Technical Advisory Note

TAN-09

Lithium-ion Batteries: Portable Fire Extinguishers and Fire Blankets

Version 3, November 2025

PO Box 1049, Box Hill VIC 3128 / 03 8892 3131 / technical@fpaa.com.au / **fpaa.com.au**

Fire Protection Association Australia

PO Box 1049, Box Hill, VIC 3128

Telephone: 03 8892 3131
Web: www.fpaa.com.au

Copyright

© Copyright 2025 Fire Protection Association Australia.

Material distributed by FPA Australia is subject to copyright. Any information within this publication may not be reproduced in printed or electronic form without permission from FPA Australia.

For more information, see www.fpaa.com.au or contact FPA Australia on 1300 731 922.

Trademarks

Fire Protection Association Australia (FPA Australia) and the FPA Australia Logo are registered trademarks of Fire Protection Association Australia. No use of these trademarks is authorised by any party without written authorisation by Fire Protection Association Australia.

Disclaimer

Whilst every effort has been made to ensure the accuracy of this information, the opinions expressed in this correspondence reflect those of FPA Australia. However, they are subject to change based on receipt of further information regarding the subject matter. You should interpret the technical opinion or information provided carefully and consider the context of how this opinion / information will be used in conjunction with the requirements of regulation (state and/or federal); relevant standards, codes or specifications; certification; accreditation; manufacturer's documentation and advice; and any other relevant requirements, instructions or guidelines. FPA Australia does not accept any responsibility or liability for the accuracy of the opinion / information provided, nor do they accept either directly or indirectly any liabilities, losses and damages arising from the use and application of this opinion / information.

Document History

Version	Status	Details	Date	Approved by
1.0	Approved	Initial version.	July 2022	FPA Australia
2.0	Approved	Includes major updates.	April 2023	FPA Australia
3.0	Approved	Updated, and inclusion of fire blankets.	November 2025	FPA Australia

Table of Content

Purpose 1

Audience 1

Overview 1

ACCC Mandatory Standards 2

Australian/New Zealand Standards 3

- AS/NZS 1841-2007 Portable fire extinguishers 3
- AS/NZS 1850-2009 Portable fire extinguishers – Classification, rating and performance testing 4
- AS 2444-2001 Portable fire extinguishers and fire blankets – Selection and location 4
- AS/NZS 3504-2006+A1 Fire blankets 5

Conclusion 5

References 6

Purpose

The purpose of this Technical Advisory Note is to clarify the current regulatory and standards framework in Australia as it relates to portable fire extinguishers and fire blankets marketed for use on lithium-ion battery fires.

It aims to ensure stakeholders are aware of the absence of Australian Standards specific to lithium-ion battery fire suppression. Only extinguishers with an "E" rating are compliant for use on energized electrical equipment. This Technical Advisory Note also highlights the limitations of current standards and relying on unverified or misleading product claims.

Audience

This Technical Advisory Note is intended for:

- FPA Australia members
- Service providers
- Certifying bodies and certifiers
- Commercial and end users
- Stakeholders – resellers and manufacturers.

Overview

Lithium-ion batteries are now widely used in everyday applications, from mobile phones, e-bikes and power tools to caravans, solar systems and household appliances. However, as their use has expanded, so too has the number of fire incidents attributed to these batteries. Contributing factors commonly include manufacturing or design defects, physical damage, improper charging practices and misuse.

This rise in lithium-ion battery fires has led to an increasing number of products being marketed as suitable for extinguishing or mitigating such incidents. Yet, at present, no Australian Standards exist for fire extinguishers or fire blankets specifically designed and tested for lithium-ion battery fires. This absence of defined testing or certification criteria creates uncertainty for users, suppliers and regulators regarding product suitability and compliance.

This Technical Advisory Note clarifies the current regulatory and standards framework relevant to lithium-ion battery fire safety. It explains that under AS/NZS 3000-2018, AS/NZS 4836-2023 and AS/NZS 5139-2019, lithium-ion batteries are classified as energized electrical equipment, and therefore fires involving them must be treated as electrical fires. Only fire extinguishers with an "E" rating, which are non-conductive and safe for use on energized electrical equipment, can be used safely and compliantly for lithium-ion battery fire incidents.

Energized electrical equipment

Energized equipment includes any electrical device that contains or produces electrical energy. This means any item with voltage that can cause shock, arc flash or short-circuit. According to Australian and New Zealand Standards (AS/NZS 3000-2018, AS/NZS 4836-2023, and AS/NZS 5139-2019), equipment is considered energized if connected to a power source or retains stored energy.

Lithium-ion batteries are classified as energized equipment since they hold stored electrical energy even when disconnected. This energy results from electrochemical reactions that convert chemical to electrical energy. Therefore, they must be treated as live and potentially hazardous unless properly discharged and verified as safe. Fires involving lithium-ion batteries are classified as electrical fires due to the potential of live voltage. Only E-rated fire extinguishers, non-conductive and approved for energized equipment, should be used. Non-E-rated extinguishers, like water or foam, can conduct electricity and pose a severe electrocution risk.

ACCC Mandatory Standards

Mandatory Australian Standards are established under federal law, enforced by the Australian Competition and Consumer Commission (ACCC), and must be complied with by businesses. A standard becomes mandatory when unsafe products could pose a serious risk of harm, for example, child car seats, electrical plugs and fire extinguishers. Businesses that fail to meet the requirements of a mandatory standard risk fines, product recalls or prosecution. By contrast, a voluntary Australian Standard is not legally required. Instead, it sets out recognised best practice for safety, quality and performance, which many businesses choose to adopt to demonstrate reliability and reduce risk.

The relevant mandatory standard for fire extinguishers is the *Consumer Goods (Portable Non-aerosol Fire Extinguishers) Safety Standard 2021*. This requires extinguishers to be manufactured, fire rated and tested in line with AS/NZS 1841-2007 Parts 1-8, with modifications to Part 1, 3, 6 and 8. The mandatory standard ensures extinguishers are tested for performance and carry the correct identification so they can be relied on in a fire.

Compliance with AS/NZS 1841-2007 involves meeting the relevant classification and performance requirements of AS/NZS 1850-2009, AS/NZS 1841-2007 requires extinguishers to have a minimum rating determined by AS/NZS 1850-2009 fire tests. While AS/NZS 1850-2009 is not listed as a separate mandatory standard under the ACCC safety standard, its requirements apply through their inclusion in AS/NZS 1841-2007.

These requirements help maintain important consumer protections so Australians can have confidence in the safety of extinguishers and access clear product information. The safety standard commenced on 21 December 2021, with a 12-month transitional period. From 21 December 2022, compliance with the new requirements became mandatory.

For further information, see the ACCC Product Safety webpage on portable non-aerosol fire extinguishers.

Australian/New Zealand Standards

AS/NZS 1841-2007 *Portable fire extinguishers*

AS/NZS 1841-2007 defines the following fire extinguishing agent types:

- Portable Fire Extinguishers - General – AS/NZS 1841.1 (Part 1)
- Water – AS/NZS 1841.2 (Part 2)
- Wet chemical – AS/NZS 1841.3 (Part 3)
- Foam – AS/NZS 1841.4 (Part 4)
- Powder – AS/NZS 1841.5 (Part 5)
- CO_2 – AS/NZS 1841.6 (Part 6)
- Vaporizing liquid – AS/NZS 1841.7 (Part 7)
- Non-rechargeable – AS/NZS 1841.8 (Part 8).

AS/NZS 1841.1 also includes a provision that allows for new or alternative extinguisher designs to be certified, provided they meet all relevant performance and safety requirements and are approved by a JAS-ANZ accredited certifying body.

This requirement contained in AS/NZS 1841.1 Clause 1.2 states:

> *Any material, design, method of assembly or procedure that does not comply with the specific requirements of this Standard may be used provided the following criteria are met:*
>
> a. *The portable fire extinguisher complies with the performance and test requirements of the AS/NZS 1841.1 2007.*
>
> b. *A certifying body having JAS-ANZ registration for product certification to Australian/New Zealand Standard AS/NZS 1841 attests in writing that it is no less safe than a portable fire extinguisher manufactured in accordance with the specific requirements of this Standard. The relative safety of the portable fire extinguishers is determined with regard to the purpose of the extinguishers, any instructions and warnings relating to the use of the extinguishers, and what might reasonably be expected to be done with or in relation to the extinguishers.*

While this provides a pathway for certain innovations, there are currently no established test methods or certification processes within Australia that would enable a lithium-ion–specific extinguisher to be assessed under this clause. As such, products promoted as “suitable for lithium-ion battery fires” cannot presently claim compliance with the Australian Standards framework.

AS/NZS 1841-2007 does not include performance test methods for the unique hazards associated with lithium-ion battery fires, such as thermal runaway, off-gassing and potential explosion. Any extinguisher used for the suppression of lithium-ion battery fires must therefore carry a Class E rating as a minimum requirement.

AS/NZS 1850-2009 *Portable fire extinguishers – Classification, rating and performance testing*

AS/NZS 1850-2009 defines the following fire classifications, and associated performance tests, for extinguishers:

- Class A – fires involving carbonaceous solids such as wood, cloth, paper, rubber and many plastics
- Class B – fires involving flammable and combustible liquids
- Class C – fires involving combustible gases
- Class D – fires involving certain combustible metals
- Class E – fires involving electrically energised equipment
- Class F – fires involving combustible cooking oils or fats.

AS/NZS 1850-2009 does not include performance test methods for the unique hazards associated with lithium-ion battery fires, such as thermal runaway, off-gassing and potential explosion. Any extinguisher used for the suppression of lithium-ion battery fires must therefore carry a Class E rating as a minimum requirement.

AS 2444-2001 *Portable fire extinguishers and fire blankets – Selection and location*

AS 2444-2001 specifies the requirements for selecting and locating portable fire extinguishers and fire blankets.

This standard currently includes the following requirements:

- Minimum size requirements
- Placement and accessibility criteria
- Labelling and instructions for use.

Furthermore, AS 2444-2001 Clause 4.2.1 states:

> *Where a Class A fire risk involves electrically energized equipment, the extinguisher or another available extinguisher shall have an E classification.*

AS 2444-2001 does not address the selection and location of fire extinguishers and fire blankets intended for use on lithium-ion battery fires.

In the absence of selection and location provisions, fires involving lithium-ion batteries should be managed in accordance with procedures applicable to energized electrical equipment (Class E fires).

AS/NZS 3504-2006+A1 *Fire blankets*

AS/NZS 3504-2006+A1 specifies the requirements for fire blankets, including their design, materials, size and performance tests.

This standard currently includes the following requirements for fire blankets:

- Minimum blanket size and material performance
- Heat resistance and durability testing
- Labelling and instructions for use.

There are no provisions within AS/NZS 3504-2006+A1 that specifically address the use of fire blankets intended for lithium-ion battery fires.

Conclusion

Several products, including fire extinguishers and fire blankets, have been advertised as being suitable for use on lithium-ion battery fires despite not possessing a Class E rating. Without this rating, these products do not satisfy the minimum compliance requirements set out in the relevant Australian Standards for equipment intended for use on electrical fire scenarios (Class E).

Consumers, regulators and industry stakeholders are advised that the use of non-compliant products in electrical fire situations – including incidents involving lithium-ion batteries – poses a significant safety risk. Such products should not be considered suitable or relied upon.

Members, regulators, suppliers and consumers are advised to exercise caution when assessing supplier claims and to ensure that any product intended for use in managing lithium-ion battery risks is supported by credible, independently verified performance data.

Additionally, it is noted that there is currently no Australian test rating that specifically addresses the unique hazards associated with lithium-ion batteries, separate from the general electrical fire test classifications. This gap is of concern given the distinct risks posed by lithium-ion batteries, including thermal runaway, off-gassing and the potential for explosion.

This document does not specifically address existing site conditions; however, it advises that the selection, location and installation of fire extinguishers should comply with the requirements of AS 2444.

For additional information relating to the use of lithium-ion batteries please refer to:

FPA Australia's Good Practice Guide GPG-10: *Charging, Using and Disposing of Lithium-ion Batteries*.

References

- AS/NZS 3504-2006+A1, *Fire blankets*.
- AS/NZS 1841-2007, *Portable fire extinguishers* series (AS/NZS 1841 Parts 1 to 8).
- AS/NZS 1850-2009, *Portable fire extinguishers - Classification, rating and performance testing*.
- AS/NZS 3000-2018, *Electrical installations*.
- AS/NZS 4836-2023 *Safe working on or near low-voltage and extra-low voltage electrical installations and equipment*.
- AS/NZS 5139-2019, *Electrical installations – Safety of battery systems for use with power conversion equipment*.
- AS 1851: 2012, *Routine service of fire protection systems and equipment*.
- AS 2444: 2001, *Selection & location of portable fire extinguishers & fire blankets*.
- *Consumer Goods (Portable Non-aerosol Fire Extinguishers) Safety Standard 2021*.