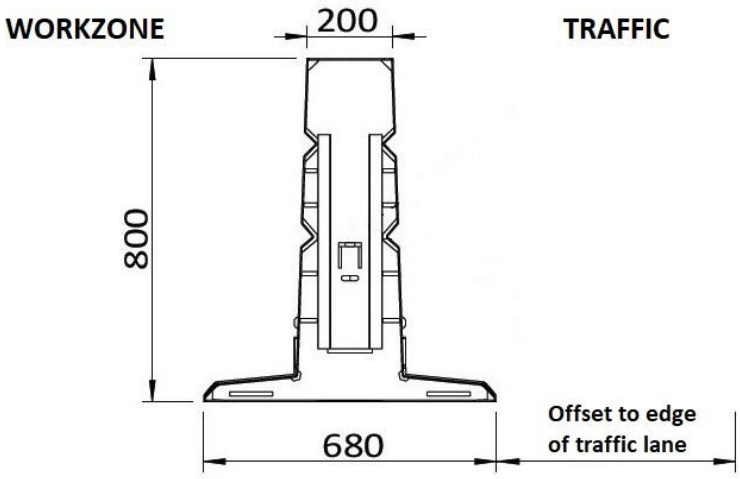
# DEFENDER 70

## REVISION REGISTER

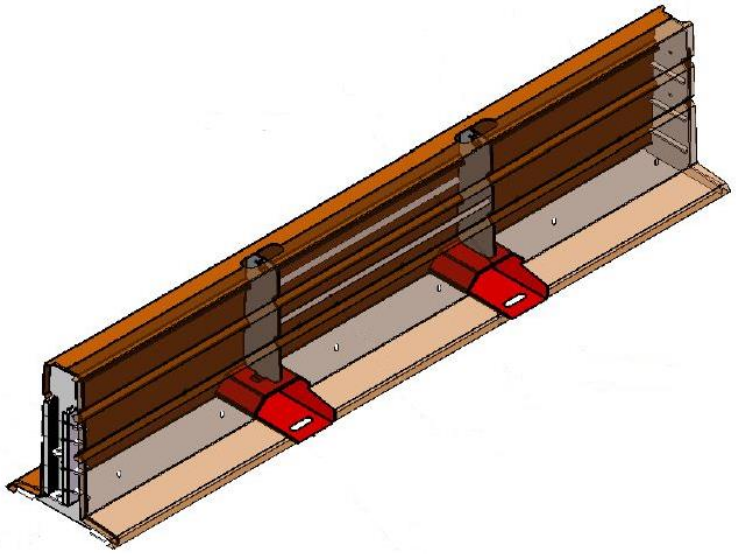
| Revision | Description | Date |
|---|---|---|
| 1 | Issued for use. | 12/07/2018. |
| 1A | Barrier offset and installation manual reference updated. Reference to FHWA approval letter added. | 08/01/2020 |
| 1B | Terminals permitted updated. | 9/08/2021 |
| 1C | Terminals permitted updated. Manual reference updated. Supplier details updated. | 12/10/2022 |

Defender 70 is a portable freestanding steel barrier that is to be used for temporary applications only. Each Defender 70 barrier unit is effectively 3.9 m long and contains 3# concrete filled ballast boxes, giving each unit a mass of 1,040 kg.

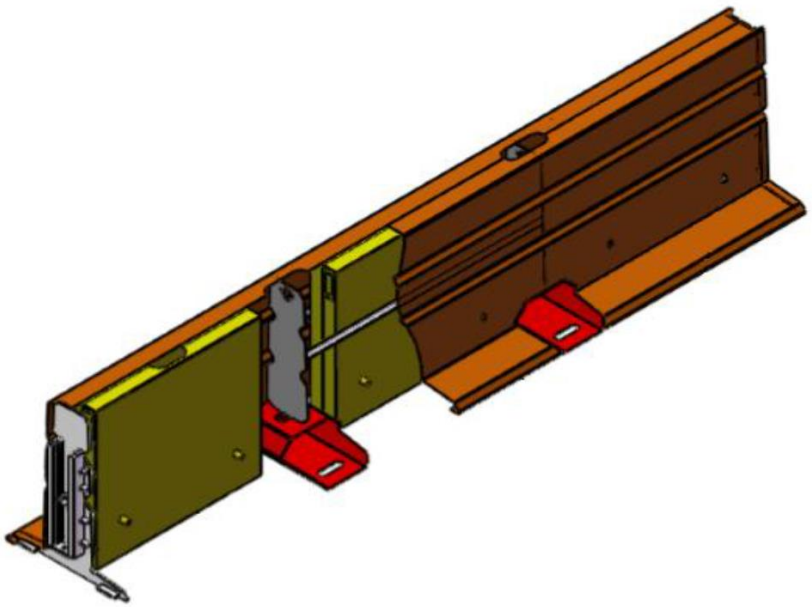
**Images:**




Typical cross section of Defender 70



Oblique view of Defender 70 unit



Oblique view of Defender 70 unit (showing ballast boxes)

Photograph of Defender 70 unit

**Ownership:** Safe Barriers Pty Ltd

**Supplier:** Safe Barriers Pty Ltd
Suite 54, 29 Smith Street
Parramatta, NSW 2150
Phone: 1800 169 799
Website - www.safebarriers.com

## DEFENDER 70

**Test Level:** Approved to MASH TL 2.

| Test Level | Test Description | Deflection | Working Width (measured at base of units) |
|---|---|---|---|
| MASH – TL 2 | 2270 kg vehicle @ 70 km/h, 25$^{o}$ impact angle | 1.20 m | 1.88 m |

**Configuration:**

- Standard 3.9 m long units are to be used.
- As the barrier is designed to resist loadings by deflecting the units should be free to move.
- The system was crash tested on a flat asphalt surface.

**Design:**

- Design to be in accordance with the Defender 70$^{TM}$ Product Design and Installation Manual Version 3.1, dated 23 August 2021.
- It is recommended that the barrier (680 mm width) should be offset from the edge of traffic lane by:
  - traffic speed 40 km/h or less - 0.2 m;
  - traffic speed 41 to 60 km/h - 0.3 m;
  - traffic speed 61 to 80 km/h - 0.5 m.
- Barrier length must be sufficient to adequately protect the hazard.
- The ends of the barrier must be protected with a suitable end treatment.

**Minimum Length:**
105.3 m (not including terminals).

**Terminals permitted:**

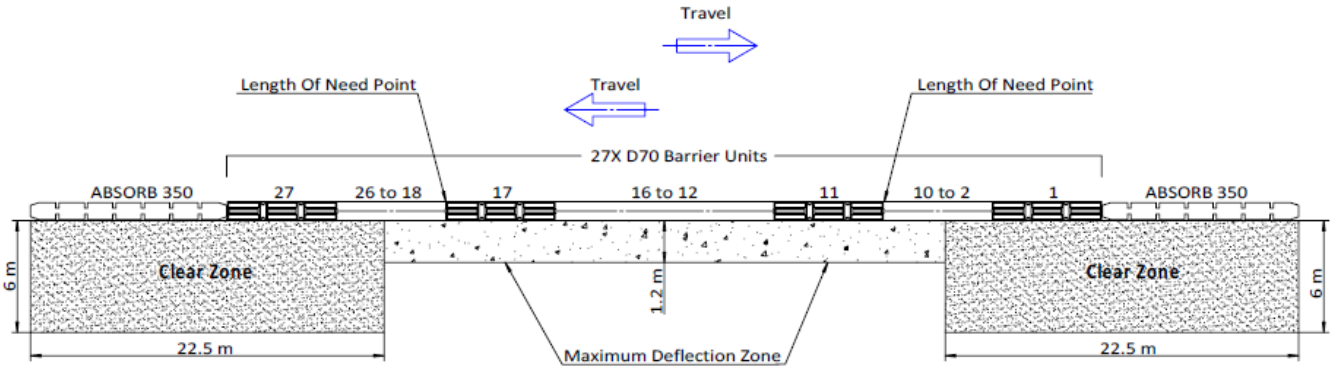
- Absorb-M (suitable for MASH TL 2 conditions only – i.e. maximum design speed = 70 km/h, maximum posted speed = 60 km/h)
- SLED End Terminal (suitable for MASH TL 2 conditions only – i.e. maximum design speed = 70 km/h, maximum posted speed = 60 km/h)

The following terminal will not be accepted for temporary installations on Main Roads WA contracts awarded after 1 January 2022.

- Absorb 350 (suitable for TL 2 conditions only – i.e. maximum design speed = 70 km/h, maximum posted speed = 60 km/h)

**Point of Redirection:**
The points of redirection shall be at 10 units or 39 m from the leading or trailing end, not including the terminals (for TL 2 conditions).

Refer to Figure 2.5 of the Defender 70$^{TM}$ Product Design and Installation Manual, as reproduced below:




**Limitations:**

- The cross slope shall be not greater than 10% for the area between the edge of travelled way and the barrier, and the area immediately behind the barrier for the width of the deflection.
- Cannot be placed adjacent to kerbs or other objects within the deflection limits of the barrier, which may prevent lateral displacement.
- Standard 3.9 m long units cannot be used on radii less than 230 m.
- Objects should not be placed on top of the barrier as they are designed to move under impact. “Anti-Gawk” screens are not to be attached.

**Installation and Maintenance Requirements:**
In accordance with the Defender 70™ Product Design and Installation Manual Version 3.1, dated 23 August 2021.

**Parts to be Replaced after Impact:**
Units may need to be repaired after impact or replaced depending on the extent of damage.

**Parts Typically Re-Useable after Impact:**
Undamaged units.

**References:**

| Item | Description |
|---|---|
| 1 | System tested on 27 April and 11 May 2017 by Holmes Solution to MASH TL 2. A copy of this testing can be found on Main Roads file 17/6332. |

**Relevant FHWA Approval Letters:**
Refer to website:
https://safety.fhwa.dot.gov/roadway_dept/countermeasures/reduce_crash_severity/barriers/pdf/b287.pdf

| Code | Description |
|---|---|
| B-287 | Defender Barrier 70 - MASH TL 2. |