

IMPACT SEVERITY INDEX

The resulting impact accelerations and decelerations are measured using:

- the Accelerated Severity Index (ASI), characterizing the intensity of the impact, and is regarded as the most important rate of impact on occupants.
- The theoretical head impact velocity (THIV), describes the theoretical speed of the head, colliding with an obstacle during an impact. It has to be less than 33km/h
- The post-impact head deceleration (PHD) describes the head deceleration after an impact and has to be less than 20g (acceleration of gravity).

The EN 1317 determines 2 levels of severity impact as a function of the ASI and THIV (PHD) indices (Table 2.)

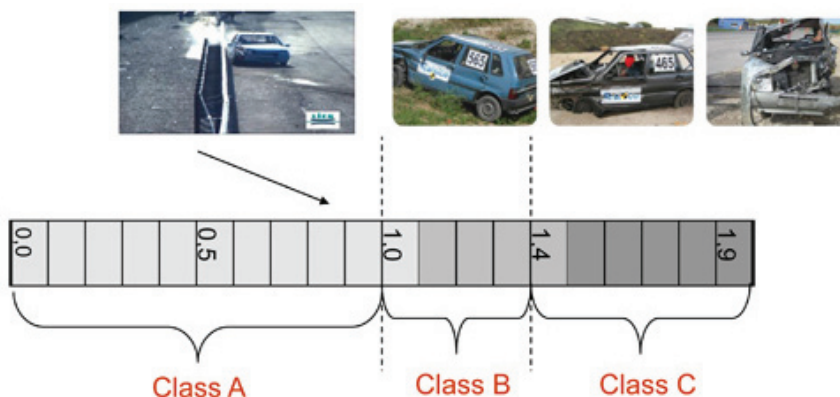
Impact Severity Class	Index value	Index value
A	$ASI \leq 1$	$THIV \leq 33 \text{ K m/h}$
B	$1 < ASI \leq 1,4$	$PHD \leq 20 \text{ g}$
C	$1,4 < ASI \leq 1,9$	VCDI

Table No 2.

- Impact severity level A affords a greater level of safety for the occupants of an errant vehicle than level B and is preferred when other considerations are the same.

- At specific hazardous locations where the containment of an errant vehicle (such as a heavy goods vehicle) is the prime consideration, a vehicle restraint system with no specific impact severity level may need to be adopted and installed. The index values recorded in the test of the restraint system shall however be quoted in the test report.

ASI measures the severity of the vehicle motion of the car during the impact. The greater the ASI level induces higher the injury risk. If maximum ASI values exceeds 1.0 or 1.4 in some cases, then it is considered that the impact consequences for the passengers are dangerous or even lethal.



Picture No 3: Accelerated Severity Index (ASI), intensity of the impact