

Preamble

There are several documents that are referenced when developing, assessing, designing, installing, and maintaining a road safety barrier system.

This Technical Advice provides commentary on the use of various documents during the road safety barrier system lifecycle.

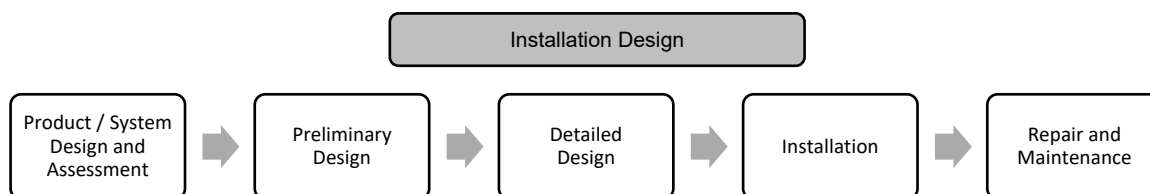
Audience

- Road agencies
- Road designers
- Product developers
- Installers and maintainers.

Commentary

The road safety barrier system lifecycle requires the use of multiple documents during the different lifecycle phases. Figure 1 illustrates the lifecycle process.

Figure 1: Road safety barrier lifecycle



Product Design and Assessment Phase

The following documents are generally used by the System Designer (the developer of the barrier) and the Austrroads Safety Barrier Assessment Panel (ASBAP) to determine the suitability and crashworthiness of road safety barrier systems and devices for deployment on the road network:

- AS/NZS 3845 – Road safety barrier systems and devices
- American Association of State Highway and Transportation Officials (AASHTO) *Manual for Assessment Safety Hardware* (MASH).

AS/NZS 3845

AS/NZS 3845 sets out the requirements of a road safety barrier system, details the crash testing that is required to establish a system's suitability and includes an assessment process which enables ASBAP to consistently assess product suitability for the Australasian market.

AS/NZS 3845 also documents and describes the roles and responsibilities of entities across the road safety barrier lifecycle.

MASH

AS/NZS 3845 makes significant reference to MASH and it is the basis of testing procedures adopted for road safety barrier systems.

Preliminary Design Phase

The following documents are generally used by the installation designer to determine an appropriate layout / arrangement design independent of the specific safety barrier product:

- Austroads *Guide to Road Design Part 6: Roadside Design, Safety and Barrier* (AGRD Part 6)
- Jurisdictional Supplements to the AGRD Part 6
- ASBAP Technical Advice Notes.

Austroads Guide to Road Design (AGRD) Part 6

AGRD Part 6 provides guidance on roadside design and in particular, guidance on evaluating the risk of a roadside and the selection and use of road safety barrier systems.

AGRD Part 6 provides information to enable designers to understand the principles that lead to the design of safer roads, identify hazards, undertake a risk assessment process of roadside hazards, establish the need for treatment of hazards and determine the most appropriate treatment. A comprehensive design process, guidance and design considerations are provided for the selection of a suitable barrier and for the lateral and longitudinal placement of barrier systems.

Road Agency Supplements to AGRD Part 6

Road Agencies may provide supplements to the AGRD Part 6. These supplements provide modifications, clarifications and/or additional information to AGRD Part 6 that are relevant to the specific jurisdiction. Supplements should be read in conjunction with AGRD Part 6 and may take precedence.

ASBAP Technical Advice Notes

ASBAP has written and published Technical Advice notes where it was considered that additional complimentary information to AGRD Part 6 was required to assist designers.

Detailed Design Phase

The following documents specific to an individual safety barrier system are generally used by the installation designer during detailed design:

- Jurisdiction's list of accepted safety barrier systems and devices
- ASBAP Technical Conditions for Use (TCU)
- Proprietary product manual.

Jurisdiction's List of Accepted Safety Barrier Systems and Devices

Each jurisdiction provides a list of safety barrier systems and devices which have been assessed and accepted for use on the roads under their care and control. Some jurisdictions link to ASBAP TCU while others produce their own conditions for use documents. It should be noted that some safety barrier systems and devices which have been recommended for acceptance by ASBAP may not be accepted in any or all jurisdictions.

TCU

The TCU document is a summary of ASBAP's assessment of the technical performance of the product against AS/NZS 3845 Parts 1 or 2. The TCU is based on the product specific information provided by the proponent, and therefore may differ from system to system even if systems appear similar. Each TCU outlines a range of recommended conditions in which to use the product.

For more information refer *ASBAP Technical Advice SBTA 22-001 Technical Conditions of Use Outline*

Proprietary Product Manual

Proprietary product manuals are available for each safety barrier system and device. Some manuals may include details that should only be considered outside the 'Normal Design Domain' for use in unique circumstances and when supported by the relevant Road Agency. Therefore, it is important to note that the product manual referenced in the TCU has been produced by the proponent, who is responsible for the content. Austroads may not support all the content of the Product Manual.

Austroads references the Product Manual as it may contain content which assists users of the road safety barrier systems and devices. Information published within product manuals may not always reflect the actual products accepted or the conditions by which the products are accepted by Austroads.

Technical details contained within the TCUs shall take precedence over information published by the proponent in the product manual. This may include variants to products for which the TCU remains silent.

Installation, Maintenance and Repair Phases

The following documents are generally used by the System Installers and Maintainers when installing and/or maintaining a safety barrier system or device:

- Accepted plans for construction
- Propriety Product Manual.

Accepted Plans for Construction

The plans are prepared by the installation (road) designer and accepted by the Road Agency for construction. The plans may include reference to the relevant Road Agency construction specifications and other parameters that may apply. The plans should not be modified without due consideration by the installation (road) designer to ensure all the relevant requirements of the documentation noted above remain met.

Proprietary Product Manual

The primary purpose of the product manual is to assist installers and traffic management companies to install or deploy the barrier, and for maintainers to inspect or repair the product. This primarily includes the bill of materials, handling, component assembly and installation tolerance requirements of the specific product chosen.

References

AS/NZS 3845.1:2015, Road safety barrier systems and devices: part 1: road safety barrier systems

AS/NZS 3845.2:2017, Road safety barrier systems and devices: part 2: road safety devices

AASHTO (2016) *Manual for assessing safety hardware*, 2nd edn, American Association of State Highway and Transportation Officials, Washington, DC, USA

Austroads (2022) *Guide to road design part 6: roadside design, safety and barriers*, AGRD06-22, Austroads, Sydney, NSW

ASBAP (2021) *ASBAP Technical Advice SBTA 22-001 Technical Conditions of Use Outline*, Austroads, Sydney, NSW

Amendment Record

Amendment no.	Amendment	Date
-	New Technical Advice Note	December 2023
