

Table : Summary - Key Metrics of Existing Side Impact Test Methods for CRS

CRS-09-07

GRSP Informal Group on CRS - 8th Meeting Bast - Cologne
Update 9 March 2009 for discussion at the 9th Meeting - Paris

Must pass both tests - with and without door. A failure in either test is deemed a failure.						
Test Method	ISO	NPACS	ADAC SW	Australia AS/NZS 1754 draft (WITH door)	Australia AS/NZS 1754 (WITHOUT door)	USA (CANADA)**
Head containment Y / N	Y	Y	<u>contained</u> : no contact between dummies head and door panel <u>not contained</u> : contact between dummies head and door panel	<u>PASS</u> : Contained within restraint side wings or headrest envelope or, Clear of door by over 25 mm if head is outside of restraint side wings or headrest envelope. <u>FAIL</u> : Head falls outside of restraint side wings or headrest envelope and head clearance to door is less than 25mm.	<u>PASS</u> : The child restraint system shall retain the dummy in the child restraint (within harness system or seat belt) Ref: Clause 4.3.1.a. <u>FAIL</u> : Dummy comes out of the restraint system i.e. both shoulders come out of both shoulder straps (rwd & fwd facing harnessed seats) or shoulder and arm completely out of sash belt (boosters)	Y (not set as criterion yet)
Head res. acceleration (G)	Y	Y	more or less the same than head res. acc. 3 ms	No	No	Use HIC15 (not set as criterion yet)
Head 3ms res. Acceleration (G)			Tests with >70 different seat models: <u>Group 0+</u> : between 55g and 120g <u>Group I</u> : between 35g and 130 g <u>Group II/III</u> : between 40g and 120g	No	No	see above
Peak Sled acc (G) and Peak Sled Velocity (km/h)	max sled acc. 12 g; v = 23 km/h	max sled acc. 12 g; v = 23 km/h	max. sled acc. 15,5 g; v = 27 kph	Max sled acc (14 - 20 G) for min 20 ms V (min) = 32 km/h	Max sled acc (14 - 20 G) for min 20 ms V (min) = 32 km/h	1/2 sine 28 G peak (20 mph) 32 km/h
Intrusion depth (mm)	250 mm	250 mm	no intrusion	None specified	n/a	N/A - (250 mm)*
Intrusion velocity (m/s)	approx. 7 - 10 m/s	approx. 9 - 12 m/s	no intrusion	None specified	n/a	N/A - (32 km/h)*
CRS centerline position wrt door (mm)	300	300	310	320	n/a	534mm 21"
Angle of impact °	90°	90°	80°	90°	90°	varied - 0, 10, 15, & 20°
Investment costs wrt to R44 test rig (no dummies included) in €	approx. 30,000 €	approx. 30,000 €	Body in white - fixed door Panel (5 000€) Body reinforcement - 40 Man Hours (3200€) Adaptation to R44 sled 80° 10 Man Hours (800€) Manufacturing door panel 10 man hours (800€)	5'000 €	No investment - Uses existing (AS) sled bench, adapted to be mounted at 90°.	No data available as it is Takata sled equipment
Operational Costs (€)	almost no difference to frontal impact test	almost no difference to frontal impact test	the same like an ECE-R44 front crash + approx. 10€ for the foam that is mouned on the door panel	TBC	TBC	Approx. \$2,200 per sled test
Level of complexity* (Simple, medium, complex)	medium	medium	between simple and medium	between simple and medium (Angled fixed door used). Test to simulate crash on struck side.	between simple and medium: Test to simulate crash on non-struck side and to assess dummy retention within restraint	Complex

Keys : **Simple** : applicable by labs , no specific hardware, compatible with existing test rigs

Medium : Requires some adaptation of existing rigs, training of staff

Complex : Requires acceleration based sled , and or double sled

Volunteers to provide data	Brita Schnottale	Marianne Hynd	Andreas Ratzek	Farid Bendjellal	Farid Bendjellal	Susan Meyerson
Volunteer to provide for all methods involving one seat	Erik Salters ; Farid Bendjellal					

* To be checked by VRTC (USA)

** CANADA test method parameters not yet confirmed, might be close to NHTSA parameters