

February 24, 2020

James Clayton Owens, Esq.
Acting Administrator
National Highway Traffic Safety Administration
1200 New Jersey Avenue, S.E.
Washington, D.C. 20590

RE: Anthropomorphic Test Devices, HIII 5th Percentile Female Test Dummy;
Incorporation by Reference

REF: 84 Fed. Reg. 247 (December 26, 2019)(Docket No. NHTSA 2019-0023)

Dear Mr. Owens:

On behalf of the members of the Alliance for Automotive Innovation (Auto Innovators), this letter provides comments supporting most aspects of the above-referenced proposal to revise the chest jacket and spine box specifications for the Hybrid III 5th Percentile Female Test Dummy (HIII-5F) set forth in Part 572.

As noted in preamble of the subject Notice of Proposed Rulemaking (NPRM), the Alliance of Automobile Manufacturers (Alliance)¹ petitioned NHTSA to adopt the SAE harmonized chest jacket and modifications to the spine box. With respect to the proposed spine box modifications, Auto Innovators fully supports those modifications as proposed. However, with respect to the incorporation of the proposed chest jacket, Auto Innovators supports its inclusion into Part 572 but notes that issues with the dimensional specifications need to be resolved as highlighted in these comments.

Implementation and Timing

In the NPRM, NHTSA proposed a 45-day effective date following the date of publication. In their justification the agency simply notes that “*manufacturers wishing to test with the proposed jacket and spine box should have no difficulty obtaining the parts*”. While that statement is true, it does not address the fact that many existing vehicles are already

¹ As of January 1, 2020, the Alliance of Automobile Manufacturers and Global Automakers merged to create the Alliance for Automotive Innovation.

certified using the previous Denton or First Tech jackets that would no longer be permitted after the 45-day period. As a result, in order for manufacturers to be certain of their compliance with crash standards referencing the HIII-5F they would have to conduct new crash tests on all of their products (those currently certified using the Denton or First Tech chest jackets) using the new chest jackets and spine box modification within 45-days. This represents a significant compliance testing and cost burden without a commensurate safety benefit.

As requested in the February 21, 2014, Alliance petition for rulemaking, vehicle manufacturers need adequate time to efficiently (with minimal cost burden) phase-in compliance using the new chest jacket and spine box modifications. In order to accomplish this, compliance with the new specifications should be optional (as is the current practice with the two existing versions of the chest jacket) for a period of 5 years. After that period compliance with the harmonized chest jacket and revised spine box specifications would be required (previous versions would no longer be accepted).

Chest Jacket Specifications

In the February 21, 2014, petition, the Alliance requested that NHTSA adopt the SAE J2921 (JAN2013), HII 5F chest jack specifications. As described in the subject NPRM, NHTSA proposed adding additional dimensional specifications. Auto Innovator members have begun to evaluate their chest jackets to the proposed specifications. Appendix A provides some dimensional measurements of new and used SAE harmonized chest jackets. Of the seven jackets measured (3 new and 4 used) only two conformed (both “used”) to all of the proposed measurement specifications. Auto Innovators is continuing to collect additional chest jacket dimensional data and plan to submit it in a supplemental submission.

Auto Innovators supports efforts by NHTSA to ensure that chest jackets specified in Part 572 have enough specificity to ensure repeatable and reproducible HIII-5F measurement responses. However, Auto Innovators has noted that specifying chest jacket measurements when placed on the HIII-5F may add additional measurement uncertainty due to additional dimensional tolerance stack up associated with the ATD itself.

Auto Innovators in consultation with Humanetics, are still evaluating the proposed specifications. For those proposed specifications that we determine are necessary, Auto Innovators will provide recommendations (and supporting data) on what the appropriate measurement points and tolerances should be.

Auto Innovators appreciates this opportunity to provide comments.

Sincerely,
ALLIANCE FOR AUTOMOTIVE INNOVATION

A handwritten signature in black ink, appearing to read "Scott Schmidt".

Scott Schmidt
Senior Director, Vehicle Safety

cc:

R. Posten
P. Martin
O. Matheke

Appendix A

Proposed Specifications - Jacket on ATD

		A-pt (Left) X	A-pt (Left) Y	A-pt (Left) Z**	A-pt (Right) X	A-pt (Right) Y	A-pt (Right) Z**	Circumference at B-B †	Y-Height ‡	Pelvis Circumference at Z §	
Proposed Specification (880105-355-H)	(in)	9.21	2.68	10.43	9.21	-2.68	10.43	33.86	4.33	30.50	
	(mm)	233.93	68.07	264.92	233.93	-68.07	264.92	860.04	109.98	774.70	
Tolerance	(in)	9.61	3.08	10.83	9.61	-2.28	10.83	34.06	4.63	31.10	
	(mm)	244.09	78.23	275.08	244.09	-57.91	275.08	865.00	117.60	789.94	
Tolerance	(in)	8.81	2.28	10.03	8.81	-3.08	10.03	33.66	4.03	29.90	
	(mm)	223.77	57.91	254.76	223.77	-78.23	254.76	854.96	102.36	759.46	
Member A *	EF2414 (New)	(in)	9.40	2.70	8.25	9.20	-2.80	8.38	34.25	N/A	30.75
		(mm)	238.76	68.58	209.55	233.68	-71.12	212.73	869.95	N/A	781.05
Member A *	EI6141 (New)	(in)	9.10	2.70	9.00	9.00	-2.70	9.25	34.13	N/A	30.75
		(mm)	231.14	68.58	228.60	228.60	-68.58	234.95	866.78	N/A	781.05
Member A *	DO5112 (Used, Made on 9/2013)	(in)	9.00	2.60	8.75	9.00	-2.70	8.50	34.00	N/A	30.75
		(mm)	228.60	66.04	222.25	228.60	-68.58	215.90	863.60	N/A	781.05
Member B	DS0380 Humanetics (Used)	(in)	9.21	2.60	10.10	9.13	-2.64	10.12	34.13	4.50	30.75
		(mm)	234.00	66.00	256.50	232.00	-67.00	257.00	867.00	114.30	772.00
Member B	DS6638 Humanetics (Used)	(in)	9.25	2.66	10.31	9.11	-2.66	10.31	33.74	4.25	30.39
		(mm)	235.00	67.50	262.00	231.50	-67.50	262.00	857.00	107.95	772.00
Member B	DR8948 Humanetics (Used)	(in)	9.25	2.64	10.35	9.09	-2.68	10.35	33.82	4.25	30.39
		(mm)	235.00	67.00	263.00	231.00	-68.00	263.00	859.00	107.95	772.00
Member B	EM8809 Humanetics (New)	(in)	8.98	2.64	10.24	9.13	-2.58	10.28	34.37	4.11	30.39
		(mm)	228.00	67.00	260.00	232.00	-65.50	261.00	873.00	104.39	772.00

Notes:

* Member A used same dummy for all three sets of jacket on ATD measurements

** A-Point Z-distance was measured from the H-Point.

† Circumference at B-B is measured 10.4 in (264 mm) above H-point

Y-Height of lower edge at anterior-most point on dummy mid-line

§ Circumference at Z is measured 6.5 in (165 mm) above table