

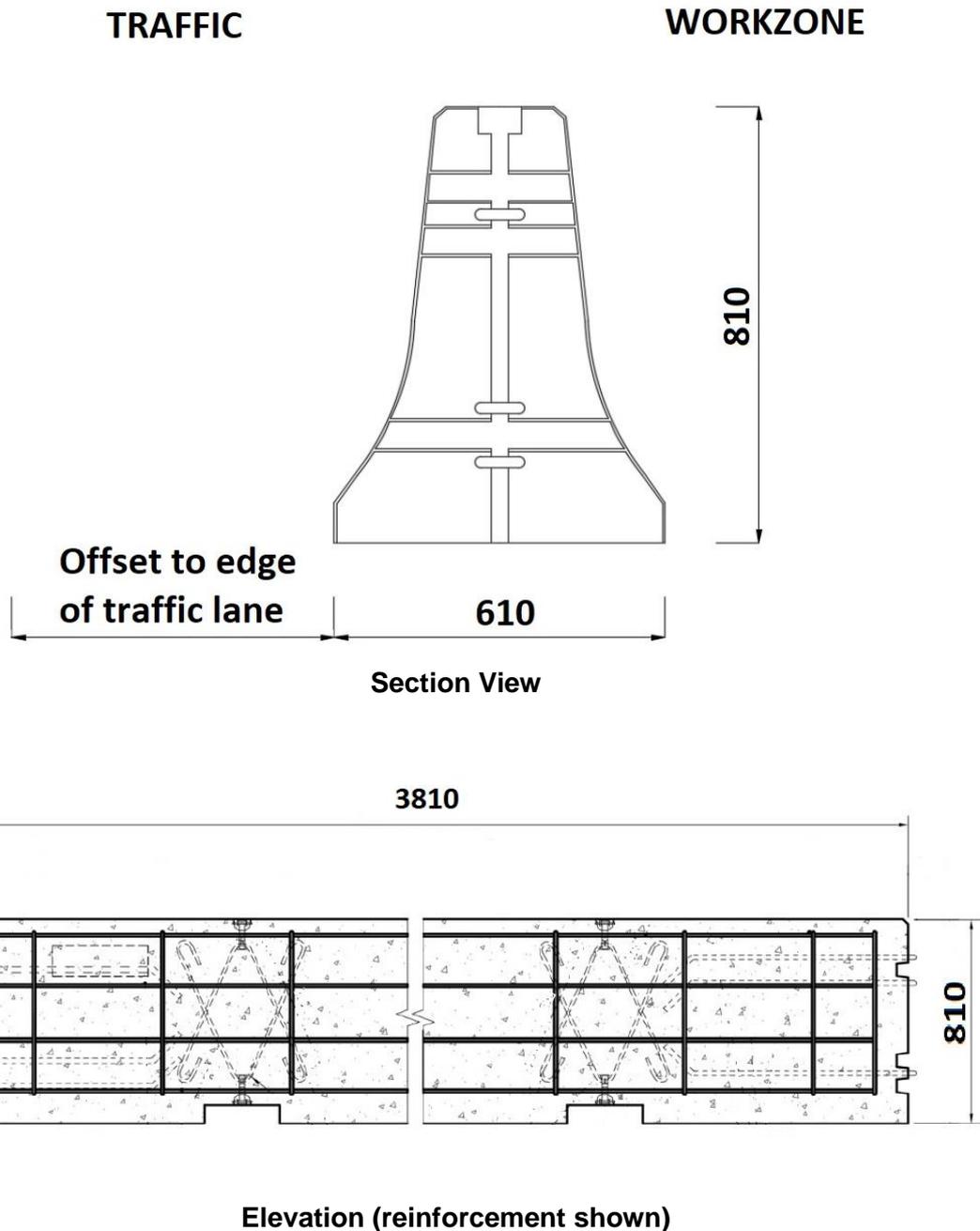
# PIN AND LOOP CONCRETE SAFETY BARRIER - TEMPORARY

## REVISION REGISTER

Revision	Description	Date
1	Issued for use.	22/10/2020
1 A	Terminals amended	29/11/2024

The Pin and Loop is a freestanding temporary concrete barrier (3.81 metre long units) consisting of Type F shape steel reinforced concrete barrier units with a jointing system that consists of steel loop bars cast into the ends of barrier units. Adjacent units are connected by a steel pin that is slotted through the loops.

### Drawings:



## PIN AND LOOP CONCRETE SAFETY BARRIER - TEMPORARY



Photograph of Pin and Loop Barrier Unit



Photographs Pin and Loop Connected Units and Joint

### Ownership:

Retsel Holdings Pty Ltd

<http://precastconcrete.com.au/>

### Supplier:

Pin and Loop Pty Ltd

63 – 69 High St, Queanbeyan NSW 2620

<http://precastconcrete.com.au/>

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

Test Level	Test Description	Deflection	Working Width
MASH - TL3	2270 kg vehicle at 100km/h 25° impact angle	1.61 m	2.22 m

Note that while the Pin and Loop Concrete Safety Barrier – Temporary has passed crash testing to MASH TL 3, the barrier system when connected to approved terminals are not accepted at 100km/h.

# PIN AND LOOP CONCRETE SAFETY BARRIER - TEMPORARY

## Configuration:

- Units must be interconnected using the pin and loop system and a sufficient length is required to resist impact.

## Design Considerations:

- Design to be in accordance with the Pin and Loop Barrier System Product Manual – Retsel Holdings Pty Ltd – Version 1, Revision 1, dated 9 May 2019.
- The barrier is designed to resist loadings by deflection, so the units should be free to move. 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 - 0.5m.
- 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 7% or flatter, clear of objects and grade changes to allow an errant vehicle to hit the barrier at an appropriate height.
- When designing a Pin and Loop barrier the flare rates used shall be those for a rigid barrier, to minimise impact angles.

## Minimum Length:

61.4 m excluding terminals.

## Terminal permitted:

1. ABSORB-M PLASTIC Terminal – Temporary
  - The installation is restricted to a design speed of 70 km/h or less (posted at 60 km/h or less).
  - The ABSORB M transition to Pin and Loop Barrier must be used to connect the terminal to the barrier.
  - Not permitted as a terminal on a flare.
2. SLED PLASTIC Terminal – Temporary
  - The installation is restricted to a design speed of 70 km/h or less (posted at 60 km/h or less).
  - The SLED transition to Pin and Loop Barrier must be used to connect the terminal to the barrier.
  - Not permitted as a terminal on a flare.
3. ArmorBuffa PLASTIC Terminal – Temporary
  - The installation is restricted to a design speed of 70 km/h or less (posted at 60 km/h or less).
  - The ArmorBuffa transition to Pin and Loop Barrier must be used to connect the terminal to the barrier.
  - Not permitted as a terminal on a flare.

## **PIN AND LOOP CONCRETE SAFETY BARRIER - TEMPORARY**

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

### **4. ABSORB 350 PLASTIC Terminal – Temporary**

- The installation is restricted to a design speed of 70 km/h or less (posted at 60 km/h or less).
- The ABSORB 350 transition to Pin and Loop Barrier must be used to connect the terminal to the barrier.
- Not permitted as a terminal on a flare.

### **5. TAU-II 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 Pin and Loop Barrier units adjacent to the TAU-II 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.

### **Point of Redirection:**

The point of redirection shall be at the nose of the pinned TAU-II crash cushion, at both ends; or if the trailing end doesn't form a hazard and does not include a pinned crash cushion, then 39.5 m upstream of the trailing end (as per the freestanding tested arrangement).

If Plastic End Terminal is used then the point of redirection is 21.8 m from the upstream end, and 39.5 m from the downstream end of the barrier.

### **Limitations:**

- The use of Pin and Loop barrier is limited to work site situations and units shall be interconnected using the pin and loop system.
- 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 Pin and Loop barrier can be installed on is 235 m.

### **Installation and Maintenance Requirements:**

In accordance with the Pin and Loop Barrier System Product Manual – Retsel Holdings Pty Ltd – Version 1, revision 1, dated 9 May 2019.

### **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:**

Refer to Main Roads file 19/945.