



WORKING PAPER

DANGEROUS GOODS PANEL (DGP)

TWENTY-SEVENTH MEETING

Montréal, 16 to 20 September 2019

Agenda Item 3: Managing safety risks posed by the carriage of lithium batteries by air

3.1: Consider how lithium battery package standard under development by SAE G27 Committee (AS6413) can be incorporated into ICAO provisions (Ref: Job Card DGP.003.02)

MARKS ON PACKAGES TESTED TO AN EXTERNAL STANDARD TO IDENTIFY CONTENTS AND PROVIDE TRACEABILITY

(Presented by D. Brennan)

SUMMARY

This working paper proposes some discussion on potential methods that could be adopted as marks on packages tested in accordance with an external standard to identify the type and quantity of lithium batteries permitted in the packaging.

Action by the DGP: The DGP is invited to discuss the possible methods to determine just what marks should be applied to a package meeting the requirements of an external standard that provides traceability and sufficient information for the operator to perform the acceptance check.

1. INTRODUCTION

1.1 The SAE International G-27 Lithium Battery Packaging Performance Committee that was tasked with the development of a packaging performance standard for lithium batteries has been working since 2016 on the development of the standard. This standard is designed to test a package containing lithium cells or batteries to verify that the packaging / cell or battery combination, including any features in the package, will contain an event should a cell fail and go into thermal runaway.

1.2 Once the standard to test packages containing lithium cells or batteries being developed by the G-27 Committee is complete, it will need to be reviewed by ICAO to determine if it is acceptable. If accepted, there will be a need for the DGP to develop requirements to bring reference and controls for packages tested to the standard into the Technical Instructions.

1.3 The purpose of this working paper is to commence the discussion on just how packagings that meet the standard, should it be accepted, can be identified when offered for transport and what potentially should be added to the Technical Instructions to achieve this.

1.4 Identification of “approved” packagings is critical for the purposes of acceptance by the operators. Like UN specification packagings, there is an expectation that operators will verify as part of the acceptance check that the packaging meets the standard and that the contents of the package are consistent with the actual tests performed. Many operators have already commented that unless they can verify that the package and packaging conform, they will not consider carrying packages of lithium batteries on passenger aircraft, assuming that the adoption of the standard results in the removal of the prohibition on the carriage of UN 3090 and UN 3480 as cargo on passenger aircraft.

1.5 It is believed that there must be a very clear set of marks on packagings that meet the standard so that there is a clear audit trail so that regulatory authorities can ensure that all applicable requirements have been met.

1.6 On the topic of regulatory authorities, the International Air Transport Association (IATA) believes the performance of the standard should be in accordance with procedures established by member States. The assignment of marks to identify the packagings, including the name of the manufacturer and a unique code or other identification of the packaging should provide an audit trail to just what configuration, quantity, type of lithium cells or batteries were tested in the identified packaging. The code of the State approving the marks should form part of any marks applied on approved packagings.

2. ACTION BY THE DGP

2.1 The DGP is invited to consider draft text for a possible new Chapter 9 to Part 6 as shown in the appendix to this working paper. This text is offered for discussion purposes, recognizing that the work of the G-27 Committee is ongoing, and the AS 6413 standard has not been completed.

2.2 Additionally, other panel members may have alternative proposals on methods to identify packagings that meet the standard that are considered as better options.

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APPENDIX

PROPOSED AMENDMENT TO PART 6 OF THE TECHNICAL INSTRUCTIONS

Part 6

PACKAGING NOMENCLATURE, MARKING, REQUIREMENTS AND TESTS

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Chapter 9

PACKAGINGS FOR LITHIUM CELLS AND BATTERIES (UN Nos 3090 and 3480 only)

9.1 GENERAL

The requirements of this chapter apply to packagings intended for the transport of lithium cells and batteries (UN Nos. 3090 and 3480 only).

9.2 REQUIREMENTS FOR PACKAGINGS

9.2.1 The requirements for packagings in this section are for packagings that have passed the relevant tests in SAE International aviation standard AS 4613.

9.2.2 Where the packagings are intended for lithium cells and/or batteries that meet the provisions of Section IA of Packing Instructions 965 and/or 968, the packagings must also meet the provisions of Chapters 1, 3 and 4.

9.2.3 Manufacturers and subsequent distributors of packagings must provide information to users of the packagings regarding procedures to be followed related to the assembly, configuration of cells and/or batteries in the package and any other components needed to ensure that packages, as presented for transport, conform the tested design.

9.3 MARKING

Note 1.— The marks indicate that the packaging which bears them corresponds to a successfully tested design type and that it complies with the provisions of this chapter which are related to the manufacture, but not to the use, of the packaging.

Note 2.— The marks do not always provide full details of the test levels, etc., and these may need to be taken further into account, e.g. by reference to a test certificate, test reports or register of successfully tested packagings.

9.3.1 Each packaging intended for use according to these Instructions must bear marks which are durable, legible and placed in a location and of such a size relative to the packaging as to be readily visible. For packages with a gross mass of more than 30 kg the marks, or a duplicate thereof, must appear on the top or on a side of the packaging. Letters, numerals and symbols must be at least 12 mm high, except for packagings of 30 kg capacity or less, when they must be at least 6 mm in height and for packagings of 5 kg or less, when they must be of an appropriate size.

9.3.2 A packaging that meets the requirements of this section and of AS 6413 must be marked with:

a) AS 6413;

This symbol must not be used for any purpose other than certifying that a packaging complies with the relevant requirements SAE AS 6413;

b) the code designating the type of lithium cells and/or batteries used in the package tests, i.e. "LI" for lithium ion and/or "LM" for lithium metal;

c) the maximum net mass, in kilograms, of lithium cells or batteries in which the package design type has been tested;

d) the last two digits of the year in which the package test was performed;

e) the State authorizing the allocation of the mark, indicated by the distinguishing sign for motor vehicles in international traffic; and

f) a unique identifier assigned as specified by the appropriate national authority that identifies the name of the entity that performed the tests in AS 6413 and the type and configuration of lithium cells and/or batteries tested.

9.3.3 Marks must be applied in the sequence of the sub-paragraphs in 9.3.2: each mark required in these sub-paragraphs must be clearly separated, e.g. by a slash or space, so as to be easily identified. For an example see 9.3.4. Any additional marks authorized by an appropriate national authority must still enable the marks required in 9.3.1 to be correctly identified.

9.3.4 Example of a marking:

AS6413/LILM/7.5/20/AUS/FALCON-1234 as in 9.3.2 a), b), c), d), e) and f)

9.4 TEST REQUIREMENTS FOR PACKAGINGS

9.4.1 Performance and frequency of tests

The design type of each packaging must be tested in accordance with the applicable requirements of AS 6413 as provided in accordance with procedures established by the appropriate national authority.

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