

Certified Traffic Barriers



GENERAL TECHNICAL CHARACTERISTICS

Tecnovial's production of certified traffic barriers is entirely designed and developed in accordance to current safety regulations.

Certified by the European norm systems must be crash tested (the parameters and criteria of these tests are defined by the norm). Tecnovial counts on certified Integrated Management System according to ISO 9001:2008 (Quality), ISO 14001:2004 (Environment) and OHSAS 18001:2007 (Safety).

Advantages

Unlike non-certified traffic barriers which are based in geometrical design, certified traffic barriers have been designed based on performance, thus, delivering functioning certainty for their service conditions.

The use of traffic barriers prevents errant vehicles from penetrating the non traffic zone. Median traffic barriers prevent errant vehicles from entering the opposing carriageway of traffic and help to reduce head-on collisions.

Side traffic barriers help to reduce the severity of accidents preventing errant vehicles from entering dangerous zones where they may cause serious damage to properties and persons. They also help to redirect errant vehicles to the correct carriageway of traffic reducing the risk of damage for other vehicles (both following and parallel), as well as to minimize injury to vehicle occupants during a collision.

SYSTEM'S MAIN COMPONENTS

Post

It is a component that works with the divider and the guard rail, which is installed by anchoring, being the support of the barrier. It has the property to become deformed and leave its position while the capacity of energy absorption of the structure is exhausted. Its function is to keep the traffic barrier height.

Divider

Its purpose is to keep the posts separated from the tires during the collision. It allows keeping the traffic barrier to a constant height and in contact with the vehicle while the posts are bending because of the impact strength.

Guard Rail

It is the element that makes contact with the vehicle to redirect it and absorb most of the kinetic energy from the impact.

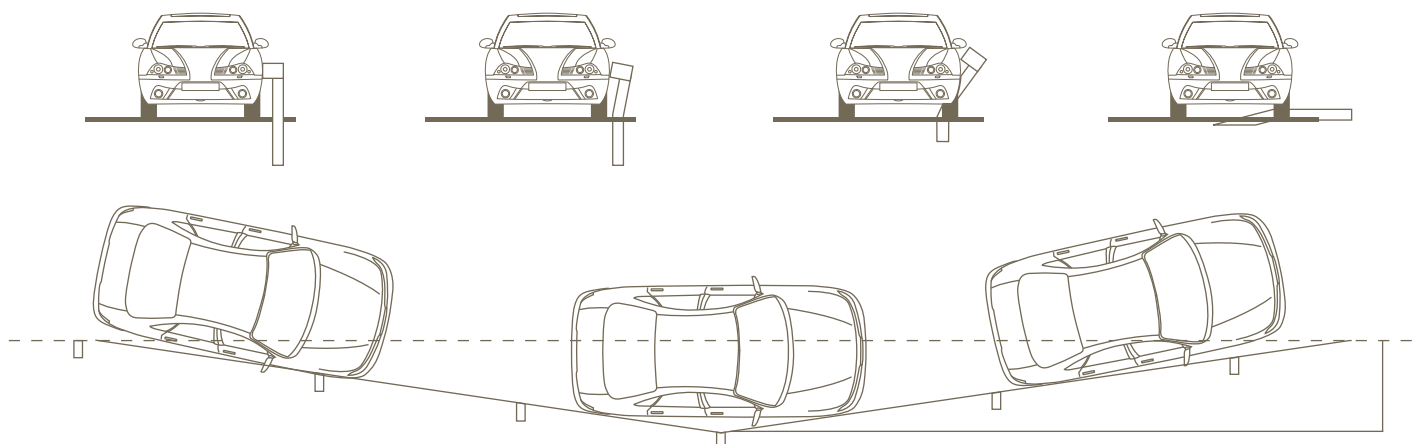
Usages

Certified traffic barriers main uses are highways, freeways and roads to mining sites safety fundamental elements to reduce the impact of an errant vehicle.



⊕ TRAFFIC BARRIER OPERATION

Sequence of deformation and traction of post + divider + guard rail structure



⊕ CONTAINMENT LEVELS

All of the traffic barriers are tested to certify two main results:

Light vehicles: shock absorption,

Heavy vehicles: retention and redirection of the vehicle.



⊕ CONTAINMENT LEVEL (EN 1317-2)

Containment Level	Acceptance Test
Low Containment	
T1	TB21
T2	TB22
T3	TB14 and TB 21
Normal Containment	
N1	TB31
N2	TB32 and TB11
High Containment	
H1	TB42 and TB11
L1	TB32, TB42 and TB11
H2	TB51 and TB11
L2	TB51, TB32 and TB11
H3	TB61 and TB11
L3	TB61, TB32 and TB11
Very High Containment	
H4a	TB81 and TB11
H4b	TB81 and TB11
L4a	TB71, TB32 and TB11
L4b	TB81, TB32 and TB11

⊕ VEHICLE CRASH TESTS

Test	Impact Speed	Angle of Impact	Total Mass	Vehicle Type
TB 11	100 km/h	20°	900 kg	Automobile
TB 21	80 km/h	8°	1300 kg	Automobile
TB 22	80 km/h	15°	1300 kg	Automobile
TB 31	80 km/h	20°	1500 kg	Automobile
TB 32	100 km/h	20°	1500 kg	Automobile
TB 41	70 km/h	8°	10000 kg	Rigid Truck
TB 42	70 km/h	15°	10000 kg	Rigid Truck
TB 51	70 km/h	20°	13000 kg	Bus
TB 61	80 km/h	20°	16000 kg	Rigid Truck
TB 71	65 km/h	20°	30000 kg	Rigid Truck
TB 81	65 km/h	20°	38000 kg	Articulated Truck

⊕ IMPACT SEVERITY LEVEL

All Tecnovial's traffic barriers have A level service with values that guarantee the highest safety levels for passengers.

⊕ IMPACT SEVERITY LEVEL (EN 1317-2)

Impact Severity Level		Values	
A	ASI ≤ 1,0	and	THIV ≤ 33 km/h
B	ASI ≤ 1,4		
C	ASI ≤ 1,9		

ASI: Acceleration Severity Index
THIV: (Theoretical Head Impact Velocity)

⊕ TRAFFIC BARRIER DEFORMATION

The deformation of the containment system is characterized by the work width (W) and dynamic deflection (D). Work width is the distance between the facing traffic side before the crash and the maximum dynamic lateral position of any guard rail part. Dynamic deflection is the maximum lateral displacement of any point of the facing traffic guard rail.

Further, there is a third parameter, vehicle intrusion (Vi), which measures the vehicle's maximum dynamic lateral position.

⊕ WORK WIDTH LEVELS

Work Width Level Type	Work Width Level [m]
W1	W ≤ 0.6
W2	W ≤ 0.8
W3	W ≤ 1.0
W4	W ≤ 1.3
W5	W ≤ 1.7
W6	W ≤ 2.1
W7	W ≤ 2.5
W8	W ≤ 3.5
TB 61	80 km/h
TB 71	65 km/h
TB 81	65 km/h

OTHER QUALITATIVE PARAMETERS

Certified containment systems must meet another set of qualitative characteristics, such as:

- To contain the vehicle without the full break of any of the main longitudinal elements of the system
- No element of the traffic barrier shall penetrate the vehicle interior
- No deformations or intrusions within the vehicle interior that may cause severe damage are admitted
- To ensure that the vehicle will not overturn during or after the impact.

