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## AMC Position Statement – Crash Barriers

There are no crash barriers that can be considered 'motorcycle friendly'. In the event of a motorcyclist impacting with a crash barrier the likelihood is that they will be severely injured.

**Priority:-** High

### **Where we are now:**

All existing crash barriers have been designed to reduce the severity of a crash when cars and trucks leave the roadway. Little consideration has been given to the welfare of motorcyclists who collide with these barriers. In most cases the safest barrier for a motorcyclist is 'no barrier'.

Crash barriers can be classified into three types, rigid, semi rigid and flexible.

Concrete barriers are classified as being 'rigid', guardrail (Armco) as 'semi rigid' and wire rope as 'flexible'.

Wire rope barriers are very effective in reducing the severity of crashes when cars and trucks impact with them as they absorb energy. Rigid barriers are less effective as more of the energy of the impact is transmitted to the vehicle occupants resulting in greater injuries. This effect is known as 'ride-down' in barrier crash testing.

This is why wire rope barriers are installed instead of guardrail (Armco) or concrete barriers.

While the classifications of rigid, semi rigid and flexible have meaning in car and truck crashes they are meaningless in motorcycle impacts. To motorcyclists, all barriers are 'rigid'.

There has been little research into what constitutes a motorcycle friendly barrier nor how to make existing barriers less aggressive in causing injury to motorcyclists.

Recent research has, however, shown that in about half of crashes the rider is still upright on the bike when it impacts a barrier and that it is very likely that the rider will then slide along the top of the barrier with the possibility of impacting the tops of posts. If the rider has separated from the bike and is sliding along the road before impacting that barrier, it is very likely that they will impact the lower part of a post.

There are a number of products available that are designed make crash barriers less 'aggressive' which are designed to prevent riders sliding under the barrier or coming into direct contact with posts or sharp edges.

Suppliers who currently have products that are designed to reduce injury to riders:-

Ingal Civil Products [www.ingalcivil.com.au](http://www.ingalcivil.com.au) :-

- Ezy-Guard barrier which has:- no exposed tops of posts, posts without sharp edges and posts suitable for stack cushions. Ezy-Guard provides a soft ride-down for vehicle occupants and has lower installation costs, providing an alternative to wire rope.
- Rub Rail to prevent riders sliding under guardrail.

- Stack Cushions to cushion the impact with posts.
- Plastic Covers for ET2000 barrier end terminals to reduce injury due to sharp edges.

Australian Construction Products [www.acprod.com.au](http://www.acprod.com.au) :-

- Motorcyclist Protection Rail to prevent riders sliding under guardrail.
- Yellow plastic cover for X-Tension barrier end terminals.

LB International [www.basyc.com.au](http://www.basyc.com.au) :-

- BASYC, a flexible system to prevent riders sliding under guardrail.

Boylan Traffic Solutions [www.boylan.net.au](http://www.boylan.net.au)

- BarrierGuard 800, a temporary barrier system that provides improved safety for motorcyclists because of its smooth surface – no gaps, protruding bolts or wire rope

A number of European countries, notably France, Germany and the UK are leading the way in installing under rails on Armco barriers to prevent riders coming into direct contact with posts.

A Swedish research paper has studied the ‘whole of life’ costs of barriers and found that wire rope barrier is the most expensive, probably due to it having to be repaired after minor impacts. Other barrier systems suffer less damage that requires repair than does wire rope, notably concrete that rarely has to be repaired.

#### **Where we want to be:**

Road Authorities need to consider the special needs of motorcyclists before installing crash barriers, these include:

- the ‘no barrier’ option
- locating the barrier as far away from the road way as possible
- installing products that make barriers less ‘aggressive’

Research is needed to determine what constitutes a ‘motorcycle friendly’ barrier.

Research is required to determine the ‘whole of life’ cost of barriers in the Australian context.

#### **How to get there:**

Obtain funding for research into what constitutes a ‘motorcycle friendly’ barrier

Obtain funding for research into the ‘whole of life’ cost of barriers

Maintain AMC representation on the Standards Australia committee on crash barrier design.

Stay in touch with groups such as the Federation of European Motorcyclists Associations (FEMA) on developments overseas.