

# TRITON

## REVISION REGISTER

Revision	Description	Date
1	Issued for use.	23/2/2004
1 A	Note added regarding deflections.	03/03/2006
1 B	Notes associated with deflection table modified.	27/04/2006
1 C	TL0 removed and replaced with TL1.	24/06/2008
1 D	Approval for TL 3 version removed.	06/12/2011
1 E	Approval of TL 2 version restricted to 50 km/h design speed.	23/11/2012
1 F	Updated deflection table and Supplier details	13/08/15

The Triton Barrier is a portable water filled longitudinal temporary barrier. There are three different versions of Triton Barrier that is produced:

TL 0 – This version does not include an internal metal frame and units are black and yellow. This configuration is not accepted for use as a barrier by Main Roads.

TL 2 – This version includes an internal metal frame and units are orange and white.

TL 3 – This version is the same as the TL 2 version, but the height of units is raised by plastic pedestals that are attached to the units. This version is not accepted for use by Main Roads.

**Images: TL 2 Version shown.**

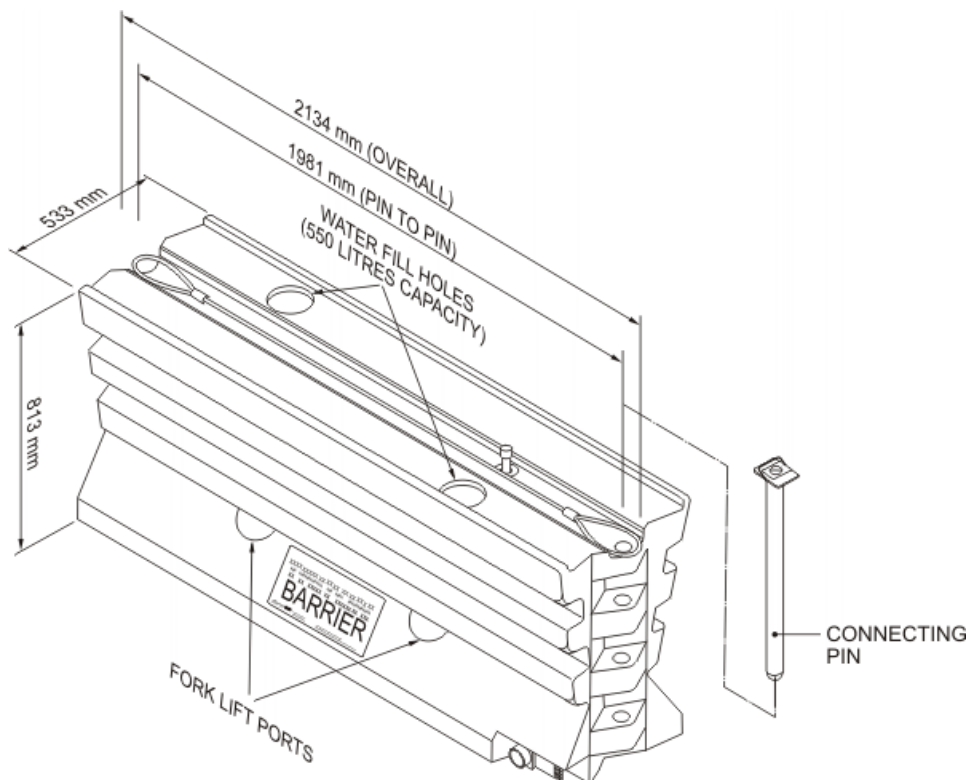


Figure 1 – Triton Barrier Components

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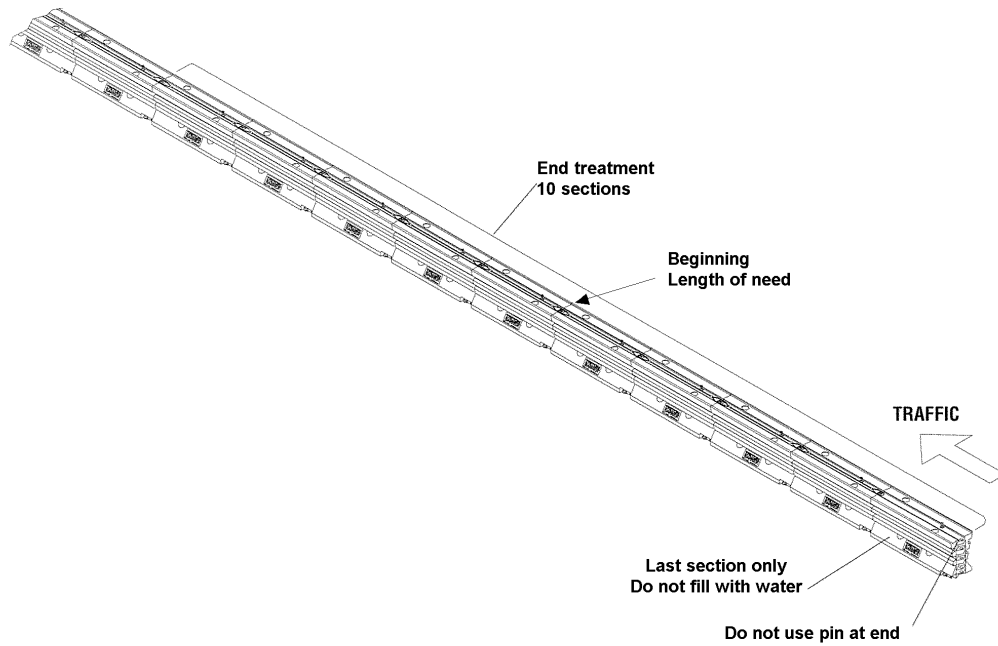


Figure 2 – Triton Barrier End Treatment



Figure 3 – Triton Barrier

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 Website: <http://www.ingalcivil.com.au/>

**Test Level:** The Triton TL 2 version has been crash tested to NCHRP 350 to TL 2, but is only accepted for use by Main Roads to test level TL 1 (i.e. to a design speed of 50km/h) under the following conditions.

Angle of Impact	10°	15°	20°	25°
Deflection (m) 2000kg vehicle @ 50km/h	0.5m	1.0m	1.8m	2.7m

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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 Design and Application Manual by Energy Absorption. Note the TL 0 has its own manual and TL 2 barriers are covered in a separate manual.
- 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 30m (i.e. 15 units).
- As shown in Figure 2, the end treatment consists of 10 units (i.e. 20m long) and beginning of the Length of Need is 5 units (i.e. 10m) from the first unit (which is empty).

## Limitations:

- The Triton TL 2 version may only be used where the design speed does not exceed 50km/h, i.e. the posted speed does not exceed 40km/h
- Not to be used on longitudinal slopes or crossfalls greater than 5%.
- Cannot be used on radii smaller than 11.3 m.
- Cannot be placed adjacent to kerbs or other objects which may prevent lateral displacement.

## Installation and Maintenance Requirements:

In accordance with the relevant Energy Absorption Installation and Maintenance Manual.

## 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:

Relevant FHWA Approval Letters

Refer to website

[http://safety.fhwa.dot.gov/fourthlevel/hardware/term\\_cush.htm](http://safety.fhwa.dot.gov/fourthlevel/hardware/term_cush.htm)

Code	Description
B26	TL 2 Approval of Triton end treatment.
B21 & B21A	TL 2 Approval