed in inner packagings that completely enclose the cell or battery, then placed with the equipment in a packaging of a type shown below that meets the Packing Group II performance requirements.
- The equipment must be secured against movement within the outer packaging.
- The number of cells or batteries in each package must not exceed the number required for the equipment's operation, plus two spare sets. A "set" of cells or batteries is the number of individual cells or batteries that are required to power each piece of equipment.
- For lithium metal cells and batteries prepared for transport on passenger aircraft as Class 9:
 - cells and batteries offered for transport on passenger aircraft must be packed in intermediate or outer rigid metal packaging surrounded by cushioning material that is non-combustible and non-conductive and placed inside an outer packaging.

I.3 Outer packagings

| <i>Boxes</i> | <i>Drums</i> | <i>Jerricans</i> |
|-------------------------|-------------------|------------------|
| Aluminium (4B) | Aluminium (1B2) | Aluminium (3B2) |
| Fibreboard (4G) | Fibre (1G) | Plastics (3H2) |
| Natural wood (4C1, 4C2) | Other metal (1N2) | Steel (3A2) |
| Other metal (4N) | Plastics (1H2) | |
| Plastics (4H1, 4H2) | Plywood (1D) | |
| Plywood (4D) | Steel (1A2) | |
| Reconstituted wood (4F) | | |
| Steel (4A) | | |

II. SECTION II

~~Lithium metal or lithium alloy~~ cells and batteries packed with equipment, when complying with Section II of this packing instruction, are only subject to the following additional provisions of these Instructions:

- Part 1;2.3 (General — Transport of dangerous goods by post);
- Part 5;2.4.16 (Shipper's responsibilities — Special marking requirements for lithium batteries or sodium ion batteries);
- Part 7;4.4 (Operator's responsibilities — Reporting of dangerous goods accidents and incidents);
- Part 7;4.5 (Operator's responsibilities — Reporting of undeclared and misdeclared dangerous goods);
- Part 8;1.1 (Provisions concerning passengers and crew — Dangerous goods carried by passengers or crew); and
- Paragraphs 1 and 2 of this packing instruction.

Lithium metal cells and batteries may be offered for transport provided that each cell and battery meets the provisions of 2;9.3 a),e), f) (if applicable) and g) and the following:

- 1) for ~~a lithium metal~~ cells, the lithium content is not more than 1 g;
- 2) for ~~a lithium metal or lithium alloy~~ batteries, the aggregate lithium content is not more than 2 g.

II.1 General requirements

Table 969-II

| <i>Contents</i> | <i>Package quantity (Section II)</i> | |
|---|--------------------------------------|--------------|
| | <i>Passenger</i> | <i>Cargo</i> |
| Net quantity of lithium metal cells or batteries per package | 5 kg | 5 kg |

Packing Instruction 969

II.2 Additional requirements

- ~~Lithium metal~~ Cells and batteries must:
 - be placed in inner packagings that completely enclose the cell or battery, then placed in a strong rigid outer packaging that conforms to Part 4;1.1.1, 1.1.3.1 and 1.1.10 (except 1.1.10.1); or
 - be placed in inner packagings that completely enclose the cell or battery, then placed with the equipment in a strong rigid outer packaging that conforms to Part 4;1.1.1, 1.1.3.1 and 1.1.10 (except 1.1.10.1).
- Cells and batteries must be protected against short circuits. This includes protection against contact with electrically conductive material within the same packaging that could lead to a short circuit.
- The equipment must be secured against movement within the outer packaging.
- The number of cells or batteries in each package must not exceed the number required for the equipment's operation, plus two spare sets. A "set" of cells or batteries is the number of individual cells or batteries that are required to power each piece of equipment.
- Each package of cells or batteries, or the completed package, must be capable of withstanding a 1.2 m drop test in any orientation without:
 - damage to cells or batteries contained therein;
 - shifting of the contents so as to allow battery to battery (or cell to cell) contact;
 - release of contents.
- Each package must be marked with the ~~appropriate lithium~~ battery mark (Figure 5-3).
 - the package must be of such size that there is adequate space to affix the mark on one side without the mark being folded.
- The words "lithium metal batteries, in compliance with Section II of PI969" must be placed on the air waybill, when an air waybill is used. Where packages of Section II ~~[lithium batteries]~~ from multiple packing instructions are included on one air waybill, the compliance statement for the different ~~[lithium]~~ battery types and/or packing instructions may be combined into a single statement provided that the statement identifies the applicable ~~[lithium]~~ battery type(s) and packing instruction numbers.
- Where a package contains a combination of ~~[lithium]~~ batteries contained in equipment and ~~[lithium]~~ batteries packed with equipment that meet the limits for ~~[lithium]~~ cells or batteries of Section II, the following additional requirements apply:
 - the shipper must ensure that all applicable parts of both packing instructions are met. The total mass of ~~[lithium]~~ batteries contained in any package must not exceed 5 kg;
 - the words "lithium metal batteries, in compliance with Section II of PI969" must be placed on the air waybill, when an air waybill is used.
- Any person preparing or offering cells or batteries for transport must receive adequate instruction on these requirements commensurate with the functions for which they are responsible.

II.3 Outer packagings

| <i>Boxes</i> | <i>Drums</i> | <i>Jerricans</i> |
|--------------------|--------------|------------------|
| Aluminium | Aluminium | Aluminium |
| Fibreboard | Fibre | Plastics |
| Natural wood | Other metal | Steel |
| Other metal | Plastics | |
| Plastics | Plywood | |
| Plywood | Steel | |
| Reconstituted wood | | |
| Steel | | |

II.4 Overpacks

When packages are placed in an overpack:

- a) the packages must be secured within the overpack;
- b) the intended function of each package must not be impaired by the overpack; and
- c) the ~~[lithium]~~ battery mark (Figure 5-3) required by this packing instruction must either be clearly visible or the mark must be reproduced on the outside of the overpack and the overpack must be marked with the word "Overpack" in lettering of at least 12 mm high.

Packing Instruction 970

Passenger and cargo aircraft for UN 3091 (contained in equipment) only

1. Introduction

This entry applies to lithium metal or lithium alloy batteries contained in equipment.

Section I of this packing instruction applies to lithium metal and lithium alloy cells and batteries that are assigned to Class 9. Certain lithium metal and lithium alloy cells and batteries offered for transport and meeting the requirements of Section II of this packing instruction, subject to paragraph 2 below, are not subject to other additional requirements of these Instructions.

A single cell battery as defined in Part III, sub-section 38.3.2.3 of the UN *Manual of Tests and Criteria* is considered a "cell" and must be transported according to the requirements for "cells" for the purpose of this packing instruction.

For the purpose of this packing instruction, "equipment" means apparatus for which the ~~lithium~~ cells or batteries will provide electrical power for its operation.

2. ~~Lithium~~ Batteries forbidden from transport

The following applies to all ~~lithium metal~~ cells and batteries in this packing instruction:

Cells or batteries identified as being damaged or defective in accordance with Special Provision A154 are forbidden for transport.

I. SECTION I

Each cell or battery must meet the provisions of 2;9.3.

I.1 General requirements

Equipment must be packed in strong rigid outer packagings that conform to Part 4;1.1.1, 1.1.3.1 and 1.1.10 (except 1.1.10.1). Large equipment can be offered for transport unpackaged or on pallets when the cells or batteries are afforded equivalent protection by the equipment in which they are contained.

Table 970-I

| UN number and proper shipping name | Package quantity (Section I) | |
|---|---|--|
| | Passenger | Cargo |
| UN 3091 Lithium metal batteries contained in equipment | 5 kg of lithium metal cells or batteries | 35 kg of lithium metal cells or batteries |

I.2 Additional requirements

- The equipment must be secured against movement within the outer packaging and must be equipped with an effective means of preventing accidental activation.
- Where multiple pieces of equipment are packed in the same outer packaging, each piece of equipment must be packed to prevent contact with other equipment.
- The quantity of lithium metal contained in any piece of equipment must not exceed 12 g per cell and 500 g per battery.

Packing Instruction 970

I.3 Outer packagings

| <i>Boxes</i> | <i>Drums</i> | <i>Jerricans</i> |
|--------------------|--------------|------------------|
| Aluminium | Aluminium | Aluminium |
| Fibreboard | Fibre | Plastics |
| Natural wood | Other metal | Steel |
| Other metal | Plastics | |
| Plastics | Plywood | |
| Plywood | Steel | |
| Reconstituted wood | | |
| Steel | | |

II. SECTION II

~~Lithium metal or lithium alloy~~ Cells and batteries contained in equipment, when complying with Section II of this packing instruction, are only subject to the following additional provisions of these Instructions:

- Part 1;2.3 (General — Transport of dangerous goods by post);
- Part 5;2.4.16 (Shipper's responsibilities — Special marking requirements for lithium batteries or sodium ion batteries);
- Part 7;4.4 (Operator's responsibilities — Reporting of dangerous goods accidents and incidents);
- Part 7;4.5 (Operator's responsibilities — Reporting of undeclared and misdeclared dangerous goods);
- Part 8;1.1 (Provisions concerning passengers and crew — Dangerous goods carried by passengers or crew); and
- Paragraphs 1 and 2 of this packing instruction.

~~Lithium metal~~ Cells and batteries may be offered for transport provided that each cell and battery meets the provisions of 2;9.3 a), e), f) (if applicable) and g) and the following:

- 1) for ~~a lithium metal~~ cells, the lithium content is not more than 1 g;
- 2) for ~~a lithium metal or lithium alloy~~ batteries, the aggregate lithium content is not more than 2 g.

Devices such as radio frequency identification (RFID) tags, watches and temperature loggers, which are not capable of generating a dangerous evolution of heat, may be transported when intentionally active. When active, these devices must meet defined standards for electromagnetic radiation to ensure that the operation of the device does not interfere with aircraft systems. The devices must not be capable of emitting disturbing signals (such as buzzing alarms, strobe lights, etc.) during transport.

II.1 General requirements

Equipment must be packed in strong rigid outer packagings that conform to Part 4;1.1.1, 1.1.3.1 and 1.1.10 (except 1.1.10.1). Large equipment can be offered for transport unpackaged or on pallets when the cells or batteries are afforded equivalent protection by the equipment in which they are contained.

Table 970-II

| <i>Contents</i> | <i>Package quantity (Section II)</i> | |
|---|--|--------------|
| | <i>Passenger</i> | <i>Cargo</i> |
| Net quantity of lithium metal cells or batteries per package | 5 kg | 5 kg |

Packing Instruction 970

II.2 Additional requirements

- The equipment must be secured against movement within the outer packaging and must be equipped with an effective means of preventing accidental activation.
- Cells and batteries must be protected so as to prevent short circuits.
- Where multiple pieces of equipment are packed in the same outer packaging, each piece of equipment must be packed to prevent contact with other equipment.
- Each package must be marked with the appropriate lithium battery mark (Figure 5-3). The package must be of such size that there is adequate space to affix the mark on one side without the mark being folded.
 - This requirement does not apply to:
 - packages containing only button cell batteries installed in equipment (including circuit boards); and
 - packages containing no more than four cells or two batteries installed in equipment, where there are not more than two packages in the consignment.
 - Where a consignment includes packages bearing the lithium battery mark, the words "lithium metal batteries, in compliance with Section II of PI970" must be placed on the air waybill, when an air waybill is used. Where packages of Section II lithium batteries from multiple packing instructions are included on one air waybill, the compliance statement for the different lithium battery types and/or packing instructions may be combined into a single statement provided that the statement identifies the applicable lithium battery type(s) and packing instruction numbers.
- Any person preparing or offering cells or batteries for transport must receive adequate instruction on these requirements commensurate with the functions for which they are responsible.

II.3 Outer packagings

| <i>Boxes</i> | <i>Drums</i> | <i>Jerricans</i> |
|--------------------|--------------|------------------|
| Aluminium | Aluminium | Aluminium |
| Fibreboard | Fibre | Plastics |
| Natural wood | Other metal | Steel |
| Other metal | Plastics | |
| Plastics | Plywood | |
| Plywood | Steel | |
| Reconstituted wood | | |
| Steel | | |

II.4 Overpacks

When packages are placed in an overpack:

- a) the packages must be secured within the overpack;
- b) the intended function of each package must not be impaired by the overpack; and
- c) the lithium battery mark (Figure 5-3) required by this packing instruction must either be clearly visible or the mark must be reproduced on the outside of the overpack and the overpack must be marked with the word "Overpack" in lettering of at least 12 mm high.