

T-LOK TYPE F CONCRETE SAFETY BARRIER - TEMPORARY

REVISION REGISTER

Revision	Description	Date
1	Issued for use.	1/10/2008
1 A	General revision.	23/03/2020
1 B	Update of conditions	22/10/2020
1 C	Update terminals, conditions and manual.	9/08/2021
1 D	Update manual. Reference to bespoke wedge added. Points of redirection updated.	1/12/2022
1 E	Update terminals and manual.	28/11/2024

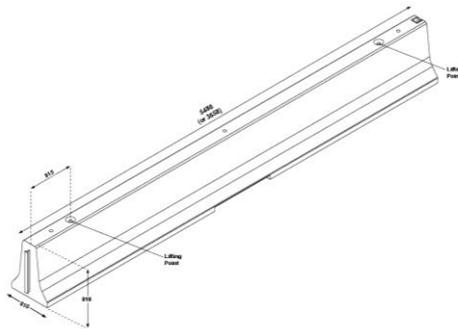
T-Lok is a freestanding temporary concrete barrier (3.6 m and 5.4 m long units), consisting of Type F shape steel reinforced concrete barrier units and a patented coupling system.

There are two versions of T-Lok:

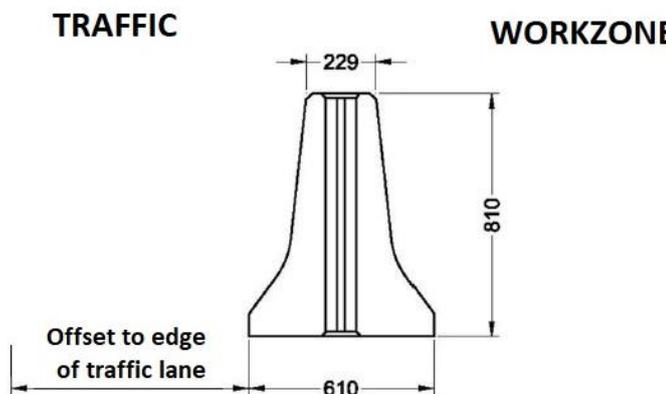
T-Lok 350 Type F – Crash tested to NCHRP 350 Test Level 3 and no longer manufactured. These units will no longer be accepted for temporary installations on Main Roads WA contracts awarded after 1 January 2022.

T-Lok MASH Type F – Crash tested to MASH Test Level 3.

Drawings:



T-Lok Oblique View



T-Lok Section View



T-Lok coupling system

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Ownership:

Rockingham Pre-Cast
www.rockinghamprecast.com

Supplier:

Units may be hired from many of the hire companies. Saferoads sells the units and contacts details are:

Saferoads,
22 Commercial Dr,
Pakenham VIC 3810.
Ph 1800 060 672
www.saferoads.com.au

Test Level: Approved to NCHRP 350 TL 3 (T-Lok 350 Type F) and MASH TL 3 (T-Lok MASH Type F).

Test Level	Test Description	Deflection	Working Width
NCHRP350 – TL 3*	2000 kg vehicle at 100 km/h 25° impact angle	1.20 m	1.81 m
MASH – TL 3**	2270 kg vehicle at 100km/h 25° impact angle	1.27 m	1.88 m

* T-Lok 350 Type F barrier status is a legacy in Western Australia. These units will no longer be accepted for temporary installations on Main Roads WA contracts awarded after 1 January 2022.

** T-Lok MASH Type F barriers are identified by the “T-Lok MASH” symbol stencilled on the side of each unit, as shown:



Note that while the T-Lok 350 Type F barrier has passed crash testing to NCHRP 350 TL 3 and the T-Lok MASH Type F barrier has passed crash testing to MASH TL 3, these barrier systems, when connected to approved terminals, are not accepted at 100 km/h.

T-Lok 350 Type F and T-Lok MASH Type F concrete barriers should not be deployed together in a single length of barrier.

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Configuration:

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

Note all references to figures in the T-Lok Product Manual are to correct for Version 8.0 dated November 2022.

Design Considerations:

- The barrier is designed to resist loadings by deflection the units should be free to move, therefore the barrier shall not be placed onto a mortar or a concrete blinding as this may overload the connections between the units.
- It is recommended that the barrier should as a minimum 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 protect the hazard.
- Kerbing is not to be placed in front of the barrier.
- Kerbing should not be placed behind the barrier within the deflection limits of the system.
- Barrier shall not be placed on top of kerbing as this negates the effects of the profile.
- The approach to the barrier should be a trafficable running surface at a slope of 1 in 20 (5%) or flatter clear of objects and grade changes to allow an errant vehicle to hit the barrier at an appropriate height.
- When designing a T-Lok barrier the flare rates used shall be those for a rigid barrier, to minimise impact angles.

Minimum Length:

58.5 m (including pinned anchored end units).

Terminals permitted:

1. Quadguard M10 CZ crash cushion

- The installation is restricted to a posted speed of 80 km/h or less.
- May only be installed where reverse impacts are highly improbable and a risk assessment has been completed and steps undertaken to mitigate any risks identified.
- Terminal must be anchored by pins in accordance with the installation instructions in the product manual.
- The T-Lok barrier units adjacent to the crash cushion must be anchored to the pavement as required by the product manual.
- An accepted transition must be used to connect the terminal to the barrier.

2. TAU-M crash cushion

- The installation is restricted to a posted speed of 80 km/h or less.
- May only be installed where reverse impacts are highly improbable and a risk assessment has been completed and steps undertaken to mitigate any risks identified.
- Terminal must be anchored by pins in accordance with the installation instructions in the product manual.

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- The T-Lok barrier units adjacent to the crash cushion must be anchored to the pavement as required by the product manual.
- An accepted transition must be used to connect the terminal to the barrier.

3. ABSORB-M

- The installation is restricted to a design speed of 80 km/h or less (posted at 70 km/h or less).
- The ABSORB-M transition to T-Lok Barrier must be used to connect the terminal to the barrier.
- Permitted as a terminal on a flare.

4. SLED End Terminal

- The installation is restricted to a design speed of 80 km/h or less (posted at 70 km/h or less).
- The SLED transition to T-Lok Barrier must be used to connect the terminal to the barrier.
- Permitted as a terminal on a flare.

5. ArmorBuffa End Terminal

- The installation is restricted to a design speed of 80 km/h or less (posted at 70 km/h or less).
- The ArmorBuffa transition to T-Lok Barrier must be used to connect the terminal to the barrier.
- Permitted as a terminal on a flare.

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

6. Quadguard CZ

- The installation is restricted to a posted speed of 80 km/h or less.
- May only be installed where reverse impacts are highly improbable and a risk assessment has been completed and steps undertaken to mitigate any risks identified.
- Terminal must be anchored by pins in accordance with the installation instructions in the product manual.
- The T-Lok barrier units adjacent to the Quadguard CZ must be anchored to the pavement as required by the product manual.
- An accepted transition must be used to connect the terminal to the barrier.

7. ABSORB 350

- The installation is restricted to a design speed of 70km/h or less (posted at 60 km/h or less).
- The ABSORB 350 transition to T-Lok Barrier must be used to connect the terminal to the barrier.
- Permitted as a terminal on a flare.

Point of Redirection:

The point of redirection shall be at the nose of the pinned crash cushion, at both ends; or if the trailing end doesn't form a hazard and does not include a pinned crash cushion, then 36.6 m upstream of the trailing end (as per the freestanding tested arrangement).

If an Absorb-M, SLED or ArmorBuffa End Terminal is used then the point of redirection is 21.9 m from the upstream end, and 36.6 m from the downstream end of the barrier.

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Limitations:

- The use of T-Lok is limited to work site situations and units shall be interconnected using the T-Lok connections.
- Objects should not be placed on top of the barrier as they are designed to move under impact. "Gawk" screens are not acceptable.
- The minimum radius that the T-Lok 350 Type F barrier can be installed on is 54 m using 3.6 m units, and 84 m using 5.4 m units.
- The minimum radius that the T-Lok MASH Type F barrier can be installed on is 30 m using 3.6 m units, and 46 m using 5.4 m units.
- A bespoke steel wedge has been developed to allow the T-Lok MASH Type F barrier to be installed at smaller radii. These should be used only when the posted speed is 60 km/h or less and with the guidance of the Supplier.

Installation and Maintenance Requirements:

In accordance with the T-Lok Product Manual Version 8.0 dated November 2022.

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/roadway_dept/policy_guide/road_hardware/listing.cfm

Code	Description
B-42	NCHRP 350 TL3
B-42B	MASH TL3

Refer to Main Roads WA file 06/4339