EEVC Offset Deformable Barrier - Solid

The specification used for the development of the EEVC Offset Deformable Frontal Impact Barrier has been taken from the 'ECE R94 Revision 1 -Frontal Impact Protection' document, dated May 2007.

The EEVC Offset Deformable Barrier is used in the EU front impact regulation and by several consumer test organizations such as EuroNCAP and IIHs in their front offset impact test. It consists of two different sized aluminium honeycomb blocks partially covered in aluminium sheets.

Specifications

Element Type	Number of Elements	Timestep	Validation Code	Regulation Test	Regulation Speed
Solid	63 192	1.2E- 6sec	R7.1.2	EU Directive 96/79/EC Frontal Impact Protection	56kph
				UN-ECE Reg.94 Rev. 1 Frontal Impact Protection (ECE R94)	56kph
				FMVSS 208 Occupant Crash Protection	40kph

Validation

The LS-DYNA model calibration has been done using the test results provided by Cellbond for a 5 different impact tests: Rigid Wall, Half Rigid Wall, Low Horizontal Bar, High Horizontal Bar and Vertical Bar. The tests involve the impactors on a trolley impacting the barrier

The force-deflection curves (generated from model analysis and test) have been compared.

This validation work has been carried out in both SMP and MPP versions of LS-DYNA R7.12 to ensure the correct performance and accuracy of the LS-DYNA model.



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