NORWEGIAN ACCREDITATION TEST 275

Test Report

SCANDINAVIAN BUSINESS SEATING

Test Report No. **2013-05-23-006**	Page **1(8)** Rev. 00

Customer	Scandinavian Business Seating AS Sundveien 7374 Røros, Norway
Customer contact	Product & Brand Concept v/ Christian Eide Lodgaard
Test item	RH Mereo
Test item ID:	Mereo 200, Mereo 220
Serial No.	5110021347-1 , 5110021347-2 , 5110021347-3
Order No.	2013-05-23-006
Date of receipt.	2014-05-15
Testing commenced / finished	2014-05-27 / 2014-08-29
Performing Laboratory.	Testlab SB Seating Røros, Scandinavian Business Seating AS Sundveien 7374 Røros, Norway +47 72 40 72 00
Accredited by.	Norsk Akkreditering Fetveien 99 2007 Kjeller +47 64 84 86 00 Valid from: 2013-04-18 Valid to: 2018-04-18 Registration No.: Test 275
Tested according to.	ANSI/BIFMA X5.1-2011 Type 1/111
Test result.	The test item passed the test specification(s)

Tested by:			**Approved by:**		
2014-09-12	John Anders Spencer		2014-09-12	Christian Andersson	
Date	**Name**	**Sign.**	**Date**	**Name**	**Sign.**

Additional information.
The test results refer only to the sample tested.

Abbreviations

P	**=Passed**
F	**=Failed**
NA	**=Not applicable**
NT	**=Not tested**

Brief description of the test item upon receipt.

RH Mereo
Office work chair with aluminium base. High and low backrest.
Armrests made of aluminium post, plastic body and top. Armrests are adjustable in height and width, rotatable with about 20°.
Seat height, depth and backrest angle adjustable by levers on seat mechanism.
Lockable tilt mechanism with tilt resistance adjustment on seat mechanism.
Backrest is height adjustable by lever on backrest.
Neck rest adjustable in height and depth.




Remarks:
There were no remarks upon receipt

Estimated uncertainty of stability measurement		
Measurement	**Description**	**Uncertainty (N)**
12.3.1	Rear stability	9,12
12.3.2	Rear stability type I & II chairs	6,84
12.4.2	Front stability	3,37

Standard: ANSI/BIFMA X5.1-2011 General-Purpose Office Chairs - Tests

This standard defines specific tests, laboratory equipment, conditions of test, and recommended minimum levels to be used in the test and evaluation of the safety, durability, and structural adequacy of general-purpose office chairs.

Requirement **ANSI/BIFMA X5.1-2011**
1 Scope The standard defines specific tests, the laboratory equipment that may be used, the conditions of tests, and the minimum acceptance levels to be used in evaluating general-purpose office chairs. See test specification for more.
2 Definitions See test specification
3 General See test specification
4 Types of chairs See table 1 – Test Guide by Chair Type below See test specification for more.
Remarks Chair was tested as a type I and III chair, due to the possible lockable/open adjustments of the tilting seat mechanism

Figure 4a - Type I - Tilting Chair

Figure 4b - Type II - Fixed seat angle, tilting backrest

Figure 4c - Type III - Fixed seat angle, fixed backrest

Types of Chairs

TABLE 1 – Test Guide by Chair Type

Section Number	Description	Type I	Type II	Type III
5	Backrest Strength Test - Static - Type I	X		
6	Backrest Strength Test - Static - Type II and III		X	X
7	Base Test - Static	X	X	X
8	Drop Test - Dynamic	X	X	X
9	Swivel Test - Cyclic	X	X	X
10	Tilt Mechanism Test - Cyclic	X	X	
11	Seating Durability Test - Cyclic	X	X	X
12	Stability Tests	X	X	X
13	Arm Strength Test - Vertical - Static	X	X	X
14	Arm Strength Test - Horizontal - Static	X	X	X
15	Backrest Durability Test - Cyclic - Type I	X		
16	Backrest Durability Test - Cyclic - Type II and Type III		X	X
17	Caster/Chair Base Durability Test - Cyclic	X	X	X
18	Leg Strength Test - Front and Side Application	X	X	X
19	Footrest Static Load Test - Vertical	X	X	X
20	Footrest Durability Test - Vertical - Cyclic	X	X	X
21	Arm Durability Test - Cyclic	X	X	X
22	Out Stop Test for Chairs with Manually Adjustable Seat Depth	X	X	X
23	Tablet Arm Chair Static Load Test	X	X	X
24	Tablet Arm Chair Load Ease Test - Cyclic	X	X	X

Section	Requirements / Remarks	Result
5	**Backrest Strength Test - Static - Type I**	
5.1	**Applicability** This backrest strength test shall be performed on Type I chairs. For chairs with tilt locks, locking the chair changes the chair type (See Section 4) and must also be tested according to Section 6 in the upright locked position. An additional chair may be used for the Section 6 testing. **Note:** This test does not apply to chairs with backrest height less than 200 mm (7.9 in.).	**P**
5.2	**Purpose of Test** The purpose of this test is to evaluate the ability of the chair to withstand stresses such as those caused by the user exerting a rearward force on the backrest of the chair.	
	Remarks See picture No.5	
6	**Backrest Strength Test - Static - Type II & III**	
6.1	**Applicability** This backrest strength test shall be performed on Type II and III chairs. **Note:** This test does not apply to chairs with backrest height less than 200 mm (7.9 in.).	**P**
6.2	**Purpose of Test** The purpose of this test is to evaluate the ability of the chair to withstand stresses such as those caused by the user exerting a rearward force on the backrest of the chair.	
	Remarks See picture No.6	
7	**Base Test – Static**	
7.1	**Applicability** The test shall be performed on all pedestal bases.	
7.2	**Purpose of Test** The purpose of this test is to evaluate the ability of a pedestal base to withstand excessive vertical forces.	**P**
	Remarks Breaking point at approx.: 13750N (requirement 11120N) See picture No.7	
8	**Drop Test – Dynamic**	
8.1	**Applicability** This test applies to all chair types.	
8.2	**Purpose of Test** The purpose of this test is to evaluate the ability of the chair to withstand heavy and abusive impact forces on the seat.	**P**
	Remarks See picture No.8	
9	**Swivel Test – Cyclic**	
9.1	**Applicability** This test applies to all chair types with a swivel seat.	
9.2	**Purpose of test** The purpose of this test is to evaluate the ability of the chair to withstand stresses and wear of repeated swivelling.	**P**
	Remarks See picture No.9	

Section	Requirements / Remarks	Result
10	**Tilt Mechanism Test – Cyclic**	P
10.1	**Applicability** This test shall be performed on Type I and Type II chairs with tilting backrests.	
10.2	**Purpose of test** The purpose of this test is to evaluate the ability of the tilt mechanism to withstand the fatigue stresses and wear caused by repeated tilting.	
	Remarks See picture No.10	
11	**Seating Durability Tests – Cyclic** **Note:** This is a two-part test. The impact test and front corner load-ease tests must be run sequentially for this evaluation.	
11.1	**Applicability** These tests apply to all chair types.	
11.2	**Purpose of test** The purpose of these tests is to evaluate the ability of chairs to withstand fatigue stresses and wear caused by downward vertical force(s) on the seat.	
11.3	**Impact Test**	P
11.4	**Front Corner Load-Ease Test – Cyclic – Off-centre**	P
	Remarks See picture No.11	
12	**Stability Tests**	P
12.1	**Applicability** The stability tests shall be performed on all types of chairs. **Note:** Rearward stability tests apply only to chairs with backrests greater than 200 mm (7.9 in. in height as measured with the BIFMA CMD.	
12.2	**Purpose of test** The purpose of these tests is to evaluate the front and rear stability of chairs.	
12.3	**Rear Stability**	P
12.3.1	**Rear Stability Test for Type III Chairs**	P
12.3.2	**Rear Stability Test for Type I and II Chairs**	P
12.4	**Front Stability**	
	Remarks Rewards stability were not conducted on model 200 since it is the same construction as model 220 with lower back. See picture No.12	

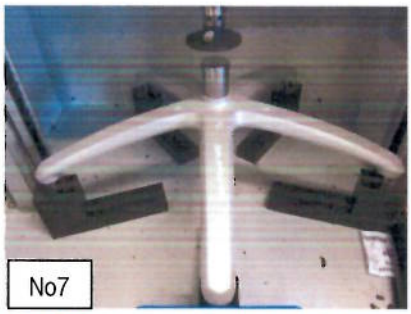
	Requirement	Result mod.200	Result mod. 220
Rear stability Type I	**13 ISO-discs**	**NT**	**13,5 discs**
Rear stability type III	**6 discs + >F=127N horizontal force H=552mm**	**NT**	**177 N**
Front stability	**600N + >20N horizontal force**	**45N**	**52N**

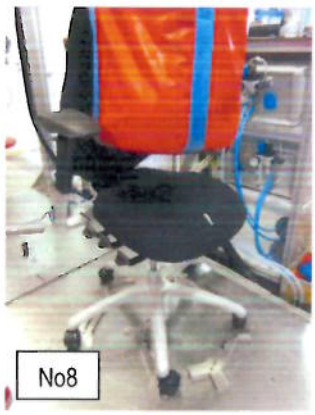
13	**Arm Strength Test - Vertical – Static**	P
13.1	**Applicability** This test applies to all chairs with arms.	
13.2	**Purpose of test** The purpose of the test is to evaluate the ability of a chair and arm to withstand stresses caused by applying vertical forces on the arm(s).	
	Remarks See picture No.13	
14	**Arm Strength Test - Horizontal – Static**	P
14.1	**Applicability** This test applies to all chairs with arms.	
14.2	**Purpose of Test** The purpose of this test is to evaluate the ability of the chair to withstand stresses caused by applying outward forces to the arm(s).	
	Remarks See picture No.14	

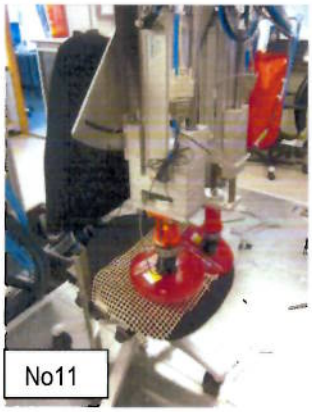
Section	Requirements / Remarks	Result
15	**Backrest Durability Test - Cyclic - Type I**	
15.1	**Applicability** This test shall be performed on Type I Tilting chairs. **Note:** This test does not apply to chairs with backrest height less than 200 mm (7.9 in.).	**P**
15.2	**Purpose of test** The purpose of this test is to evaluate the ability of the chairs to withstand fatigue stresses and wear caused by rearward force on the backrest of the chair.	
	Remarks See picture No.15	
16	**Backrest Durability Test - Cyclic - Type II and III**	
16.1	**Applicability** This test shall be performed on Type II and III chairs. **Note:** This test does not apply to chairs with backrest height less than 200 mm (7.9 in.).	**P**
16.2	**Purpose of Test** The purpose of this test is to evaluate the ability of the chairs to withstand fatigue stresses and wear caused by rearward force on the backrest of the chair.	
	Remarks See picture No.16	
17	**Caster/Chair Base Durability Test – Cyclic**	
17.1	**Caster/Chair Base Durability Test for Pedestal Base Chairs**	
17.1.1	**Applicability** This test applies to pedestal base chairs with casters.	**P**
17.1.2	**Purpose of Test** The purpose of this test is to evaluate the ability of the chair base and casters to withstand fatigue stresses and wear caused by moving the chair back and forth.	
	Remarks See picture No.17	
17.2	**Caster/Chair Frame Durability Test for Chairs with Legs**	
17.2.1	**Applicability** This test applies to chairs with legs and casters. This test is not applicable to chairs with glide/caster combinations (i.e., those having two glides and two casters).	**NA**
17.2.2	**Purpose of Test** The purpose of this test is to evaluate the ability of the chair frame and casters to withstand fatigue stresses and wear caused by moving the chair back and forth.	
	Remarks	
18	**Leg Strength Test - Front and Side Application**	
18.1	**Applicability** This test applies to all chairs without pedestal bases.	
18.2	**Purpose of Test** The purpose of this test is to evaluate the ability of legs to withstand horizontal side and frontal forces.	**NA**
18.3	**Front Load Test**	
18.4	**Side Load Test**	
	Remarks	

Section	Requirements / Remarks	Result
19 19.1 19.2	**Footrest Static Load Test – Vertical** **Applicability** The footrest static load test shall be performed on all chairs with a footrest feature and a seat height equal to or greater than (or can be adjusted to) 610 mm (24 in.). **Purpose of Test** The purpose of this test is to evaluate the ability of the footrest to withstand static loading stresses.	**NA**
	Remarks	
20 20.1 20.2	**Footrest Durability Test - Vertical – Cyclic** **Applicability** The footrest durability test shall be performed on all chairs with a footrest feature. **Purpose of Test** The purpose of this test is to evaluate the ability of the footrest to withstand stresses that occur as a result of repetitive loading.	**NA**
	Remarks	
21 21.1	**Arm Durability Test – Cyclic** **Purpose of test** The purpose of this test is to evaluate the ability of the chair armrests to withstand stresses that occur as a result of repetitive loading that can be imposed on the armrest structure. Loading of this type is the result of using the armrests as a support when getting into or out of the chair.	**P**
	Remarks See picture No.21	
22 22.1	**Out Stop Tests for Chairs with Manually Adjustable Seat Depth** **Purpose of Test** The purpose of this test is to evaluate the ability of the seat slide out stops to withstand excessive impact forces that may result from user adjustment of the seat depth. **Note:** This test does not apply to chairs where seat depth adjustments must occur with the user out of the chair.	**P**
	Remarks See picture No.22	
23 23.1	**Tablet Arm Chair Static Load Test** **Purpose of Test** The purpose of this test is to evaluate the ability of the unit equipped with a tablet arm or other attached auxiliary writing/laptop surface to withstand stresses caused by vertical loading.	**NA**
	Remarks	
24 24.1	**Tablet Arm Chair Load Ease Test – Cyclic** **Purpose of Test** The purpose of this test is to evaluate the durability of the tablet arm chair to withstand cyclic loading of the tablet.	**NA**
	Remarks	

Annex I – Photo documentation







ENVIRONMENTAL PRODUCT DECLARATION

ISO 14025

epd-norge.no
The Norwegian EPD Foundation

Owner of the declaration	Scandinavian Business Seating AS
Program holder and publisher	The Norwegian EPD Foundation
Declaration number	NEPD-319-196-EN
Issue date	26.03.2015
Valid to	26.03.2020

RH Mereo 220 with armrests

Product

SCANDINAVIAN BUSINESS SEATING

Scandinavian Business Seating AS

Manufacturer

General information

Product
RH Mereo 220 with armrests

General Information
The Norwegian EPD Foundation
Post Box 5250 Majorstuen, 0303 Oslo
Phone: +4723088292
e-mail: post@epd-norge.no

Declaration number:
NEPD-319-196-EN

This declaration is based on Product Category Rules:
PCR for Seating Solution, NPCR 003 extended version 2013, in accordance with recommendations by the Norwegian EPD Foundation.

Declared unit:
One office chair: RH Mereo 220

Declared unit with option:
Option: armrests

Functional unit:
Production of one seating solution provided and maintained for a period of 15 years.

This EPD has been worked out by:
The declaration has been developed using Furniture EPD Tool Version 1.0, Approval: NEPDT04
Company specific data collected and registered by:
Laura Fouilland
Company specific data audited by:
Kristian Nilsen Ødegaard

Verification:
Independent verification of data, other environmental information and EPD has been carried out in accordance with ISO14024, 8.1.3. and 8.1.4.

externally

Mie Vold, Senior Research Scientist
(Independent verifier approved by EPD Norway)

Owner of the declaration:
Scandinavian Business Seating AS
Contact person:Laura Fouilland
Phone: + 47 40 41 56 13
E-mail: laura.fouilland@sbseating.com

Manufacturer
Scandinavian Business Seating AS

Place of production:
Vallgatan 1, 571 23 Nässjö, Sweden

Management system:
ISO 14001, Certificate No.151496-2014-AE-NOR-NA
From the accredited unit: DNV Certification As, Norway.
ISO 9001, Certificate No.151495-2014-AQ-NOR-NA
From the accredited unit: DNV Certification As, Norway.

Org. No:
No 928 902 749

Issue date:
26.03.2015

Valid to:
26.03.2020

Comparability:
EPDs from programmes other than the Norwegian EPD Foundation may not be comparable

Year of study:
2015

Approved

Dagfinn Malnes
Managing Director of EPD-Norway

Key environmental indicators	Unit	Cradle to Gate A1-A3
Global warming	kg CO_2	76
Total energy use	MJ	1667
Amount of recycled materials	%	45%

Product

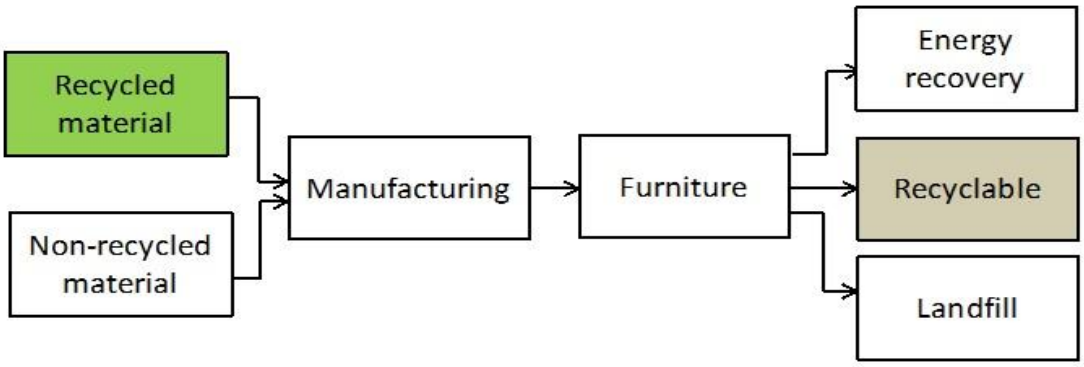
Product Description and Application
RH Mereo is a task chair crafted to improve your performance as well as the performance of the whole workplace. It is easily fitted for everyone, whatever your physical assets. This makes it a one-person chair as well as a chair for the landscaped office. In RH Mereo the 2PP™ dynamics bring active sitting to one and to all. An easy adjustment is all it takes. RH Mereo fuses innovation, functionality, usability and design impact. RH Mereo 220 has a large back and comes as standard with castors for carpeted floors and base in grey or black lacquered aluminium. In this declaration, RH Mereo 220 with armrests is studied.

Technical Data
Total Weight: 21,3kg
EN-1335 approved
Greenguard and Möbelfakta certified

Market
Worldwide

Reference Service Life
15 years

Materials	kg	%
Aluminium	7,8	37%
Steel	6,1	28%
Plastic	6,0	28%
Polyurethane (PUR foam)	1,2	6%
Textiles	0,3	1%
Total product	**21,3**	**100%**
Packaging	3,8	
Total product with packaging	**25,1**	



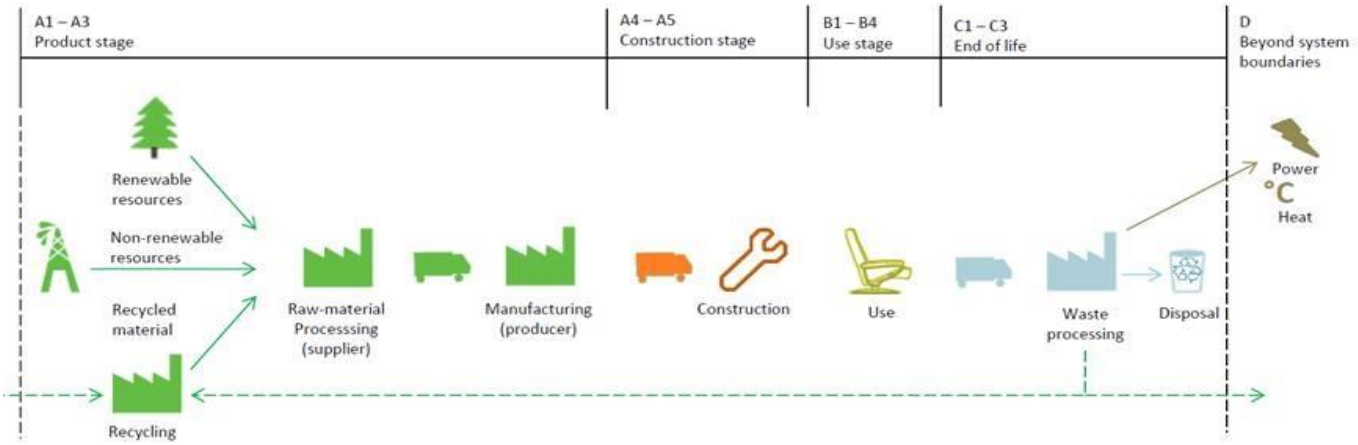
Materials	Recycled	Recycled amount	Recycled materials	Recyclable	Recyclable amount	Recyclable materials
Unit	%	kg	%	%	kg	%
Aluminium	95%	7,4	65%	100%	7,8	33%
Steel	21%	1,3	11%	100%	6,1	26%
Plastic	0%	0,0	0%	100%	6,0	25%
Polyurethane (PUR foam)	0%	0,0	0%	0%	0,0	0%
Textiles	0%	0,0	0%	100%	0,3	1%
Packaging (EPS)	0%	0,0	0%	0%	0,0	0%
Packaging (cardboard)	76%	2,7	24%	100%	3,5	15%
Total product	45%	11,3		94%	23,6	

Product manufactured from 45% recycled material (packaging included)
At end of life product contains 94% recyclable material

LCA: Calculation rules

Declared unit:
Production of one seating solution provided and maintained for a period of 15 years.

System boundary:
Life cycle stages included are described in figure and through the corresponding letter and number designations in the declaration (see figure below)



Data quality:
Specific manufacturing data from 2014 are used. Data from Ecoinvent 3.0.1. and Østfoldforskning databases are used as the basis for raw materials and energy carrier production. See [6].

Cut-off criteria:
All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows that are included with very small amounts (<1%) are not included. This cut-off rule does not apply for hazardous materials and substances

Allocation:
Where virgin materials are used, emissions and energy consumption connected with extraction and production are included.

Where recycled materials are used in the product, emissions and energy consumption related to the recycling process are included.

Emissions from incineration are allocated to the product system that uses the recovered energy.

Emissions from incineration of waste are allocated to the product system that uses the recovered energy.

LCA: Scenarios and additional technical information

Transportation to an average customer in Copenhagen is 360 km (A4: average European lorry > 32 tonnes)

The use stage is represented by a scenario and includes vacuum cleaning of textile once a month. The PCR does not provide detailed guidelines for what should be included in the use stage. In the end of life stage, the transport distance for waste to waste processing is 72 km (C1). The reuse, recovery and recycling stage is beyond the system boundaries (D).
It is assumed that the solution is dismantled and the materials recycled or combusted according to the general Norwegian treatment of industrial waste (see the table below). The transport distance to reuse, recovery or recycling is varying for each material, but the average distance is 373 km. The vehicles used and associated data are described in detail in [5].

	Material recovery	Energy recovery	Disposal
Aluminium	70,1 %	0,0 %	30 %
Steel	70,1 %	0,0 %	30 %
Plastic	64,3 %	30,8 %	5 %
Cardboard	94,5 %	5,5 %	0 %

LCA: Results

The following information describe the scenaries in the different modules of the EPD.

System boundaries (X=included, MND=modul not declared, MNR=modul not relevant)

Product stage			Construction stage		Use stage				End of life			Beyond the system boundaries
Raw materials	Transport	Manufacturing	Transport	Construction	Maintenance	Repair	Replacement	Operational energy use	Transport	Waste Processing	Disposal	Reuse-recovery-recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	C1	C2	C3	D
x	x	x	x	MNR	x	MNR	MNR	MNR	x	x	x	x

Environmental impact

Parameter	A1	A2	A3	A1-A3	A4	B1	C1	C2	C3	C1-C3	D
GWP	72,2	1,8	2,0	76,1	0,9	6,1E-03	2,1	19,3	0,1	21,5	-14,8
ODP	5,5E-05	1,3E-07	9,9E-08	5,6E-05	6,8E-08	1,9E-10	0,0	0,0	0,0	0,0	0,0
POCP	2,4E-02	3,4E-04	3,9E-04	2,5E-02	1,3E-04	1,2E-06	0,0	0,0	0,0	0,0	0,0
AP	0,1	2,1E-03	7,0E-03	0,1	9,3E-04	5,0E-06	0,0	0,0	0,0	0,0	0,0
EP	0,3	7,7E-03	9,7E-03	0,4	3,8E-03	3,4E-05	0,0	0,0	0,0	0,0	0,0
ADPM*	8,8E-04	5,3E-06	3,1E-06	8,8E-04	2,9E-06	2,0E-08	0,0	0,0	0,0	0,0	0,0
ADPE	1126,7	27,3	24,4	1178,4	14,2	8,2E-02	33,1	89,2	1,9	124,2	-350,7

* Some processes use Ecoinvent 3.0.1. and thus data on renewable resources is omitted. The true ADPM, RPEE, RPEM and TPE may be higher than indicated. This issue will be addressed in a new version of Ecoinvent 3, data from which was not available when this declaration was prepared.

GWP Global warming potential (kg CO2-eqv.); **ODP** Depletion potential of the stratospheric ozone layer (kg CFC11-eqv.); **POCP** Formation potential of tropospheric photochemical oxidants (kg C2H4-eqv.); **AP** Acidification potential of land and water (kg SO2-eqv.); **EP** Eutrophication potential (kg PO4-3-eqv.); **ADPM** Abiotic depletion potential for non fossil resources (kg Sb -eqv.); **ADPE** Abiotic depletion potential for fossil resources (MJ);

Resource use

Parameter	A1	A2	A3	A1-A3	A4	B1	C1	C2	C3	C1-C3	D
RPEE*	8,6	0,0	2,7	11,3	0,0	9,3E-02	0,0	0,0	0,0	0,0	-2,3
RPEM*	33,5	0,2	0,4	34,0	0,1	0,0	0,0	0,0	0,0	0,0	-6,2
TPE*	42,1	0,2	3,1	45,3	0,1	9,3E-02	0,0	0,0	0,0	0,0	-8,5
NRPE	1612,3	28,2	28,4	1668,9	14,3	7,9E-02	0,0	0,0	0,0	0,0	-345,9
NRPM	338,1	0,0	0,0	338,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0
TNRPE	1950,4	28,2	28,4	2007,0	14,3	8,8E-02	0,0	0,0	0,0	0,0	-345,9
SM	11,8	0,0	0,0	11,8	0,0	0,0	0,0	0,0	0,0	0,0	-4,6
RSF	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
NRSF	-12,9	0,0	0,0	-12,9	0,0	4,0E-02	0,0	0,0	0,0	0,0	0,0
W	8,8	7,8E-05	14,9	23,7	3,8E-05	0,0	0,0	0,0	0,0	0,0	-43,7

RPEE Renewable primary energy resources used as energy carrier (MJ); **RPEM** Renwable primary energy resources used as raw materials (MJ); **TPE** Total use of renewable primary energy resources (MJ); **NRPE** Non renewable primary energy resources used as energy carrier (MJ); **NRPM** Non renewable primary energy resources used as materials (MJ); **TNRPE** Total use of non renewable primary energy resources (MJ); **SM** Use of secondary materials (kg); **RSF** Use of renewable secondary fuels (MJ); **NRSF** Use of non renewable secondary fuels (MJ); **W** Use of net fresh water (m3);

End of life - Waste and Output flow

Parameter	A1	A2	A3	A1-A3	A4	B1	C1	C2	C3	C1-C3	D
HW	0,3	4,4E-05	4,7E-05	0,3	1,8E-05	5,8E-06	0,0	0,0	0,0	0,0	-0,3
NHW	34,6	2,3	0,5	37,4	1,2	7,6E-04	0,0	0,0	4,2	4,2	-2,0
RW	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
CR	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
MR	1,9E-03	0,0	0,0	1,9E-03	0,0	0,0	0,0	17,0	0,0	17,0	0,0
MER	0,0	0,0	0,0	0,0	0,0	0,0	0,0	3,9	0,0	3,9	0,0
EEE	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
ETE	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0

HW Hazardous waste disposed (kg); **NHW** Non hazardous waste disposed (kg); **RW** Radioactive waste disposed (kg); **CR** Components for reuse (kg); **MR** Materials for recycling (kg); **MER** Materials for energy recovery (kg); **EEE** Exported electric energy (MJ); **ETE** Exported thermal energy (MJ);

Specific Norwegian requirements

Electricity
The following data from ecoinvent v3 (June 2012) for Norwegian production mix included import, low voltage is used; Energy/Electricity country mix/Low voltage/Market: Electricity, low voltage {NO}| market for | Alloc Def, U. Production of transmission lines, in addition to direct emissions and loss in grid are included. Characterisation factors stated in EN 15804:2012+A1:2013 are used. This gives following greenhouse gas emissions: 24 g CO2-eqv/kWh.

Dangerous Substances
None of the following substances have been added to the product: Substances on the REACH Candidate list of substances of very high concern (of '17.12.2014) substances on the Norwegian Priority list (published 04.12.2014) and substances that lead to the product being classified as hazardous waste. The chemical content of the product complies with regulatory levels as given in the Norwegian Product Regulations.

Indoor environment
Greenguard certificate

Climate declaration
Not relevant

Bibliography

[1] NS-EN ISO 14025:2006, Environmental labels and declarations-Type III environmental declarations-Principles and procedures.

[2] NS-EN ISO 14044:2006, Environmental management - Life cycle assessment - Requirements and guidelines

[3] EN 15804:2012 + A1:2013 Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products

[4] PCR for seating solution: PRODUCT-CATEGORY RULES(PCR) for preparing an environmental product declaration (EPD) for Product Group “Seating solution”, PCR 2008:NPCR 003, extended version

[5] Raadal, H. L., Modahl, I. S., Lyng, K. A. (2009). Klimaregnskap for avfallshåndtering, Fase I og II. OR 18.09. ISBN : 978-82-7520-611-2, 82-7520-611-1

[6] Brekke, A., Møller, H., Baxter, J., Askham, C. (2014). Verktøy - miljødeklarasjon for møbel □ Dokumentasjon som grunnlag for verifisering, Ostfold Research

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CERTIFICATE OF COMPLIANCE

GREENGUARD

PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS
UL.COM/GG
UL 2818

RH Chairs

RH Mereo

29833-410
Certificate Number

05/18/2006 - 05/19/2017
Certificate Period

Certified
Status

UL 2818 - 2013 Standard for Chemical Emissions for Building Materials, Finishes and Furnishings

Products tested in accordance with UL 2821 test method to show compliance to emission limits in UL 2818, Section 7.1.

Seating units are tested in accordance with ANSI/BIFMA M7.1-2011 and determined to comply with ANSI/BIFMA X7.1-2011 and ANSI/BIFMA e3-2014e Credit 7.6.1. Seating units are modeled in the seating environment.

Environment

GREENGUARD Certification Criteria for Mattresses, Bedding, Component Materials and Seating Units

Criteria	CAS Number	Maximum Allowable Predicted Concentration	Units
TVOC(A)	-	0.25	mg/m³
Formaldehyde	50-00-0	30.7 (25 ppb)	µg/m³
Total Aldehydes (B)	-	0.05	ppm
4-Phenylcyclohexene (C)	4994-16-5	3.25	µg/m³
Individual VOCs (D)	-	1/10th TLV	-

(A) Defined to be the total response of measured VOCs falling within the C_6 – C_{16} range, with responses calibrated to a toluene surrogate.

(B) The sum of all measured normal aldehydes from formaldehyde through nonanal, plus benzaldehyde, individually calibrated to a compound specific standard. Heptanal through nonanal are measured via TD/GC/MS analysis and the remaining aldehydes are measured using HPLC/UV analysis.

(C) Applicable to flooring and furniture, including component materials.

(D) Allowable levels for chemicals not listed are derived from 1/10th of the Threshold Limit Value (TLV) industrial work place standard (Reference: American Conference of Government Industrial Hygienists, 6500 Glenway, Building D-7, and Cincinnati, OH 45211-4438).

SCANDINAVIAN
BUSINESS SEATING

Making the world
a better place to sit

LEED for Commercial Interiors (LEED-CI)

RH Mereo can provide 5 (or 6) LEED points

LEED for Commercial Interiors offers building owners, tenants, designer and contractors a guideline for creating more efficient, healthier interior spaces that promote comfort and productivity. Points are distributed across 7 major credit categories, where 2 of the categories are relevant for RH's products.

RH Mereo contributes to green building projects as follow:

Materials and Resources (MR)

MR 2: Construction Waste Management
LEED intent: To divert construction and demolition debris from disposal in landfills and incineration facilities. Redirect recyclable recovered resources back to the manufacturing process and reusable material to appropriate sites.
Result: RH Mereo is made from more than 90% recyclable materials. All plastic parts are marked for easy identification and sorting. The only materials that are not recyclable are foam and textiles.
LEED points: Gives 2 points (out of 2).

MR 4: Recycled Content
LEED intent: To increase demand for building products that incorporate recycled content materials, thereby reducing impacts resulting from extraction and processing of virgin materials.
Result: The RH Mereo contains more than 20% post consumer recycled materials.
LEED points: Gives 2 points (out of 2)

MR 5: Regional Materials
LEED intent: To increase demand for product that are assembled within the region, thereby supporting the regional economy and reducing the environmental impact resulting from transportation.
Result: RH products are assembled in Nassjo, Sweden..
LEED points: Can give 1 point (out of 2) if the building project is within 500 miles/800 km from Nassjo.

Indoor Environmental Quality (IEQ)

IEQ 4.5: Low-Emitting Materials
LEED intent: To reduce the quantity of indoor air contaminants that are odorous, irritating and harmful to the comfort and well-being of installers and occupants.
Result: RH Mereo with standard textiles is designed to meet the GREENGUARD requirements.
LEED points: Gives 1 point (out of 1)

Our products can help a client to score points within the groups MR and IEQ. A practical problem for the client, however, is to weigh the chair's part of the complete interior. If, for example, a table also meets the requirement, is would be wrong to accumulate 2 points from the chair and 2 points from the table and thus score 4.

HÅG RBM

MÖBELFAKTA INTYG

PRODUKTNAMN:	RH Mereo Arbetsstol 8111, 8211 Låg eller hög rygg. Kan fås med armstöd. Hög modell kan fås med nackstöd.
FÖRETAG:	Scandinavian Business Seating AB
REG.NUMMER:	1520140618
ANVÄNDARMILJÖ:	Kontorsmiljö

GILTIGHET: 2014-06-18 - 2019-06-18 under förutsättning att möbeln och kraven i Möbelfakta ej ändrats. Vid ändring gäller en övergångsperiod på 12 månader.

PRODUKTEN HAR DEKLARERATS OCH GODKÄNTS ENLIGT KRITERIERNA I MÖBELFAKTA VER. 2015-05-01.

- **KVALITET** – MÖBLERNA LEVER UPP TILL INTERNATIONELLA TEKNISKA STANDARDER
- **MILJÖ** – TILLVERKNINGEN ÄR MILJÖANPASSAD I ALLA LED, FRÅN RÅVARA TILL FÄRDIG MÖBEL
- **SOCIALT ANSVAR** – ALLA PARTER I PRODUKTIONSKEDJAN FÖRBINDER SIG ATT FÖLJA FN:S DIREKTIV THE GLOBAL COMPACT

ROBIN LJUNGAR, *Miljö- och hållbarhetschef, TMF*

tmf TRÄ- OCH MÖBELFÖRETAGEN

MÖBELFAKTA

Prüfbericht-Nr.: *Test Report No.:*	**21215054_001**	**Auftrags-Nr.:** *Order No.:*	3071808	Seite 1 von 12 *Page 1 of 12*
Kunden-Referenz-Nr.: *Client Reference No.:*	N/A	**Auftragsdatum:** *Order date:*	2012-06-19	
Auftraggeber: *Client:*	Scandinavian Business Seating AS; 7374 Røros-Norway			
Prüfgegenstand: *Test item:*	office work swivel chairs			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	"RH Mereo"			
Auftrags-Inhalt: *Order content:*	mechanical safety test			
Prüfgrundlage: *Test specification:*	DIN EN 1335-1, DIN EN 1335-2, DIN EN 1335-3 (DIN EN 1335-1: 2002-08, Office furniture - Office work chair - Part 1: Dimensions - Determination of dimensions; DIN EN 1335-2: 2010-01, Office furniture - Office work chair - Part 2: Safety requirements; DIN EN 1335-3: 2009-08, Office furniutre - Office work chair - Part 3: Test methods)			
Wareneingangsdatum: *Date of receipt:*	2013-11-06, 2014-03-14			
Prüfmuster-Nr.: *Test sample No.:*	A000053623-001+002, A000063214-001			
Prüfzeitraum: *Testing period:*	2013-11-07 – 2014-04-03			
Ort der Prüfung: *Place of testing:*	Furniture Testing Laboratory Dresden			
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland LGA Products GmbH			
Prüfergebnis*: *Test result*:*	Pass			

geprüft von / *tested by*:

2014-04-11	André Paul (SV)	
Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

kontrolliert von / *reviewed by*:

2014-04-11	Andreas Möschner (SV)	
Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

Sonstiges / *Other*: Currently neither a safeguard clause procedure has been invoked nor is an increase in accidents known for this / these product(s).
The requirements of the ZEK decision regarding 01.4-08 PAHs were considered.

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Prüfbericht-Nr.: 21215054_001
Test Report No.:

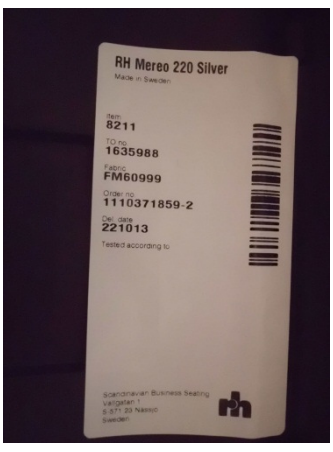
Liste der verwendeten Prüfmittel
List of used test equipment

Prüfmittel *Test equipment*	**Prüfmittel-Nr. / ID-Nr.** *Equipment No. / ID-No.*	**Nächste Kalibrierung** *Next calibration*
Messschieber / vernier calliper 0-300 mm	02089	05.2014
Messschieber / vernier calliper 0-1000 mm	07647	05.2014
Stahlmaßstab / steel flat ruler 1000 mm	02082	05.2014
Stahlmaßstab / steel flat ruler 600 mm	07649	05.2014
Wasserwaage / spirit level 250 mm	07646	05.2014
Neigungsmessgerät digital / digital protractor	06575	11.2013
Radienschablonen / radius gauge	02270	03.2014
Radienlehre / radius gauge 1-7mm	01967	05.2014
Belastungsschablone Stühle / loading point template for chairs	02259	03.2015
Stuhlmessstand 2 dimensional / chair measuring device 2 dimensional	01970	02.2015
Gesäßattrappe für Stuhlmessstand / seat loading pad for chair measuring device	02254	03.2015
Waage / scales 30 kg	02238	03.2015
Standsicherheitsprüfgerät / stability test devicde	02245	03.2015
Standsicherheitsscheiben / discs 10 kg	02041 - 02052	03.2014
Handkraftmessgerät / portable force measuring instrument	02084	04.2014
Doppelprüfstand Sitz-Rücken / Double test machine seat-backrest	07076	01.2015
5 Kanalsteuerung / 5 channel control	01965	04.2014
Kraftmessdose / force sensor 5 kN; AST 04-3596	01974	04.2014
Kraftmessdose / force sensor 2 kN; AST 97-3862	01981	02.2014
Kraftmessdose / force sensor 5 kN; AST 52460	01984	02.2014
Druckstück / loading pad D100, R 12	02260	03.2014
Druckstück / loading pad D200, R300/12	02241, 02242, 02243, 02244	03.2014
Kraftmessdose / force sensor 5 kN; AST 05-4481	01990	02.2014
Kraftmessdose / force sensor 5 kN; AST 04-3595	01973	02.2014
Armlehnendruckstück / arm loading pad	02257, 02258	03.2014
Dreh-Rollenprüfstand / swivel castors test machine, Kraftmessdose / force sensor 5 kN; AST	01977	03.2013
Federkraftmesser / spring resistance force sensor 50 N	02080	06.2014

Produktbeschreibung
Product description

Office work chair model range “RH Mereo” with aluminum base, optional with armrests, optional with medium or high back, optional with neck rest, optional with break unloaded twin wheel swivel castors optional type “W” or “H”

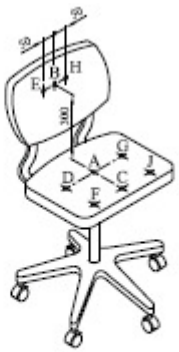
- seat height adjustable by means of gas cylinder from Stabilus
- denomination of the gas spring: STABILUS STAB-O-MAT "D" DIN 4550-4 023788 070 13 D
- seat mechanism made of steel and aluminium die cast with backward tilt function
- tilt resistance of mechanism adjustable by hand wheel
- seat inclination lockable by knob in 6 steps
- seat made of plastic, upholstered and covered with fabric, 80 mm sliding seat adjustable in 7 steps
- backrest support made of aluminium die cast
- backrest made of plastic upholstered and covered with fabric, backrest 78 mm height-adjustable in 7 steps
- additional backrest inclination by hand lever and gas cylinder from Stabilus: BLOCK – O – LIFT
- optional height-adjustable and hinged neck rest for height back, neck rest support made of aluminium die cast, neck rest made of plastic upholstered and covered with fabric
- optional with and without arm rests
- arm rests adjustable in height and clear width, arm rest pad slidable and rotatable
- arm rests made of plastic with arm rest pads made of PU cover
- arm rest supports made of aluminium die cast, mounted on backrest support
- base made of aluminium die cast SS 4520 – 2B 730402
- 5 brake unloaded twin wheel swivel castors type "H" and "W" in a diameter of 64 mm
- marking of castors: none, castor manufacturer: Jemp Jou

Fig. 1	Fig. 2	Fig. 3	Fig. 4
			
Fig. 5 + 6	Fig. 7 +8	Fig. 9 + 10	Fig. 11
			

Absatz *Clause*	**DIN EN 1335-1, DIN EN 1335-2, DIN EN 1335-3** Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse - Bemerkungen *Measuring results - Remarks*	Bewertung *Evaluation*
	General information		
	The test report contents mechanical safety requirements based on DIN EN 1335-1, DIN EN 1335-2 and DIN EN 1335-3 as well as additional safety-related tests and requirements towards the state of the art. The tests acc. to the standards were divided in dimensional tests, safety strength tests and functional tests, a standard-independent numbering system was used. The content of the test basics was shortened. For details be referred to the original documents.		
1	**Determination of dimensions acc. to DIN EN 1335-1**		
	The chair shall provide support to the thighs and the lumbar region with sufficient depth and height to provide all users with a sitting position suited to their activity and their height. The dimension of the chair shall comply with type "A", "B" or "C". Details of measuring see appendix.	type "A"	P ☒ F ☐ N/A ☐ N/T ☐
2	**General design requirements acc. to DIN EN 1335-2 cl. 4.1**		
2.2	**Corners and edges, trapping, pinching and shearing acc. to DIN EN 1335-2 cl. 4.1.1**		
	- distance of accessible movable parts either ≤ 8 mm or ≥ 25 mm in any position during movement - accessible corners rounded with minimum 2 mm radius - edges of the seat, back rest and arm rests which are in contact with the user when sitting in the chair rounded with minimum 2 mm radius - edges of handles rounded with minimum 2 mm radius in the direction of the force applied - other edges free from burrs and rounded or chamfered - ends of accessible hollow components closed or capped	Opening between parts of aluminum mechanism (see figure 8 page 3): The gap is closing with the backward force of the user when the hand lever is pulled. When the user remove its load the gap will open immediately by the force of the gas spring. After a safety risk analysis this is acceptable.	P ☒ F ☐ N/A ☐ N/T ☐
2.3	**Adjusting devices acc. to DIN EN 1335-2 cl. 4.1.2**		
	Movable and adjustable parts shall be designed so that injuries and inadvertent operation are avoided. It shall be possible to operate the adjusting devices from a sitting position in the chair.		P ☒ F ☐ N/A ☐ N/T ☐
2.4	**Connections acc. to DIN EN 1335-2 cl. 4.1.3**		
	It shall not be possible for any load bearing part of the chair to come loose unintentionally.		P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	**DIN EN 1335-1, DIN EN 1335-2, DIN EN 1335-3** Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse - Bemerkungen *Measuring results - Remarks*	Bewertung *Evaluation*
2.5	**Avoidance of soiling acc. to DIN EN 1335-2 cl. 4.1.4**		
	All parts which are lubricated to assist sliding (greasing, lubricating, etc.) shall be designed to protect users from lubricant stains when in normal use.		P ☒ F ☐ N/A ☐ N/T ☐
3	**Stability acc. to DIN EN 1335-2 cl. 4.3, DIN EN 1335-3 cl. 7.1**		
	Front edge overturning ≥ 27 kg Forward overturning vertical load: 60 kg, horizontal force: ≥ 20 N Sideways overturning without arms vertical load: 60 kg, horizontal force: ≥ 20 N Sideways overturning with arms vertical load: 25/35 kg, horizontal force: ≥ 20 N Rearwards overturning without back rest inclination vertical load: 60 kg, horizontal force: ≥ 192 N Rearwards overturning with back rest inclination ≥ 13 discs Stability of footrest vertical load: 110 kg, horizontal force: ≥ 20 N	31 kg till 28 N 100 N till 61 N till 13.5 discs	P ☒ F ☐ N/A ☐ N/T ☐
4	**Rolling resistance of unloaded chair**		
4.1	**Rolling resistance of unloaded chair DIN EN 1335-2 cl. 4.4, DIN EN 1335-3 cl. 7.4**		
	- all castors identical in construction - rolling resistance ≥ 12 N	type "W": 15 N type "H": 22 N	P ☒ F ☐ N/A ☐ N/T ☐
4.2	**Additional rolling resistance of unloaded chair for GS-certification DIN EN 1335-2: 2002 cl. 4.4, DIN EN 1335-3: 2000 cl. 6.1, cl. 6.2**		
	- all castors identical in construction - rolling resistance for castors type "H" ≥ 15 N - rolling resistance for castors type "W" ≥ 12 N - measuring of rolling resistance after durability test		P ☒ F ☐ N/A ☐ N/T ☐

Absatz	**DIN EN 1335-1, DIN EN 1335-2, DIN EN 1335-3**	Messergebnisse - Bemerkungen	Bewertung
Clause	Anforderungen - Prüfungen / *Requirements - Tests*	*Measuring results - Remarks*	*Evaluation*

5	**Strength and durability tests acc. to DIN EN 1335-2 cl. 4.5**		
	The requirements are fulfilled when after the tests acc. to DIN EN 1335-3 cl. 7.2.1, cl. 7.2.2, cl. 7.2.6, cl. 7.3.1 and cl. 7.3.2: - there are no fractures of any member, joint or component - there is no loosening of joints intended to be rigid - no major structural element is significantly deformed - the chair fulfils its functions after removal of the test loads and when after the test in 7.2.3 of DIN EN 1335-3 the arm rests show no fracture.		
5.1	**Seat front edge static load test DIN EN 1335-3 cl. 7.2.1**		
	10 cycles 1600 N		P ☒ F ☐ N/A ☐ N/T ☐
5.2	**Seat and back static load test DIN EN 1335-3 cl. 7.2.2**		
	10 cycles Seat: 1600 N Back: 560 N		P ☒ F ☐ N/A ☐ N/T ☐
5.3	**Foot rest static load test DIN EN 1335-3 cl. 7.2.6**		
	10 cycles 1300 N		P ☐ F ☐ N/A ☒ N/T ☐
5.4	**Seat and back durability DIN EN 1335-3 cl. 7.3.1**		
	 Key A loading point "A" D loading point "D" G loading point "G" B loading point "B" E loading point "E" H loading point "H" C loading point "C" F loading point "F" J loading point "J" Figure 6 — Loading points **Table 2 — Seat and back durability test** Step / Loading point (see Figure 6) 1 — A 2 — C-B 3 — J-E 4 — F-H 5 — D-G All chairs shall be tested to steps 1 to 5 (see table 2).		

Absatz *Clause*	**DIN EN 1335-1, DIN EN 1335-2, DIN EN 1335-3** Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse - Bemerkungen *Measuring results - Remarks*	Bewertung *Evaluation*
5.4.1	**Seat and back durability - step 1**		
	120 000 cycles Seat (Loading point "A"): 1500 N		P ☒ F ☐ N/A ☐ N/T ☐
5.4.2	**Seat and back durability - step 2**		
	Test performance acc. to DIN EN 1335-3 cl. 7.3.1 or DIN EN 1335-3: 2000 cl. 7.2, depending on higher stress for the construction of the chair. 80 000 cycles Seat (Loading point "C"): 1200 N Back (Loading point "B"): 320 N	40.000 cycles locked 40.000 cycles unlocked	P ☒ F ☐ N/A ☐ N/T ☐
5.4.3	**Seat and back durability - step 3**		
	Test performance acc. to DIN EN 1335-3 cl. 7.3.1 or DIN EN 1335-3: 2000 cl. 7.2, depending on higher stress for the construction of the chair. 20 000 cycles Seat (Loading point "J"): 1200 N Back (Loading point "E"): 320 N		P ☒ F ☐ N/A ☐ N/T ☐
5.4.4	**Seat and back durability - step 4**		
	Test performance acc. to DIN EN 1335-3 cl. 7.3.1 or DIN EN 1335-3: 2000 cl. 7.2, depending on higher stress for the construction of the chair. 20 000 cycles Seat (Loading point "F"): 1200 N Back (Loading point "H"): 320 N		P ☒ F ☐ N/A ☐ N/T ☐
5.4.5	**Seat and back durability - step 5**		
	20 000 cycles Seat (Loading point "D" and "G"): 1200 N lateral alternating		P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	**DIN EN 1335-1, DIN EN 1335-2, DIN EN 1335-3** Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse - Bemerkungen *Measuring results - Remarks*	Bewertung *Evaluation*
5.5	**Arm rest durability DIN EN 1335-3 cl. 7.3.2**		
	60 000 cycles 400 N		P ☒ F ☐ N/A ☐ N/T ☐
5.6	**Arm rest downward static load test - central DIN EN 1335-3 cl. 7.2.3**		
	5 cycles 750 N		P ☒ F ☐ N/A ☐ N/T ☐
	5 cycles 900 N		P ☒ F ☐ N/A ☐ N/T ☐
6	**Requirements for chairs with self-supporting gas spring**		
6.1	**Safety class of gas spring tube DIN 4550 cl. 5**		
	Maximum permissible distance "u" between seat front edge and the center of the gas spring in accordance with safety class may not be exceeded.	class 4	P ☒ F ☐ N/A ☐ N/T ☐
6.2	**General safety requirements DIN 4550: 2004 cl. 6.1**		
	Self-supporting gas springs must have a tripping device on the face side and have to be made of one part in the load bearing area.		P ☒ F ☐ N/A ☐ N/T ☐
6.3	**Gas spring taper DIN 4550 cl. 6.2, 6.3**		
	- overlapping minimum 80 % - one-piece taper - radius minimum 1 mm at the bottom edge - taper with smooth surface		P ☒ F ☐ N/A ☐ N/T ☐
6.4	**Durability test for self-supporting energized devices DIN 4550 cl. 7.2**		
	Test certificate for durability test	"TÜV Rheinland LGA type approved"	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	**DIN EN 1335-1, DIN EN 1335-2, DIN EN 1335-3** Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse - Bemerkungen *Measuring results - Remarks*	Bewertung *Evaluation*
6.5	**Marking of gas spring DIN 4550 cl. 9**		
	- manufacturer - type designation - classification - date of production (week / year)	STABILUS STAB-O-MAT "D" 023788 DIN 4550-4 070 13 D	P ☐ F ☐ N/A ☐ N/T ☐
6.6	**Safety advice on the chair DIN 4550 cl. 9**		
	Conspicuously warning advice near the gas spring in German with the following content: “Achtung! Austausch und Arbeiten im Bereich des Sitzhöhenverstellelementes nur durch eingewiesenes Personal.” We recommend the safety advice also in the language of the country in which it will be delivered to the end user.	The label of the swivel chairs is supplemented in series production with the warning advice minimum in german language (indentical procedure on every GS-certificated chair with gas spring)	P ☒ F ☐ N/A ☐ N/T ☐
6.7	**Self assembly EK 5 / AK 3: 01-04**		
	The decision of EK 5 / AK 3: 01-04 for self assembly office workchairs shall be considered.		P ☒ F ☐ N/A ☐ N/T ☐
7	**Functional tests acc. to DIN EN 1335-3**		
7.1	**Arm rest downward static load test - front DIN EN 1335-3 cl. 7.2.4**		
	5 cycles 450 N	no safety requirement	P ☐ F ☐ N/A ☐ N/T ☒
7.2	**Arm sideways static load test DIN EN 1335-3 cl. 7.2.5**		
	10 cycles 400 N	no safety requirement	P ☐ F ☐ N/A ☐ N/T ☒
7.3	**Swivel test DIN EN 1335 cl. 7.3.3**		
	120 000 cycles Seat (Loading point "A"): 60 kg Seat (Loading point "C"): 35 kg	no safety requirement	P ☐ F ☐ N/A ☐ N/T ☒

Absatz *Clause*	**DIN EN 1335-1, DIN EN 1335-2, DIN EN 1335-3** Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse - Bemerkungen *Measuring results - Remarks*	Bewertung *Evaluation*
7.4	**Foot rest durability DIN EN 1335-3 cl. 7.3.4**		
	50 000 cycles 900 N	no safety requirement	P ☐ F ☐ N/A ☐ N/T ☒
7.5	**Castor and chair base durability DIN EN 1335-3 cl. 7.3.5**		
	36 000 cycles Seat (Loading point "A"): 110 kg	no safety requirement	P ☐ F ☐ N/A ☐ N/T ☒
8	**Information for use**		
	Information for use shall be available in the language of the country in which it will be delivered to the end user. It shall contain at least the following details: - information regarding the intended use - information regarding possible adjustments and chair type - instruction for operating the adjusting mechanisms - instruction for the care and maintenance of the chair - information regarding all adjustments - information for chairs with seat height adjustments with energy accumulators that only trained personnel may replace or repair seat height adjustment components with energy accumulators - information on the choice of castors in relation to the floor surface	information for use with all relevant informations available	P ☒ F ☐ N/A ☐ N/T ☐

Absatz *Clause*	**DIN EN 1335-1, DIN EN 1335-2, DIN EN 1335-3** Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse - Bemerkungen *Measuring results - Remarks*	Bewertung *Evaluation*
9	**Materials**		
	Materials and its combinations shall not be toxic, among others the following certificates are necessary: - test certifiacte of harmful substances for wooden materials - test certificates of harmful substances for upholstery und cover materials - risk analysis for Polycyclic Aromatic Hydrocarbons (PAH) according to the valid ZEK requirement	Fabrics: Öko-Tex Standard 100 no.: 6234-4401 DTI Denmark from Gabriel, Öko-Tex Standard 100 no.: 1076-17401 DTI Denmark from Gabriel EU-Ecolabel DK/16/024 from Kvadrat, EU-Ecolabel UK/16/005 from Camira EU-Ecolabel DK/16/020 from Gabriel Lether: TRLP test report 1063617A from Wollsdorf Leder Schmidt Armrest pad: PAH-test, TRLP test report 3071808/180 AZ 166400 A risk analysis and evaluation regarding PAH's (polycyclic aromatic hydrocarbons) according to the actual requirement ZEK 01.4-08 was carried out. The accessibility and the selection of the materials show no further suspicion concerning a PAH-risk.	P ☒ F ☐ N/A ☐ N/T ☐
10	**Marking towards ProdSG section 2 § 6**		
	Durable marking of product with name and contact address of manufacturer or importer and the product designation	see figure 11 on page 3	P ☒ F ☐ N/A ☐ N/T ☐

ANLAGE zum Prüfbericht-Nr.: 21215054_001
APPENDIX to Test Report No.:

ZUSATZ-DOKUMENTATION
ADDITIONAL DOCUMENTATION

Dimensions to EN 1335 - Office work chairs **Denomination/code letter**			**nominal size (mm)**	**Type A** **actual size (mm)**	
Seat height [a]	adjustable	**a**	≤ 400 to ≥ 510	388 - 520	+[1]
	adj. range		≥ 120	132	+
Seat depth	adjustable	**b**	≤ 400 to ≤ 420	403 - 483	+[1), 2]
	adj. range		≥ 50	80	+
Depth of seat surface		**c**	≥ 380	465	+
Seat width		**d**	≥ 400	410	+[3]
Inclination of seat surface	adjustable	**e**	≥ -2° bis ≤ -7°	+7.7° till -16.0°	+
	adj. range		≥ 6°	23.7°	+
Height of back supp. point "S" above the seat	adjustable	**f**	≤ 170 to ≥ 220	132 - 210	+[1),4]
	adj. range		≥ 50	78	+
Height of back rest	adjustable	**g**	≥ 220	470 / 630	+
	fixed		≥ 260		
Height of upper edge of the back rest above the seat		**h**	≥ 360	564 - 642	+[1]
				404 – 482	+[1]
Back rest width		**i**	≥ 360	365	+[5]
Back rest radius horizontal		**k**	≥ 400	>400	+
Back rest inclination	adj. range	**l**	≥ 15°	23.7°	+[6]
Length of the armrest		**n**	≥ 200	200	+[7]
Width of the armrest [b]		**o**	≥ 40	40	+[7]
Height of armrest above the seat	fixed	**p**	200 to 250	195 - 310	+[1), 8]
	adjustable		≤ 200 to ≥ 250	115	+
Distance of armrest to the front edge of the seat [c]		**q**	≥ 100	>100	+[1]
Clear width between armrests [d]	fixed	**r**	460 to 510		
	adjustable		≤ 460 to ≥ 510	355 - 510	+
Max. offset of the of the underframe [e]		**s**	≤ 365	390.5	+
Stability dimension		**t**	≥ 195	248.5	+

1) Measured with seat inclination near 0° and backrest inclination 90° (determined with loading template DIN EN 17128)
2) The measurement is still in tolerance.
3) Adjustment of sliding seat in forward position, measured in point “A”
4) Special formed backrest with a back supporting zone of 30 mm, middle of the zone in a height of 132-210 adjustable.
5) Measured 300 mm above point “A” in lowest backrest height adjustment.
6) By mechanism movement, additional 20° by separate backrest inclination
7) Measured length till a width of 40 mm, measured width till a till a length of 200 mm
8) Lowest position measured in smallest clear width adjustment, highest position measured in widest clear width between armrests
a) The limits of the minimum adjustable range consider work heights of min 680 mm to 780 mm. Some users need a foot rest.
b) This requirement applies for a minimum length of ”n”.
c) This requirement applies for a length from 170 mm above point ”A”.
d) This requirement applies for ¾ of the seat depth ”b” (measured from the seat front edge) with back rest setting most forwarded.
e) When castors are used the requirement is: 415 mm.

Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*
S 60093486

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0001

Ihr Zeichen *Client Reference*	**Unser Zeichen** *Our Reference*	**Längstens gültig bis** *Latest expiration date (day/mo/yr)*
	0010-- 21215054 001	27.04.2019

Genehmigungsinhaber *License Holder*
Scandinavian Business Seating AS
Fridtjof Nansens vei 12
0301 Oslo
Norway

Fertigungsstätte *Manufacturing Plant*
Scandinavian Business Seating AB
Vallgatan 1
SE-571 23 Nässjö
Sweden

Prüfzeichen *Test Mark*

TÜVRheinland ZERTIFIZIERT
GS geprüfte Sicherheit
www.tuv.com
ID 1000000000

Geprüft nach *Tested acc. to*
DIN EN 1335-1/08.02
DIN EN 1335-2/01.10
DIN EN 1335-3/08.09
ZEK 01.4-08/11.11

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Bürostuhl / office work chair

Bezeichnung: Büro-Arbeitsstuhl
designation: office work chair

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Modellreihe/model range: " RH Mereo "

Artikel/: 200 mit mittlerer Rückenlehne / with medium back
article 220 mit hoher Rückenlehne / with high back
- Sitzmechanik aus Stahl und Aluminiumdruckguss, blockierbar, mit 80 mm Schiebesitz und zusätzlicher Rückenlehnenneigung / seat mechanism made of steel and aluminium die cast, lockable, with 80 mm sliding seat and additional backrest inclination
- hohe Rückenlehne optional mit Nackenstütze / high back optional with neck rest
- optional mit Armlehnen / optional with armrests
- optional mit Rollen Typ H oder Typ W / optional with castors type H or W
- Gasfeder / gas spring: STAB-O-MAT "D" DIN 4550-4 023788

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Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde. Produkt und Fertigungsstätte erfüllen § 20 und § 21 des Produktsicherheitsgesetzes.
This certificate is based on our Testing and Certification Regulation. Product and production fulfill par § 20 and § 21 of the Product Safety Law.

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Zertifizierungsstelle

TÜV Rheinland LGA Products GmbH Zertifizierungsstelle

A. He

Andre Henning

Ausstellungsdatum *Date of Issue* : 28.04.2014 **(day/mo/yr)**