



PROSPERITY THROUGH SAFETY

# HIGHWAY GUARD RAIL

VEHICLE RESTRAINT SYSTEMS



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Pioneers in design, manufacture, supply & installation of security systems with backing of over two decades of experience, our manufacturing facilities located at Jebel Ali, Dubai and a state of the art plant at Ras Al Khaima in the United Arab Emirates. The plant is fully integrated and is designed to be a one stop solution to all engineering needs including security systems. Spread over 65,000 square meters the plant employs a skilled workforce of around 1,000 people. The plant covers the entire gamut of engineering fabrication and is equipped with most sophisticated equipment and systems like Robotic welding, CNC machines & purpose built PLC controlled systems to achieve quality products consistently.

In addition to the above this facility also incorporates facilities such as a full fledged tool room, machine shop, automatic blasting machines, Hot Dip Galvanizing plant & Powder Coating Facility - apart from facilities to manufacture decorative products in

wrought iron and aluminum which are much sought after.

The use of Guard Rail Systems on highways as a safety barrier is quite well known and is popular throughout the world. Millions of kilometres of roads are fitted with these systems to protect the vehicles from skidding away and avert fatal accidents.

The Highway Guard Rail System is an ISO 9001 Certified product, with complete range of accessories including Posts, Spacer Blocks, Transition, End pieces and allied hardware.



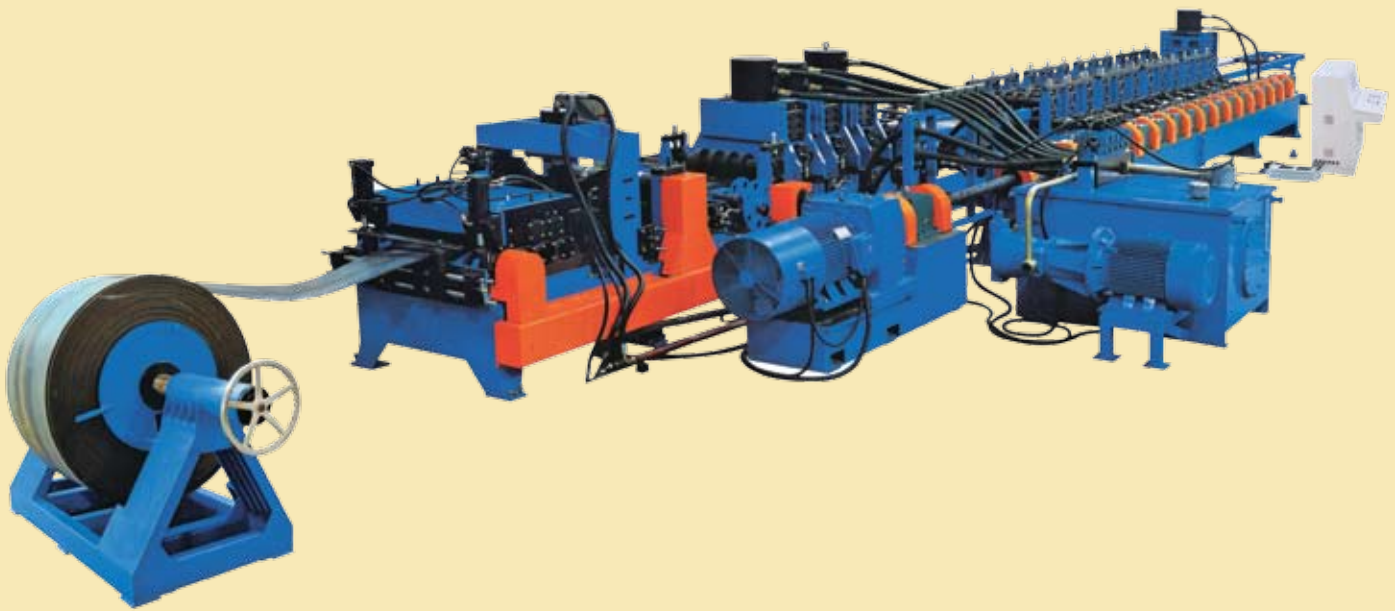


# Machinery

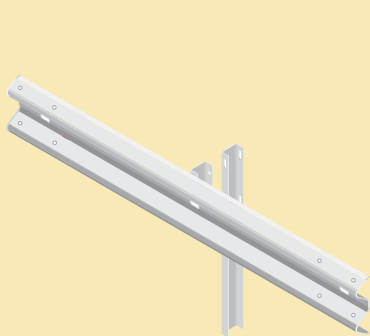
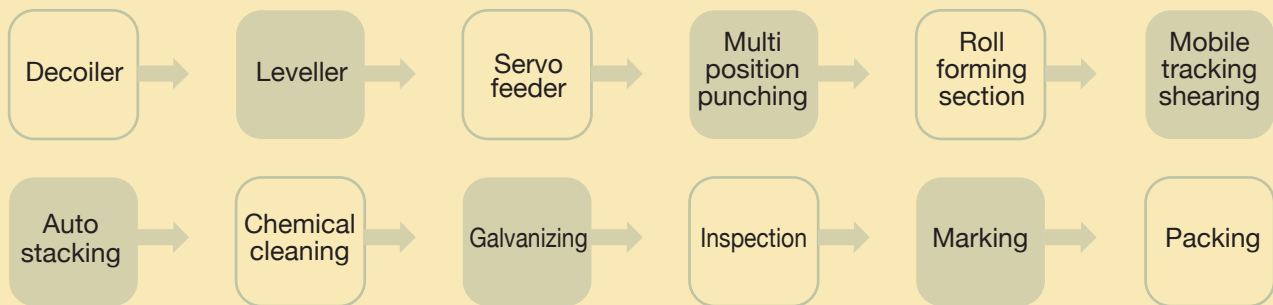
The guard rail beams are manufactured in one of the most, modern computer controlled continuous forming line with excellent consistency of quality, high production rate and superb finish. The plant is extremely sophisticated with built in safety measures and is a high speed forming line and pre-programmed to form the W-type guard rail beam with close control of dimensions. Being a fully automatic high speed plant with a capacity of about 300 km per month, it is ideal for large requirements with short delivery lead times

The Punching, Forming, Cutting & Stacking are computer controlled and pre-programmed to required dimensions like the Forming Height, Width, Length etc

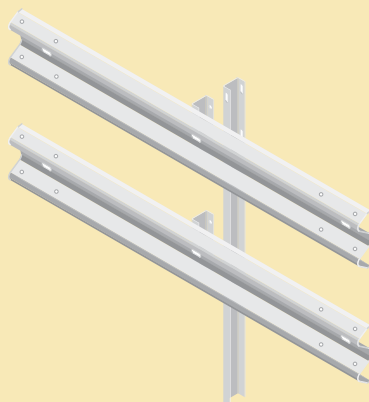
A schematic diagram of the process is shown below.



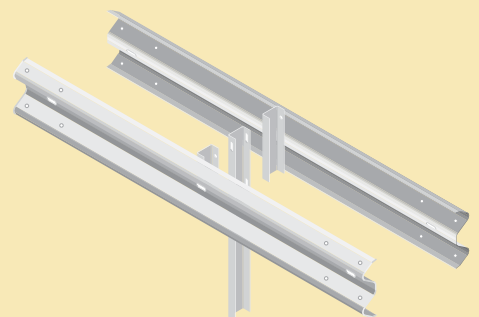
## Process



Single Guard Rail - System



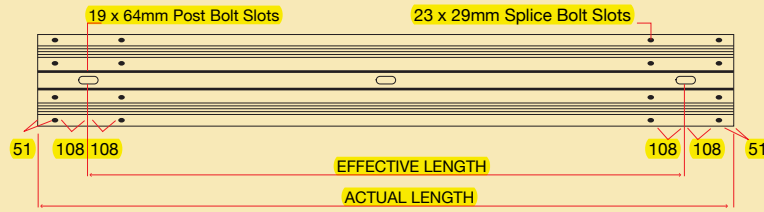
Double Guard Rail - System



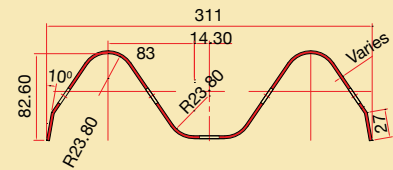
Twin Barricade - System

## GUARD RAIL

### W-Beam Dimensions

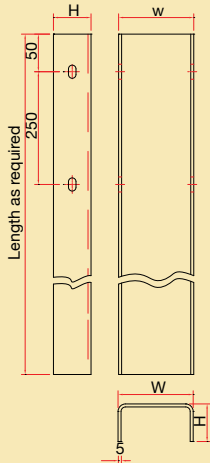


### W-Beam Profile



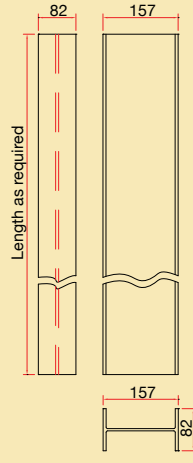
## POST OPTIONS

### Post C-150



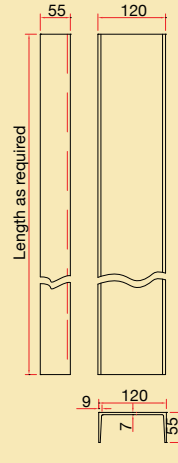
Option Type-I

### IPE A-160



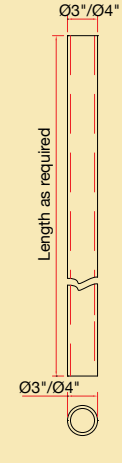
Option Type-II

### UPN-120



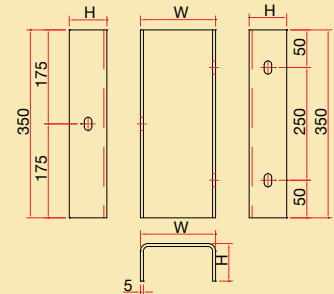
Option Type-III

### Pipe Post

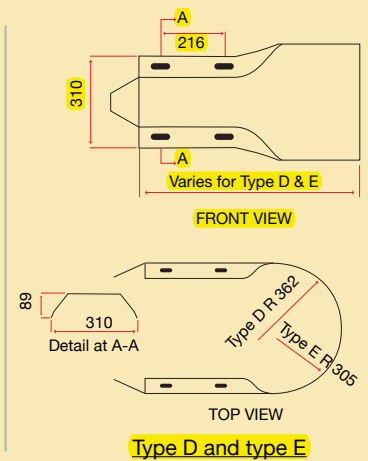
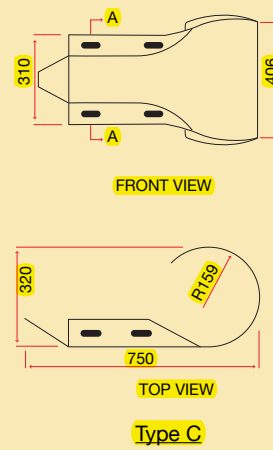
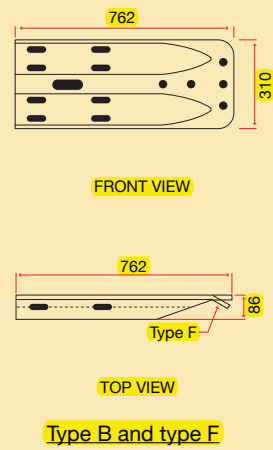
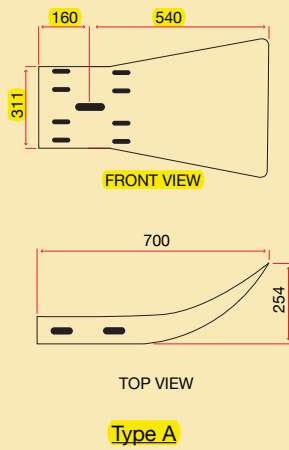


Option Type-IV

### Spacer C-150



## TERMINAL SECTION



all dimensions in mm

### Guard Rail - Typical Dimensions(Nominal)

Type	Effective Length mm	Overall Length mm	Beam Width mm	Beam Thickness mm
SG 3.0	3000	3318	306 to 311	2.67 to 3.43
SG 3.6	3600	3918		
SG 3.7	3750	4068		
SG 3.8	3810	4128		
SG 3.9	3900	4218		
SG 4.0	4000	4318		
SG 7.6	7620	7938		

### Guard Rail Post & Spacer Block- Options

Type	Section & Size Options	
	Post	Spacer
SGP-CH	C - 150x100x5*	C - 150x100x5*
SGP-CM	C - 150x75x5*	C - 150x75x5*
SGP-CL	C - 120x80x5*	C - 120x80x5*
SGP-IH	IPE - 157	IPE - 157
SGP-UH	UPN - 120	UPN - 120
SGP-OH	CHS - 4" NB	CHS - 4" NB
SGP-OM	CHS - 3" NB	CHS - 3" NB

\*Also available with 6mm instead of 5mm c/s.

- Guard Rails Conform to AASHTO M 180
- Guard Rails & Systems conforming to other standards / customized dimensions can be offered

In view of our policy of continuous product improvement, dimensions, profiles and other specifications are subject to change without prior notice.

## Manufacturing Standard

Primarily the guard rail is manufactured to conform to AASHTO M 180. Other specification like AASHTO M 270 / ASTM A 446 / A36 for posts, DIN St 37 etc. are also used as per the customer requirements. Nuts and Bolts conform to ASTM A 307 Class 8.8.

Apart from the above specifications we can cater to any specific standards required by the customer tailor made to suit individual requirements.

Guard rail beams are W type, i.e two wave type while posts are either C-channel formed from hot rolled sheets or IPE or UPN structural steels. We also provide pipe posts which are sturdy and cost effective. Guard Rail beams are generally type 1 and 2 in Class A or B as per AASHTO M 180.

## Raw Material

Prime quality raw material made from hot rolled coils is used to form the Guard Rail beam and posts. Generally the thickness for the beam is 2.67mm to 3.43 mm while for the posts and spacers both 5 mm and 6 mm are used as per requirement. Structural steel for posts like C-channels and I-sections are also used. We also can provide posts made of Pipes which are popular in many countries.

## Finishing of Guard Rail & Accessories

### Galvanising

All Posts and Accessories are Galvanised to Specifications mentioned in International Standards. All Material to be galvanised goes through an elaborate Pre- Cleaning process which includes: precleaning, degreasing, Rinsing, Pickling & Drying process before Galvanising. Quenching & Passivation Is carried out based on individual specification / needs of the Customer.

Galvanising Of Guard Rail complies to requirements of AASHTO M111, ASTM A 123 & EN 1461

Hardware : All Hardware such as Nut & Bolt Sets are Galvanised as per AASHTO M 232

## Quality Control

All raw material used for guard rail beams or posts are tested for mechanical properties in our in-house laboratory. We have in-house testing facilities, and machines for tensile strength, yield strength and elongation apart from Hardness testing. Every lot is tested and record maintained.

## Acceptance Criteria

All guard rails, posts, end pieces, hardware conform to AASHTO 180 or any other specification as specified by the customer. Each lot is checked for dimensions, surface, galvanized coating thickness and recorded.

The finished guard rails are marked with manufacturer's brand name, lot number, specification and class & type at a location which is easily visible and identifiable.

## Packing

Beams, posts are packed with standard packing material and wrapped in polyethylene sheets and corrugated cardboard with steel strapping in convenient lots while the hardware is packed in carton boxes.



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YOUR SUCCESS**

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