



# The Next Generation Steel Guardrail Barrier





Introducing Ezy-Guard SMART W-Beam, the next generation steel guardrail barrier providing MASH TL3 and NCHRP-350 TL4 containment. The superior design offers rapid installation, improved motorist safety and more metres of barrier for your rupee.

Ezy-Guard SMART rails and Z-posts are manufactured from hotrolled steel in accordance with AS/NZS1594/BSEN10025 Grade S355. The product is hot dip galvanised in accordance with AS/ NZS 4680/IS 4759, leaving no surface untreated.

The Z-post profile shields post edges from vulnerable road users and provides sectional strength when driving through difficult ground conditions.

An Ezy-Carriage is used to secure the W-Beam rails to the Z-posts eliminating the requirement for blocking pieces and rail stiffening plates. This unique connection provides a soft ride down for the occupants, a smooth vehicle containment and redirection.

# **CRASH TEST DETAILS**

Ezy-Guard SMART has been fully crash-tested and evaluated according to the specifications for Test Level 3 (TL3) of the AASHTO Manual for Assessing Safety Hardware (MASH). The system has also been crash-tested in accordance with NCHRP-350 Test Level 4, this is the containment of an 8000kg truck impacting the rail at 80km/h and 15 degrees.

The MASH specification is an update to and supersedes the NCHRP Report 350 for the purpose of evaluating new safety hardware devices. The MASH TL3 crash test matrix requires the following impacts:

- 1,100kg car travelling at 100km/h and 25 degrees.
- 2,270kg pick-up travelling at 100km/h and 25 degrees.

The MASH TL3 test condition represents a 13% to 18% increase in impact energy when compared to the superseded NCHRP-350 Test Level 3.





Specifications	
Ezy-Guard SMART Z-Post Length	1,650mm
Ezy-Guard SMART Z-Post Mass	12.5kg
Ezy-Guard SMART System Mass	18.6kg per metre
Rail Height Above Ground	787mm
Z-Post Height Above Ground	777mm
Post Spacing	2,000mm
Ezy-Guard SMART System Width	200mm
MASH TL3 Crash Test Deflection	1.65m

#### **FEATURES**

#### • Safer

Fully compliant with MASH TL3 & NCHRP-350 TL4

High Performance

Demonstrated containment and redirection of 2,270kg pick-up truck travelling at 100km/h

Fewer Parts

No blocking pieces or rail stiffener plates

Rapid Installation

Fewer components facilitate rapid installation

- Z-post embedment depth is just 870mm
- Cost Savings

Fewer components to purchase, savings on freight costs and faster to install

#### Narrow Width

A system width of just 200mm conserves valuable formation width

#### Consideration for Vulnerable Road Users

The supporting Z-posts contain smooth, rounded post edges and corners. In addition, the revolutionary design of Ezy-Guard SMART, shields the top of the support Z-posts by positioning the top of the rail above the posts.

This eliminates a dangerous snag point and is a significant safety benefit compared to existing safety barrier designs. It's fully crash tested and approved by Ingal MPR motorcyclist protection.



**W-Beam Barrier System** 





Ezy-Guard HC is the newest member of the Ezy-Guard family. It is crash-tested according to the latest performance standard, MASH Test Level 4.

The Z-post profile shields post edges from vulnerable road users and provides sectional strength when driving through difficult conditions.

An Ezy-HC-Carriage is used to secure the Thriebeam rails to the posts eliminating the requirement for blocking/off-setting pieces and rail stiffening plates. This unique connection provides a soft ride down for the occupants, a smooth vehicle containment and redirection.







### **FEATURES**

#### • Fully Compliant to MASH TL4

The MASH TL4 compliance demonstrates the systems' ability to contain and redirect the 10,000kg truck which is 2,000kg heavier than the NCHRP-350 TL4 truck.

#### Rapid Installation & Repair

Ezy-Guard HC installation can be up to twice as fast to install than conventional guardrail barriers and unlike cable barrier systems, no concrete is required. The Ezy-Guard HC design uses fewer components and features 2,000mm Z-posts that are rapidly driven into the ground. This reduces installation time providing significant cost savings.

#### Narrow Width

Ezy-Guard HC is significantly narrower than the traditional guardrail barriers that incorporate the use of blocking pieces. It conserves valuable formation width and allows a greater recovery width to be provided for errant vehicles. The design of the Z-post makes them suitable for installation in rock, asphalt or concrete mowing strips.

#### Manual Handling

Ezy-Guard HC uses fewer components than the public domain guardrail systems. The lightweight Z-post reduces manual lifting by installation crews. The rounded edges of the Z-post provides a handle-like grip when lifting, reducing the possibility of hand lacerations.

#### Quality Materials and Manufacture

All rails, posts and carriages are hot-dipped galvanised to provide corrosion-resistance and durability.

#### Soft Ride-Down Decelerations

The Ezy-HC-Carriage controls the release of the Thriebeam rail from the Z-posts. This controlled release reduces the potential for vehicle pocketing and provides a soft ride down for vehicle occupants.

#### Performance

Ezy-Guard HC provides protection from roadside hazards located close to the edge of the travelled way. The sectional strength of the Z-post reduces lateral deflection whilst providing controlled containment and redirection.



# **CRASH TEST DETAILS**

Ezy-Guard HC has been fully crash-tested and evaluated according to the specifications for Test Level 4 (TL4) of the AASHTO Manual for Assessing Safety Hardware (MASH). The MASH specification is an update to and supersedes the NCHRP Report 350 for the purposes of evaluating new safety hardware devices.

The MASH TL4 crash test matrix requires the following impacts:

- \* 1,100kg car travelling at 100km/h and 25 degrees.
- 2,270kg pick-up travelling at 100km/h and 25 degrees.
- 10,000kg truck travelling at 90km/h and 15 degrees.



# EZY-GUARDHC

209.3 kj Impact Severity: 10,000kg rigid truck travelling at 90km/h and 15 degrees 132.3 kj Impact Severity: 8,000kg truck travelling at 80km/h and 15 degrees

156.4 kj Impact Severity: 2,270kg pick-up truck travelling at 100km/h and 25 degrees



Specifications	
Ezy-Guard HC Z-Post Length	2,000mm
Ezy-Guard HC Z-Post Mass	19.5kg
Ezy-Guard HC System Mass	28.8kg per metre
Rail Height Above Ground	980mm
Z-Post Height Above Ground	970mm
Post Spacing	2,000mm
Ezy-Guard HC System Width	245mm
MASH TL3 Crash Test Deflection	1.16m
MASH TL4 Crash Test Deflection	1.77m



# **ABOUT US**

Valmont is a leading manufacturer and supplier of safety barriers with its in-house hot dip galvanising plant. We are the market leader for safety barrier systems and continue to service our customers through our ongoing program of research and development. We have built our reputation on a company-wide customer service, innovation and cost-effective solutions. Most importantly, we put our experience, understanding of customer needs, technology and operational excellence into everything we design and manufacture. We pride ourselves on being people of integrity who excel at delivering optimal results.



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