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List of Approved Road Safety Barrier Systems

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Amendments

Revision Number	Revision Date	Description of Key Changes
5G	19-Dec-2024	Tau XR, SafeZone MDS and HighwayGuard MDS design sheets added. Ramshield, ET-SS, MSKT, Max-Tension, SafeZone and SafeZone LDS design sheets updated.
5F	2-Dec-2024	Sentry W-Beam, T-Lok and Pin and Loop design sheets amended. Amendments register limited to 2 years.
5E	16-Oct-2024	Austrroads Safety Hardware Training and Accreditation (ASHTAS) Operative accreditation added.

Revision Number	Revision Date	Description of Key Changes
5D	10-Oct-2024	Orange Hire and KSI Global Australia replaced with Jaybro and Ambient Technologies respectively. Ramshield High Containment trailing Point of Redirection corrected.
5C	24-Jan-2024	List converted to PDF
5B	23-Jan-2024	Ingal MPR, ArmorBuffa, HighwayGuard and HighwayGuard LDS design sheets updated
5A	18-Jan-2024	Australian Construction Products Pty Ltd (ACP) removed from barrier design sheets and replaced with Safe Direction Pty Ltd.
4Z	12-Jan-2024	Ezy-Guard HC design sheet updated
4Y	20-Dec-2023	Biker Shield design sheet updated
4X	15-Dec-2023	RiderPro design sheet updated.
4W	30-Nov-2023	Ezy-Guard SMART design sheet amended and shifted to table created for Permanent Systems no longer accepted for use in new installations. Triton CET design sheet removed.
4V	25-Oct-2023	ArmorZone and Triton design sheets removed. ArmorZone MASH design sheet amended.
4U	27-Mar-2023	Design sheets for Zoneguard and Zoneguard MDS amended.
4T	30-Jan-2023	Design sheets for REBLOC 80SAH_12, REBLOC 80SAH_12_8B, REBLOC 120FA_6_SF and REBLOC 80SAH_4 added.

BACKGROUND

For each approved component a date of approval is shown if it is a proprietary product approved since 2001 or public domain product that has been modified since January 2009 and a design sheet is attached as a hyperlink to the component name. Where indicated, the systems shall be installed in configurations indicated in these sheets.

Approved solid blockouts for use on W Beam barrier systems can be found in Annexure 603D of Specification 603 Safety & Traffic Barrier Systems.

In this document, the Test Levels are shown as:

- TL # = NCHRP 350 Test Level
- MASH TL # = MASH Test Level

Barrier System Assessment

Products that are to be assessed by Main Roads Western Australia shall be presented in the format required by the Austroads Safety Barrier Assessment Panel.

Crash Testing

The process and requirements to evaluate the suitability of a road safety barrier system are specified in Section 4 of AS/NZS 3845.1:2015. The process and requirements to evaluate the suitability of a road safety device are specified in Section 4 of AS/NZS 3845.2:2017.

Acceptability

Successful passing of the required crash testing is only one element to barrier system acceptability.

Other elements considered by Main Roads are:

- System performance
- System maintenance
- Whole of life considerations

Exclusions

The listing does not cover traffic barriers on structures. Details on approved traffic barriers on structures and transitions can be found on the Main Roads website under Standard Drawings under the heading Traffic Barriers and Balustrading for Structures.

Disclaimer

The information below is intended to reflect the preferred practice of Main Roads Western Australia ("Main Roads"). Main Roads reserves the right to update this information at any time without notice.

To the extent permitted by law, Main Roads, its employees, agents, authors and contributors are not liable for any loss resulting from any action taken or reliance made by you on the information below or changes to its preferred practice.

The design sheets are intended to be used as a guide to the Designer. Where they describe proprietary systems, they do not take precedence over information contained within the Manufacturer's documentation other than where limitations or configurations have been specified.

Some systems have restrictions placed upon such as "work zone barriers only" or "no longer accepted for use in new installations". These sheets are provided for maintenance of existing systems.

AUSTROADS SAFETY HARDWARE TRAINING AND ACCREDITATION SCHEME (ASHTAS)

The Austroads Safety Hardware Training and Accreditation Scheme (ASHTAS) is a national training and accreditation scheme for people who undertake installation, repair or maintenance of road safety barrier systems on Australian and New Zealand road networks. The scheme has been developed to ensure safety and compliance with jurisdictional and supplier specification requirements. Austroads has partnered with Lantra (UK) to develop and deliver this national accreditation scheme.

Details of ASHTAS are available on the Austroads website:

<https://austroads.com.au/safety-and-design/ashtas>

Main Roads WA has committed to ASHTAS. By setting consistent training and licensing standards, we ensure that those working with road safety barriers possess the required expertise and adhere to best practices.

For the initial phase of the scheme, it will become mandatory for personnel undertaking work on behalf of Main Roads WA, involving installation, repair or maintenance of permanent wire rope, w-beam and thrie beam barriers only (i.e. not temporary workzone barriers or permanent concrete barriers) as proposed below:

- Now to June 2025 - recommend personnel undertake available training and obtain ASHTAS Operative accreditation,
- July 2025 onwards - mandatory ASHTAS Operative accreditation to install, repair and maintain permanent road safety barrier systems.

The Operative course is now available, via multiple delivery methods, as below:

<https://www.lantra.co.uk/national-highway-sector-schemes-nhss/austroads/approved-training-providers>

1 BARRIERS

1.1 Permanent Systems

System Name	Type	Test Level	Date of Approval OR Date of Last Amendment
<u>Constant Slope</u>	Rigid Barriers	MASH TL 4 - TL 5	31/10/2019
<u>Type F</u>	Rigid Barriers	MASH TL 4 - TL 5	31/10/2019
<u>W Beam</u>	Semi-Rigid Systems	TL 3	08/07/2022
<u>MashFlex Wire Rope</u>	Wire Rope Barrier Systems	MASH TL 3 - TL 4	27/10/2022
<u>MASH TL3 Brifen Wire Rope</u>	Wire Rope Barrier Systems	MASH TL 3	25/03/2021
<u>Sentryline-M Wire Rope</u>	Wire Rope Barrier Systems	MASH TL 3 - TL 4	12/01/2024
<u>W Beam Treatment Sheet</u>	Semi-Rigid Systems	N/A	12/08/2013
<u>Ezy-Guard 4</u>	Semi-Rigid Systems	MASH TL 3	22/03/2022
<u>Ezy-Guard HC</u>	Semi-Rigid Systems	MASH TL 4	12/01/2024
<u>Ramshield</u>	Semi-Rigid Systems	MASH TL 3	17/12/2024
<u>Ramshield High Containment</u>	Semi-Rigid Systems	MASH TL 4	10/10/2024
<u>Sentry W-Beam</u>	Semi-Rigid Systems	MASH TL 3	28/11/2024
<u>Sentry TL 4 Thrie Beam</u>	Semi-Rigid Systems	MASH TL 4	12/01/2024
<u>Safety Roller Barrier</u>	Semi-Rigid Systems	MASH TL 3 - TL 4	10/10/2024
<u>Quickchange Reactive Tension Barrier</u>	Semi-Rigid Systems	MASH TL 3	13/10/2022
<u>DOLRE Low Stress</u>	Semi-Rigid Systems	MASH TL 4	30/06/2020
<u>CrocGuard</u>	Semi-Rigid Systems	MASH TL 4	29/11/2022

1.2 Permanent Systems No Longer Accepted for Use in New Installations

System Name	Type	Test Level	Date of Approval OR Date of Last Amendment
<u>Brifen Wire Rope</u>	Wire Rope Barrier Systems	TL 3	18/12/2017
<u>Flexfence Wire Rope</u>	Wire Rope Barrier Systems	TL 3 - TL 4	25/03/2021
<u>Sentryline II – 4 Wire Rope Safety Barrier</u>	Wire Rope Barrier Systems	TL 3 - TL 4	12/01/2024
<u>Double sided lip channel</u>	Semi-Rigid Systems	TL 3	11/05/2009
<u>EZY-Guard Smart</u>	Semi-Rigid Systems	MASH TL 3	30/11/2023

1.3 Work Zone Barrier Systems

System Name	Type	Test Level	Date of Approval OR Date of Last Amendment
<u>BG800</u>	Steel	MASH TL 3 - TL 4	14/10/2022
<u>BG800 MDS</u>	Steel	MASH TL 3	14/10/2022
<u>BG800 LDS</u>	Steel	MASH TL 2	14/10/2022
<u>Zoneguard</u>	Steel	MASH TL 3 - TL 4	27/03/2023
<u>Zoneguard MDS</u>	Steel	MASH TL 3	27/03/2023
<u>Defender 70</u>	Steel	MASH TL 2	12/10/2022
<u>Defender 100FS</u>	Steel	MASH TL 3	12/10/2022
<u>Defender 100LDS</u>	Steel	MASH TL 3	12/10/2022
<u>Defender 100HC</u>	Steel	MASH TL 3 - TL 4	12/10/2022
<u>T-Lok</u>	Concrete	MASH TL 3 (speed restricted)	28/11/2024
<u>ArmorZone MASH</u>	Water Filled Barrier	MASH TL 1 - TL 2	25/10/2023
<u>Shield I</u>	Water Filled Barrier	MASH TL 1	21/05/2018
<u>Mobile Barrier Trailer MBT-1</u>	Mobile Barrier	MASH TL 3	21/08/2018
<u>DB80 K150</u>	Concrete	MASH TL 3 (speed restricted)	10/10/2024
<u>DB80 T150S</u>	Concrete	MASH TL 3 - TL 4 (speed restricted)	10/10/2024
<u>HV2</u>	Steel / Concrete	MASH TL 3 - TL 4	21/10/2022
<u>Ricochet</u>	Water Filled Barrier	MASH TL 1	03/04/2020
<u>SafeZone</u>	Steel	MASH TL 3 - TL 4	17/12/2024
<u>SafeZone LDS</u>	Steel	MASH TL 3 - TL 4	17/12/2024
<u>SafeZone MDS</u>	Steel	MASH TL 3 - TL 4	17/12/2024
<u>Lo-Ro</u>	Water Filled Barrier	MASH TL 1 - TL 2	20/07/2020
<u>HighwayGuard</u>	Steel	MASH TL 3 - TL 4	22/01/2024
<u>HighwayGuard LDS</u>	Steel	MASH TL 3 - TL 4	22/01/2024
<u>HighwayGuard MDS</u>	Steel	MASH TL 3 - TL 4	18/12/2024
<u>Pin and Loop</u>	Concrete	MASH TL 3 (speed restricted)	29/11/2024
<u>REBLOC 80SAH 12</u>	Concrete	MASH TL 3 - TL 4 (speed restricted)	30/01/2023
<u>REBLOC 80SAH 12 8B</u>	Concrete	MASH TL 3 (speed restricted)	30/01/2023
<u>REBLOC 120FA 6 SF</u>	Concrete	MASH TL 3 - TL 5 (speed restricted)	30/01/2023
<u>REBLOC 80SAH 4</u>	Concrete	MASH TL 3 (speed restricted)	30/01/2023

2 TERMINALS

2.1 Permanent Terminals

System Name	Type	Test Level	Date of Approval OR Date of Last Amendment
<u>ET-SS</u>	Gating / Non redirective	MASH TL 2 - TL 3	13/01/2022
<u>MSKT</u> (MASH Sequential Kinking Terminal)	Gating / Non redirective	MASH TL 2 - TL 3	13/01/2022
<u>MAX-Tension</u>	Gating / Non redirective	MASH TL 2 - TL 3	12/01/2024
<u>TAU-M Crash Cushion</u>	Redirective	MASH TL 2 - T3	12/01/2024
<u>TAU-XR Crash Cushion</u>	Redirective	MASH TL 3	17/12/2024
<u>QuadGuard M10</u>	Redirective	MASH TL 2 - T3	22/07/2022
<u>Trailing End Terminal</u>	Non-Crashworthy	N/A	08/07/2022
<u>SMART Steel Crash Cushion</u>	Redirective	MASH TL 2 - TL 3	26/07/2022
<u>Hercules Crash Cushion</u>	Redirective	MASH TL 3	22/04/2020
<u>Quadguard M10 Elite</u>	Redirective	MASH TL 3	22/07/2022
<u>Quadguard M Wide</u>	Redirective	MASH TL 3	22/07/2022

2.2 Terminals No Longer Accepted for Use in New Installations

System Name	Type	Test Level	Date of Approval OR Date of Last Amendment
<u>Bullnose Attenuator</u>	Gating / Non redirective	TL 3	09/04/2020
<u>ET2000 Plus</u>	Gating / Non redirective	TL 2 - TL 3	25/03/2020
<u>FLEAT-SP</u>	Gating / Non redirective	TL 2 - TL 3	23/12/2015
<u>SKT-SP (Sequential Kinking Terminal)</u>	Gating / Non redirective	TL 2 - TL 3	24/03/2020
<u>WAMELT</u>	Gating / Non redirective	TL 3	09/04/2020
<u>X-Tension 350</u>	Gating / Non redirective	TL 3	30/03/2020
<u>TAU-II Crash Cushion</u>	Redirective	TL 2 - TL 3	12/01/2024
<u>TRACC</u>	Redirective	TL 2 - TL 3	21/04/2020
<u>QuadGuard</u>	Redirective	TL 2 - TL 3	17/04/2020
<u>QuadGuard HS</u>	Redirective	TL 3	25/03/2021

2.3 Terminals Accepted for Temporary Installations Only

System Name	Type	Test Level	Date of Approval OR Date of Last Amendment
Absorb 350	Gating / Non redirective	TL 2	12/01/2024
QuadGuard M10 CZ	Redirective	MASH TL 2 - TL 3	17/04/2020
QuadGuard CZ	Redirective	TL 2 - TL 3	17/04/2020
SLED	Gating / Non redirective	MASH TL 1 - TL 3 (speed restricted)	06/10/2022
Absorb-M	Gating / Non redirective	MASH TL 2 - TL 3 (speed restricted)	12/01/2024
ArmorBuffa	Gating / Non redirective	MASH TL 3 (speed restricted)	22/01/2024

3 TRANSITIONS

Drawing No.	Description	Test Level
200331-021	General Arrangement 'W' Beam to Concrete Barrier Connection	TL 3
200331-0022	General Arrangement 'Thriebeam' to Concrete Barrier Connection	TL 3

4 GATES

System Name	Type	Test Level	Date of Approval OR Date of Last Amendment
ArmorGuard Gate	Gate	TL 3	12/01/2024
BG800 Gate	Gate	TL 3	24/01/2020

5 MOTORCYCLIST PROTECTION

System Name	Date of Approval OR Date of Last Amendment
Ingal MPR	23/01/2024
HIASA Rail	12/01/2024
Biker Shield	18/12/2023
RiderPro	15/12/2023