AS 4825—2011

Australian Standard®

Tunnel fire safety

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The following are represented on Committee FP-023:

- AUSTROADS
- Australasian Fire and Emergency Service Authorities Council
- Australian Automobile Association
- Australian Tunnel Operators Group
- CSIRO Manufacturing and Materials Technology
- Engineers Australia
- Fire Protection Association Australia
- Main Roads Department, Queensland
- Main Roads Western Australia
- Society of Fire Safety
- RailCorp
- Risk Management Institution of Australasia
- Roads and Traffic Authority of NSW

This Standard was issued in draft form for comment as DR AS 4825.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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PREFACE

This Standard was prepared by Standards Australia Committee FP-023, Tunnel Fire Safety.

Whilst a number of existing overseas Standards and guidance documents were considered by the committee during the preparation of this first edition of the Standard, the document is not based upon any other Standard.

The committee decided that the most appropriate format for the Standard is to facilitate the current Australian practice of adopting a performance-based approach to fire safety in tunnels. Such an approach is reliant on fire safety engineering methodologies similar to those described in the *International Fire safety engineering Guidelines* which is extensively used in Australia for performance-based design for fire safety in buildings.

The Standard is intended to provide a generic framework for establishing the fire safety systems that are required in road, rail or bus tunnels to provide an acceptable level of safety in case of fire. This Standard is intended to guide professional fire safety engineers in the development of a fire safety strategy, the design and documentation of fire safety systems for tunnels.

Specifically, this Standard—

(a) recommends appropriate performances of the fire safety system;

(b) provides guidance on appropriate fire safety strategies;

(c) provides information on what may constitute appropriate trial concept design for various tunnels;

(d) does not restrict innovative approaches or new technology provided that the required performance can be demonstrated;

(e) outlines what may be appropriate analysis methodology;

(f) allows for both deterministic and probabilistic (risk-based) analysis and approach;

(g) specifies what may constitute appropriate acceptance criteria;

(h) provides general guidelines on system installation and maintenance, which is intended to facilitate making appropriate assumptions in the engineering analysis; and

(i) refers to other Standards providing greater detail where appropriate.

It is not the purpose of this Standard to prescribe an acceptable level of fire safety for tunnels rather to provide a framework for establishing the required fire safety systems.

As it not possible to prescribe either the fire safety measures or the analysis required, the Standard has been written as an ‘informative’ document providing guidance to competent designers to undertake a performance-based design for fire safety. Further, the information presented permits a systematic consideration of a fire safety strategy with fire safety measures that can form the input into the fire safety engineering analysis to demonstrate to stakeholders that an acceptable level of safety can be achieved by the design.

This Standard incorporates a Commentary on some Clauses. The Commentary directly follows the relevant Clause, is designated by ‘C’ preceding the Clause number and is printed in italics in a panel.

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