

ENGINEERING REPORT

GOODMORNING.COM

THIRD PARTY MATTRESS TESTING

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REVISION: 0
CREATED BY: WS

INTRODUCTION

GoodMorning.com has commissioned Techtree Engineering to provide independent 3rd party testing of multiple mattresses, based on an established testing schema prescribed by GoodMorning.com. Similar testing has been completed previously by other engineering firms, and that data is contained herein, as provided by GoodMorning.com. The testing procedures are described in detail in document "TT-GM-01 – Appendix B", which is excluded for brevity. Additional results can be found in "Appendix A – Accelerometer Data"

Techtree Engineering forms no formal opinions on the scientific accuracy or repeatability of the testing results or the margin of error therein.

New units tested in this report are as follows:

- Amerisleep AS2
- Bloom Air (V2)
- Bloom Cloud (V2)
- Bloom Earth (V2)
- Bloom Mist (V2)
- Bloom River (V2)
- Emma Hybrid
- Emma Original
- Endy (V3)
- Novaform (V2)
- Polysleep Original 2.0

These units have been highlighted in the tables and graphs below.

Sincerely,

Techtree Engineering Ltd.

Brad Schroeder, P.Eng.



TEST 1 – RESULTS – MATTRESS FIRMNESS

Table 1: Test 1 – Mattress Firmness - Tight Top Mattress

		Deflection			
Mattress		[mm]	[in]	Measured [mm]	Out of 10
1	Amerisleep AS2	70.8	2.8	76.0	5.0
2	Amerisleep AS3	68.8	2.7	70.0	5.2
3	Apollo	76.8	3.0	70.0	4.2
4	Bear	69.8	2.7	69.0	5.1
5	Bloom Air	75.8	3.0	71.0	4.3
6	Bloom Air (V2)	69.8	2.7	77.0	5.1
7	Bloom Cloud	64.3	2.5	74.5	5.8
8	Bloom Cloud (V2)	68.8	2.7	78.0	5.2
9	Bloom Earth	76.8	3.0	70.0	4.2
10	Bloom Earth (V2)	58.8	2.3	88.0	6.5
11	Bloom Mist	65.8	2.6	81.0	5.6
12	Bloom Mist (V2)	64.8	2.5	82.0	5.7
13	Bloom River	51.8	2.0	95.0	7.4
14	Bloom River (V2)	65.8	2.6	81.0	5.6
15	Casper (V1)	71.8	2.8	67.0	4.8
16	Casper (V2)	62.8	2.5	76.0	6.0
17	Casper (V3)	78.8	3.1	68.0	3.9
18	Casper (V4)	71.8	2.8	75.0	4.8
19	Casper Element	73.8	2.9	73.0	4.6
20	Casper Element Pro	48.8	1.9	98.0	7.8
21	Casper Essential (V1)	67.8	2.7	79.0	5.4
22	Casper Essential (V2)	65.8	2.6	81.0	5.6
23	Casper Wave	57.8	2.3	89.0	6.6
24	Cherry	53.8	2.1	93.0	7.2
25	Classic Brands (Thick)	56.8	2.2	82.0	6.8
26	Classic Brands (Thin)	46.8	1.8	92.0	8.1
27	Dormeo	76.8	3.0	70.0	4.2
28	Douglas (V1)	68.3	2.7	70.5	5.3
29	Douglas (V2)	57.8	2.3	81.0	6.6
30	Douglas Alpine - New Composition	59.8	2.4	87.0	6.4
31	Douglas Alpine (Original)	78.8	3.1	68.0	3.9
32	Douglas Alpine Calgary	73.8	2.9	73.0	4.6
33	Douglas Alpine Toronto	71.8	2.8	75.0	4.8
34	Douglas Summit	60.8	2.4	86.0	6.3
35	Emma	67.8	2.7	79.0	5.4
36	Emma Original	69.8	2.7	77.0	5.1
37	Endy (V1)	76.3	3.0	62.5	4.3
38	Endy (V2)	51.8	2.0	87.0	7.4
39	Endy (V3)	71.8	2.8	75.0	4.8
40	Fleep (Firm)	50.3	2.0	88.5	7.6
41	Fleep (Soft)	69.3	2.7	69.5	5.2
42	Full Moon	68.8	2.7	78.0	5.2
43	GhostBed Classic	68.8	2.7	78.0	5.2
44	GhostBed Luxe	74.8	2.9	72.0	4.5
45	Gotta Sleep (OMG)	81.8	3.2	65.0	3.6
46	Haven Rejuvenate	48.8	1.9	98.0	7.8
47	Helix	61.8	2.4	77.0	6.1
48	Helix Midnight	87.8	3.5	59.0	2.8
49	iComfort	65.8	2.6	73.0	5.6
50	IKEA Foam	58.8	2.3	88.0	6.5
51	IKEA Matrand	31.8	1.3	115.0	10.0
52	IKEA Spring	54.8	2.2	92.0	7.0
53	Juno	65.8	2.6	81.0	5.6
54	Layla (Firm)	61.8	2.4	77.0	6.1
55	Layla (Firm) (V2)	55.8	2.2	91.0	6.9
56	Layla (Soft)	75.8	3.0	63.0	4.3
57	Layla (Soft) (V2)	79.8	3.1	67.0	3.8
58	Leesa	76.3	3.0	62.5	4.3
59	Leesa (V2)	74.8	2.9	72.0	4.5
60	Lucid	53.8	2.1	85.0	7.2

61	Lull	71.8	2.8	75.0	4.8
62	Luna	66.8	2.6	72.0	5.5
63	Mira (V1)	51.8	2.0	95.0	7.4
64	Mira (V2)	61.8	2.4	85.0	6.1
65	Nectar	76.8	3.0	70.0	4.2
66	Nectar (V2)	82.8	3.3	64.0	3.4
67	Nectar Premier (V1)	80.8	3.2	66.0	3.7
68	Nectar Premier (V2)	46.8	1.8	100.0	8.1
69	Nectar Premier Copper	58.8	2.3	88.0	6.5
70	Nolah	78.8	3.1	68.0	3.9
71	Nora	58.8	2.3	80.0	6.5
72	Novaform	82.8	3.3	64.0	3.4
73	Novaform (V2)	81.8	3.2	65.0	3.6
74	Novosbed Firm	59.3	2.3	79.5	6.5
75	Novosbed Firm (V2)	69.8	2.7	77.0	5.1
76	Novosbed Medium	68.3	2.7	70.5	5.3
77	Novosbed Medium (V2)	80.8	3.2	66.0	3.7
78	Novosbed Soft	79.3	3.1	59.5	3.9
79	Novosbed Soft (V2)	84.8	3.3	62.0	3.2
80	PerfectSense	61.8	2.4	85.0	6.1
81	Polysleep	65.8	2.6	73.0	5.6
82	Polysleep Original 2.0	55.8	2.2	91.0	6.9
83	Puffy (V1)	78.8	3.1	60.0	3.9
84	Puffy (V2)	80.8	3.2	66.0	3.7
85	Puffy Lux	72.8	2.9	74.0	4.7
86	Purple	66.8	2.6	72.0	5.5
87	Purple (V2)	77.8	3.1	69.0	4.1
88	Purple Plus	86.8	3.4	60.0	2.9
89	Recore	72.8	2.9	74.0	4.7
90	Saatva Loom & Leaf	82.8	3.3	64.0	3.4
91	Saatva Zenhaven	70.8	2.8	76.0	5.0
92	Sealy Cocoon	48.8	1.9	98.0	7.8
93	Sealy Cocoon Classic	68.8	2.7	78.0	5.2
94	Sealy Posturepedic	76.8	3.0	62.0	4.2
95	Serta Chinook	70.8	2.8	76.0	5.0
96	Silk & Snow (V1)	77.8	3.1	69.0	4.1
97	Silk & Snow (V2)	80.8	3.2	66.0	3.7
98	Simba 2500 (V1)	36.8	1.4	110.0	9.4
99	Simba 2500 (V2)	84.8	3.3	62.0	3.2
100	Simba 1500	59.8	2.4	87.0	6.4
101	Simba 5000	76.8	3.0	70.0	4.2
102	Spa Sensations	71.8	2.8	75.0	4.8
103	Structube	41.8	1.6	105.0	8.7
104	TEMPUR-Cloud	43.8	1.7	103.0	8.5
105	Tempur-Pedic	68.8	2.7	70.0	5.2
106	Tuft & Needle (V1)	66.8	2.6	72.0	5.5
107	Tuft & Needle (V2)	57.8	2.3	89.0	6.6
108	Zinus	83.8	3.3	63.0	3.3

**Table 2: Test 1 – Mattress Firmness - Quilted Top Mattress**

	Mattress	Deflection		Measured [mm]	Out of 10
		[mm]	[in]		
109	Allswell	76.8	3.0	70.0	6.6
110	Avocado Green	63.8	2.5	83.0	7.6
111	Brooklyn	77.8	3.1	69.0	6.6
112	Brunswick	82.8	3.3	64.0	6.2
113	Casper Hybrid	79.8	3.1	67.0	6.4
114	Casper Nova	78.8	3.1	68.0	6.5
115	Casper Wave Hybrid	81.8	3.2	65.0	6.3
116	DreamCloud (V1)	88.8	3.5	58.0	5.7
117	DreamCloud (V2)	67.8	2.7	79.0	7.3
118	Emma Hybrid	60.8	2.4	86.0	7.8
119	Endy Hybrid	88.8	3.5	58.0	5.7
120	Hamuq	63.8	2.5	75.0	7.6
121	Haven Lux Hybrid	77.8	3.1	69.0	6.6
122	Hush	75.8	3.0	71.0	6.7
123	Kingsdown	80.8	3.2	66.0	6.3
124	Layla Hybrid (Firm)	65.8	2.6	81.0	7.5
125	Layla Hybrid (Soft)	79.8	3.1	67.0	6.4
126	Logan & Cove (Firm)	62.8	2.5	76.0	7.7
127	Logan & Cove (Medium)	81.8	3.2	65.0	6.3
128	Parachute	75.8	3.0	71.0	6.7
129	Purple Hybrid	72.8	2.9	74.0	6.9
130	Saatva	80.8	3.2	58.0	6.3
131	Silk & Snow Hybrid (V1)	66.8	2.6	80.0	7.4
132	Silk & Snow Hybrid (V2)	76.8	3.0	70.0	6.6
133	Silk & Snow Organic	75.8	3.0	71.0	6.7
134	Simmons Beautyrest Black	75.8	3.0	63.0	6.7
135	Springwall	68.8	2.7	78.0	7.2
136	Stearns & Foster	70.8	2.8	76.0	7.1
137	WinkBed	75.8	3.0	71.0	6.7



Test 1 - Mattress Firmness (or Sinkage) Tight Top Mattress

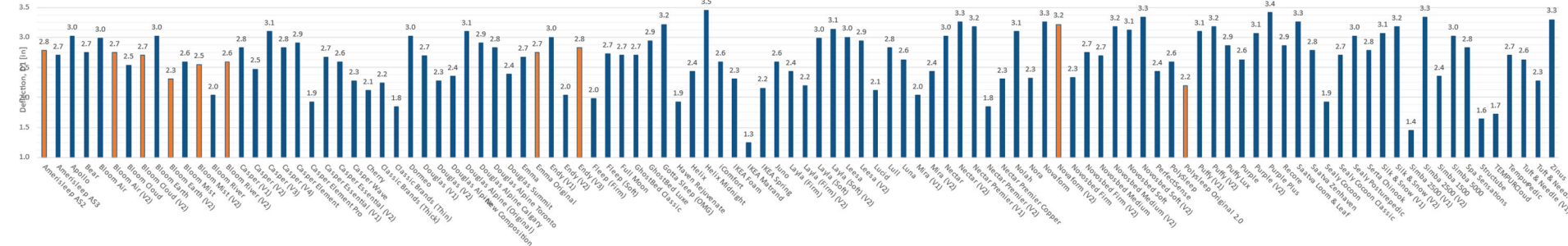


Figure 11: Test 1 – Mattress Firmness measuring how far Reference Load 1 deflects in the center of the mattress. A higher number indicates a softer mattress.

Test 1 - Mattress Firmness (or Sinkage) Tight Top Mattress

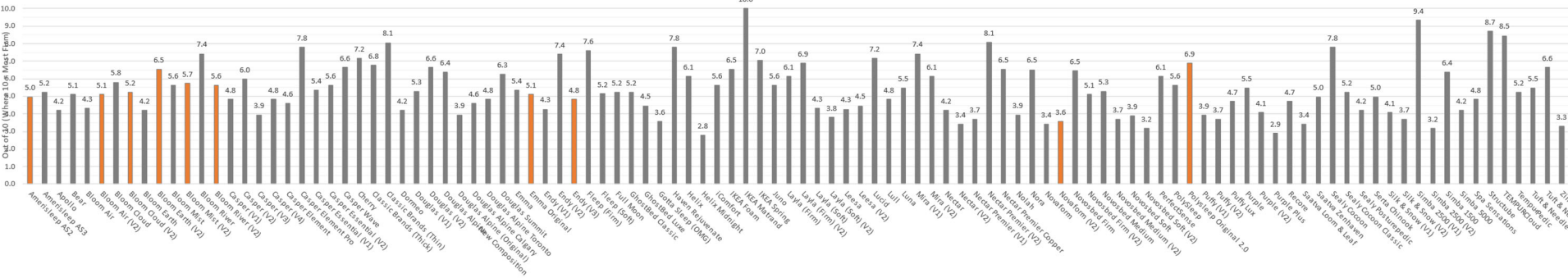


Figure 12: Test 1 – Mattress Firmness on a scale from 1 to 10 based on the given mattresses that were sampled (where 10 = most firm)

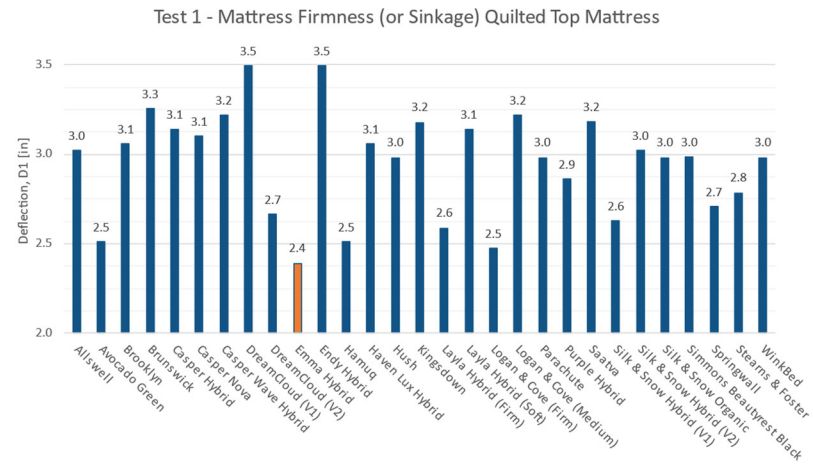


Figure 13: Test 1 – Mattress Firmness measuring how far Reference Load 1 deflects in the center of the mattress. A higher number indicates a softer mattress. Hybrid mattresses.

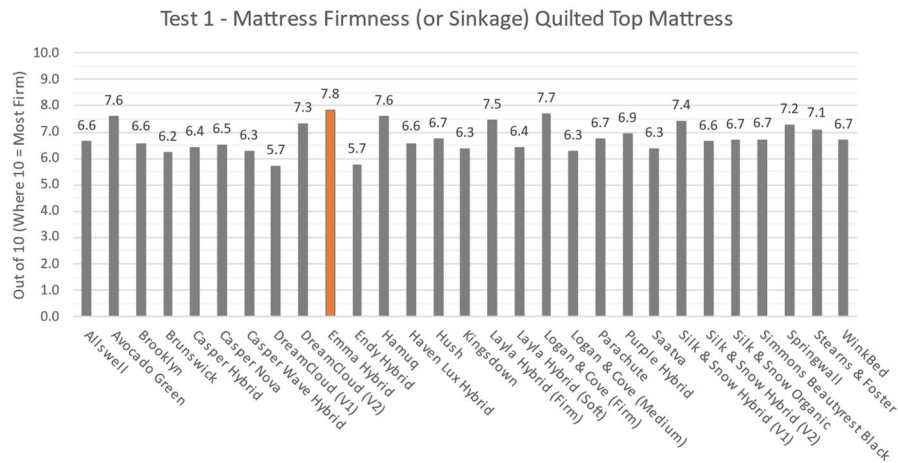


Figure 14: Test 1 – Mattress Firmness on a scale from 1 to 10 based on the given mattresses that were sampled (where 10 = most firm). Hybrid mattresses.



TEST 2 – RESULTS – EDGE SUPPORTIVENESS

Table 3: Test 2 – Edge Supportiveness - Tight Top Mattress

	Mattress	Mattress Height, D4		Measured Depth, D2		Deflection, D1		Out of 10
		[mm]	[in]	[mm]	[in]	[mm]	[in]	
1	Amerisleep AS2	300	11.8	306	12.0	98.0	3.9	5.4
2	Amerisleep AS3	288	11.3	285	11.2	107.0	4.2	4.7
3	Apollo	307	12.1	285	11.2	126.0	5.0	3.1
4	Bear	235	9.3	241	9.5	98.0	3.9	5.4
5	Bloom Air	227	8.9	254	10.0	77.0	3.0	7.1
6	Bloom Air (V2)	250	9.8	269	10.6	85.0	3.3	6.5
7	Bloom Cloud	281	11.1	301	11.9	84.0	3.3	6.5
8	Bloom Cloud (V2)	280	11.0	290	11.4	94.0	3.7	5.7
9	Bloom Earth	201	7.9	213	8.4	92.0	3.6	5.9
10	Bloom Earth (V2)	195	7.7	235	9.3	64.0	2.5	8.2
11	Bloom Mist	227	8.9	248	9.8	83.0	3.3	6.6
12	Bloom Mist (V2)	230	9.1	283	11.1	51.0	2.0	9.2
13	Bloom River	180	7.1	190	7.5	94.0	3.7	5.7
14	Bloom River (V2)	170	6.7	198	7.8	76.0	3.0	7.2
15	Casper (V1)	249	9.8	268	10.6	85.0	3.3	6.5
16	Casper (V2)	233	9.2	198	7.8	139.0	5.5	2.1
17	Casper (V3)	285	11.2	288	11.3	101.0	4.0	5.2
18	Casper (V4)	260	10.2	261	10.3	103.0	4.1	5.0
19	Casper Element	240	9.4	235	9.3	109.0	4.3	4.5
20	Casper Element Pro	230	9.1	261	10.3	73.0	2.9	7.4
21	Casper Essential (V1)	214	8.4	210	8.3	108.0	4.3	4.6
22	Casper Essential (V2)	271	10.7	279	11.0	96.0	3.8	5.6
23	Casper Wave	270	10.6	281	11.1	93.0	3.7	5.8
24	Cherry	156	6.1	161	6.3	99.0	3.9	5.3
25	Classic Brands (Thick)	204	8.0	239	9.4	69.0	2.7	7.8
26	Classic Brands (Thin)	154	6.1	194	7.6	64.0	2.5	8.2
27	Dormeo	304	12.0	314	12.4	94.0	3.7	5.7
28	Douglas (V1)	258	10.2	276	10.9	86.0	3.4	6.4
29	Douglas (V2)	253	10.0	283	11.1	74.0	2.9	7.3
30	Douglas Alpine (New Composition)	300	11.8	315	12.4	89.0	3.5	6.1
31	Douglas Alpine (Original)	290	11.4	267	10.5	127.0	5.0	3.1
32	Douglas Alpine Calgary	285	11.2	274	10.8	115.0	4.5	4.0
33	Douglas Alpine Toronto	285	11.2	262	10.3	127.0	5.0	3.1
34	Douglas Summit	300	11.8	316	12.4	88.0	3.5	6.2
35	Emma	305	12.0	294	11.6	115.0	4.5	4.0
36	Emma Original	230	9.1	248	9.8	86.0	3.4	6.4
37	Endy (V1)	261	10.3	250	9.8	115.0	4.5	4.0
38	Endy (V2)	247	9.7	235	9.3	116.0	4.6	3.9
39	Endy (V3)	250	9.8	241	9.5	113.0	4.4	4.2
40	Fleep (Firm)	249	9.8	259	10.2	94.0	3.7	5.7
41	Fleep (Soft)	249	9.8	243	9.6	110.0	4.3	4.4
42	Full Moon	208	8.2	210	8.3	102.0	4.0	5.1
43	GhostBed Classic	266	10.5	285	11.2	85.0	3.3	6.5
44	GhostBed Luxe	310	12.2	286	11.3	128.0	5.0	3.0
45	Gotta Sleep (OMG)	251	9.9	246	9.7	109.0	4.3	4.5
46	Haven Rejuvenate	255	10.0	281	11.1	78.0	3.1	7.0
47	Helix	252	9.9	222	8.7	134.0	5.3	2.5
48	Helix Midnight	300	11.8	296	11.7	108.0	4.3	4.6
49	iComfort	302	11.9	324	12.8	82.0	3.2	6.7
50	IKEA Foam	178	7.0	195	7.7	87.0	3.4	6.3
51	IKEA Matrand	190	7.5	233	9.2	61.0	2.4	8.4
52	IKEA Spring	237	9.3	259	10.2	82.0	3.2	6.7
53	Juno	196	7.7	185	7.3	115.0	4.5	4.0
54	Layla (Firm)	270	10.6	271	10.7	103.0	4.1	5.0
55	Layla (Firm) (V2)	280	11.0	268	10.6	116.0	4.6	3.9
56	Layla (Soft)	270	10.6	225	8.9	149.0	5.9	1.3
57	Layla (Soft) (V2)	280	11.0	247	9.7	137.0	5.4	2.2
58	Leesa	250	9.8	273	10.7	81.0	3.2	6.8
59	Leesa (V2)	270	10.6	243	9.6	131.0	5.2	2.7
60	Lucid	254	10.0	292	11.5	66.0	2.6	8.0

61	Lull	250	9.8	257	10.1	97.0	3.8	5.5
62	Luna	256	10.1	275	10.8	85.0	3.3	6.5
63	Mira (V1)	200	7.9	218	8.6	86.0	3.4	6.4
64	Mira (V2)	245	9.6	288	11.3	61.0	2.4	8.4
65	Nectar	267	10.5	270	10.6	101.0	4.0	5.2
66	Nectar (V2)	290	11.4	253	10.0	141.0	5.6	1.9
67	Nectar Premier (V1)	330	13.0	279	11.0	155.0	6.1	0.8
68	Nectar Premier (V2)	340	13.4	330	13.0	114.0	4.5	4.1
69	Nectar Premier Copper	355	14.0	329	13.0	130.0	5.1	2.8
70	Nolah	260	10.2	237	9.3	127.0	5.0	3.1
71	Nora	289	11.4	272	10.7	121.0	4.8	3.5
72	Novaform	340	13.4	312	12.3	132.0	5.2	2.7
73	Novaform (V2)	260	10.2	242	9.5	122.0	4.8	3.5
74	Novosbed Firm	293	11.5	316	12.4	81.0	3.2	6.8
75	Novosbed Firm (V2)	279	11.0	290	11.4	93.0	3.7	5.8
76	Novosbed Medium	307	12.1	311	12.2	100.0	3.9	5.2
77	Novosbed Medium (V2)	272	10.7	258	10.2	118.0	4.6	3.8
78	Novosbed Soft	286	11.3	276	10.9	114.0	4.5	4.1
79	Novosbed Soft (V2)	265	10.4	262	10.3	107.0	4.2	4.7
80	PerfectSense	255	10.0	265	10.4	94.0	3.7	5.7
81	PolySleep	248	9.8	297	11.7	55.0	2.2	8.9
82	PolySleep Original 2.0	260	10.2	272	10.7	92.0	3.6	5.9
83	Puffy (V1)	246	9.7	248	9.8	102.0	4.0	5.1
84	Puffy (V2)	257	10.1	230	9.1	131.0	5.2	2.7
85	Puffy Lux	304	12.0	297	11.7	111.0	4.4	4.4
86	Purple	242	9.5	236	9.3	110.0	4.3	4.4
87	Purple (V2)	240	9.4	234	9.2	110.0	4.3	4.4
88	Purple Plus	300	11.8	268	10.6	136.0	5.4	2.3
89	Recore	285	11.2	309	12.2	80.0	3.1	6.9
90	Saatva Loom & Leaf	300	11.8	294	11.6	110.0	4.3	4.4
91	Saatva Zenhaven	280	11.0	278	10.9	106.0	4.2	4.8
92	Sealy Cocoon	222	8.7	271	10.7	55.0	2.2	8.9
93	Sealy Cocoon Classic	260	10.2	265	10.4	99.0	3.9	5.3
94	Sealy Posturepedic	325	12.8	312	12.3	117.0	4.6	3.9
95	Serta Chinook	230	9.1	233	9.2	101.0	4.0	5.2
96	Silk & Snow (V1)	265	10.4	268	10.6	101.0	4.0	5.2
97	Silk & Snow (V2)	250	9.8	253	10.0	101.0	4.0	5.2
98	Simba 2500 (V1)	263	10.4	301	11.9	66.0	2.6	8.0
99	Simba 2500 (V2)	304	12.0	282	11.1	126.0	5.0	3.1
100	Simba 1500	250	9.8	289	11.4	65.0	2.6	8.1
101	Simba 5000	350	13.8	332	13.1	122.0	4.8	3.5
102	Spa Sensations	224	8.8	216	8.5	112.0	4.4	4.3
103	Structube	275	10.8	316	12.4	63.0	2.5	8.2
104	TEMPUR-Cloud	260	10.2	266	10.5	98.0	3.9	5.4
105	Tempur-Pedic	286	11.3	246	9.7	144.0	5.7	1.7
106	Tuft & Needle (V1)	251	9.9	270	10.6	85.0	3.3	6.5
107	Tuft & Needle (V2)	245	9.6	269	10.6	80.0	3.1	6.9
108	Zinus	290	11.4	295	11.6	99.0	3.9	5.3



	Mattress	Mattress Height, D4		Measured Depth, D2		Deflection, D1 [in]		Out of 10
		[mm]	[in]	[mm]	[in]	[mm]	[in]	
109	Allswell	300	11.8	268	10.6	136.0	5.4	2.3
110	Avocado Green	279	11.0	309	12.2	74.0	2.9	7.3
111	Brooklyn	280	11.0	253	10.0	131.0	5.2	2.7
112	Brunswick	298	11.7	309	12.2	93.0	3.7	5.8
113	Casper Hybrid	260	10.2	236	9.3	128.0	5.0	3.0
114	Casper Nova	300	11.8	281	11.1	123.0	4.8	3.4
115	Casper Wave Hybrid	300	11.8	275	10.8	129.0	5.1	2.9
116	DreamCloud (V1)	340	13.4	350	13.8	94.0	3.7	5.7
117	DreamCloud (V2)	330	13.0	337	13.3	97.0	3.8	5.5
118	Emma Hybrid	280	11.0	315	12.4	69.0	2.7	7.8
119	Endy Hybrid	308	12.1	315	12.4	97.0	3.8	5.5
120	Hamuq	300	11.8	328	12.9	76.0	3.0	7.2
121	Haven Lux Hybrid	359	14.1	338	13.3	125.0	4.9	3.2
122	Hush	327	12.9	310	12.2	121.0	4.8	3.5
123	Kingsdown	369	14.5	355	14.0	118.0	4.6	3.8
124	Layla Hybrid (Firm)	330	13.0	326	12.8	108.0	4.3	4.6
125	Layla Hybrid (Soft)	330	13.0	286	11.3	148.0	5.8	1.4
126	Logan & Cove (Firm)	352	13.9	390	15.4	66.0	2.6	8.0
127	Logan & Cove (Medium)	350	13.8	343	13.5	111.0	4.4	4.4
128	Parachute	305	12.0	273	10.7	136.0	5.4	2.3
129	Purple Hybrid	279	11.0	305	12.0	78.0	3.1	7.0
130	Saatva	400	15.7	384	15.1	120.0	4.7	3.6
131	Silk & Snow Hybrid (V1)	284	11.2	285	11.2	103.0	4.1	5.0
132	Silk & Snow Hybrid (V2)	295	11.6	325	12.8	74.0	2.9	7.3
133	Silk & Snow Organic	300	11.8	329	13.0	75.0	3.0	7.3
134	Simmons Beautyrest Black	355	14.0	349	13.7	110.0	4.3	4.4
135	Springwall	232	9.1	288	11.3	48.0	1.9	9.5
136	Stearns & Foster	342	13.5	355	14.0	91.0	3.6	6.0
137	WinkBed	330	13.0	356	14.0	78.0	3.1	7.0

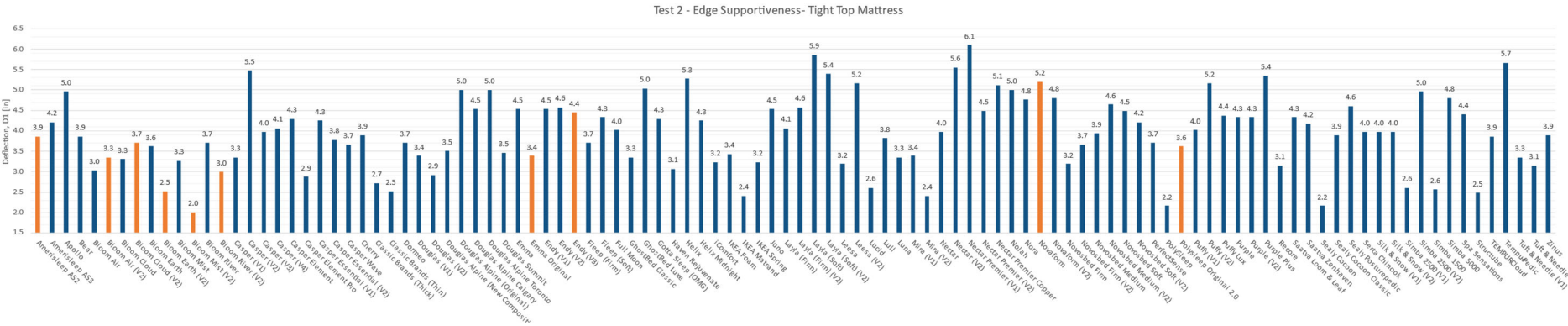


Figure 15: Test 2 – Mattress Firmness measuring how far Reference Load 1 deflects on the edge of the mattress. A higher number indicates a softer mattress.

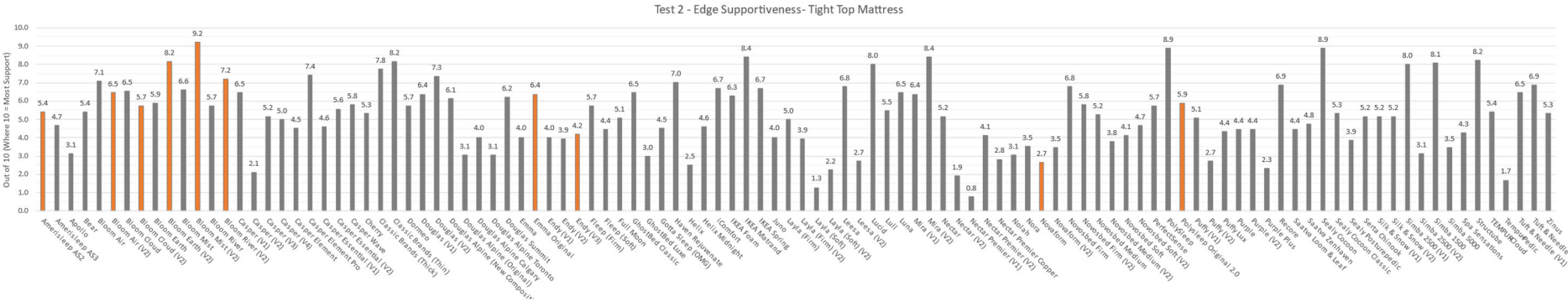


Figure 16: Test 2 – Mattress Firmness on a scale from 1 to 10 based on the given mattresses that were sampled (where 10 = most firm)

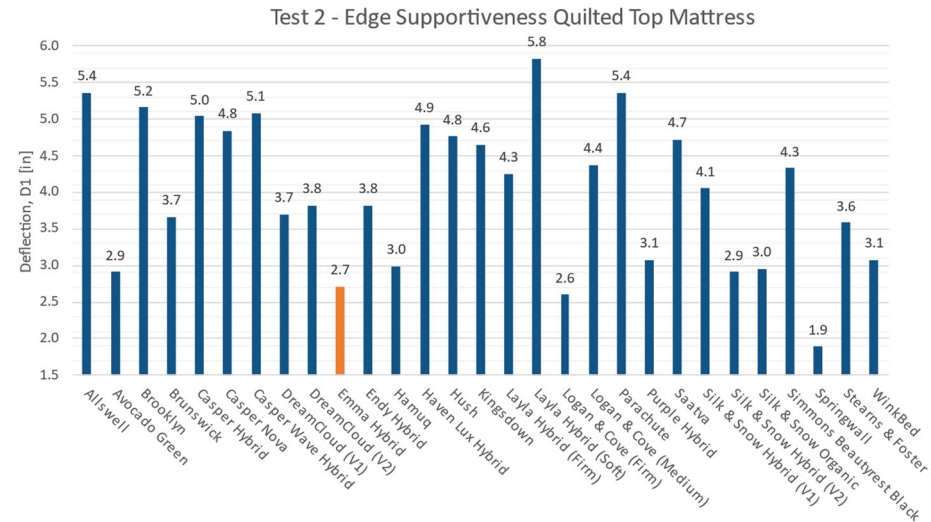


Figure 17: Test 2 – Mattress Firmness measuring how far Reference Load 1 deflects on the edge of the mattress. A higher number indicates a softer mattress. Hybrid mattresses.

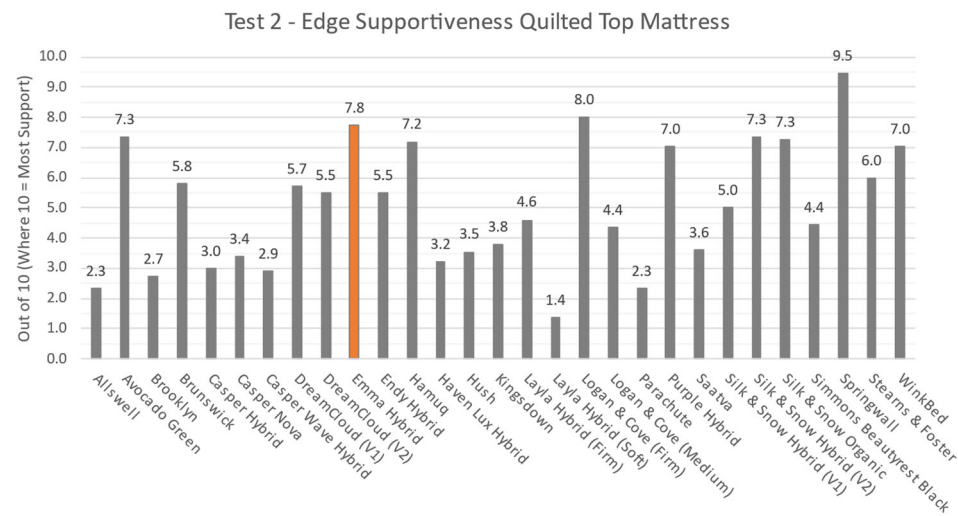


Figure 18: Test 2 – Mattress Firmness on a scale from 1 to 10 based on the given mattresses that were sampled (where 10 = most firm). Hybrid mattresses.



TEST 3 – RESULTS – MOTION ISOLATION

Table 5: Test 3 – Motion Isolation - Tight Top Mattress

	Mattress	Average Peak Acceleration [g]	Out of 10
1	Amerisleep AS2	5.8	6.5
2	Amerisleep AS3	6.8	5.9
3	Apollo	2.3	8.6
4	Bear	5.1	6.9
5	Bloom Air	5.9	6.5
6	Bloom Air (V2)	5.2	6.9
7	Bloom Cloud	5.1	6.9
8	Bloom Cloud (V2)	5.3	6.8
9	Bloom Earth	4.5	7.3
10	Bloom Earth (V2)	6.4	6.2
11	Bloom Mist	5.9	6.5
12	Bloom Mist (V2)	4.7	7.2
13	Bloom River	5.3	6.8
14	Bloom River (V2)	7.1	5.8
15	Casper (V1)	8.7	4.8
16	Casper (V2)	6.1	6.4
17	Casper (V3)	4.8	7.1
18	Casper (V4)	4.8	7.1
19	Casper Element	6.9	5.9
20	Casper Element Pro	4.1	7.5
21	Casper Essential (V1)	5.8	6.5
22	Casper Essential (V2)	5.3	6.8
23	Casper Wave	4.9	7.1
24	Cherry	6.1	6.4
25	Classic Brands (Thick)	7.0	5.8
26	Classic Brands (Thin)	6.4	6.2
27	Dormeo	6.7	6.0
28	Douglas (V1)	3.3	8.0
29	Douglas (V2)	2.8	8.3
30	Douglas Alpine (Calgary)	2.9	8.3
31	Douglas Alpine (New Composition)	2.4	8.5
32	Douglas Alpine (Original)	2.0	8.8
33	Douglas Alpine (Toronto)	1.9	8.9
34	Douglas Summit	2.0	8.8
35	Emma	4.9	7.0
36	Emma Original	2.7	8.4
37	Endy (V1)	5.1	6.9
38	Endy (V2)	5.7	6.6
39	Endy (V3)	4.3	7.4
40	Fleep (Firm)	5.2	6.9
41	Fleep (Soft)	5.2	6.9
42	Full Moon	4.2	7.5
43	GhostBed Classic	4.7	7.2
44	GhostBed Luxe	4.4	7.4
45	Gotta Sleep (OMG)	5.9	6.4
46	Haven Rejuvenate	6.2	6.3
47	Helix	5.4	6.7
48	Helix Midnight	5.9	6.5
49	iComfort	4.4	7.4
50	IKEA Foam	8.6	4.8
51	IKEA Matrand	3.9	7.6
52	IKEA Spring	4.8	7.1
53	Juno	6.3	6.2
54	Layla (Firm)	5.8	6.5
55	Layla (Firm) (V2)	5.8	6.5
56	Layla (Soft)	5.9	6.4
57	Layla (Soft) (V2)	9.0	4.6
58	Leesa	6.4	6.1
59	Leesa (V2)	8.0	5.2
60	Lucid	5.4	6.8

61	Lull	4.3	7.4
62	Luna	6.6	6.1
63	Mira (V1)	5.3	6.8
64	Mira (V2)	3.4	7.9
65	Nectar	4.5	7.3
66	Nectar (V2)	8.3	5.0
67	Nectar Premier (V1)	6.7	6.0
68	Nectar Premier (V2)	2.8	8.3
69	Nectar Premier Copper	4.1	7.5
70	Nolah	5.2	6.9
71	Nora	3.1	8.1
72	Novaform	3.0	8.2
73	Novaform (V2)	5.8	6.5
74	Novosbed Firm	5.4	6.8
75	Novosbed Firm (V2)	5.4	6.8
76	Novosbed Medium	5.0	7.0
77	Novosbed Medium (V2)	5.3	6.8
78	Novosbed Soft	6.7	6.0
79	Novosbed Soft (V2)	4.5	7.3
80	PerfectSense	9.8	4.1
81	Polysleep	3.3	8.0
82	Polysleep Original 2.0	5.9	6.5
83	Puffy (V1)	5.0	7.0
84	Puffy (V2)	6.1	6.3
85	Puffy Lux	4.6	7.3
86	Purple	9.9	4.0
87	Purple (V2)	10.8	3.5
88	Purple Plus	5.5	6.7
89	Recore	4.8	7.1
90	Saatva Loom & Leaf	6.1	6.4
91	Saatva Zenhaven	6.5	6.1
92	Sealy Cocoon	6.7	6.0
93	Sealy Cocoon Classic	3.7	7.8
94	Sealy Posturepedic	6.5	6.1
95	Serta Chinook	4.4	7.4
96	Silk & Snow (V1)	3.9	7.6
97	Silk & Snow (V2)	4.0	7.6
98	Simba 2500 (V1)	6.2	6.3
99	Simba 2500 (V2)	5.7	6.6
100	Simba 1500	4.1	7.5
101	Simba 5000	4.3	7.4
102	Spa Sensations	7.1	5.7
103	Structube	5.9	6.5
104	TEMPUR-Cloud	8.9	4.6
105	Tempur-Pedic	4.3	7.4
106	Tuft & Needle (V1)	4.7	7.2
107	Tuft & Needle (V2)	5.9	6.5
108	Zinus	4.3	7.4

**Table 6: Test 3 – Motion Isolation - Quilted Top Mattress**

	Mattress	Average Peak Acceleration [g]	Out of 10
109	Allswell	5.6	6.6
110	Avocado Green	6.8	5.9
111	Brooklyn	6.7	6.0
112	Brunswick	5.5	6.7
113	Casper Hybrid	9.5	4.3
114	Casper Nova	4.8	7.1
115	Casper Wave Hybrid	5.2	6.9
116	DreamCloud (V1)	6.8	5.9
117	DreamCloud (V2)	4.3	7.4
118	Emma Hybrid	6.3	6.3
119	Endy Hybrid	4.8	7.2
120	Hamuq	6.0	6.4
121	Haven Lux Hybrid	4.6	7.3
122	Hush	4.6	7.2
123	Kingsdown	4.9	7.1
124	Layla Hybrid (Firm)	7.0	5.8
125	Layla Hybrid (Soft)	4.6	7.2
126	Logan & Cove (Firm)	5.2	6.9
127	Logan & Cove (Medium)	5.1	7.0
128	Parachute	7.1	5.7
129	Purple Hybrid	5.8	6.5
130	Saatva	5.2	6.9
131	Silk & Snow Hybrid (V1)	4.9	7.0
132	Silk & Snow Hybrid (V2)	3.3	8.0
133	Silk & Snow Organic	5.1	7.0
134	Simmons Beautyrest Black	3.6	7.8
135	Springwall	6.5	6.1
136	Stearns & Foster	4.1	7.6
137	WinkBed	5.6	6.7

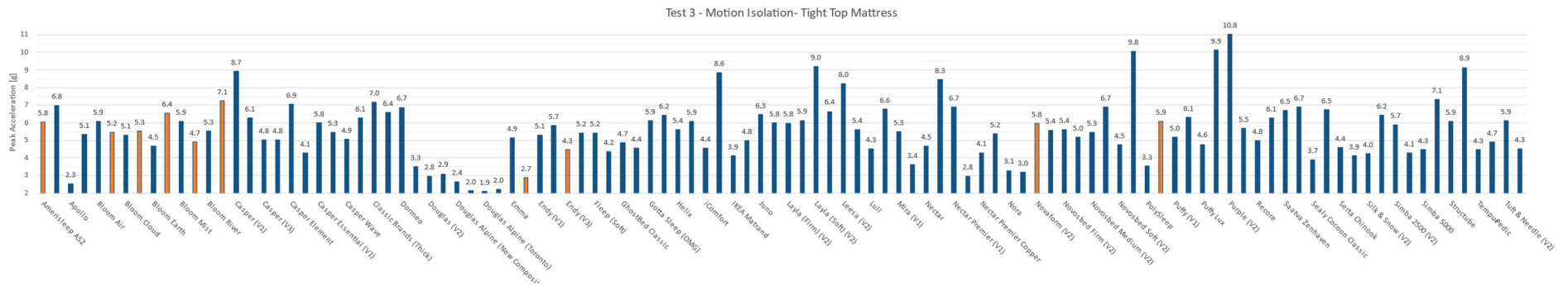


Figure 19: Test 3 - Peak Acceleration at one sleep point when Reference Load 2 is dropped on the other sleep point. Values shown are an average of 20 runs per mattress.

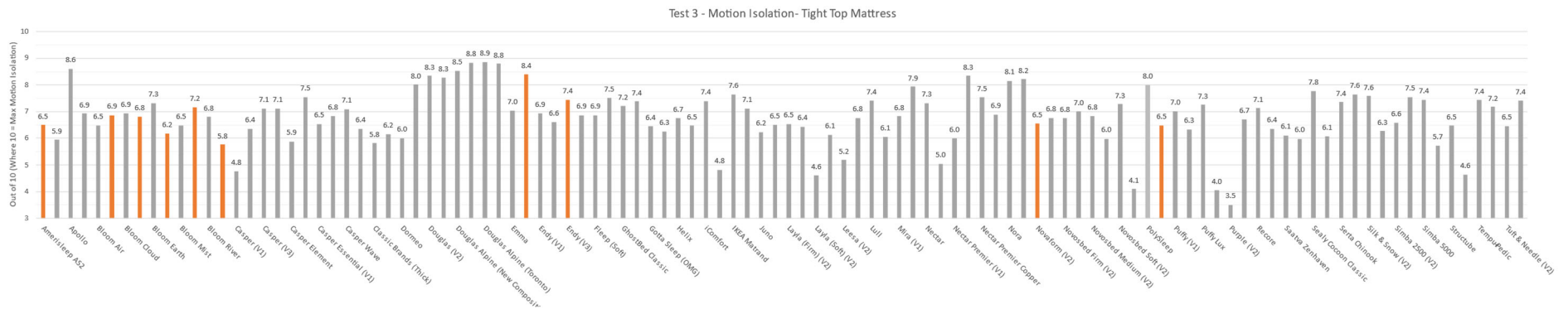


Figure 20: Test 3 – Motion Isolation on a scale from 1 to 10 based on the given mattresses that were sampled (where 10 = max motion isolation)

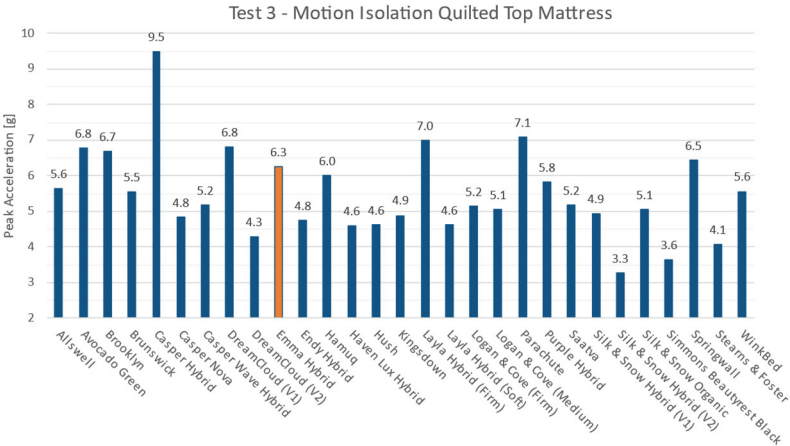


Figure 21: Test 3 - Peak Acceleration at one sleep point when Reference Load 2 is dropped on the other sleep point. Values shown are an average of 20 runs per mattress. Hybrid mattresses.

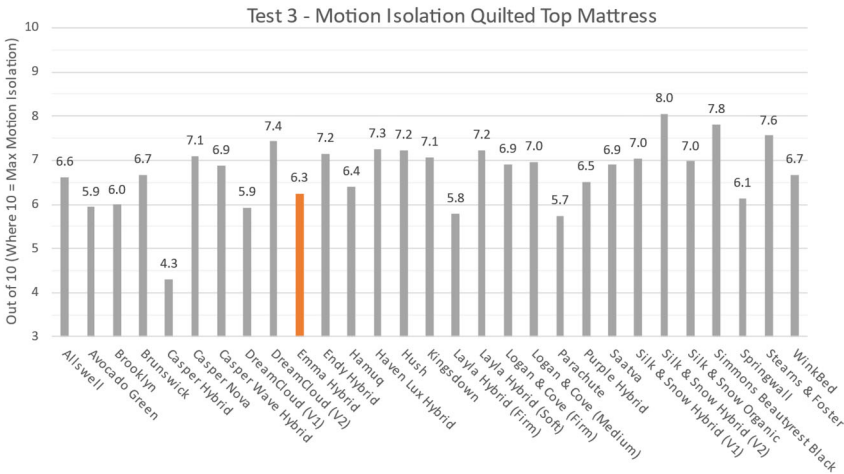


Figure 22: Test 3 – Motion Isolation on a scale from 1 to 10 based on the given mattresses that were sampled (where 10 = max motion isolation). Hybrid mattresses.



TEST 4 – RESULTS - BOUNCINESS

Table 7: Test 4 – Bounciness - Tight Top Mattress

Mattress	Rebound Height Run 1, [in]	Rebound Height Run 2, [in]	Rebound Height Run 3, [in]	Rebound Height Average, [in]	Out of 10
1 Amerisleep AS2	4.2	4.4	4.0	4.2	3.4
2 Amerisleep AS3	3.1	3.0	3.3	3.1	2.9
3 Apollo	1.8	1.8	1.5	1.7	2.0
4 Bear	3.8	3.8	3.9	3.8	3.3
5 Bloom Air	3.4	3.3	3.4	3.3	3.0
6 Bloom Air (V2)	4.0	3.8	4.2	4.0	3.3
7 Bloom Cloud	3.5	3.7	4.0	3.7	3.2
8 Bloom Cloud (V2)	3.6	4.0	4.2	3.9	3.3
9 Bloom Earth	5.3	5.1	5.1	5.2	4.1
10 Bloom Earth (V2)	5.5	5.4	5.6	5.5	4.2
11 Bloom Mist	3.6	3.5	3.5	3.5	3.1
12 Bloom Mist (V2)	4.2	4.0	3.8	4.0	3.3
13 Bloom River	3.8	4.0	3.8	3.8	3.3
14 Bloom River (V2)	3.8	4.0	4.2	4.0	3.3
15 Casper (V1)	4.9	5.0	5.1	5.0	4.0
16 Casper (V2)	5.0	4.9	5.0	5.0	4.0
17 Casper (V3)	3.5	3.5	3.5	3.5	3.1
18 Casper (V4)	6.3	6.3	6.3	6.3	4.8
19 Casper Element	8.8	8.6	8.8	8.7	6.2
20 Casper Element Pro	4.6	4.8	4.4	4.6	3.7
21 Casper Essential (V1)	3.3	3.3	3.4	3.3	3.0
22 Casper Essential (V2)	4.3	4.1	4.3	4.2	3.5
23 Casper Wave	6.0	6.0	6.0	6.0	4.6
24 Cherry	3.5	3.8	3.4	3.5	3.1
25 Classic Brands (Thick)	3.4	3.6	3.5	3.5	3.1
26 Classic Brands (Thin)	7.1	7.1	7.2	7.1	5.3
27 Dormeo	8.8	8.8	8.6	8.7	6.2
28 Douglas (V1)	5.5	5.7	5.5	5.6	4.3
29 Douglas (V2)	3.8	3.8	3.5	3.7	3.2
30 Douglas Alpine (Calgary)	3.5	3.0	2.5	3.0	2.7
31 Douglas Alpine (New Composition)	4.5	4.3	4.7	4.5	3.6
32 Douglas Alpine (Original)	3.2	3.4	3.0	3.2	2.9
33 Douglas Alpine (Toronto)	2.5	2.0	3.0	2.5	2.5
34 Douglas Summit	3.5	3.3	3.7	3.5	3.0
35 Emma	3.3	3.3	3.3	3.3	3.0
36 Emma Original	5.0	4.9	5.1	5.0	3.9
37 Endy (V1)	2.5	2.6	2.6	2.6	2.5
38 Endy (V2)	6.3	6.0	6.3	6.2	4.7
39 Endy (V3)	7.8	8.0	7.6	7.8	5.5
40 Fleep (Firm)	7.5	7.6	7.5	7.5	5.5
41 Fleep (Soft)	3.6	3.7	3.5	3.6	3.2
42 Full Moon	4.0	3.8	4.2	4.0	3.4
43 GhostBed Classic	3.5	3.4	3.5	3.5	3.1
44 GhostBed Luxe	3.2	3.5	2.9	3.2	2.9
45 Gotta Sleep (OMG)	3.0	3.0	3.0	3.0	2.8
46 Haven Rejuvenate	6.6	6.6	6.5	6.6	5.0
47 Helix	9.3	9.3	9.3	9.3	6.6
48 Helix Midnight	8.0	8.2	7.8	8.0	5.8
49 iComfort	1.8	2.0	1.8	1.8	2.1
50 IKEA Foam	9.6	9.5	9.8	9.6	6.8
51 IKEA Matrand	5.7	6.0	5.4	5.7	4.3
52 IKEA Spring	12.3	12.1	12.3	12.2	8.3
53 Juno	2.6	2.6	2.6	2.6	2.6
54 Layla (Firm)	4.5	4.4	4.5	4.5	3.7
55 Layla (Firm) (V2)	6.6	6.7	6.5	6.6	4.8
56 Layla (Soft)	1.8	1.8	1.5	1.7	2.0
57 Layla (Soft) (V2)	2.3	2.1	2.5	2.3	2.3
58 Leesa	4.4	4.4	4.3	4.4	3.6
59 Leesa (V2)	3.3	3.4	3.2	3.3	2.9
60 Lucid	3.4	3.5	3.4	3.4	3.1

61 Lull	4.9	5.1	4.7	4.9	3.9
62 Luna	3.3	3.4	3.4	3.4	3.0
63 Mira (V1)	5.4	5.4	5.5	5.4	4.3
64 Mira (V2)	4.8	4.5	4.8	4.7	3.8
65 Nectar	1.3	1.3	1.1	1.2	1.7
66 Nectar (V2)	4.4	4.6	4.2	4.4	3.6
67 Nectar Premier (V1)	2.0	2.3	1.7	2.0	2.2
68 Nectar Premier (V2)	4.0	3.7	4.3	4.0	3.3
69 Nectar Premier Copper	3.3	3.5	3.1	3.3	2.9
70 Nolah	3.1	2.9	3.3	3.1	2.8
71 Nora	3.4	3.5	3.5	3.5	3.1
72 Novaform	0.6	0.8	0.6	0.7	1.4
73 Novaform (V2)	3.8	3.6	4.0	3.8	3.2
74 Novosbed Firm	1.2	1.3	1.3	1.3	1.8
75 Novosbed Firm (V2)	3.3	3.1	3.3	3.2	2.9
76 Novosbed Medium	1.7	1.7	1.6	1.7	2.0
77 Novosbed Medium (V2)	2.1	2.1	2.1	2.1	2.3
78 Novosbed Soft	3.4	3.5	3.6	3.5	3.1
79 Novosbed Soft (V2)	1.6	1.6	1.8	1.7	2.0
80 PerfectSense	4.3	4.4	4.3	4.3	3.6
81 PolySleep	3.5	3.8	3.6	3.6	3.2
82 Polysleep Original 2.0	6.2	5.8	6.4	6.1	4.6
83 Puffy (V1)	0.5	0.4	0.5	0.5	1.3
84 Puffy (V2)	4.1	4.1	4.3	4.2	3.5
85 Puffy Lux	2.8	2.9	2.8	2.8	2.7
86 Purple	8.6	8.5	8.6	8.6	6.1
87 Purple (V2)	8.5	8.1	8.9	8.5	5.9
88 Purple Plus	5.4	5.1	5.7	5.4	4.2
89 Recore	4.3	4.4	4.4	4.3	3.6
90 Saatva Loom & Leaf	3.2	3.5	2.9	3.2	2.9
91 Saatva Zenhaven	6.1	6.3	5.9	6.1	4.5
92 Sealy Cocoon	8.0	8.0	8.0	8.0	5.8
93 Sealy Cocoon Classic	4.1	4.4	3.8	4.1	3.4
94 Sealy Posturepedic	5.4	5.4	5.4	5.4	4.2
95 Serta Chinook	4.4	4.3	4.3	4.3	3.6
96 Silk & Snow (V1)	2.5	2.5	2.5	2.5	2.5
97 Silk & Snow (V2)	3.1	3.3	2.9	3.1	2.9
98 Simba 2500 (V1)	5.5	5.5	5.6	5.5	4.3
99 Simba 2500 (V2)	5.8	5.5	5.8	5.7	4.4
100 Simba 1500	5.1	5.3	4.9	5.1	4.0
101 Simba 5000	4.4	4.2	4.6	4.4	3.6
102 Spa Sensations	12.5	12.6	12.5	12.5	8.5
103 Structube	9.0	9.0	9.0	9.0	6.4
104 TEMPUR-Cloud	4.4	4.6	4.2	4.4	3.6
105 Tempur-Pedic	1.1	1.1	1.0	1.1	1.7
106 Tuft & Needle (V1)	6.3	6.5	6.4	6.4	4.8
107 Tuft & Needle (V2)	5.0	5.3	5.0	5.1	4.1
108 Zinus	1.5	1.5	1.4	1.5	1.9

**Table 8: Test 4 – Bounciness - Quilted Top Mattress**

	Mattress	Rebound	Rebound	Rebound	Rebound	Out of 10
		Height	Run	Height	Run	
109	Allswell	3.1	3.0	3.2	3.1	2.8
110	Avocado Green	9.1	8.8	9.4	9.1	6.3
111	Brooklyn	6.7	6.5	6.9	6.7	4.9
112	Brunswick	7.8	7.6	7.8	7.7	5.5
113	Casper Hybrid	7.3	7.6	7.0	7.3	5.2
114	Casper Nova	6.2	6.0	6.4	6.2	4.6
115	Casper Wave Hybrid	7.5	7.6	7.4	7.5	5.4
116	DreamCloud (V1)	5.0	5.2	4.8	5.0	3.9
117	DreamCloud (V2)	5.4	5.6	5.2	5.4	4.1
118	Emma Hybrid	9.5	9.8	9.7	9.7	6.6
119	Endy Hybrid	7.5	7.3	7.7	7.5	5.4
120	Hamuq	6.8	6.5	6.8	6.7	4.9
121	Haven Lux Hybrid	9.5	9.3	9.4	9.4	6.4
122	Hush	7.8	7.5	8.1	7.8	5.5
123	Kingsdown	5.4	5.3	5.3	5.3	4.1
124	Layla Hybrid (Firm)	6.3	6.0	6.6	6.3	4.7
125	Layla Hybrid (Soft)	3.7	3.5	3.3	3.5	3.0
126	Logan & Cove (Firm)	7.5	7.8	7.6	7.6	5.4
127	Logan & Cove (Medium)	3.8	3.8	3.6	3.7	3.2
128	Parachute	8.8	9.0	8.6	8.8	6.1
129	Purple Hybrid	15.5	15.4	15.6	15.5	10.0
130	Saatva	12.2	12.5	12.3	12.3	8.2
131	Silk & Snow Hybrid (V1)	7.5	7.5	7.5	7.5	5.4
132	Silk & Snow Hybrid (V2)	6.4	6.1	6.7	6.4	4.7
133	Silk & Snow Organic	9.9	10.2	9.7	9.9	6.8
134	Simmons Beautyrest Black	6.0	5.9	6.0	6.0	4.5
135	Springwall	13.6	13.8	13.6	13.7	8.9
136	Stearns & Foster	3.3	3.3	3.1	3.2	2.9
137	WinkBed	4.9	5.2	4.6	4.9	3.8

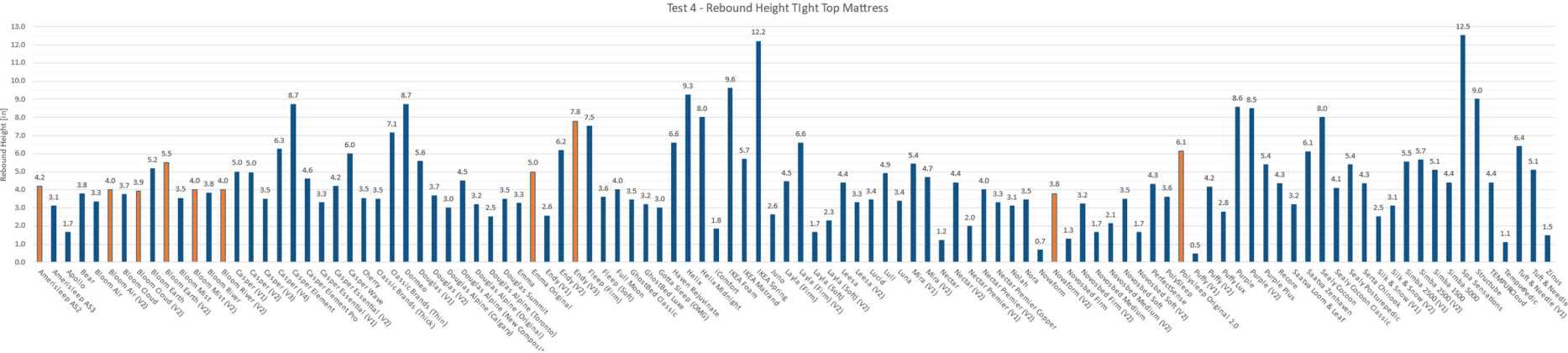


Figure 23: Test 4 - Rebound height of Reference Load 2 when dropped in the center of the mattress. Values shown are an average of 3 runs per mattress.

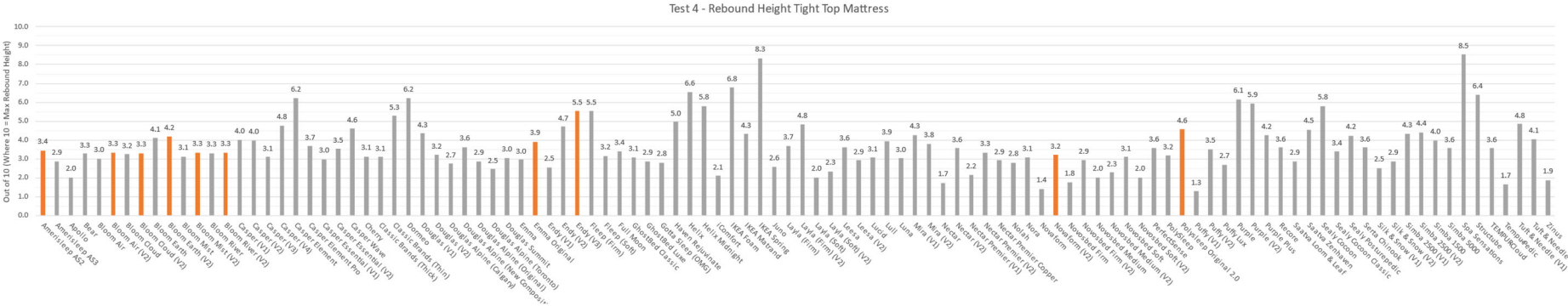


Figure 24: Test 4 – Rebound height on a scale from 1 to 10 based on the given mattresses that were sampled (where 10 = max rebound height)

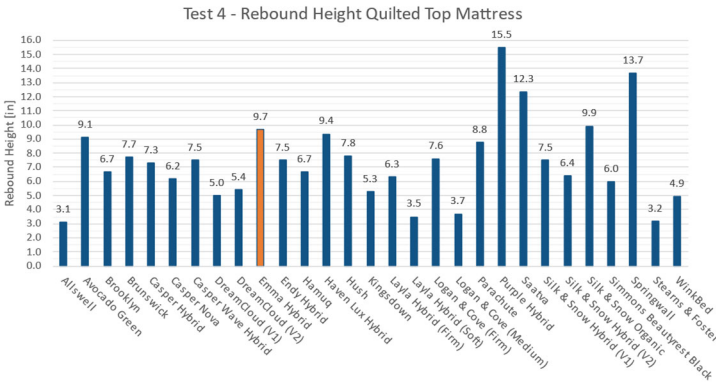


Figure 25: Test 4 - Rebound height of Reference Load 2 when dropped in the center of the mattress. Values shown are an average of 3 runs per mattress. Hybrid mattresses.

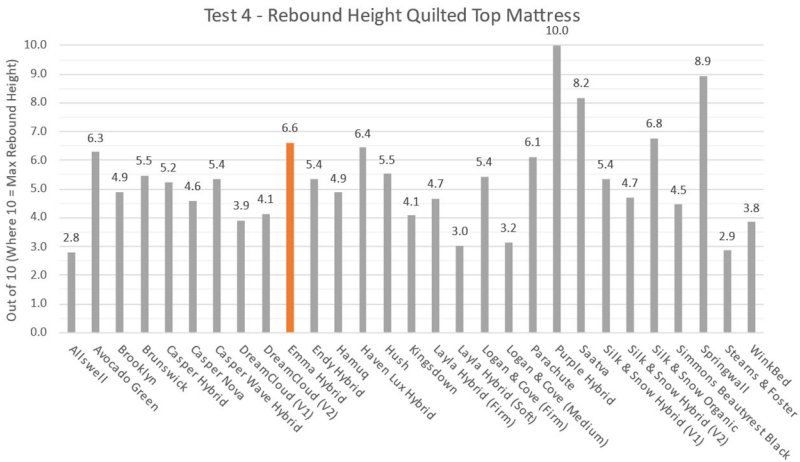


Figure 26: Test 4 – Rebound height on a scale from 1 to 10 based on the given mattresses that were sampled (where 10 = max rebound height). Hybrid mattresses.