PACKING INSTRUCTIONS

ThorPak®
Batterie 03_900

Key Figures

Designation	*Type tested Plastic load carrier*
External dimensions	*1207 x 807 x 900 mm*
Internal dimensions	*1200 x 800 x 700 mm*
Tare weight	*55 kg*
Max. Gross Weight	*560 kg*
Permissible load	*1680 kg*
UN-Packaging approval	*UN 50H/Y/11 25/E/COMPANY XX SYSTEM/02-G-303-01/3026/560*

Check before packing activity:

- Check transport boxes for damage and, if necessary, order for repair.
- Only transport-safe batteries may be loaded.
- Verification by transport assessment protocol.

TRANSPORT IN THE ABSENCE OF A TRANSPORT ASSESSMENT REPORT OR NOT IN A SAFE CONDITION FOR TRANSPORT IS PROHIBITED

Description

This is a large plastic packaging for LITHIUM METAL BATTERIES (including lithium alloy batteries) UN 3090, or LITHIUM ION BATTERIES (including lithium ion polymer batteries) UN 3480. The design is in accordance with the following applicable dangerous goods regulations: ADR, RID, ADN and IMDG, according to packing instructions LP903, LP904, LP905 for a maximum gross mass of 560 kg according to the ThorPak battery type.
The inner packaging must be enclosed with a sufficient amount of non-combustible and non-electrically conductive thermal insulation material to protect against hazardous heat generation.
Non-combustibility must be determined in accordance with a standard recognized in the country where the packaging is designed or manufactured. According to LP 904, this is approved for a single damaged or defective battery of UN Nos. 3090, 3091, 3480, 3481 and for individual pieces of equipment containing damaged or defective cells and batteries of these UN Numbers.
This packaging is not authorized for a single damaged or defective battery that may decompose rapidly, react dangerously, produce a flame or dangerous evolution of heat, or emit dangerous toxic, corrosive, or flammable gases or vapors under normal conditions of carriage, as shown in LP906.

Tested and certified according to

ADR, *2025 edition.*
RID, *2025 edition.*
ADN, *2025 edition.*
IMDG, *Code Amendment 42-24 edition.*
*According to norm **UNE-EN ISO** 16495:2022 Anex I and regulations in force:*
ADR, ADN, RID and IMDG, Chapter 6.6 Section 6.6.5.3.1 + 6.6.5.3.3 + 6.6.5.3.4

UN Nr.	Name & Description	Class	Packaging Groups	Classification code	Packaging instructions
3090	LITHIUM METAL BATTERIES *(including lithium alloy batteries)*	9	II, III	M4	LP903, LP904, LP905
3480	LITHIUM-IONEN-BATTERIEN *(including lithium ion polymer batteries)*	9	II, III	M4	LP903, LP904, LP905

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1. Fold safety belts & fire protection blankets over the edge of the container.

2. Position the battery centrally on the fire protection cushion.

3. Place all 4 sides of the fire blanket over the battery so that it is fully covered.

4. Tie down all belts tightly.

5. Place the end cap on the ring wall.

6. Hook the 2 hooks of the webbing under the pallet.

7. Tighten all straps using the ratchet **(yellow)**.

8. The tension of the webbing should be selected so that there is still 30 - 40mm play between the webbing and the ring wall.

9. Attention! If the tension is too tight, the webbing cassette can be damaged.

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10. If the packaging is loaded with dangerous goods, the marking must be set to **red.**

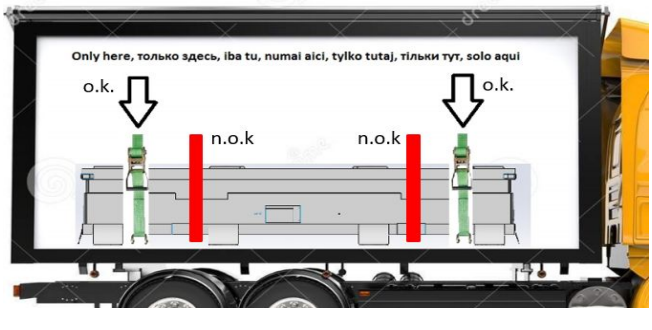
11. When the packaging is emptied, the marking must be set to **green** (empties).

12. Alternatively, use the existing sliders.

13. When lashing to the truck, make sure that the webbing cassettes are not displaced.

14. It is forbidden to lash the load carriers on the belt cassettes of the cover.

15. The plastic load carriers must be handled with care, especially when being transported with (forklift trucks) and when securing the load during truck transport.



	Material
Type	1207 x 807 mm
Pallet	HDPE
Cover	Alveolar - 10 mm - 3500 g/m² - schwarz Stahlrahmen
Sleeve	PP - 15 mm - 5000 g/m² - schwarz
Insert	Reusable inner packaging SwagBag non-flammable material

WISALES
Member of DÖRKEN

PACKING INSTRUCTIONS

ThorPak®
Batterie 03_900

AIDIMME
INSTITUTO TECNOLÓGICO

Reference: 2507179-01
Work order: 22503525

TEST REPORT nº 311.I.2508.559.EN.01

AT THE REQUEST OF:

COMPANY:	**ALTOPLAST SYSTEM, S.L.U.**
PERSON IN CHARGE:	**ALBERTO MANCHON**
ADDRESS:	**P.I. VALL-LLOSERA** **C/ PLA DE LA CALMA, 13-31**
TOWN:	**08550 ELS HOSTALETS DE BALENYÀ (BARCELONA)**
PHONE NUMBER:	**+34 938 800 364**
CIF:	**B55020457**

CONCERNING:

SAMPLE/S:	**1 RIGID PLASTIC LARGE PACKAGING FOR A LITHIUM BATTERY**
TEST/S:	**BOTTOM LIFT TEST** **STACKING TEST** **DROP TEST**

SAMPLE RECEPTION DATE:	**21th JULY 2025**
TESTING STARTING DATE:	**22th JULY 2025**
TESTING FINISHING DATE:	**24th JULY 2025**

Digitally signed document using a legal electronic signature.

THIS REPORT CONSISTS OF 12 CONSECUTIVELY NUMBERED PAGES AND AN ANNEX OF 2 PAGES.

The test sample, the subject of this report, will remain at AIDIMME for a period of thirty days starting from the report issue date. That period having expired, it will be destroyed. Hence, any claim must be made within this time limit.

ilac-MRA ENAC ENSAYO ISO 17025 Nº13 / LE027

The annex is not covered by ENAC accreditation.

AIDIMME. INSTITUTO TECNOLÓGICO METALMECÁNICO, MUEBLE, MADERA, EMBALAJE Y AFINES

Parque Tecnológico - Calle Benjamín Franklin, 13
CIF: ESG46261590-46980 PATERNA (Valencia) ESPAÑA
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www.aidimme.es

1. DESCRIPTION AND IDENTIFICATION OF THE SAMPLE. INSPECTION BEFORE TESTING

x **Sample 1:**

Client identification	**A077-345-3D-00**
Model:	Rigid Plastic Large Packaging
Nº of test pieces	3

Packaging specification:

Code for designating types of packagings indicated in regulations. See section 3: *	50 H. Rigid Plastic Large Packaging.
Material: *	Polypropylene (PP), ALVEOLAR 5000 g/m^2 15 mm
Packaging groups: *	II y III
Empty total mass: *	55,15 kg
External dimensions: *	1207 x 807 x 898 mm
Internal dimensions: *	1200 x 800 x 700 mm
Material pallet: *	HDPE twin sheet
Pallet dimensions: *	798 x 1202 x 193 mm
Pallet mass: *	18,10 kg
Packaging body material: *	Polypropylene alveolar 15 mm, 5000 g/m^2
Packaging body dimensions: *	1152 x 753 x 698 mm
Packaging body mass: *	15,3 kg
Closure: **	The large packaging is closed by superimposing the lid on the body. The lid has retractable tape to fix it to the pallet on the 4 sides.
Closure mass: *	13,15 kg
Closure dimensions: *	1205 x 805 mm
Closure material: *	Polypropylene alveolar 10 mm, 3500 g/m^2
Maximum gross mass: *	560 kg
Colour: **	Black

** Data supplied by the manufacturer*
*** Data obtained in the laboratory*

Photograph 1 – View of the Large Packaging

Photograph 2 – Retractable tape to hold the lid

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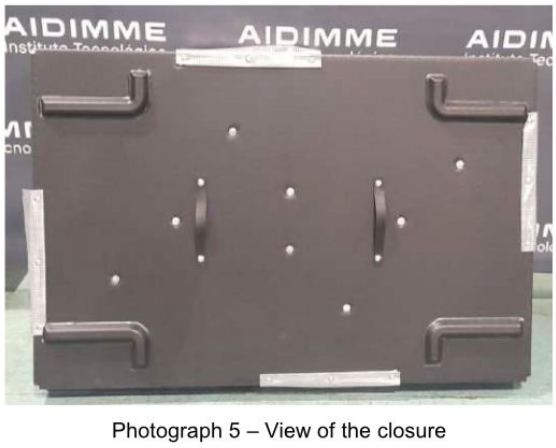
Photograph 3 – Inside view of the Large Packaging

Photograph 4 – 2 handles on the closure



Photograph 5 – View of the closure

The set also includes:

- ☐ Straps for holding the battery, located at the base.
- ☐ Retractable straps for securing the lid to the pallet.
- ☐ Identification elements (labels, document holders, paint chips).
- ☐ Interior protection cushions and foams, located at the base.
- ☐ Fire resistant textile blanket, covering the battery.
- ☐ 2 handles on the closure.

2. ORIGIN OF THE SAMPLE

Samples were supplied by the client (manufacturer).

3. REQUESTED TESTS

- x Bottom lift test
- x Stacking test
- x Drop test

According to the following regulations of dangerous goods:

ADR, 2025 edition.
RID, 2025 edition.
ADN, 2025 edition.
IMDG, Code Amendment 42-24 edition.
EN ISO 16495:2022.

4. STANDARD TEST METHODS

The test methods used correspond to the standards and methods described in point 3 of this report.

5. METHODOLOGY AND TEST RESULTS

CLIENT IDENTIFICATION: **A077-345-3D-00**

5.1. BOTTOM LIFT TEST

TEST METHODS

According to standard EN ISO 16495:2022 Annex K and regulations in force: ADR, RID, ADN and IMDG, Chapter 6.6 Section 6.6.5.3.1

No preconditioning is necessary

Nº of samples:	1
Points of entry:	4
Nº of insertion position lifts:	8
Points of entry:	Fixed [ ] Mobiles [X]
Situation of the forks of the lift truck:	Forks centrally positioned and spaced at three quarters of the dimension of the insertion side. The forks shall penetrate to three quarters of the insertion direction.
Nº of the sample:	1
Test filling substance:	Dummy load (weight up to maximum gross mass)
Mass for the test:	1.25 times its maximum permissible gross mass: 700 Kg

RESULTS

INSERTION POSITION	LEAKAGE OF THE FILLING SUBSTANCE		LEAK SOURCE	PERMANENT DEFORMATION	
	YES	NO		YES	NO
1 (long side 5)		X			X
		X			X
2 (short side 2)		X			X
		X			X
3 (long side 6)		X			X
		X			X
4 (short side 4)		X			X
		X			X

Conclusions:

According to the regulations specified in point 3, the test result is SATISFACTORY.

Remarks:

Photograph 2 - Bottom lift test in process

Photograph 3 – Bottom lift test

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5.2. DROP TEST

TEST METHODS

According to standard EN ISO 16495:2022 Annex F and regulations in force: ADR, RID, AND, IMDG, OACI and IATA, Chapter 6.6 Section 6.6.5.3.4.

Conditioning

TEMPERATURE ≤ -18 °C
-18.0 °C

Test conditions:

TEST PIECES TESTED	PACKAGING GROUP	DROP HEIGHT
2	II, III	1.2 m

Test filling substance: Dummy load (weight up to maximum gross mass)

RESULTS

SAMPLE		DROP	LEAKAGE OF THE FILLING SUBSTANCE	
			YES	NO
1st	1	The most vulnerable part of the base is the front heel		X

Conclusions:

According to the regulations specified in point 3, the test result is SATISFACTORY.

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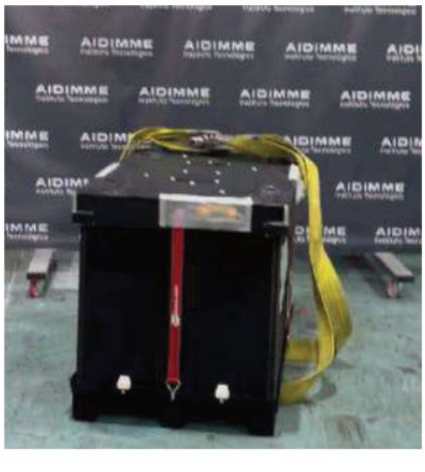
Remarks:

Photograph 4 – Drop test in process.



Photograph 5 – Drop test at the moment of impact.

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5.3. STACKING TEST

TEST METHODS

According to norms EN ISO 16495:2022 Annex I and regulations in force: ADR, RID, ADN and IMDG, Chapter 6.6 Section 6.6.5.3.3.

Test conditions:

N° LARGE PACKAGINGS THAT MAY BE STACKED ON TOP	STACKING TEST LOAD	DURATION
3	3026 kg	24 hours

	PACKAGING GROUP	N° OF SAMPLES TESTED
Guided load	II, III	1

Test filling substance: Dummy load (weight up to maximum gross mass)

RESULTS

SAMPLE	LEAKAGE OF THE FILLING SUBSTANCE		ORIGIN OF THE LEAK	UNSTABLE STACKING	
	YES	NO		YES	NO
2		X	-		X

Conclusions:

According to the regulations specified in point 3, the test result is SATISFACTORY.

Remarks:

Photograph 6 – Stacking test.

The results of the tests apply only to the tested samples.

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The large packaging, prepared as for carriage, has been tested in accordance with the appropriate requirements of ADR, RID, ADN and IMDG regulations in force. The use of other packaging elements or components could invalidate the results indicated on this test report.

The samples received have been selected and identified by BUREAU VERITAS INSPECCIÓN Y TESTING, S.L.U.

Date: 1st August 2025

AIDIMME
INSTITUTO TECNOLÓGICO

Raúl Moreno

Technical Manager of Dangerous Goods Laboratory

Packaging and Goods Transport Department

PACKING INSTRUCTIONS

ThorPak®
Batterie 03_900

ANNEX

The following test is not included in the Scope of the Accreditation. It is informative.

FILLING SUBSTANCE(S):

According to ADR, RID, ADN and IMDG: dangerous objects including in the packaging groups II and III, with maximum gross mass 560 kg. In particular, UN numbers:

x UN 3090 LITHIUM METAL BATTERIES (including lithium alloy batteries)

x UN 3480 LITHIUM ION BATTERIES (including lithium ion polymer batteries).

Regulation in force must be always consulted in order to check if a certain object is admitted being transported according to the characteristics or capacity of the packaging.

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PACKING INSTRUCTIONS

ThorPak®
Batterie 03_900

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MARKING

The large packaging marking of **A077-345-3D-00** after granting type approval will be:

u
n

50H / Y / 11 25 / E / ALTOPLAST SYSTEM / 02-G-303-01 / 3026 / 560

CODE	
50H	Rigid Plastic Large Packaging
Y	Packaging group II, III
11 25	The month and year (last two digits of the year in which the packaging is manufactured)
E	Spain. The State authorizing the allocation of the mark, indicated by the distinguishing sign for motor vehicles in international traffic.
ALTOPLAST SYSTEM	The name of the manufacturer
02-G-303-01	Identification of the packaging specified by the competent authority.
3026	The stacking test load in kg.
560	The maximum permissible gross mass in kg.

The large packaging must have the following additional markings:

The maximum permitted stacking load applicable when the large packaging is in use. Shall be displayed on a symbol as shown in this figure: (*). The symbol shall be durable and clearly visible.

(*) NOTE: The mass marked above the symbol shall not exceed the load imposed during the design type test divided by 1.8.

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