

# Deutsche Akkreditierungsstelle GmbH

## Annex to the Accreditation Certificate D-PL-11238-01-00 according to DIN EN ISO/IEC 17025:2018

**Valid from:** 04.12.2020

Date of issue: 04.12.2020

Holder of certificate:

**ContiTech Luftfedersysteme GmbH**  
**Philipsbornstraße 1, 30165 Hannover**

Tests in the fields:

**Endurance tests of air spring systems and rubber suspension components and measurement of force and deformation characteristics; corrosion tests, burst pressure tests, climate chamber testing**

*Within the given test fields the testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, the following: the modification, development and refinement of testing methods. The listed testing methods are exemplary.*

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

*The management system requirements in DIN EN ISO/IEC 17025 are written in language relevant to operations of testing laboratories and operate generally in accordance with the principles of DIN EN ISO 9001.*

*The certificate together with its annex reflects the status at the time of the date of issue. The current status of the scope of accreditation can be found in the database of accredited bodies of Deutsche Akkreditierungsstelle GmbH.  
<https://www.dakks.de/en/content/accredited-bodies-dakks>*

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**1. Endurance tests of air spring systems and rubber suspension components**

DIN EN ISO 6803 2017-07	Rubber or plastic hoses and hose assemblies - Hydraulic-pressure impulse test without flexing
AAHP91, Vers. 3 2017-08	Tests with road load data – Conversion of a measured acceleration signal into a displacement signal
AAWP05, Vers. 7 2018-01	Durability tests on seesaw test rigs

**2. Measurement of force and deformation characteristics, burst pressure tests**

DIN EN 13597 2008-04	Railway applications - Rubber suspension components - Rubber diaphragms for pneumatic suspension springs
DIN EN 13913 2003-08	Railway applications - Rubber suspension components - Elastomer-based mechanical parts
AABD02, Vers. 4 2019-04	Bursting pressure test
AADA01, Vers. 3 2018-03	Rolling performance in deflated condition
AADP01, Vers. 1 2017-06	Tightness test
AAHP02, Vers. 10 2019-04	Characteristics measurement of airsprings for railway applications
AAHP03, Vers. 11 2019-05	Characteristics measurement of sleeve type bellows and airsprings for commercial vehicles and industrial applications
AAHP05, Vers. 2 2011-11	Simulation of static and dynamic multiaxial kinematics
AAHP07, Vers. 3 2017-08	Measurement of deformations using strain gauges
AAHP08, Vers. 2 2014-03	Determination of high product stiffness using direct displacement measurement (independent from test rig stiffness)
HVHP02_e, Vers. 5 2018-12	Specification MV 600/ A for railway air spring systems

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**3. Corrosion and climate chamber testing**

DIN EN ISO 4628-1 2016-07	Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 1: General introduction and designation system
DIN EN ISO 4628-2 2016-07	Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 2: Assessment of degree of blistering
DIN EN ISO 4628-3 2016-07	Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 3: Assessment of degree of rusting
DIN EN ISO 4628-8 2013-03	Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 8: Assessment of degree of delamination and corrosion around a scribe or other artificial defect
DIN EN ISO 9227 2017-07	Corrosion tests in artificial atmospheres - Salt spray tests
DIN EN ISO 11997-1 2018-01	Paints and varnishes - Determination of resistance to cyclic corrosion conditions - Part 1: Wet (salt fog)/dry/humidity
Scania STD 4271 2018-10	Surface Treatment-Scribing and evaluating the extent of damage
Scania STD 4319 2012-09	Accelerated corrosion test
Volvo STD 423-0014 2015-01	Accelerated corrosion test
Volvo STD 423-0018 2004-10	Moisture resistance in tropical cabinet
Volvo STD 1021,2 2002-10	Scribing of a surface coated test object and evaluation of the propagation from scribe when corrosion testing
AABD03, Vers. 3 2019-10	Warm bursting pressure test

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**Characteristic Parameter within the flexible scope of accreditation**

Type of test	Test range	Measurement uncertainty <sup>2)</sup>	Typically test methods
<b>Life cycles, characteristic curve, burst pressure</b>			
- force	-500 kN - 500 kN	±1%	DIN EN ISO 6803
- moment	-60 kNm to +60 kNm	±1%	DIN EN 13597,
- pressure <sup>1)</sup>	-0,9 hPa to 100 hPa	±1%	DIN EN 13913,
- distance (product deformation)	-1000 mm to +1000 mm	±2%	AABD02, Vers. 4 AABD03, Vers. 3
- angel	-30° to +30°	±1%	AADA01, Vers. 3
- length (product dimension)	1,0 mm to 1000 mm to 10 mm to 150 mm to 250 mm to 600 mm to 1000 mm	± 0,025 mm ± 0,04 mm ± 0,08 mm ± 0,1 mm ± 0,25 mm	AADP01, Vers. 1 AAHP02, Vers. 10 AAHP03, Vers. 11 AAHP05, Vers. 2 AAHP07, Vers. 3 AAHP08, Vers. 2 AAHP91, Vers. 3 AAWP05, Vers.7 HVHP02, Vers. 5
- weigth	1,0 kg to 250 kg to 5 kg to 20 kg to 50 kg to 250kg	± 0,01 kg ± 0,02 kg ± 0,04 kg ± 0,2 kg	AAHP02, Vers. 10
- mass flow	0 - 1200 l/min (iN)	±2%	AAWP05, Vers. 7
<b>Corrosion test</b>			
- chamber volume	400 und 1000 l		DIN EN ISO 9227
- density	0,01 g/cm <sup>3</sup> to 3 g/cm <sup>3</sup>	± 0,001 g/cm <sup>3</sup>	DIN EN ISO 11997-1
- pH-value	0 to 14 pH	± 0,1 pH	Volvo STD 423-0014
- electrical conductivity	0,002 mS/cm to 0,2 mS/cm	± 0,0002 mS/cm	Scania STD 4319
- rust grade	Ri0 to Ri5	± 0,5 Ri	
<b>climate chamber</b>			
- temperature	- 60°C to +120°C	±2°C	DIN EN ISO 6803
- humidity	10% - 100% rel. F	±2%	DIN EN ISO 11997-1 DIN EN 13597, DIN EN 13913, Volvo STD 423-0014 Scania STD 4319

Note:

<sup>1)</sup> Pressure is given as relative value according to ambient pressure of 1,013 hPa (mean value).

<sup>2)</sup> The measurement uncertainty of the value measured is given for a coverage interval of 95% (k=2).

**Abbreviations used:**

DIN	German Institute for Standardization
EN	European Standard
ISO	International Organization for Standardization
AA; HV	Standard of ContiTech Luftfedersysteme GmbH (ContiTech Air spring systems)