

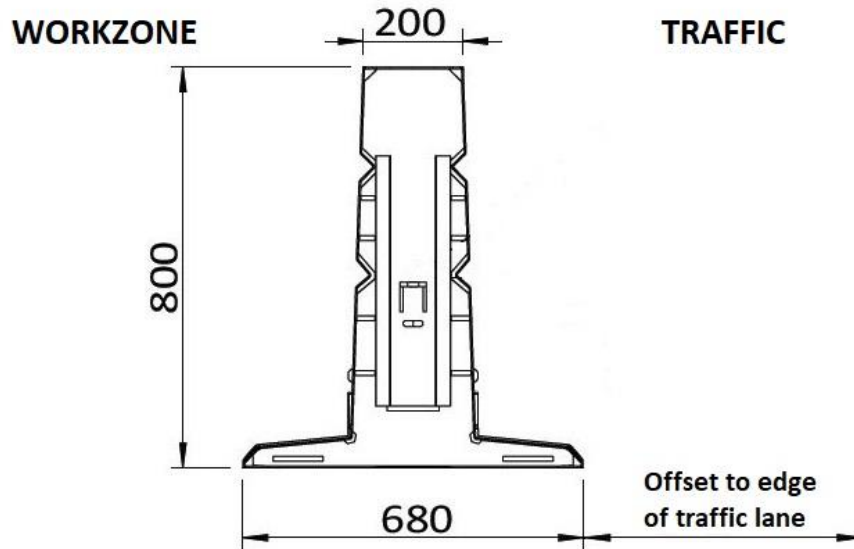
# DEFENDER 100FS

## REVISION REGISTER

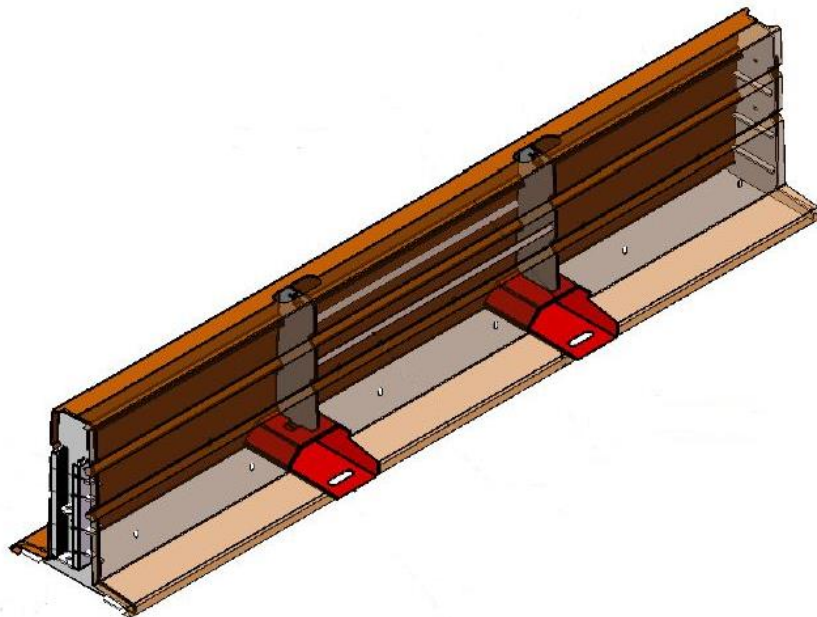
Revision	Description	Date
1	Issued for use.	08/01/2020.

Defender 100FS is a portable freestanding steel barrier that is to be used for temporary applications only. Each Defender 100FS 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:

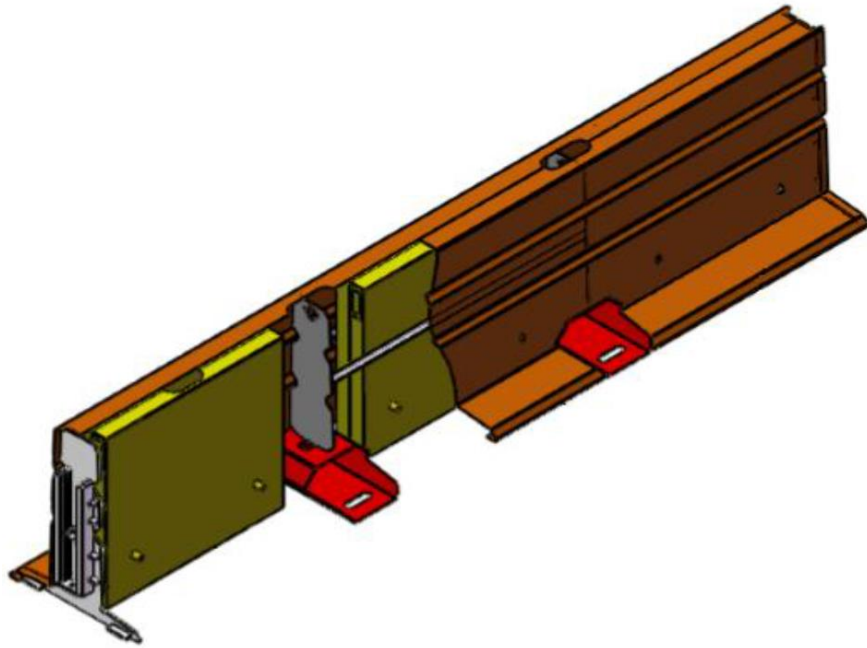


Typical cross section of Defender 100FS

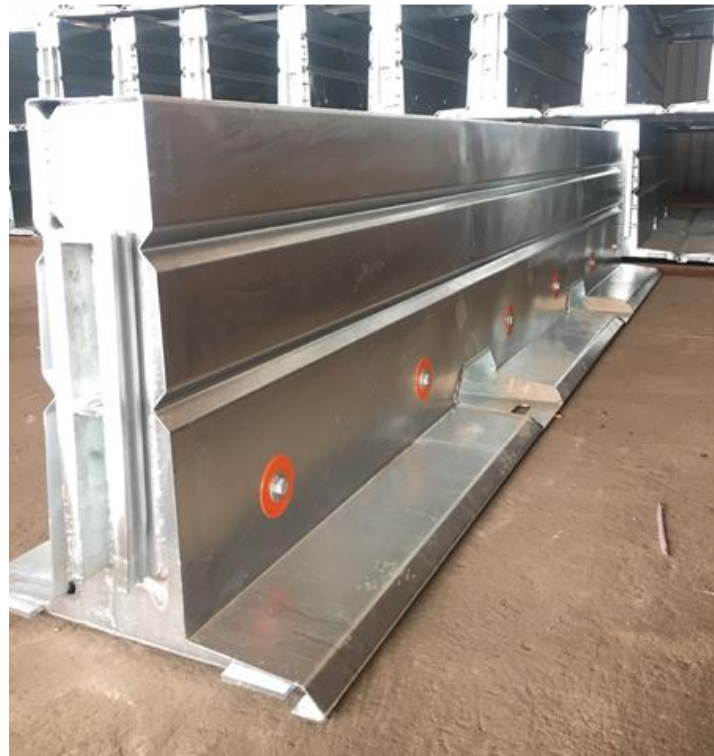


Oblique view of Defender 100FS unit

## DEFENDER 100FS



Oblique view of Defender 100FS unit (showing ballast boxes)



Photograph of Defender 100FS unit

**Ownership:** Safe Barriers Pte Ltd

**Supplier:** Safe Barriers Pty Ltd  
PO Box 7178  
Hemmant, QLD 4174  
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Website - [www.safebarriers.com](http://www.safebarriers.com)

## DEFENDER 100FS

**Test Level:** Approved to MASH TL3.

Test Level	Test Description	Deflection	Working Width (measured at base of units)
MASH – TL3	2270 kg vehicle @ 100 km/h, 25° impact angle	1.90 m	2.58 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 100FS Product Design and Installation Manual Version 1.2, dated 10 September 2018.
- 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 - 0.5m;
  - traffic speed greater than 80 km/h - 1.0 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:

156 m (not including TAU-II Crash Cushion).

### Terminals permitted:

- TAU-II Crash Cushion, pinned (anchored), suitable for TL3 conditions.
- At the connection to the crash cushion, the Defender 100FS end unit is required to be transitioned to the TAU-II Crash Cushion (incorporating 8# ground anchor pins) as detailed in the Defender 100FS Product Design and Installation Manual Version 1.2, dated 10 September 2018.
- Minimum pavement construction is 150 mm asphalt with 150 mm compacted sub-base.

### Length of Need:

The point of redirection shall be at the nose of the pinned TAU-II Crash Cushion, at both ends; or if the trailing end does not form a hazard and does not include a pinned TAU-II Crash Cushion, then 66.3 m upstream of the trailing end.

### 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.

## DEFENDER 100FS

- 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 100FS Product Design and Installation Manual Version 1.2, dated 10 September 2018.

### 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 28 July, 31 July and 14 September 2017 by Holmes Solution to MASH TL 3. A copy of this testing can be found on Main Roads file 19/7619.

### Relevant FHWA Approval Letters:

Refer to website:

[https://safety.fhwa.dot.gov/roadway\\_dept/countermeasures/reduce\\_crash\\_severity/barriers/pdf/b296.pdf](https://safety.fhwa.dot.gov/roadway_dept/countermeasures/reduce_crash_severity/barriers/pdf/b296.pdf)

Code	Description
B-296	Defender Barrier 100 FS - MASH TL 3.