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# List of Approved Road Safety Barrier Systems

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# Document Control

Owner	Manager Road & Traffic Engineering
Custodian	Bruce Snook - Principal Design Engineer
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# Amendments

Revision Number	Revision Date	Description of Key Changes
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.

Revision Number	Revision Date	Description of Key Changes
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.
4S	1-Dec-2022	T-Lok design sheet amended. Ironman design sheet removed.
4R	29-Nov-2022	CrocGuard design sheet amended.
4Q	27-Oct-2022	Design sheets for MAX-Tension and MashFlex amended.
4P	26-Oct-2022	Ingal MPR design sheet amended.
4O	25-Oct-2022	DB80 T150S design sheet added.
4N	21-Oct-2022	HV2 design sheet amended.
4M	18-Oct-2022	ArmorBuffa design sheet added.
4L	14-Oct-2022	Design sheets for BG800, BG800 MDS and BG800 LDS amended.
4K	13-Oct-2022	Quickchange Reactive Tension Barrier design sheet amended.
4J	12-Oct-2022	Design sheets for Defender 70, Defender 100FS, Defender 100LDS and Defender 100HC amended.
4I	11-Oct-2022	Design sheets for HighwayGuard and HighwayGuard LDS amended.
4H	6-Oct-2022	SLED End Terminal design sheet amended.
4G	5-Oct-2022	SafeZone Barrier and SafeZone LDS Barrier design sheets amended.
4F	4-Oct-2022	CrocGuard design sheet added.
4E	26-Jul-2022	TAU-M Crash Cushion and SMART Steel Crash Cushion design sheets amended.
4D	22-Jul-2022	Quadguard M10 Elite and Quadguard M Wide design sheets added. Quadguard M10 design sheet amended.
4C	8-Jul-2022	W-Beam and Trailing End Terminal design sheets amended.
4B	4-Apr-2022	Sentry W-Beam and Sentry TL4 Thrie Beam design sheets amended. RiderPro design sheet added.
4A	22-Mar-2022	Ezy-Guard SMART and Ezy-Guard 4 design sheets amended.
4	17-Mar-2022	Ramshield design sheet amended.

## 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 Australian 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.

# 1 BARRIERS

## 1.1 Permanent Systems

System Name	Type	Test Level	Date of Approval OR Date of Last Amendment
<a href="#"><u>Constant Slope</u></a>	Rigid Barriers	MASH TL 4 - TL 5	31/10/2019
<a href="#"><u>Type F</u></a>	Rigid Barriers	MASH TL 4 - TL 5	31/10/2019
<a href="#"><u>W Beam</u></a>	Semi-Rigid Systems	TL 3	08/07/2022
<a href="#"><u>MashFlex Wire Rope</u></a>	Wire Rope Barrier Systems	MASH TL 3 - TL 4	27/10/2022
<a href="#"><u>MASH TL3 Brifen Wire Rope</u></a>	Wire Rope Barrier Systems	MASH TL 3	25/03/2021
<a href="#"><u>Sentryline-M Wire Rope</u></a>	Wire Rope Barrier Systems	MASH TL 3 - TL 4	12/01/2024
<a href="#"><u>W Beam Treatment Sheet</u></a>	Semi-Rigid Systems	N/A	12/08/2013
<a href="#"><u>Ezy-Guard 4</u></a>	Semi-Rigid Systems	MASH TL 3	22/03/2022
<a href="#"><u>Ezy-Guard HC</u></a>	Semi-Rigid Systems	MASH TL 4	12/01/2024
<a href="#"><u>Ramshield</u></a>	Semi-Rigid Systems	MASH TL 3	17/03/2022
<a href="#"><u>Ramshield High Containment</u></a>	Semi-Rigid Systems	MASH TL 4	28/11/2023
<a href="#"><u>Sentry W-Beam</u></a>	Semi-Rigid Systems	MASH TL 3	12/01/2024
<a href="#"><u>Sentry TL 4 Thrie Beam</u></a>	Semi-Rigid Systems	MASH TL 4	12/01/2024
<a href="#"><u>Safety Roller Barrier</u></a>	Semi-Rigid Systems	MASH TL 3 - TL 4	01/04/2020
<a href="#"><u>Quickchange Reactive Tension Barrier</u></a>	Semi-Rigid Systems	MASH TL 3	13/10/2022
<a href="#"><u>DOLRE Low Stress</u></a>	Semi-Rigid Systems	MASH TL 4	30/06/2020
<a href="#"><u>CrocGuard</u></a>	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
<a href="#"><u>Brifen Wire Rope</u></a>	Wire Rope Barrier Systems	TL 3	18/12/2017
<a href="#"><u>Flexfence Wire Rope</u></a>	Wire Rope Barrier Systems	TL 3 - TL 4	25/03/2021
<a href="#"><u>Sentryline II – 4 Wire Rope Safety Barrier</u></a>	Wire Rope Barrier Systems	TL 3 - TL 4	12/01/2024
<a href="#"><u>Double sided lip channel*</u></a>	Semi-Rigid Systems	TL 3	11/05/2009
<a href="#"><u>EZY-Guard Smart</u></a>	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)	01/12/2022
<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)	09/08/2021
<u>DB80 T150S</u>	Concrete	MASH TL 3 - TL 4 (speed restricted)	25/10/2022
<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	05/10/2022
<u>SafeZone LDS</u>	Steel	MASH TL 3 - TL 4	05/10/2022
<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>Pin and Loop</u>	Concrete	MASH TL 3 (speed restricted)	22/10/2020
<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>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
<a href="#"><u>Absorb 350</u></a>	Gating / Non redirective	TL 2	12/01/2024
<a href="#"><u>QuadGuard M10 CZ</u></a>	Redirective	MASH TL 2 - TL 3	17/04/2020
<a href="#"><u>QuadGuard CZ</u></a>	Redirective	TL 2 - TL 3	17/04/2020
<a href="#"><u>SLED</u></a>	Gating / Non redirective	MASH TL 1 - TL 3 (speed restricted)	06/10/2022
<a href="#"><u>Absorb-M</u></a>	Gating / Non redirective	MASH TL 2 - TL 3 (speed restricted)	12/01/2024
<a href="#"><u>ArmorBuffa</u></a>	Gating / Non redirective	MASH TL 3 (speed restricted)	22/01/2024

## 3 TRANSITIONS

Drawing No.	Description	Test Level
<a href="#"><u>200331-021</u></a>	General Arrangement 'W' Beam to Concrete Barrier Connection	TL 3
<a href="#"><u>200331-0022</u></a>	General Arrangement 'Thriebeam' to Concrete Barrier Connection	TL 3

## 4 GATES

System Name	Type	Test Level	Date of Approval OR Date of Last Amendment
<a href="#"><u>ArmorGuard Gate</u></a>	Gate	TL 3	12/01/2024
<a href="#"><u>BG800 Gate</u></a>	Gate	TL 3	24/01/2020

## 5 MOTORCYCLIST PROTECTION

System Name	Date of Approval OR Date of Last Amendment
<a href="#"><u>Ingal MPR</u></a>	23/01/2024
<a href="#"><u>HIASA Rail</u></a>	12/01/2024
<a href="#"><u>Biker Shield</u></a>	18/12/2023
<a href="#"><u>RiderPro</u></a>	15/12/2023