

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-20848-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 26.02.2021

Date of issue: 26.02.2021

Holder of certificate:

**ATD-Service Gerhard Pfeifer
Dieselstraße 1, 63843 Niedernberg**

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. The current status of any given scope of accreditation may be found respectively in the database of accredited bodies of Deutsche Akkreditierungsstelle GmbH <https://www.dakks.de/en/content/accredited-bodies-dakks>.

Abbreviations used: see last page

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

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49 CFR Part 572 Subpart R 2001-10	CRABI 12 Month (CRABI 12-Month-Old Infant, Alpha Version) 572.152 - Head drop front 572.152 - Head drop rear 572.153 - Neck pendulum flexion and extension 572.154 - Thorax impact
49 CFR Part 572 Subpart P 2002-01	HIII 3 Year Dummy (3-Year-old Child Crash Test Dummy, Alpha Version) 572.142 - Head drop 572.143 - Neck pendulum flexion and extension 572.144 - Thorax impact 572.145 - Torso flexion
49 CFR Part 572 Subpart N 2011-06	HIII 6 Year Dummy (Six-Year-old Child Test Dummy, Beta Version) 572.122 - Head drop 572.123 - Neck pendulum flexion and extension 572.124 - Thorax impact 572.125 - Torso flexion 572.126 - Knee impact left and right
49 CFR Part 572 Subpart S 2010-12	HIII 6 Year (Six-Year-old Weighted Child Test Dummy) 572.162 - Head drop 572.163 - Neck pendulum flexion and extension 572.164 - Thorax impact 572.165 - Torso flexion 572.166 - Knee impact left and right
49 CFR Part 572 Subpart T 2012-02	HIII 10 Year (10-Year-old Weighted Child Test Dummy, HIII-10C) 572.172 - Head drop 572.173 - Neck pendulum flexion and extension 572.174 - Thorax impact 572.175 - Torso flexion 572.176 - Knee impact left and right
UN-R 44 Annex 8 2010-11	Regulation No 44 of the Economic Commission for Europe of the United Nations (UN/ECE) — Uniform provisions concerning the approval of restraining devices for child occupants of power-driven vehicles ('Child Restraint Systems')

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49 CFR Part 572 Subpart O 2002-09	<p>HIII 5th (Hybrid III 5th Percentile Female Test Dummy, Alpha Version)</p> <p>572.132 - Head drop 572.133 - Neck pendulum flexion and extension 572.134 - Thorax impact 572.135 - Torso flexion 572.136 - Knee impact left and right</p>
SAE Engineering AID 25 1999-07	<p>HIII 5th User's Manual for the Small Adult Female Hybrid III Test Dummy</p> <p>Knee Slider Test (left and right) Hip range of motion (left and right)</p>
SAE J2878 2016-06	<p>HIII 5th Low Speed Thorax Impact Test Procedure for the HIII 5F Dummy</p> <p>3 m/s Thorax impact</p>
49 CFR Part 572 Subpart E 2011-11	<p>HIII 50th Male Dummy</p> <p>572.32 - Head drop 572.33 - Neck pendulum flexion and extension 572.34 - Thorax impact 572.35 - Knee impact (left and right) 572.35 - Hip range of motion (left and right)</p>
ECE-R 94 Annex 10 Series 02 2013-07	<p>HIII 50th Certification procedure for the dummy lower leg and foot</p> <p>Foot impact (left and right)</p>
SAE J2779 2015-07	<p>HIII 50th Low Speed Thorax Impact Test Procedure for the HIII 50th Male Dummy</p> <p>3 m/s Thorax impact</p>
SAE Engineering AID 23 SAE J2856 2009-09	<p>User's Manual for the 50th percentile male hybrid III test dummy</p> <p>Knee Slider Test (left and right)</p>

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SAE J2876 2015-07	<p>HIII 50th (Low Speed Knee Slider Test Procedure for the Hybrid III 50th Male Dummy)</p> <p>Sliding-Knee Test low speed (left and right)</p>
SAE J3074 2017-02	<p>HIII 50th (Lumbar Flexion Test Procedure for the Hybrid III 50th Male Dummy)</p> <p>Lumbar flexion test</p>
SAE J2860 2012-09	<p>HIII 95th (User's Manual for the Hybrid III Large Male Test Dummy)</p> <p>4.1 - Head drop 4.2 - Neck pendulum flexion and extension 4.3 - Thorax impact 4.4 - Knee impact left and right 4.5 - Sliding-Knee Test left and right 5.5 - Torso flexion test</p>
49 CFR Part 572 Subpart B 1985-06	<p>HII 50th (50th Percentile Male)</p> <p>572.6 - Head drop 572.7 - Neck pendulum 572.8 - Thorax impact 572.8 - Thorax impact (slow) 572.9 - Torso flexion test 572.9 - Abdomen compression 572.10 - Knee impact left and right</p>
78051-9904 User Manual HIII-50th FAA Male Rev. B 2011	<p>FAA (Hybrid III 50th Male FAA Dummy 78051-218X-FAA User Manual)</p> <p>3.3 - Head drop 3.4 - Neck pendulum flexion and extension 3.5 - Thorax impact 3.6 - Knee impact left and right 3.7 - Sliding-Knee Test left and right 3.8 - Hip range of motion left and right 3.9 - Torso flexion test 3.9 - Abdomen compression</p>

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THOR Qualification
Procedures Manual
(NHTSA)
2018-09

THOR-M-50th (THOR 50th Percentile Male Qualification
Procedures Manual)

- 4 - Head impact
- 5 - Face impact
- 6.8 - Neck pendulum flexion
- 6.9 - Neck pendulum extension
- 6.7 - Neck pendulum (torsion left + right)
- 6.10 - Neck pendulum lateral R+L
- 7 - Upper thorax impact
- 8 - Lower thorax impact (left and right)
- 9 - Abdomen impact
- 10 - Knee impact (left + right)
- 11 - Knee slider impact (left+ right)
- 12 - Ankle eversion and inversion (left and right)
- 13 - Ball of foot impact (left and right)
- 14 - Heel impact (left and right)

THOR-BLD A
THOR-50M EuroNCAP SBL-A
Update
2017-01

THOR-M-50th (THOR-50M EuroNCAP SBL-A Update)

- Head impact
- Face impact
- Neck torsion
- Neck pendulum flexion
- Neck pendulum extension
- Neck pendulum lateral R+L
- Upper thorax impact
- Lower thorax impact
- Abdomen impact
- Knee impact (left + right)
- Knee slider impact (left+ right)
- Ankle eversion and inversion (left and right)
- Ball of foot impact (left and right)
- Heel impact (left and right)

THOR-BLD B
THOR-50M Standard SBL-B
Update (Humanetics)
2018-01

THOR-M-50th (THOR-50M EuroNCAP SBL-B Update)

- Head impact
- Face impact
- Neck torsion
- Neck pendulum flexion
- Neck pendulum extension
- Neck pendulum lateral R+L
- Upper thorax impact

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- Lower thorax impact
- Abdomen impact
- Knee impact (left + right)
- Knee slider impact (left+ right)
- Ankle eversion and inversion (left and right)
- Ball of foot impact (left and right)
- Heel impact (left and right)

THOR-EuroNCAP
THOR-50M EuroNCAP
Specification and
Certification Version 1.1
TB026
2020-08

THOR-M-50th (THOR-50M EuroNCAP Specification and
Certification Version 1.1 TB026)

- 2 Table 5 – Head impact
- 2 Table 4 – Neck torsion (left and right)
- 2 Table 1 – Neck pendulum flexion
- 2 Table 2 – Neck pendulum extension
- 2 Table 3 – Neck pendulum lateral R+L
- 2 Table 6 – Upper thorax impact (4,3 m/s)
- 2 Table 7 – Upper thorax impact (2,5 m/s)
- 2 Table 8 – Lower thorax impact (L + R)
- 2 Table 9 – Abdomen impact
- 2 Table 10 – Knee impact (left + right)

THOR-H3 Legs
SAE J2876
2015-07

HIII 50th (Low Speed Knee Slider Test Procedure for the Hybrid
III 50th Male Dummy)

Sliding-Knee Test slow (left and right)

THOR-H3 Legs
UN-R 94 Anhang 10 ÄS 02
2013-07

HIII 50th (Certification procedure for the dummy lower leg and
foot)

Foot impact (left and right, 3 Tests each)

ECE-R 95 Annex 6 Series 03
2014-02

ES-2 50th Male Side Impact

- 5.5 - Head drop
- 5.6 - Neck pendulum
- 5.7 - Shoulder impact
- 5.9 - Rip drop (3tests)
- 5.10 - Lumbar flexion
- 5.11 - Abdomen impact
- 5.12 - Pelvis impact

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49 CFR Part 572 Subpart U 2011-11	ES-2re Side Impact Crash Test Dummy, 50th Percentile Adult Male 572.182 - Head drop 572.183 - Neck pendulum 572.184 - Shoulder impact 572.185 - Rib drop (2 tests) 572.185 - Thorax without arm impact 572.186 - Abdomen impact 572.187 - Lumbar flexion 572.188 - Pelvis impact
W5-9900 User Manual Rev E Revision 2015	WorldSID 5th (User's Manual for the WorldSID 5th Small Adult Female Side Impact Dummy) 9.1 - Head drop (front and lateral) 9.2 - Neck pendulum 9.3 - Shoulder impact 9.4 - Thorax with arm impact 9.5 - Thorax without arm impact 9.6 - Abdomen impact 9.7 - Pelvis impact
W50-9900 User Manual Rev. H 2016	WorldSID 50th (User's Manual for the WorldSID 50th percentile Male Side Impact Dummy) 8.4 - Head drop (front and lateral) 8.5 - Neck pendulum 8.7 - Shoulder impact 8.8 - Thorax without arm impact 8.9 - Abdomen impact 8.10 - Pelvis impact
ISO 15830-2 2013-05	WorldSID 50th (Design and performance specifications for the WorldSID 50th Percentile Male Side Impact Dummy) 4.1 - Head drop (front and lateral) 4.2 / 5.2 - Neck pendulum 4.3 - Shoulder impact 4.3 - Thorax with arm impact 4.3 - Thorax without arm impact 4.6 - Abdomen impact 4.6 - Pelvis impact

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WorldSID-50M Qualification Procedure (NHTSA) 2019-10	WorldSID 50th (WorldSID-50M Qualification Procedures (NHTSA)) Neck torsion (left and right)
49 CFR Part 572 Subpart V 2009-08	SID IIs (SID-IIs Side Impact Crash Test Dummy, Small Adult Female) 572.192 - Head drop 572.193 - Neck pendulum 572.194 - Shoulder impact (on certification bench) 572.195 - Thorax impact with arm (on certification bench) 572.196 - Thorax impact without arm (on certification bench) 572.197 - Abdomen impact (on certification bench) 572.198 - Pelvis impact (on certification bench) 572.199 - Iliac impact (on certification bench)
047-9900 User Manual Q0 Rev. F 2017	Q 0 Year (6week old, Newborn User Manual) 5.3 - Head drop (front and lateral) 5.4 - Neck pendulum (flexion, extension, lateral) 5.5 - Lumbar test (flexion, extension, lateral)
036-9900 User Manual Q1 Rev. H 2016	Q 1 Year (Advanced 1 year old child User Manual) 8.1 – Head drop (front and lateral) 8.2 - Neck pendulum (flexion and lateral) 8.3 - Lumbar test (flexion and lateral) 8.4 – Abdomen test 8.5 – Thorax impact (front and lateral)
048-9900 User Manual Q1.5 Rev. G 2015	Q 1.5 Year (Advanced 1.5 year old child User Manual) 8.1 - Head drop (front and lateral) 8.2 - Neck flexion (front and lateral) 8.3 - Lumbar test (front and lateral) 8.4 - Abdomen test 8.5 - Thorax impact (front and lateral)
020-9905 User Manual Q3 Rev. G 2016	Q 3 Year (Advanced 3 year old child User Manual) 8.1 - Head drop (front and lateral) 8.2 - Neck flexion (front and lateral) 8.3 - Lumbar test (front and lateral)

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	8.4 - Abdomen test 8.5 - Thorax impact (front and lateral)
020-9900 User Manual Q3s Rev. J 2018	Q 3 Year (Q3s User Manual) 7.1 - Head drop (front and lateral) 7.2 - Neck flexion (front, lateral and torsion) 7.3 - Lumbar test (front and lateral) 7.4 – Shoulder test 7.5 - Thorax impact with / without arm 7.6 – Abdomen test 7.7 - Pelvis impact
033-9900 User Manual Q6 Rev. M 2016	Q 6 Year (Advanced 6 year old child User Manual) 8.1 - Head drop (front and lateral) 8.2 - Neck flexion (front and lateral) 8.3 - Lumbar flexion (front and lateral) 8.4 - Abdomen test 8.5 - Thorax impact (front and lateral)
010-9900 User Manual Q 10 Rev. G 2016	Q 10 Year (10.5 year old child User Manual) 14.1 - 14.3 - Head drop (front and lateral) 14.4 - 14.7 - Neck flexion (flexion, extension and lateral) 14.8 - 14.10 - Lumbar flexion (front and lateral) 14.11 - 14.13 - Thorax impact (front and lateral) 14.14 - Shoulder impact (full arms for frontal dummy) 14.15 - Pelvis impact 14.16 - Abdomen impact 14.17 - Shoulder impact (half arms for lateral dummy)
ARA-9901 BioRID II Dummy Certification Manual Rev. E 2019	BioRID II (BioRID II Dummy Certification Manual) BioRID Sled Jacket Pelvis Dummy
49 CFR Part 572 Subpart L 1995-08	FMH (Free Motion Headform) 572.102 - Head drop
631/2009/EC Annex I 09- 2011	Type-approval of motor vehicles with regard to the protection of pedestrians and other unprotected road users

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PART V: TEST SPECIMENS, Annex I: Certification of test specimens, Chapter 4

GTR9 2011-02	Global Technical Regulation No. 9 "PEDESTRIAN SAFETY"
UN-R 127 Annex 6 2015-02	8.3. - Child and adult head form impactors certification Uniform provisions concerning the approval of motor vehicles with regard to their pedestrian safety performance 3 x head drop test
133-9900 User Manual FLEX PLI GTR Rev. J 2016	Flex PLI (Flex PLI GTR User Manual) 7.2 - Femur- und Tibia bones test 7.3 - Knee test 7.4 - Frontone test fixture for static certification
ISO/NP TS 20458 2019-11	aPLI (Road vehicles Design and performance specifications for advanced Pedestrian Legform Impactor)

Abbreviations used:

ATD	Anthropomorphic Test Devices
CFR	Code of Federal Regulations (Office of the Federal Register, U.S. Government)
UN-R	Regulation of the Economic Commission for Europe (ECE)
EG	European Community
GTR	Global Technical Regulation (Working group, works for the ISO)
User Manual	Product documentation of ATD manufacturers (manufacturer specifications)
SAE	Society of Automotive Engineers