

ARMORZONE

REVISION REGISTER

Revision	Description	Date
1	Issued for use.	4/12/2012
1 A	Updated Ownership, Supplier contact details and current Product Manual	21/11/2016
1 B	Amended Supplier and updated Product Manual. Working width and link to FHWA Approval letter added.	22/05/2019

The ArmorZone Barrier is a portable water filled longitudinal temporary barrier. It can be used in worksites with design speeds up to 70 km/h (i.e. posted speed up to 60 km/h). The barrier units are orange in colour, while the end treatments (which are empty) are yellow.

The ArmorZone Barrier shall NOT be installed with the ArmorZone MASH Barrier units due to their different crash rating and performance.

Images / Drawings.



Figure 1: Photographs of ArmorZone Barrier and Terminal units

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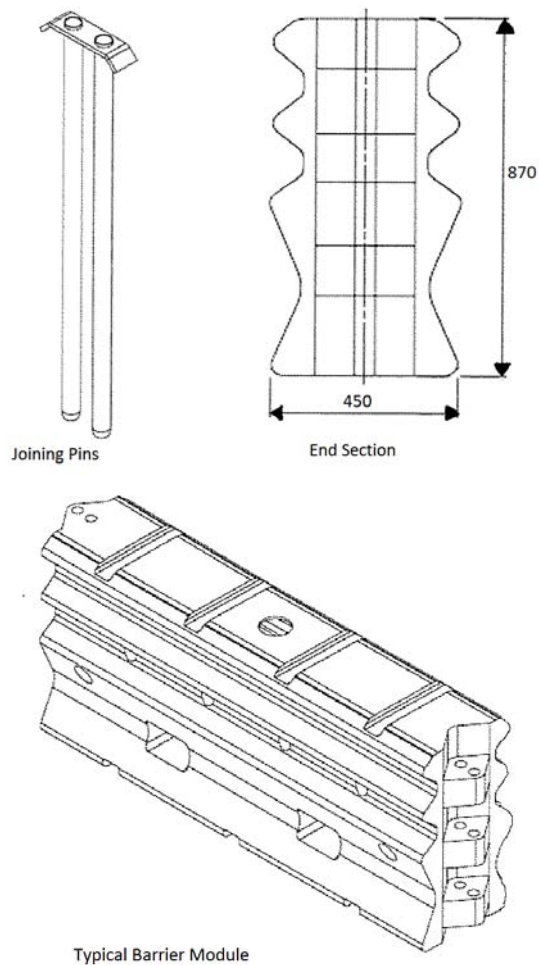


Figure 2: Typical Details of ArmorZone Barrier

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Supplier: Ingal Civil Products
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Ph: (08) 9452 9111 Fax: (08) 9358 9111
Website - <http://www.ingalcivil.com.au/>

Test Level: Tested in accordance with NCHRP 350 to TL2.

Test Deflection: 1.51 m under NCHRP 350 TL1 conditions
2.10 m under NCHRP 350 TL2 conditions

Note that these deflections were measured in crash tests performed under controlled conditions. The deflections recorded are the horizontal offset between the face of the barrier units measured prior to and following vehicle impact. Designers should be aware that the deflection published as a test result may not be the deflection value achieved in the field for all impacts by errant vehicles.

Working Width: 1.96 m under NCHRP 350 TL1 conditions
2.55 m under NCHRP 350 TL2 conditions

Note that the working widths above are equivalent to the test deflections plus the width of the system.

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Configuration:

Units must be interconnected and requires a sufficient length to resist impact.

Design:

- Design to be in accordance with the ArmorZone Temporary Safety Barrier Product Manual (Release 10/18 (Australia)).
- Barrier should be placed a minimum of 250 mm from the edge of travelled way to avoid nuisance impacts.
- Amount of deflection to be allowed depends on whether traffic is un-directional or bi-directional and offset to barrier and speed.
- The barrier has its own end terminals which must be installed.
- Barrier length must be sufficient to adequately protect the hazard. The minimum length of barrier to be installed is 50 m (between points of need).
- Plant, personnel or roadside hazards should not be located within the hazard free and deflection area as shown in Figure 3.

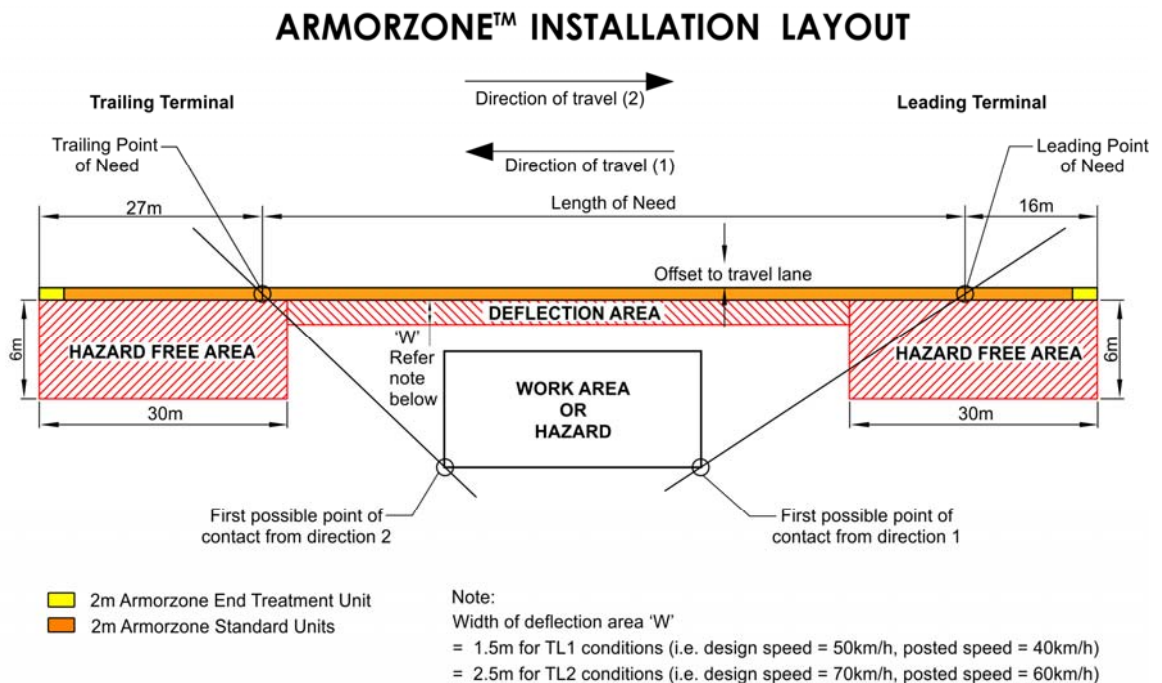


Figure 3: ArmorZone Layout Diagram
(Not to Scale)

Limitations:

- Not to be used on longitudinal slopes or crossfalls greater than 5%.
- Cannot be used on radii smaller than 28m.
- Cannot be placed adjacent to kerbs or other objects which may prevent lateral displacement.

Installation and Maintenance Requirements:

In accordance with the ArmorZone Temporary Safety Barrier Product Manual (Release 10/18 (Australia)).

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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	Barrier system tested to NCHRP 350 Test Level TL 2. A copy of the test reports can be found on Main Roads file 11/4154.
2	Terminal tested to NCHRP 350 Test Level TL 2. A copy of this testing can be found on Main Roads file 11/4154.

Relevant FHWA Approval Letter to NCHRP 350:

https://safety.fhwa.dot.gov/roadway_dept/countermeasures/reduce_crash_severity/barriers/pdf/b223.pdf

Code	Description
B223	NCHRP Report 350 Test Level 2 and MASH Test Level 2 approval