

Deutsche Akkreditierungsstelle GmbH

Entrusted according to Section 8 subsection 1 AkkStelleG in connection with Section 1 subsection 1 AkkStelleGBV

Signatory to the Multilateral Agreements of EA, ILAC and IAF for Mutual Recognition

Accreditation



The Deutsche Akkreditierungsstelle GmbH attests that the testing laboratory

Humanetics Europe GmbH Im Breitspiel 6A, 69126 Heidelberg

is competent under the terms of DIN EN ISO/IEC 17025:2018 to carry out tests in the following fields:

Testing of Crash Test Dummies (ATD), used for passive vehicle safety dynamic testing

The accreditation certificate shall only apply in connection with the notice of accreditation of 18.03.2022 with the accreditation number D-PL-15087-01. It comprises the cover sheet, the reverse side of the cover sheet and the following annex with a total of 14 pages.

Registration number of the certificate: D-PL-15087-01-00

Berlin,

18.03.2022

Dr Heike Manke

Head of Technical Unit

 $Translation\ is sued:$

18.03.2022

Head of Technical Unit

The certificate together with the annex reflects the status as indicated by the date of issue.

The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH at https://www.dakks.de/en/accredited-bodies-search.html.

This document is a translation. The definitive version is the original German accreditation certificate.

Deutsche Akkreditierungsstelle GmbH

Office Berlin Spittelmarkt 10 10117 Berlin Office Frankfurt am Main Europa-Allee 52 60327 Frankfurt am Main Office Braunschweig Bundesallee 100 38116 Braunschweig

The publication of extracts of the accreditation certificate is subject to the prior written approval by Deutsche Akkreditierungsstelle GmbH (DAkkS). Exempted is the unchanged form of separate disseminations of the cover sheet by the conformity assessment body mentioned overleaf.

No impression shall be made that the accreditation also extends to fields beyond the scope of accreditation attested by DAkkS.

The accreditation was granted pursuant to the Act on the Accreditation Body (AkkStelleG) of 31 July 2009 (Federal Law Gazette I p. 2625) and the Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products (Official Journal of the European Union L 218 of 9 July 2008, p. 30). DAkkS is a signatory to the Multilateral Agreements for Mutual Recognition of the European co-operation for Accreditation (EA), International Accreditation Forum (IAF) and International Laboratory Accreditation Cooperation (ILAC). The signatories to these agreements recognise each other's accreditations.

The up-to-date state of membership can be retrieved from the following websites:

EA: www.european-accreditation.org

ILAC: www.ilac.org IAF: www.iaf.nu



Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-15087-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 18.03.2022Date of issue: 18.03.2022

Holder of certificate:

Humanetics Europe GmbH Im Breitspiel 6A, 69126 Heidelberg

Tests in the fields:

Testing of Crash Test Dummies (ATD), used for passive vehicle safety dynamic testing

The testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, to use standards or equivalent testing methods listed here with different issue dates.

The testing laboratory maintains a current list of all testing methods within the flexible scope of accreditation.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories. Laboratories that conform to the requirements of this standard, operate generally in accordance with the principles of DIN EN ISO 9001.

The certificate together with the annex reflects the status as indicated by the date of issue.

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Abbreviations used: see last page Page 1 of 14

This document is a translation. The definitive version is the original German annex to the accreditation certificate.



Frontal Impact Dummies

Hybrid III 5th Percentile Female

49 CFR Part 572 Subpart O Hybrid III 5th Percentile Female Test Dummy, Alpha Version

2002-09 572.132 - Head assembly test procedure

572.133 - Neck assembly test procedure 572.134 - Thorax assembly test procedure 572.135 - Torso flexion test procedure

572.136 - Knee impact test procedure

SAE J2862 User's Manual for the Small Adult Female Hybrid III Test

2015-02 Dummy

8.1 Head Drop Test8.2 Neck Tests

8.3 Thorax Impact Test 8.4 Knee Impact Test 8.5 Knee Slider Test

9.3 Hip Joint Range of Motion Test

9.4 Foot Test

9.6 Torso Flexion Test

9.7 Low-speed Thorax Impact Test

SAE J2878 Low Speed Thorax Impact Test Procedure for the Hybrid III 5th

2016-06 Percentile Female Test Dummy

3.2 Test Procedure

3.3 Performance Specifications

Hybrid II 50th Percentile Male

49 CFR Part 572 Subpart B Hybrid II 50th Percentile Male Dummy

1985-06 572.6 - Head

572.7 - Neck 572.8 - Thorax

572.9 - Lumbar spine, abdomen and pelvis

- Translation -

572.10 - Limbs

Hybrid III 50th Percentile Male

49 CFR Part 572 Subpart E Hybrid III 50th Male Dummy

2011-11 572.32 - Head

572.33 - Neck 572.34 - Thorax 572.35 - Limbs



UN-R 94, Annex 10

SA 02 2013-08 UN Regulation No 94 - Uniform provisions concerning the approval of vehicles with regard to the protection of the

occupants in the event of a frontal collision

Annex 10 Certification procedure for the dummy lower leg and

foot

1. Upper foot impact test

2. Lower foot impact test (without shoe)3. Lower foot impact test (with shoe)

Dummy 78051-218X-FAA-

User Manual

Hybrid III 50th Male FAA

2015-07

FAA (Hybrid III 50th Male FAA Dummy

78051-218X-FAA User Manual)

3.3 - Head Drop (according to Subpart E 572.32)3.4 - Neck Pendulum Flexion and Extension

(according to Subpart E 572.33)

3.5 - Thorax Impact (according to Subpart E 572.34)3.6 - Knee Impact (according to Subpart E 572.35)3.7 - Knee Slider Test (according to SAE EA-23)

3.8 - Hip Range of Motion Test (according to Subpart E 572.35)

3.9 - Torso Tests (according to Subpart B 572.9)

SAE J2779 Low Speed Thorax Impact Test Procedures for the Hybrid III 50th

2015-07 Male Dummy

3. Calibration Procedure

SAE J2856 User's Manual for the 50th Percentile Male Hybrid III Dummy

2009-09 4.3 Head Drop Test

4.4 Neck Tests

4.5 Thorax Impact Test4.6 Knee Impact Test4.7 Knee Slider Test

4.8 Hip Joint Range of Motion Test4.9 European Calibration Tests5.1 Low-speed Thorax Impact Test5.2 Low-speed Knee Slider Test

5.3 Foot Test

SAE J2876 Low Speed Knee Slider Test Procedure for the Hybrid III 50th

2009-03 Male Dummy

3. Certification Procedures

Valid from: 18.03.2022 Date of issue: 18.03.2022

Page 3 of 14



SAE Engineering AID 23 User Manual for the 50th Percentile Male Hybrid III Dummy

1998-06 Head Drop Test

Neck Tests

Thorax Impact Test Knee Impact Test Knee Slider Test

Hip Joint Range of Motion Test

SAE J3074 Hybrid III 50th Test Dummy Lumbar Flexion Test Procedure

2017-02 3.4 Test Procedure

3.5 Performance Specifications

Hybrid III 95th Percentile Male

SAE J2860 User Manual for the Hybrid III Large Male Test Dummy

2012-09 4. Certification Test Procedures

4.1 Head Drop Test 4.2 Neck Tests

4.3 Thorax Impact Test 4.4 Knee Impact Test 4.5 Knee Slider Test

5. Inspection Procedures and Tests

5.5 Torso Flexion Test

5.6 Foot Test

NATO AEP-55 Procedures for Evaluating the Protection Level of Armoured

Annex E Vehicles

2011-08 Annex E2 – ATD Preparation and Certification

MIL-LX Legform

THOR 5th Percentile Female

THOR-5th Female 474-9901

2018-07

THOR 5th Percentile Female NHTSA Advanced Frontal Dummy

2. Head Qualification

3. Face Qualification

4. Neck Qualification5. Thorax Qualification

6. Abdomen Qualification

7. Upper Leg Qualification

8. Lower Leg Qualification

Valid from: 18.03.2022 Date of issue: 18.03.2022

Page 4 of 14



THOR AV 5th ATD

2021-01

Certification Procedures for Certification Procedures for THOR AV 5th Female ATD

2. Head Qualification

3. Face Qualification

4. Neck Qualification

5. Thorax Qualification

6. Abdomen Qualification

7. Upper Leg Qualification

8. Lower Leg Qualification

9. Lumbar / Torso Certification Evaluation

THOR 50th Percentile Male

THOR AV 50th ATD

2020-07

Certification Procedures for Certification Procedures for THOR AV 50th ATD

1.0 Head Certification Evaluation

1.1 Face Certification Evaluation

1.2 Neck Certification Evaluation

1.3 Thorax Certification Evaluation

1.4 Abdomen Certification Evaluation

1.5 Lumbar / Torso Certification Evaluation

1.6 Upper Leg Certification Evaluation

1.7 Lower Leg Certification Evaluation

THOR-50M Qualification

Procedures Manual

2018-09

Qualification Procedures Manual THOR-50M Test Dummy

4. Head Qualification

5. Face Qualification

6. Neck Qualification

7. Upper Thorax Qualification

8. Lower Thorax Qualification r

9. Abdomen Qualification

10. Upper Leg Qualification

11. Knee Qualification

12. Ankle Inversion and Eversion Qualification

13. Ball of Foot Qualification

14. Heel Qualification

Valid from: 18.03.2022 Date of issue: 18.03.2022

Page 5 of 14



EuroNCAP THOR Specification and Certification THOR-50M Test Dummy

Technical Bulletin 026 (In according to NHTSA, UN-R94 and SAE procedures)

V. 1.2 2. THOR Certification 2020-11 2.1.1 Head Impact Test

2.1.2 Neck Tests, all 6 six conditions2.1.3 Upper Thorax Impact at 4.3m/s2.1.4 Left and Right Lower Thorax Impact

2.1.5 Abdomen Impact

2.1.6 Left and Right Upper Leg Impact

2.2 Test Impact Conditions

2.3 Thorax and Abdomen Displacement Sensors

2.4 Certification Corridors2.5 The Knee Sliders2.6 The HIII Lower legs

Side Impact Dummies

SID-IIs

49 CFR Part 572 Subpart V

2009-09

SID-IIs Side Impact Crash Test Dummy, Small Adult Female

572.192 - Head assembly 572.193 - Neck assembly

572.194 - Shoulder

572.195 - Thorax with arm 572.196 - Thorax without arm

572.197 - Abdomen

572.198 - Pelvis acetabulum

572.199 - Pelvis iliac

180-9900 SID-IIs User

SID-IIs Side Impact Crash Test Dummy, Small Adult Female

Manual 3. Certification Procedures

Rev. H 3.2 Head Certification Test Procedure 2015-07 3.7 Neck Certification Test Procedure

3.8.3 Thorax with Arm Certification Test Procedure 3.10 Thorax without Arm Certification Test Procedure

3.11.3 Abdomen Certification Test Procedure3.12.1.3 Pelvis Plug Certification Test Procedures3.12.2.3 Acetabulum Certification Test Procedure

3.12.4 Iliac Certification Test Procedure3.13.3 Shoulder Certification Test Procedure



EuroSID-2 & EuroSID-2re

49 CFR Part 572 Subpart U

2012-09

ES-2re Side Impact Crash Test Dummy, 50th Percentile Adult

Male

572.182 - Head assembly 572.183 - Neck assembly 572.184 - Shoulder assembly

572.185 - Thorax (upper torso) assembly

572.186 - Abdomen assembly 572.187 - Lumbar spine

572.188 - Pelvis

UN-R 95, Annex 6

SA 03 2014-02 UN Regulation No 95 - Uniform provisions concerning the approval of vehicles with regard to the protection of the occupants in the event of a lateral collision

Annex 6, Section 5 Certification of the dummy

5.5 Head5.6 Neck5.7 Shoulder5.9 Thorax

5.10 Lumbar spine 5.11 Abdomen 5.12 Pelvis

WorldSID 5th Percentile Female

W5-9900 User Manual WorldSID 5th (User's Manual for the WorldSID 5th Small Adult

Rev. E Female Side Impact Dummy)

2015-08 Section 9. Certification Test Procedures

9.1 - Head Test 9.2 - Neck Test

9.3 - Thorax / Shoulder Test9.4 - Thorax with Half Arm9.5 - Thorax without Arm9.6 - Abdomen Test9.7 - Pelvis Test

Valid from: 18.03.2022 Date of issue: 18.03.2022

Page 7 of 14



WorldSID 50th Percentile Male

W50-9900 WorldSID 50M W50-9900 WorldSID 50M User Manual User Manual Section 8. Verification Procedures

Rev. K 8.4 Head Tests
2018-02 8.5 Neck Tests
8.6 Full-body Tests

8.7 Shoulder Verification

8.8 Thorax without Arm Verification

8.9 Abdomen Verification8.10 Pelvis Verification Test

ISO/WD 15830-2 WorldSID 50th Side impact Test Dummy

2011-02 Section 5 in conjunction with ISO/TS 15830-5 (2017) Section 7

(withdrawn standard) (withdrawn standard)

5. Certification Test Procedures

5.1 - Head 5.2 - Neck

5.3.2 - Shoulder test

5.3.3 - Thorax with half arm5.3.4 - Thorax without arm5.3.5 - Abdomen test5.3.6 - Pelvis test

Rear Impact Dummy

BioRID II

BioRID II Dummy BioRID-II UN

Certification Manual BioRID Sled and Track System Certification Test

Rev. E BioRID Jacket Certification Test 2019-12 BioRID Pelvis Certification Test

BioRID Dummy Certification with and without Headrest Test

Child Dummies

Hybrid III Children

49 CFR Part 572 Subpart R

2001-10

CRABI 12-Month-Old Infant Crash Test Dummy, Alpha Version

572.152 - Head assembly test procedure 572.153 - Neck-headform test procedure 572.154 - Thorax assembly test procedure



49 CFR Part 572 Subpart P

Hybrid III 3-Year-Old Child Crash Test Dummy, Alpha Version

2002-01

572.142 - Head test procedure

572.143 - Neck-headform test procedure 572.144 - Thorax assembly test procedure 572.145 - Torso flexion test procedure

49 CFR Part 572 Subpart N

2011-06

Six-Year-Old Child Test Dummy, Beta Version 572.122 - Head assembly test procedure 572.123 - Neck assembly test procedure

572.124 - Thorax assembly test procedure 572.125 - Torso flexion test procedure 572.126 - Knee impact test procedure

49 CFR Part 572 Subpart S

2011-02

Hybrid III Six-Year-Old Weighted Child Test Dummy

572.162 - Head assembly Test procedure 572.163 - Neck assembly Test procedure 572.164 - Thorax assembly Test procedure 572.165 - Torso flexion test procedure 572.166 - Knee impact test procedure

49 CFR Part 572 Subpart T

2012-02

Hybrid III 10-Year-Old Child Test Dummy

572.172 - Head assembly and test procedure 572.173 - Neck assembly and test procedure 572.174 - Thorax assembly and test procedure

572.175 - Torso flexion test procedure 572.176 - Knee impact test procedure

921022-9900 User Manual

2015-07

CRABI 12- And 18-Month-Old Rev.C

Section 4. Certification Tests

4.1 Head Drop Test 4.2 Neck Tests

4.3 Thorax Impact Test

420-9900 Hybrid III 10 Year

Old User Manual

420-9900 User Manual HIII-10 Year Old Rev.C

3.1. Head Calibration Procedure3.2. Neck Calibration Test Procedure3.4. Chest Calibration Procedure

3.5. Knee Calibration Procedure

3.6. Torso Flexion Calibration Procedure

SAE J2706 2013-06

Rev. C

2015-07

Hybrid III Six-Year Old Child Dummy User's Manual

8.1 Head Drop Test

8.2 Neck Tests

8.3 Thorax Impact Test 9.3 Knee Impact Test 9.4 Torso Flexion Test



SAE J2854 User's Guide for the Six-Month-Old Infant Dummy (CRABI)

2008-09 Six-Month-Old Infant Test Dummy

4.3 Head Drop Test4.4 Neck Tests

SAE Engineering AID 27

2005-07

12 and 18 Month Old Infant Dummies User's Manual

Calibration Test Procedures

Head Drop Test Neck Tests

Thorax Impact Test

SAE J2857 Hybrid III 3-Year Old Child Dummy User's Manual

2011-03 9.1 Head Drop Test

9.2 Neck Tests

9.3 Thorax Impact Test

9.4 Chest Depth Measurement Procedure

10.4 Torso Flexion Test Procedure

SAE J2858 Hybrid III Ten-Year-Old Child Dummy User's Manual

2017-10 5. Calibration Test Procedures

5.1 Head Drop Test5.2 Neck Tests

5.3 Thorax Impact Test6. Inspection Test Procedures

6.3 Knee Impact Test6.4 Torso Flexion Test

P-Dummies (Children (P))

UN-R 44 UN Regulation No 44 – Uniform provisions concerning the

Annex 8, Appendix 1 to 3 approval of restraining devices for child occupants of power-

SA 02 driven vehicles ('Child Restraint Systems')

2010-11 Annex 8 Description of manikins

(withdrawn standard) Appendix 1 Description of the 9 months and 3, 6 and 10-year

manikins

Appendix 2 Description of the 'new-born' manikin Appendix 3 Description of the 18 months manikin

Valid from: 18.03.2022 Date of issue: 18.03.2022

Page 10 of 14



Q-Dummies (Children (Q))

49 CFR Part 572 Subpart W

2020-11

Q3s Three-Year-Old Child Side Impact Test Dummy

572.212 - Head assembly test procedure 572.213 - Neck assembly test procedure

572.214 - Shoulder assembly test procedure

572.215 - Thorax with arm assembly test procedure 572.216 - Thorax without arm assembly test procedure

572.217 - Lumbar spine assembly test procedure 572.218 - Pelvis assembly test procedure

047-9900 User Manual Q0

Rev. F

User Manual Q0 Rev F / Q 0 Year (6 week old, Newborn User

Manual)

2017-07 Section 5. Certification Tests

5.3 Head 5.4 Neck

5.5 Lumbar Spine

036-9900 User Manual Q1

Rev. H

User Manual Q1 Rev H / Q 1 Year (Advanced 1 year old child

User Manual)

2016-08 Section 8. Certification Tests

8.1 Head8.2 Neck8.3 Lumbar8.4 Abdomen8.5 Thorax

048-9900 User Manual

Q1,5

User Manual Q1,5 Rev G / Q 1.5 Year (Advanced 1.5-year-old

child) User Manual

Rev. G Section 8. Certification Tests

2015-07 8.1 Head

8.2 Neck8.3 Lumbar8.4 Abdomen8.5 Thorax

020-9905 User Manual Q3

User Manual Q3 Rev G / Q3 (Advanced 3-year-old child) User

Rev. G

Manual

2016-10 Section 8. Certification Tests

8.1 Head Certification

8.2 Certification of the Neck

8.3 Certification of the Lumbar Spine8.4 Certification of the Abdomen8.5 Certification of the Thorax



020-9900 User Manual Q3s User Manual Q3s Three-Year-Old Child Test Dummy

Rev. J Section 7. Certification Procedure

2018-02 7.1 Head

7.2 Neck

7.3 Lumbar Spine7.4 Shoulder7.5 Thorax7.6 Abdomen7.7 Pelvis

033-9900 User Manual Q6 User Manual Q6 Rev M / Q6 (Advanced 6-year-old child) User

Rev. M Manual

2016-11 Section 8. Certification Tests

8.1 Head Certification

8.2 Certification of the Neck

8.3 Certification of the Lumbar Spine8.4 Certification of the Abdomen8.5 Certification of the Thorax

010-9900 User Manual Q10 User Manual Q10 Rev G / Q10 (10.5-year-old child) User Manual

Rev. G Section 14. Certification Procedures

2016-02 14.1 Head Certification

14.2 Frontal Impact Head Certification14.3 Lateral Impact Head Certification

14.4 Neck Certification 14.5 Flexion Neck Test 14.6 Extension Neck Test 14.7 Lateral Neck Test

14.8 Lumbar Spine Certification

14.9 Frontal Spine Test14.10 Lateral Spine Test14.11 Thorax Certification

14.12 Frontal Impact Thorax Test14.13 Side Impact Thorax Test

14.14 Shoulder Lateral Impact Test / Application for Frontal

Dummy with Full Arms 14.15 Side Impact Pelvis Test 14.16 Abdomen Certification

14.17 Shoulder Lateral Impact Test / Application for Side Impact

Shoulder Kit

DAKKS Deutsche Akkreditierungsstelle

Annex to the accreditation certificate D-PL-15087-01-00

Impactors

Ejection Mitigation

TL-WI-0267HD 2019-10 Verification Procedure for the 18Kg Headform

Pedestrian Protection

49 CFR Part 572 Subpart L

1995-08

Free Motion Headform 572.102 - Drop test

UN-R 127, Annex 6

SA 02

UN Regulation No 127 – Uniform provisions concerning the approval of motor vehicles with regard to their pedestrian

safety performance

2018-05

Annex 6 Certification of the impactor

1. Flexible lower legform impactor certification

2. Upper legform impactor certification

3. Child and adult headform

User Manual FLEX PLI GTR

2019-05

User Manual FLEX PLI GTR

Pedestrian Lower Legform Impactors

Section 7. Calibration and Certification Testing 7.2. Femur and Tibia Bone Assembly Certification

7.3. Knee Certification

8. Pendulum Dynamic Certification9. Dynamic Inverse Certification Test

ISO/NP TS 20458

2019-11

Road vehicles Design and performance specifications for

advanced Pedestrian Legform Impactor (aPLI)

Femur Certification Tibia Certification Knee Certification Flesh Certification Knee test (Type I) Femur Test (Type II)

EuroNCAP

aPLI Dynamic Certification

Technical Bulletin 032 V. 1.0

aPLI Dynamic Certification Corridors
 4 Certification Corridors for the knee test (Type I)
 Certification Corridors for the femur test (Type II)

2021-04

Valid from: 18.03.2022 Date of issue: 18.03.2022

Page 13 of 14



Abbreviations used:

ATD Anthropomorphic Test Devices
BioRID Biofidelic Rear Impact Dummy

CFR Code of Federal Regulations (Office of the Federal Register, U.S. Government)

HUM HUMANETICS (Developer and manufacturer of anthropomorphic testing equipment)

GTR Global Technical Regulation
SAE Society of Automotive Engineers

SID Side Impact Dummy

UN-R Regulation of the Economic Commission for Europe (ECE)

User Manual Product documentation from ATD manufacturers (manufacturer specifications)

NHTSA National Highway Traffic Safety Administration
EuroNCAP European New Car Assessment Programme
NATO AEP Standardization Agreement of the NATO
ISO International Standards Organization