CONTAINMENTS LEVEL

Represents the level of containment of the restrain system for different type of impacting vehicles with various speed and impact angles (Table No 1). The decided containment level for a road should suit the traffic condition and the geometrical characteristics of the road under consideration. The EN 1317 defines four major classes of containment levels (low, normal, high, very high) which are further subdivided. The containment levels of a RRS should be verified trough full scale crash test in accordance with the vehicle impact test criteria defined in table 1.
The evaluation of a vehicle restraint system within the range of containment levels T3, N2, H1, H2, H3, H4a and H4b, requires the performance out of two different tests:

- A test according to the maximum level of containment for that particular system.
- A test using a light vehicle (900 kg), in order to verify that the satisfactory attainment of the maximum level is also compatible with the safety of a light vehicle.

Containment Level		Test	Impact Speed Km/h	Angle Degrees	Total Vehicle Mass Kg	Type of Vehicle
Low angle Containment	**T1**	TB21	80	8	1.300	Car
	T2	TB22	80	15	1.300	Car
	T3	TB21	80	8	1.300	Car
	T3	TB41	70	8	10.000	Rigid HGV
Normal Containment	**N1**	TB31	80	20	1.500	Car
	N2	TB11	100	20	900	Car
	N2	TB32	110	20	1.500	Car
Higher Containment	**H1**	TB11	100	20	900	Car
	H1	TB42	70	15	10.000	Rigid HGV
	H2	TB11	100	20	900	Car
	H2	TB51	70	20	13.000	Bus
	H3	TB11	100	20	900	Car
	H3	TB61	80	20	16.000	Rigid HGV
Very high Containment	**H4a**	TB11	100	20	900	Car
	H4a	TB71	65	20	30.000	Rigid HGV
	H4b	TB11	100	20	900	Car
	H4b	TB81	65	20	38.000	Articulated HGV

Table No 1

After testing in accordance with the vehicle impact test criteria depicted in the above table, the RRS:

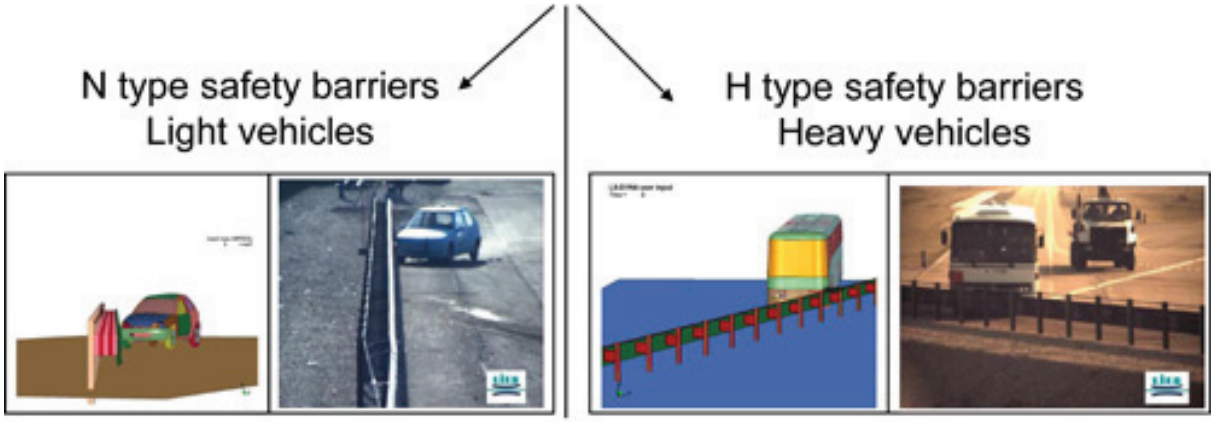
- Shall contain and redirect the errant vehicle back to a safe trajectory without complete breakage of the principal longitudinal elements of the system. Passenger cars and heavy goods vehicles must be prevented from crossing over against oncoming traffic or roadside obstacles.

- No major part of the safety barrier shall become totally detached or present an undue hazard to other traffic, pedestrians or personnel in a work zone.

-Elements of the safety barrier shall not penetrate to the passenger compartment of the vehicle. Deformations or intrusions into the passenger compartment causing serious injuries are not permitted.

	N1	N2	H1	H2	H3	H4
1st test	1500 Kg	900 Kg	900 Kg	900 Kg	900 Kg	900 Kg
2nd test		1500 Kg	10.000 Kg	13.000 Kg	16.000 Kg	38.000 Kg

Table



Picture No 1: Containment Level

The Vehicle:

- Shall remain upright during and after impact, although moderate rolling, pitching and yawing are acceptable.
- The centre of gravity of the vehicle shall not cross the centreline of the deformed system.

Picture No 2: Failure on Containment Level