

TIME-LINE OF THE EVOLUTION OF SEAT BACK STRENGTH

TIME PERIOD	MOMENT / RESISTANCE of SEAT BACKs (estimated) in-lb above H-pt	G's GENERATED FROM SEAT STRENGTH [Rounded]	RESISTING FORCE [Rounded]	COMMENTS
Pre – 1967 -- No FMVSS	As-built from mfr's discretion	Individualized per manufacturer	Individualized per manufacturer	No FMVSS standards
1967 – Initial FMVSS	373 Nm (3,300 in-lb)	2.19 G's	1.13 KN (254 lb)	The initial FMVSS
1980's – GM internal standards	746 Nm (6,600 in-lb)	4.39 G's	2.26 KN (508 lb)	GM's internal standards
2001 – Ford	1695 Nm (15,000 in-lb)	10.0 G's	5.14 KN (1154 lb)	Ford's up-dated internal criteria
1990's – Viano/GM	1864 Nm (16,500 in-lb)	11.0 G's	5.65 KN (1270 lb)	Viano's criteria – no uncontrolled ramping
1990 – Volvo std.	2486 Nm (22,000 in-lb)	14.6 G's	7.63 KN (1693 lb)	Typical Volvo seat
1990's Mercedes	2825 Nm (25,000 in-lb)	16.6 G's	8.56 KN (1924 lb)	Mercedes standard seats
1990 – Volvo WHIPS	2938 Nm (26,000 in-lb)	17.3 G's	8.90 KN (2001 lb)	Volvo WHIPS seat
10 x FMVSS 207	3729 Nm (33,000 in-lb)	22.0 G's	11.3 KN (2540 lb)	For reference – 10 x FMVSS 207
2001-05 Ford ABTS	3841 Nm (34,000 in-lb)	22.6 G's	11.6 KN (2616 lb)	Ford models with All-Belts-to-Seat
1990's GM-ABTS	3954 Nm (35,000 in-lb)	23.3 G's	11.9 KN (2693 lb)	GM models with All-Belts-to-Seat
1990's – present	4067 Nm (36,000 in-lb)	23.9 G's	12.3 KN (2770 lb)	Chrysler Sebring convertible – ABTS
1980's – early	4632 Nm (41,000 in-lb)	27.3 G's	14.0 KN (3156 lb)	Range Rover -- ABTS
1990's – early	4745 Nm (42,000 in-lb)	27.9 G's	14.4 KN (3232 lb)	BMW 850i – ABTS
1991 Mercedes SL	6101 Nm (54,000 in-lb)	35.9 G's	18.5 KN (4256 lb)	Mercedes SL Roadster titanium capsule ABTS
20 x FMVSS 207	7457 Nm (66,000 in-lb)	43.9 G's	22.6 KN (5080 lb)	For reference – 20 x FMVSS 207
1967 to present – No Change in Initial FMVSS	373 Nm (3,300 in-lb)	The terms: “withstand; failure; without failure ; etc. are not defined in FMVSS 207.		