**Appendix**

**Table A1:** Full performance metrics from the 3-year-old ATD during side impact tests.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Test number (see Table 1) | Seat design | Cast | HIC15, | Peak Head Resultant acceleration (g) / time (ms)\* | Body rotation at peak head accel (°) | Resultant Neck Peak Force (N) | Resultant Neck Peak Moment (Nm) | Shoulder Peak Compression (mm) | Tether Belt Peak Force (N) | Chest Peak Lateral Compression (mm) | Chest cum. 3 ms Accel (g) | Pelvis cum. 3ms Accel (g) | Pubic Symphysis Peak Lateral Force  (N) |
| 1 | Graco | No | 833 | 107 / 164 | 11 | 1,127 | 30 | 20.7 | 277 | 14 | 76 | 122 | 800 |
| 2 | Diono | No | 773 | 111 / 171 | 13 | 1,786 | 26 | 24.7 | 240 | 32 | 82 | 113 | 755 |
| 3 | Graco | Yes | 561 | 88 / 168 | 17 | 984 | 25 | 4.0 | 320 | 15 | 73 | 91 | 944 |
| 4 | Graco repeat | Yes | 436 | 85 / 171 | 21 | 943 | 25 | 7.1 | 309 | 15 | 58 | 91 | 1,280 |
| 5 | Diono | Yes | 716 | 106 / 171 | 14 | 1,712 | 34 | 14.8 | 317 | 21 | 75 | 74 | 792 |
| 6 | Meritt | Yes | 1,373 | 199 / 174 | 9 | 1,541 | 36 | 17.8 | 669 | 27 | 83 | 97 | 805 |
| 7 | Britax | Yes | 767 | 97 / 165 | 19 | 1,383 | 27 | 15.2 | 202 | 21 | 87 | 97 | 917 |

\*The time corresponds to the instant that the peak head acceleration occurred (example: test 1 peak of 107 g at 164 ms).

a,b: Limits for HIC15 and lateral chest compression are 570 and 23 mm, respectively (Side Impact NPRM, NHTSA 2014)