

Test report No.: 19-00055-CP-PRG-00
Manufacturer: NMI Safety Systems Ltd., United Kingdom
Type: FL



Test report

No.: 19-00055-CP-PRG-00

Test of NMI composite floor
with regard to Directive / Regulation (EC/EU) / Regulation No. **ECE R14**
taking into consideration amendment No. 07, **Supplement 8**

Approval subject:
Strength of safety belt anchorages

Approval status		
<input type="checkbox"/>	Granting of a type approval	N/A
<input type="checkbox"/>	Extension/correction to type approval no.	N/A

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I. General

Make: NMI

Type: FL

Commercial name(s) (if available): NMI M1 Ultralite composite floor

Category of vehicle: M1, M2, M3, N1, N2, N3

Name and address of manufacturer: Base:
NMI Safety Systems Ltd.
16 IO Centre, Arlington Business Park,
Whittle Way, Stevenage, Herts SG1 2BD
United Kingdom

Manufacturer

Floor: NMI Safety Systems Ltd.
16 IO Centre, Arlington Business Park,
Whittle Way, Stevenage, Herts SG1 2BD
United Kingdom

Seats:

Intap Tobik Sp. j.
ul. Rokicińska 110/112
95-006 Bukowiec k/Łodzi
Poland

Rescroft Ltd.
20 Oxleasow Road, East Moons Moat,
REDDITCH, Worcestershire, B98 0RE
United Kingdom

Phoenix Seating Ltd.
Unit 47, Bay 3, Second Avenue,
The Pensnett Estate, Kingswinford,
West Midlands, DY6 7UZ
United Kingdom

Cogent Passenger Seating Ltd.
Prydwen Road Swansea West
Industrial Park, SA5 4HN
United Kingdom

Assembly plant: Floor:
OKB Sp. z o.o.
ul. Rokicińska 108/110,
95-006 Bukowiec,
Poland

Name and address of representative: N/A

Reference number of information folder: FL-01-2019

Date of issue of information folder: 05.06.2019



II. Test results

Refer to the Annex

III. Enclosures

Information Folder

IV. Statement of conformity

The mentioned information folder and the type described therein are in accordance with the test basis mentioned above. The worst-case was selected in accordance with document "Requirements for Test Reports (AS-PB-T-02)".

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TÜV SÜD Auto Service GmbH is designated as Technical Service by:

Genehmigungsbehörde <i>Approval authority</i>	Land <i>Country</i>	Registriernummer <i>Registration number</i>
Kraftfahrt-Bundesamt (KBA)	Deutschland <i>Germany</i>	KBA-P 00100-10
Vehicle Certification Agency (VCA)	Vereinigtes Königreich <i>United Kingdom</i>	VCA-TS-006
Approval Authority of the Netherlands (RDW)	Niederlande <i>The Netherlands</i>	RDWT-082-xx
National Standards Authority of Ireland (NSAI)	Irland <i>Ireland</i>	Technical Service Number: 49
Société Nationale de Certification et d'Homologation s.à r.l.	Luxemburg <i>Luxembourg</i>	B27180

Munich, 01.08.2019



[Signature]
 Ing. Martin Hron
 Authorized signatory

Annex

Test report

1. Technical data of the test sample

- 1.1. Test object: NMI M1 composite ultralite floor type FL installed to various vehicles bodies or on rigid test rig with several types of seats and legs installed on the floor. Details see below and in manufacturer's information document.
- 1.1.1. Location and arrangement: Seats can be mounted in any position in the vehicle, provided in one row there are not more than 4 seats.
- 1.1.2. Variants: FLR, FLM
- 1.1.3. Manufacturer of floor: NMI Safety Systems Ltd.
16 IO Centre, Arlington Business Park,
Whittle Way, Stevenage, Herts SG1 2BD
United Kingdom
- 1.1.4. Manufacturer of seats:
- | | |
|--|--|
| Intap Tobik Sp. j.
ul. Rokicińska 110/112
95-006 Bukowiec
Poland | Rescroft Ltd.
20 Oxleasow Road, East Moons Moat,
REDDITCH, Worcestershire, B98 0RE
United Kingdom |
| Phoenix Seating Ltd.
Unit 47, Bay 3, Second Avenue,
The Pensnett Estate, Kingswinford,
West Midlands, DY6 7UZ
United Kingdom | Cogent Passenger Seating Ltd.
Prydwen Road Swansea West
Industrial Park, SA5 4HN
United Kingdom |
- 1.1.5. Assembly plant of floor: OKB Sp. z o.o.
ul. Rokicińska 108/110,
95-006 Bukowiec,
Poland

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1.1.6. Table of vehicles types for which are test results valid:

Manufacturer	Commercial description / Type	Wheelbase
Daimler	Sprinter (906, 907)	3250, 3665, 4325
	Sprinter (910)	3259, 3924
	Vito/Viano/V-klasse (639, 639/2, 639/4)	3200, 3430
VW	Crafter (2E_)	3250, 3665, 4325
	Crafter (SYN_ e.g. SYN1E, SYN2E, SYN2Z)	3640, 4490
	T5 (7H_, 7E_)	3000, 3400
	T6 (7H_, 7E_, 7J_)	3000, 3400
Citroen	Jumper (Y)	3000, 3450, 4035
	Jumpy (X)	3000, 3122
	Jumpy (2016)	2925, 3275
	SpaceTourer	2925, 3275
Peugeot	Boxer (Y)	3000, 3450, 4035
	Expert (VF3_)	3000, 3122
	Expert (2016)	2925, 3275
	Traveller	2925, 3275
Fiat	Ducato (250)	3000, 3450, 4035
	Scudo (270)	3000,3122
	Talento (FJL, FFL)	3098, 3498
Opel	Movano (MR, MS, MW)	3182, 3682, 4332
	Vivaro (F7)	3098, 3498
Renault	Master (FV, MA)	3182, 3682, 4332
	Trafic (FL, L)	3098, 3498
	Trafic 2014 (JL, L)	3098, 3498
Renault Truck	Master (MF)	3182, 3682, 4332
Ford	Transit (FA_, FD_)	2933, 3300, 3750
	Transit (FC_)	3300, 3750, 3954
	Transit Custom (FA_, FC_)	2933, 3300
	Transit Connect (PU2)	2662, 3062
Iveco	Daily (IS_)	3000, 3300, 3520, 3950, 4100, 4750
Nissan	NV200	2725
	NV300	3098, 3498
	NV400	3182, 3682, 4332
Toyota	Pro Ace, Pro Ace Verso (2016)	2925, 3275
MAN	TGE (SYN_ e.g. SYN1E, SYN2E, SYN2Z)	3640, 4490
LDV	V80, Maxus (SV6C)	3100, 3850
Hyundai	H350 (EU(V))	3435, 3670

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1.1.7. Table of seats tested for installation on NMI M1 composite ultralite floor – INTAP seats

Seats type	Legs and consoles	Category seats	Weight of maximum mass configuration (kg)
S1NOV01	N0AZM06**, N0AZM36, N0BLS10, N0AZM09 or Millennium leg, N0BLS17***, V-leg*	M2/N2, M3/N3	27,0
S2NOV01 ^D	N0BLS17***, N0BLS17 or N0AZM36,	M2/N2, M3/N3	40,0
S1NOV04	N0AZM06**, N0BLS17***, N0BLS17, N0AZM36, N0AZM06, N0BLS10, N0AZM09, Millennium leg, V-leg*	M1/N1, M2/N2, M3/N3	32,0
S1LID17	N0AZM06**, N0BLS10, N0AZM09, Millennium leg, N0BLS17***, N0BLS17, N0AZM36, Centro leg, V-leg*	M2/N2, M3/N3	13,5
S1LID18	N0AZM06**, N0BLS10, N0AZM09, Millennium leg, N0BLS17***, N0BLS17, N0AZM36, Centro leg, V-leg*	M2/N2, M3/N3	14,7
S1LID25	N0AZM06**, N0BLS10, N0AZM09, Millennium leg, N0BLS17***, N0BLS17, N0AZM36, Centro leg, V-leg*	M2/N2, M3/N3	20,0
S2LID17 ^D	N0BLS17***, N0AZM36**	M2/N2, M3/N3	25,6
S2LID18 ^D	N0BLS17***, N0AZM36**	M2/N2, M3/N3	27,6
S2LID25 ^D	N0BLS17***, N0AZM36**	M2/N2, M3/N3	35,0
S1POL01	N0AZM06**, N0AZM06, N0BLS10, N0AZM09, Millennium leg, N0BLS17, V-leg*	M2/N2, M3/N3	13,0
S2POL01 ^D	N0BLS17***, N0AZM36**	M2/N2, M3/N3	24,0
S1MED01	Slide base, N0AZM06**, N0BLS10, N0AZM09, Millennium leg, V-leg*	M1/N1, M2/N2, M3/N3	39,5
S1MED11	Slide base	M1/N1, M2/N2, M3/N3	39,5
S1AMB01	N0AZM35, Centro leg, P1NKL21, Slide base	M1/N1, M2/N2, M3/N3	29,0
S1TAX01	N0AZM06**, N0BLS10, N0AZM09, Millennium leg, V-leg*	M1/N1, M2/N2, M3/N3	19,0
S1TAX02	N0AZM06**, N0BLS10, N0AZM09, Millennium leg, V-Leg*	M1/N1, M2/N2, M3/N3	19,5
S1TAX03	N0AZM35, Centro leg, P1NKL21, Slide base	M1/N1, M2/N2, M3/N3	28,5
S1TAX08	N0AZM06**, N0BLS10, N0AZM09 or Millennium leg, V-leg*	M1/N1, M2/N2, M3/N3	27,0

^D - double seat

V-leg* – could be with V-fitting

N0AZM06** - can be equipped with NMI V or W fitting, Qstraint lockable or UNWIN HAL Quicklock

N0BLS17*** - can be equipped with UNWIN HALL Quick lock

Remark: Any seat can be used if tested for appropriate vehicle category and seatbelt anchorages not higher than on the dummy seat.

1.1.8. Table of seats tested for installation on NMI M1 composite ultralite floor – Rescroft seat

Seat type	Leg	Category seat	Weight of maximum mass configuration
CT Space	Space saver leg	M2/N2, M3/N3	25 kg

1.1.9. Table of seats tested for installation on NMI M1 composite ultralite floor – Phoenix Seating seat

Seat type	Leg	Category seats	Weight of maximum mass configuration
Blenheim	Millennium leg	M1/N1, M2/N2, M3/N3	23 kg

1.1.10. Table of seats tested for installation on NMI M1 composite ultralite floor – Cogent Passenger Seating seat

Seat type	Leg	Category seat	Weight of maximum mass configuration
COGESA-501	Millennium leg	M1/N1, M2/N2, M3/N3	19 kg

1.1.11. Table of seats tested for installation on NMI M1 composite ultralite floor – Cogent Passenger Seating seat

Leg/base type	Mass	Fixation parts	Mass
P1NKL21	12,0 kg	TMI-16	0,05 kg
N0AZM35	8,1 kg	TMI-17	0,05 kg
N0AZM36	2,5 kg	OKBeeLOCK03	0,05 kg
N0AZM06	2,5 kg	TMI	0,05 kg
N0AZM09	4,1 kg	TMDS	0,10 kg
N0BLS09	2,5 kg	UNWIN SL/STD	0,90 kg
N0BLS10	3,0 kg	NMI Vfitting	2,50 kg
N0BLS15	2,1 kg	NMI V fitting 03 single	1,10 kg
N0BLS17	2,5 kg	Q'straint Lockable	0,90 kg
SLIDE Base	16,0 kg	UNWIN HALL quic-klock	1,80 kg
V-leg	4,3 kg		

1.1.12. Legs and consoles and fixation parts tested for installation on NMI M1 composite ultralite floor – Other manufacturer seats (Rescroft, Cogent Passenger Seating, Phoenix Seating)

Leg/base type	Mass
Millennium leg	3,0 kg
Space saver leg	2,5 kg

For All possible combinations of legs with seats and design details see manufacturer's information document.

All production seats have anchorages points lower or in same height as a dummy seat.

Results of tests with dummy seats used cover installation of any production seat if such seat is separately tested and positions of seatbelt anchorage points are not higher than on these dummy seats.

2. Test conditions

- 2.1. Test procedures used (ECE R14):
 Strength test of safety belt anchorages according to ECE R 14.07 concerning to strength of NMI M1 composite floor.
- 2.2. Measuring and test equipment:
- Digital ballance
 - Electrohydraulic test device and respective fixtures
 - Force measuring chain with load cells
 - Interface 1210AF
 - Tape rule
- 2.3. Test track or site: OKB testing laboratory, Bukowiec, Poland

3. Test results

The below mentioned test results cover all variants including the maximum mass stated in the enclosed information document (seat, leg design, seat-to-vehicle anchorages, seat arrangement, floor to vehicle attachment).

Geometrical requirements are fulfilled; all the seat belts anchorages are provided on- seat.

- 3.1. Production seats test results – safety belts anchorages strength:

Other row of seats:

Test results in points 2.1.1. – 2.1.13. are included in technical report No. 121175 – 17 – TAC (NMI composite floor A) and see below too.

- 3.1.1. Strength test of seat to floor and floor to vehicle attachment for OKBeeFLOOR 15 with mounted dummy seat. Maximum mass of seat with leg $m_s = 30$ kg.

Additional force applied to lower belt portion:

$F_z = 20 \times m_s \times g$ (N) as relevant for M1 and N1 vehicle category.

Seat	Forward facing
Safety belt	Ar
Upper belt anchorage	Seat structure
Lower belt anchorages	Seat structure
Required force in shoulder belt portion	13 500 \pm 200 N
Required force in lab belt portion	19 390 \pm 200 N
Force in shoulder belt measured	13 500 / > 0,2 s
Force in lab belt measured	19 390 / > 0,2 s
Remark: No ruptures occurred. Upper belt anchorage displacement was 234 mm.	

- 3.1.2. Strength of seat to vehicle attachment - three dummy seats in one row with 3-point safety belts, legs INTAP stamped – NBL510 (H=320mm), Mass of the seat 25 kg.
 Additional force applied $F_z = 20 \times m_s \times g$ (N) as relevant to M1, N1.

Seat	Left	Centre	Right
Safety belt	Ar	Ar	Ar
Upper belt anchorage	on seatback	on seatback	on seatback
Lower belt anchorages	on seat structure	on seat structure	on seat structure
Required force in the shoulder belt	13 500 ± 200 N	13 500 ± 200 N	13 500 ± 200 N
Required force in the lap belt	18 405 ± 200 N	18 405 ± 200 N	18 405 ± 200 N
Force in the shoulder belt	14 000 N/>0,2s	13 800 N/>0,2s	13 800 N/>0,2s
Force in the lap belt	18 900 N/>0,2s	18 880 N/>0,2s	18 500 N/>0,2s
Upper anchorage point displacement	200 mm	170 mm	160 mm
Remark: Additional force applied to the lower belt portion. No ruptures occurred.			

- 3.1.3. Taxi seat on revolving base and Inter leg on OKBeeRAIL 04 mounted on rigid test stand.
 Mass of the seat 40 kg.
 Additional force applied $F_z = 20 \times m_s \times g$ (N) as relevant to M1, N1.

Safety belt	Ar
Upper belt anchorage	on seatback
Lower belt anchorages	on seat structure
Required force in the shoulder belt	13 500 ± 200 N
Required force in the lap belt	13 500 ± 200 N
Required force of mass	8000 N
Force in the shoulder belt	achieved
Force in the lap belt	achieved
Force of mass	achieved
Upper anchorage point displacement	150 mm

3.1.4. Seats to floor and floor to vehicle attachment strength

Mass of the single seat 27 kg.

Additional force applied $F_z = 20 \times m_s \times g$ (N) as relevant to M1.

Seat	Left	Centre	Right
Longitudinal adjustment	N/A	N/A	N/A
Vertical adjustment	N/A	N/A	N/A
Seat-back adjustment	Effective torso angle 19°		
Safety belt	Ar	Ar	Ar
Upper belt anchorage	On seatback	On seatback	On seatback
Lower belt anchorages	On seat structure	On seat structure	On seat structure
Required force in the shoulder belt	13 500 ± 200 N	13 500 ± 200 N	13 500 ± 200 N
Required force in the lap belt	18 797 ± 200 N	18 797 ± 200 N	18 797 ± 200 N
Required additional force	5 297 N	5 297 N	5 297 N
Force in the shoulder belt	13 800 N	14 500 N	15 000 N
Force in the lap belt	18 800 N	18 800 N	18 800 N
Upper anchorage displacement	295 mm	345 mm	270 mm
Remark: No ruptures occurred. Additional force applied to lower belt portion.			

Seat S1TAX03 on wheelarch bridge P1NKL21-01 (cover also P1NKL21-02)

3.1.5. Mass of seat with bridge $m_s=39$ kg.

Additional force applied $F_z = 20 \times m_s \times g$ (N) as relevant M1..

Longitudinal adjustment	N/A
Vertical adjustment	N/A
Seat-back adjustment	19°
Safety belt	Ar
Belt anchorages	Fixed on seat structure
Required force in the lap belt	13 500 ± 200 N
Required force in the shoulder belt	13 500 ± 200 N
Required additional force	7 652 N
Force in the lap belt	14 000 N
Force in the shoulder belt	14 100 N
Additional force	8 900 N
Remark: No ruptures occurred. Upper anchorage point displacement was in the limit.	

- 3.1.6. Seat S1TAX03 on N0AZM35-01 equipped with UNWIN quicklock SL/STD or NMI V fitting or attached to the floor with gliders.
 Mass of seat with leg in heaviest configuration $m_s=40$ kg.
 Additional force applied $F_z= 20 \times m_s \times g$ (N) as relevant M1.

Seat with leg	N0AZM35 with UN-WIN quicklock	N0AZM35 with gliders	N0AZM35 with NMI Vfitting
Longitudinal adjustment	N/A	N/A	N/A
Vertical adjustment	N/A	N/A	N/A
Seat-back adjustment	19°	19°	19°
Safety belt	Ar	Ar	Ar
Belt anchorages	Fixed on seat structure	Fixed on seat structure	Fixed on seat structure
Required force in lap belt	21 350 ± 200 N	21 350 ± 200 N	21 350 ± 200 N
Required force in shoulder belt	13 500 ± 200 N	13 500 ± 200 N	13 500 ± 200 N
Force in the lap belt	21 300 N	21 500 N	21 550 N
Force in shoulder belt	16 000 N	14 100 N	13 400 N
Remark: Additional force added to lower belt portion. No ruptures occurred. Upper anchorage point displacement was in the limit.			

- 3.1.7. Seat S1TAX03 on N0AZM35-01 equipped with UNWIN quicklock SL/STD.
 Mass of seat with leg $m_s=40$ kg.
 Additional force applied $F_z= 20 \times m_s \times g$ (N) as relevant M1.

Longitudinal adjustment	N/A
Vertical adjustment	N/A
Seat-back adjustment	19°
Safety belt	Ar
Belt anchorages	Fixed on seat structure
Required force in lap belt	21 350 ± 200 N
Required force in shoulder belt	13 500 ± 200 N
Force in the lap belt	21 600N
Force in the shoulder belt	13 800 N
Remark: Additional force added to lower belt portion. No ruptures occurred. Upper anchorage point displacement was in the limit.	

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- 3.1.8. Seat S1TAX03 with sliding base in vehicle body.
Mass of seat with base $m_s = 36,5$ kg.
Additional force applied $F_z = 20 \times m_s \times g$ (N) as relevant M1.

Seat	Forward facing
Safety belt	Ar
Upper belt anchorage	Seat structure
Lower belt anchorages	Seat structure
Required force shoulder belt portion	13 500 ± 200 N
Required force lap belt portion	13 500 ± 200 N
Additional force required	7 300 N
Force in the shoulder belt	> 13 300 N / > 0,2 s
Force in the lap belt	> 13 300 N / > 0,2 s
Additional force	8 500 N
Remark: No ruptures occurred. Upper anchorage point displacement was 250 mm.	

- 3.1.9. Seat S1MED01 with sliding base (transverse) on rigid bench.
Mass of seat with base $m_s = 55$ kg.
Additional force applied $F_z = 20 \times m_s \times g$ (N) as relevant M1.

Seat	Forward facing
Safety belt	Ar
Upper belt anchorage	Seat structure
Lower belt anchorages	Seat structure
Required force shoulder belt portion	13 500 ± 200 N
Required force lap belt portion	13 500 ± 200 N
Additional force required	11 000 N
Force in the shoulder belt	13 600 N / > 0,2 s
Force in the lap belt	14 300 N / > 0,2 s
Additional force	11 800 N
Remark: No ruptures occurred. Upper anchorage point displacement was 350 mm.	

3.1.10. Dummy seat with sliding base on rigid bench.

Mass of seat with base $m_s = 42$ kg.

Additional force applied $F_z = 20 \times m_s \times g$ (N) as relevant M1.

Seat	Forward facing
Safety belt	Ar
Upper belt anchorage	Seat structure
Lower belt anchorages	Seat structure
Required force shoulder belt portion	13 500 ± 200 N
Required force lap belt portion	13 500 ± 200 N
Additional force required	8 400 N
Force in the shoulder belt	> 13 300 N / > 0,2 s
Force in the lap belt	15 200 N / > 0,2 s
Additional force	8 800 N
Remark: No ruptures occurred. Upper anchorage point displacement was 300 mm.	

3.1.11. Dummy seat with sliding base on rigid bench.

Mass of seat with base $m_s = 42$ kg.

Additional force applied $F_z = 20 \times m_s \times g$ (N) as relevant M1.

Seat	Forward facing
Safety belt	Ar
Upper belt anchorage	Seat structure
Lower belt anchorages	Seat structure
Required force shoulder belt portion	13 500 ± 200 N
Required force lap belt portion	13 500 ± 200 N
Additional force required	9 200 N
Force in the shoulder belt	14 000 N / > 0,2 s
Force in the lap belt	14 500 N / > 0,2 s
Additional force	9 250 N
Remark: No ruptures occurred. Upper anchorage point displacement was 300 mm.	

- 3.1.12. Seat S1AMB01 with sliding base on rigid bench.
 Mass of seat with base $m_s = 46$ kg.
 Additional force applied $F_z = 20 \times m_s \times g$ (N) as relevant M1.

Seat	Forward facing
Safety belt	Ar
Upper belt anchorage	Seat structure
Lower belt anchorages	Seat structure
Required force shoulder belt portion	13 500 ± 200 N
Required force lap belt portion	13 500 ± 200 N
Additional force required	9 200 N
Force in the shoulder belt	14 000 N / > 0,2 s
Force in the lap belt	14 500 N / > 0,2 s
Additional force	9 250 N
Remark: No ruptures occurred. Upper anchorage point displacement was 280 mm.	

- 3.1.13. 4 seats - Ekolider II double in one row mounting on leg NOBLS17 (S1LID25 and S2LID25) in vehicle body FIAT Ducato.
 Mass of the single seat with leg $m_s = 25$ kg.
 Additional force applied $F_z = 10 \times m_s \times g$ (N) as relevant to M2.

Seat	Forward facing			
	Right	Right centre	Left centre	Left
Safety belt	Ar	Ar	Ar	Ar
Upper belt anchorage	Seat structure	Seat structure	Seat structure	Seat structure
Lower belt anchorages	Seat structure	Seat structure	Seat structure	Seat structure
Required force in shoulder belt portion	6 750 ±200 N	6 750 ±200 N	6 750 ±200 N	6 750 ±200 N
Required force in lap belt portion	9 250 ±200 N	9 250 ±200 N	9 250 ±200 N	9 250 ±200 N
Force in the shoulder belt measured	7 000N / > 0,2 s	7 250 N / > 0,2 s	7 000 N / > 0,2 s	6 850 N / > 0,2 s
Force in the lap belt measured	10 500 N / > 0,2 s	10 000 N / > 0,2 s	9 750 N / > 0,2 s	9 500 N / > 0,2 s
Remark: No ruptures occurred. Additional force was applied to lap belt portion.				

Remarks: Tests were made in vehicle body FIAT Ducato as a worst case representative of big VANs.

3.2. New additional tests of seat belt anchorages and seat to floor attachment.

3.2.1. FLM composite floor

Dummy seat DS-02 on dummy leg tested on NMI M1 composite ultralite floor with OKBeerail 09 in representative bodywork.

Mass of the single seat with leg $m_s = 34$ kg.

Additional force applied $F_z = 20 \times m_s \times g$ (N) as relevant for category M1/N1.

Seat	Forward facing
Safety belt	Ar
Upper belt anchorage	Seat structure
Lower belt anchorages	Seat structure
Required force shoulder belt portion	13 500 ± 200 N
Required force lap belt portion	13 500 ± 200 N
Additional force required	6 800 N
Force in the shoulder belt	13 500 N / > 0,2 s
Force in the lap belt	14 000 N / > 0,2 s
Additional force	6 800 N
Remark: No ruptures occurred. Upper anchorage point displacement was 105 mm. Additional force is added to the seat base.	

3.2.2. Coparative test composite floors - FLM versus FLR

1. Dummy seat DS-02 with dummy leg tested on NMI M1 composite floor with OKBeerail 04

2. Dummy seat DS-02 with dummy leg tested on NMI M1 composite ultralite floor with OK-Beerail 09

Mass of the single seat with leg $m_s = 30$ kg.

Additional force applied $F_z = 20 \times m_s \times g$ (N) as relevant for category M1/N1.

Seat	Left seat (OKBeeRAIL04)	Right seat (OKBeeRAIL09)
Safety belt	Ar	Ar
Upper belt anchorage	Seat structure	Seat structure
Lower belt anchorages	Seat structure	Seat structure
Required force shoulder belt portion	13 500 ± 200 N	13 500 ± 200 N
Required force lap belt portion	19 390 ± 200 N	19 390 ± 200 N
Force in the shoulder belt	13 700 N / > 0,2 s	14 000 N / > 0,2 s
Force in the lap belt	20 200 N / > 0,2 s	19 200 N / > 0,2 s
Displacement of upper anchorage point	52 mm	138 mm
Remark: No ruptures occurred. Additional force is added to the lab belt portion.		

3.2.3. FLR Variant of floor

Dummy seat DS-02 on dummy leg tested on NMI M1 composite ultralite floor with OKBeerail 04 in representative bodywork.

Mass of the single seat with leg $m_s = 65$ kg.

Additional force applied $F_z = 20 \times m_s \times g$ (N) as relevant for category M1/N1.

Additional force applied to the seat base.

Seat	Forward facing
Safety belt	Ar
Upper belt anchorage	Seat structure
Lower belt anchorages	Seat structure
Required force shoulder belt portion	13 500 ± 200 N
Required force lap belt portion	13 500 ± 200 N
Additional force required	13 000 N
Force in the shoulder belt	13 900 N / > 0,2 s
Force in the lap belt	14 400 N / > 0,2 s
Additional force	13 300 N
Remark: No ruptures occurred. Upper anchorage point displacement was 62 mm. Additional force is added to the seat base.	

3.2.4. Centro leg

Dummy seat DS-03 on Centro leg with V Fitting mounted on NMI M1 composite floor.

Mass of the single seat with leg $m_s = 33$ kg.

Additional force applied $F_z = 20 \times m_s \times g$ (N) as relevant for category M1/N1.

Additional force applied to the seat base.

Seat	Forward facing
Safety belt	Ar
Upper belt anchorage	Seat structure
Lower belt anchorages	Seat structure
Required force shoulder belt portion	13 500 ± 200 N
Required force lap belt portion	13 500 ± 200 N
Additional force required	6 600 N
Force in the shoulder belt	13 500 N / > 0,2 s
Force in the lap belt	13 750 N / > 0,2 s
Additional force	6 650 N
Remark: No ruptures occurred. Upper anchorage point displacement was 48 mm. Additional force is added to the seat base.	

- 3.2.5. Seat Belenheim on Millenium leg mounted on NMI composite floor M1.
 Mass of the single seat with leg $m_s = 23$ kg.
 Additional force applied $F_z = 20 \times m_s \times g$ (N) as relevant for category M1/N1.
 Additional force applied to the lab belt.

Seat	Forward facing
Safety belt	Ar
Upper belt anchorage	Seat structure
Lower belt anchorages	Seat structure
Required force shoulder belt portion	13 500 ± 200 N
Required force lap belt portion	18 100 ± 200 N
Force in the shoulder belt	13 500 N / > 0,2 s
Force in the lap belt	18 100 N / > 0,2 s
Remark: No ruptures occurred. Upper anchorage point displacement was 210 mm. Additional force is added to the lab belt portion.	

- 3.2.6. Seat COGESA-501 on Millenium leg mounted on NMI composite floor M1.
 Mass of the single seat with leg $m_s = 19$ kg.
 Additional force applied $F_z = 20 \times m_s \times g$ (N) as relevant for category M1/N1.
 Additional force applied to the lab belt.

Seat	Forward facing
Safety belt	Ar
Upper belt anchorage	Seat structure
Lower belt anchorages	Seat structure
Required force shoulder belt portion	13 500 ± 200 N
Required force lap belt portion	17 300 ± 200 N
Force in the shoulder belt	13 400 N / > 0,2 s
Force in the lap belt	17 400 N / > 0,2 s
Remark: No ruptures occurred. Upper anchorage point displacement was 240 mm. Additional force is added to the lab belt portion.	



- 3.2.7. Seat S1TAX08 on N0AZM06 legs mounted on rigid plate.
 Mass of the heaviest possible seat configuration covered by the test $m_s = 42,5 \text{ kg}$.
 $F_z = 20 \times m_s \times g \text{ (N)}$ as relevant for M1 and N1 vehicle category.
 Additional force applied to the seat base.

Safety belt	Ar
Upper belt anchorage	Seat structure
Lower belt anchorages	Seat structure
Required force in shoulder belt portion	13 500 ± 200 N
Required force lab belt portion	13 500 ± 200 N
Required force inertia	6 200 N
Force in the shoulder belt	13 750 N / > 0,2 s
Force in the lap belt	15 100 N / > 0,2 s
Inertia force in the seat base	6 900 N / > 0,2 s
Remark: No ruptures occurred. Additional force is added to seat base. Displacement of upper anchorage point was 345 mm.	

Test report No.:
 Manufacturer:
 Type:

19-00055-CP-PRG-00
 NMI Safety Systems Ltd., United Kingdom
 FL



Test results – for category of vehicle M2/N2

3.2.8. CT Space seat M2 on Space saver leg mounted on NMI M1 composite floor M1.

Mass of the single seat with leg $m_s = 25$ kg.

Additional force applied $F_z = 10 \times m_s \times g$ (N) as relevant for category M2/N2.

Additional force applied to the lab belt.

Seat	Forward facing
Safety belt	Ar
Upper belt anchorage	Seat structure
Lower belt anchorages	Seat structure
Required force shoulder belt portion	6 750 ± 200 N
Required force lap belt portion	9 250 ± 200 N
Force in the shoulder belt	6 700 N / > 0,2 s
Force in the lap belt	9 300 N / > 0,2 s
Remark: No ruptures occurred. Upper anchorage point displacement was 80 mm. Additional force is added to the lab belt portion.	

3.2.9. Double Seat S1LID25 (EkoLider II adjustable) with Floor-wall on pressed legs (N0BLS15) mounted on rigid plate.

Mass of the heaviest possible seat configuration covered by the test (double seat with legs) $m_s = 45$ kg.

Additional force applied $F_z = 10 \times m_s \times g$ (N) as relevant for category M2/N2.

Additional force applied to the lab belt.

Seat	Left seat	Right seat
Safety belt	Ar	Ar
Upper belt anchorage	Seat structure	Seat structure
Lower belt anchorages	Seat structure	Seat structure
Required force shoulder belt portion	6 750 ± 200 N	6 750 ± 200 N
Required force lap belt portion	8 850 ± 200 N	8 850 ± 200 N
Force in the shoulder belt	6 900 N / > 0,2 s	7 000 N / > 0,2 s
Force in the lap belt	9 600 N / > 0,2 s	9 900 N / > 0,2 s
Displacement of upper anchorage point	285 mm	263 mm
Remark: No ruptures occurred. Displacement of upper anchorage points was in tolerance. Inertia load is added to the lab belt portion.		

Test report No.:
 Manufacturer:
 Type:

19-00055-CP-PRG-00
 NMI Safety Systems Ltd., United Kingdom
 FL



Auto Service

3.3. Table of seat with technical report

Seat manufacturer	Seat type	Fulfilling of requirements
INTAP	S1MED01 S1AMB01	See Technical report No. BLB.060.10B
	S1TAX01	See Technical report No. BLB.036.12B
	S1TAX02 S1TAX03	See Technical report No. PL13040008
	S1NOV04	See Technical report No. 15-00057-CP-PRG-00
	S1NOV01 S2NOV01	See Technical report No. BLB.056.12B
	S1POL01 S2POL01	See Technical report No. BLB.006.10B
	S1LID17, S1LID18 S2LID17, S2LID18	See Technical report No. BLB.059.10B
	S2LID25, S1LID25	See point 3.2.9.
	S1MED11	See Technical report No 120166-17-TAC
	S1TAX08	See point 3.2.7.
Phoenix Seating	Belenheim	See point 3.2.5.
Cogent Passenger	COGESA-501	See point 3.2.6.
Rescroft	CT Space	See point 3.2.8.

3.3.1. Verification of installation of the floor in vehicle body. For this verification were chosen worst case representatives of vehicles (Fiat Ducato and Renault Traffic) intended for mount of floor and seats and most unfavorable seat arrangements and seat masses.

3.4. ISOFIX and Top Tether anchorages strength (if provided):

Seat manufacturer	Seat type	Fulfilling of requirements
INTAP	S1MED01, S1MED11, S1KAP02, S1TAX02, S1TAX08*, S1AMB01, S1NOV04	See Technical report No. 120731-15-TAC

* construction of seat S1TAX08 and position of backrest, ISOFIX and Top Tether are the same as in case of seat S1TAX02

For M1 category minimum 2 seats with ISOFIX anchorage systems and their ISOFIX top tether anchorages shall be mounted. At least one of them shall be in 2nd row of seats.

3.5. Final confirmation

All results mentioned for M1 category cover N1, M2/N2 and M3/N3 category as well.

All results mentioned for M2 category cover N2 and M3/N3 category as well.

All possible combinations of seats, legs to floor attachment, attachment of floor and vehicles mentioned in manufacturer's information document are cover above mentioned tests.

3.6. Test records

3.6.1. Photos

3.1.4. - NMI composite Floor A, vehicle body – Fiat Ducato

Before test



After test



3.1.8. Seat S1TAX03 with sliding base in vehicle body
Before test



After test



3.1.9. Seat S1MED01 with sliding base (transverse) on rigid bench
Before test



After test



3.1.10. Dummy seat with sliding base on rigid bench
Before test



After test



3.1.11. Seat S1MED01 with sliding base on rigid bench
Before test



After test



3.1.12. Seat S1AMB01 with sliding base on rigid bench
Before test



After test



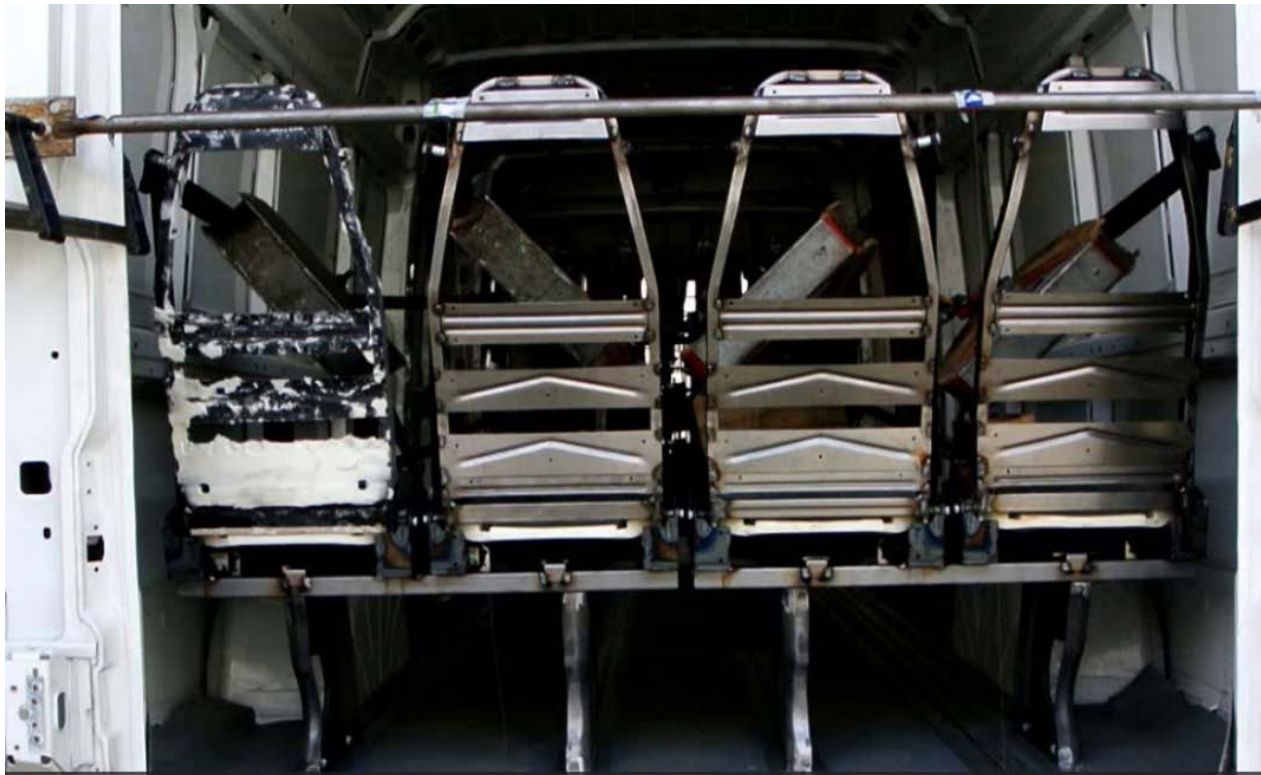
Test report No.:
Manufacturer:
Type:

19-00055-CP-PRG-00
NMI Safety Systems Ltd., United Kingdom
FL



3.1.13. Ekolider II double + NOBLS17 (S1LID25 and S2LID25), vehicle body - Fiat Ducato

Before test



After test



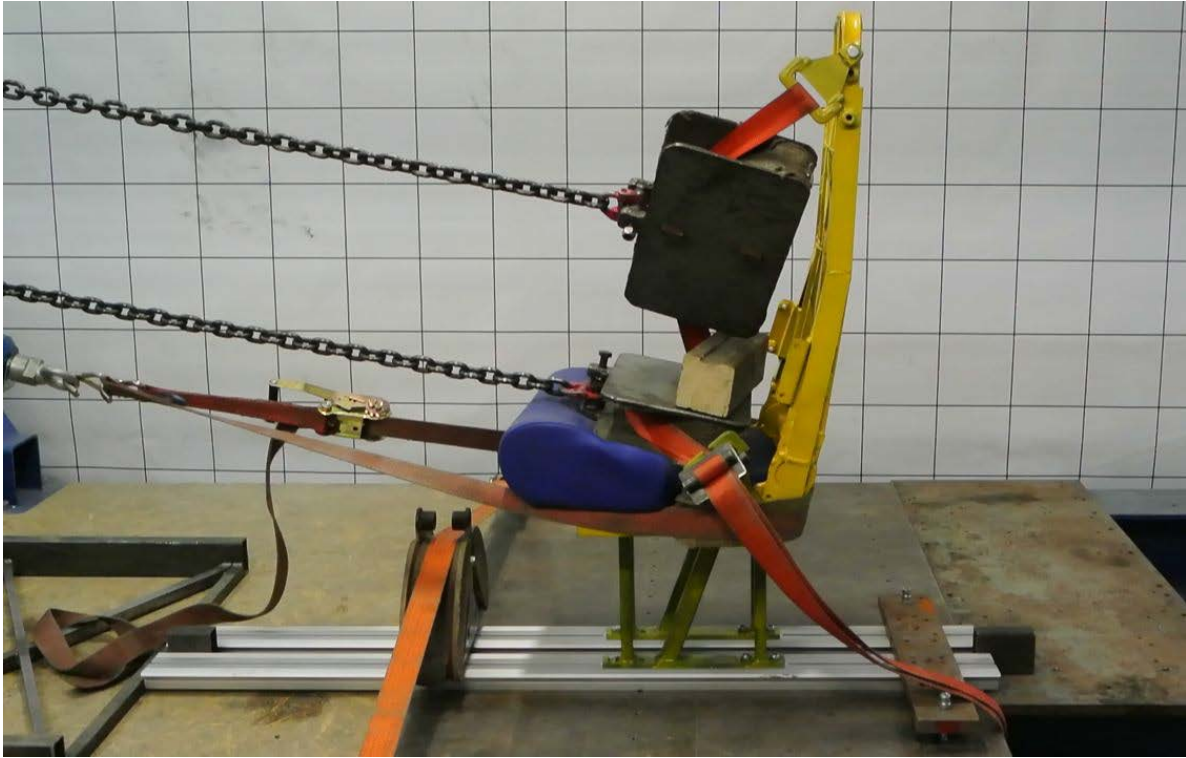
Test report No.:
Manufacturer:
Type:

19-00055-CP-PRG-00
NMI Safety Systems Ltd., United Kingdom
FL

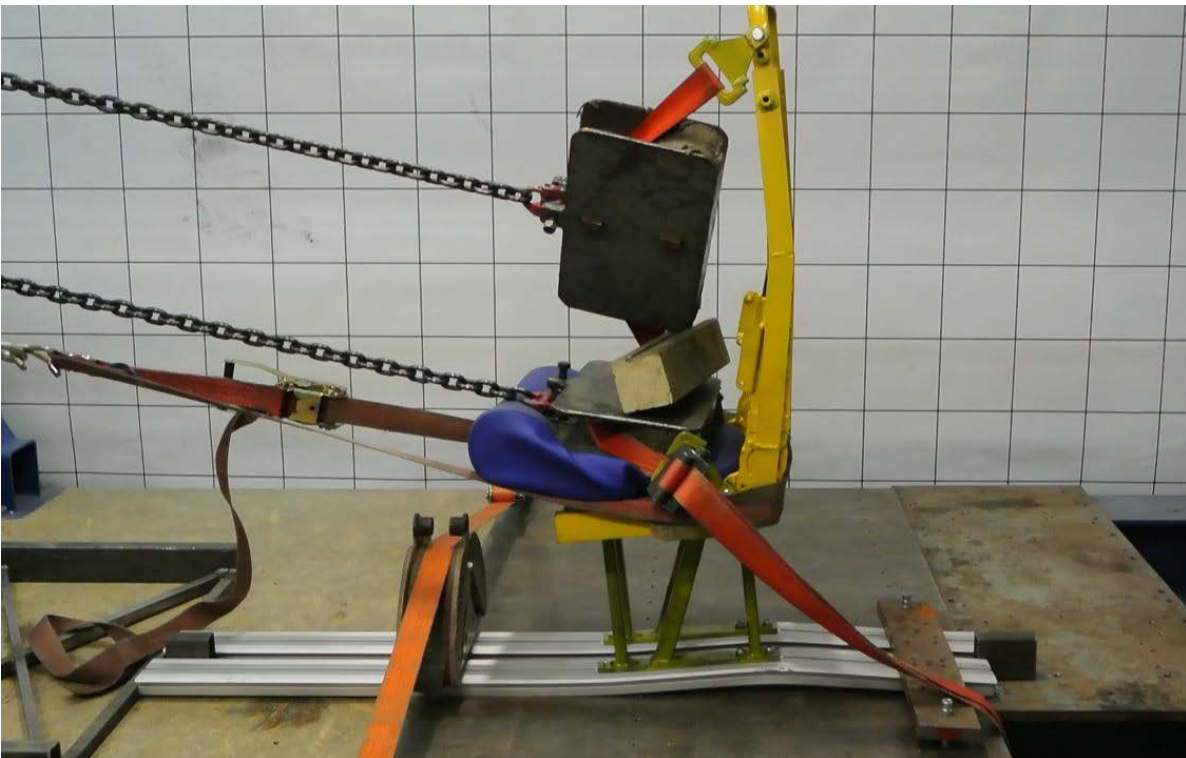


Auto Service

A, Dummy seat, dummy leg, rigid plate
Before test



After test



Test report No.:
Manufacturer:
Type:

19-00055-CP-PRG-00
NMI Safety Systems Ltd., United Kingdom
FL



Auto Service

B, Dummy seat, dummy leg, vehicle body - Fiat Ducato
Displacement – 100mm

Before test



After test



C, Dummy seat, dummy leg, rigid plate
Before test



After test



Test report No.:
Manufacturer:
Type:

19-00055-CP-PRG-00
NMI Safety Systems Ltd., United Kingdom
FL



Auto Service

D, Dummy seat, dummy leg, OKBeeLOCK03, rigid plate
Before test



After test (detail)



Test report No.:
Manufacturer:
Type:

19-00055-CP-PRG-00
NMI Safety Systems Ltd., United Kingdom
FL



Auto Service

Additional photos of seat belt anchorages and seat to floor attachment.

3.2.1. - Dummy seat DS-02 with Dummy leg with OKBeerail09 on NMI composite floor FLM

Before test



After test



3.2.2. – comparative test NMI composite floor - FLM versus FLR

Before test



After test



3.2.3. - Dummy seat DS-02 on dummy leg with OKBeeRAIL04

Before test



After test



3.2.4. - Dummy seat DS-03 on Centro leg with V-Fitiing mounted on NMI composite floor

Before test



After test



3.2.5. - Belenheim seat on Millenium leg mounted on NMI M1 composite floor M1.

Before test

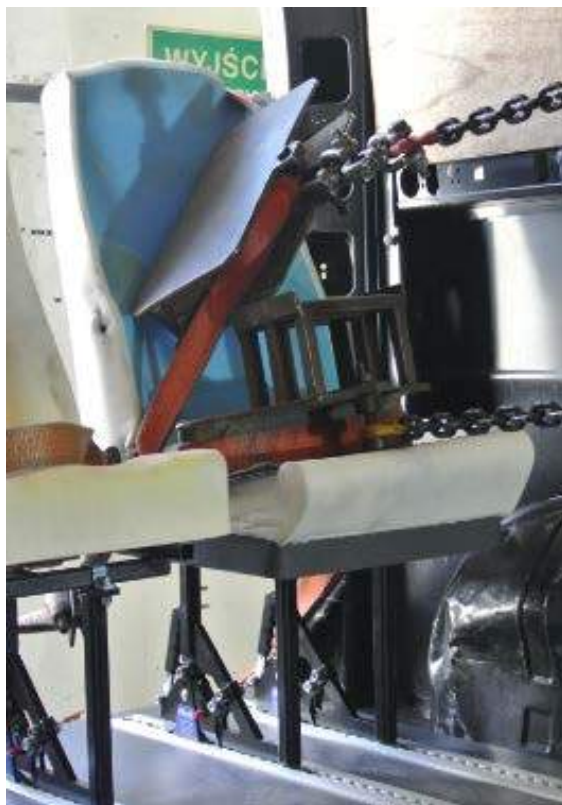


After test



3.2.6. - COGESA-501 on Millenium Leg mounted on NMI M1 composite floor M1.

Before test



After test



Test report No.:
Manufacturer:
Type:

19-00055-CP-PRG-00
NMI Safety Systems Ltd., United Kingdom
FL



Auto Service

3.2.7. Seat S1TAX08 on NOAZM06 legs mounted on rigid plate.

Before test



After test



3.2.8. - CT Space seat M2 on Space saver leg mounted on NMI M1 composite floor M1.

Before test



After test



3.2.9. – Double Seat S1LID25 (Ekolider II adjustable) with Floor-wall on pressed legs (N0BLS15) mounted on rigid plate.

Before test



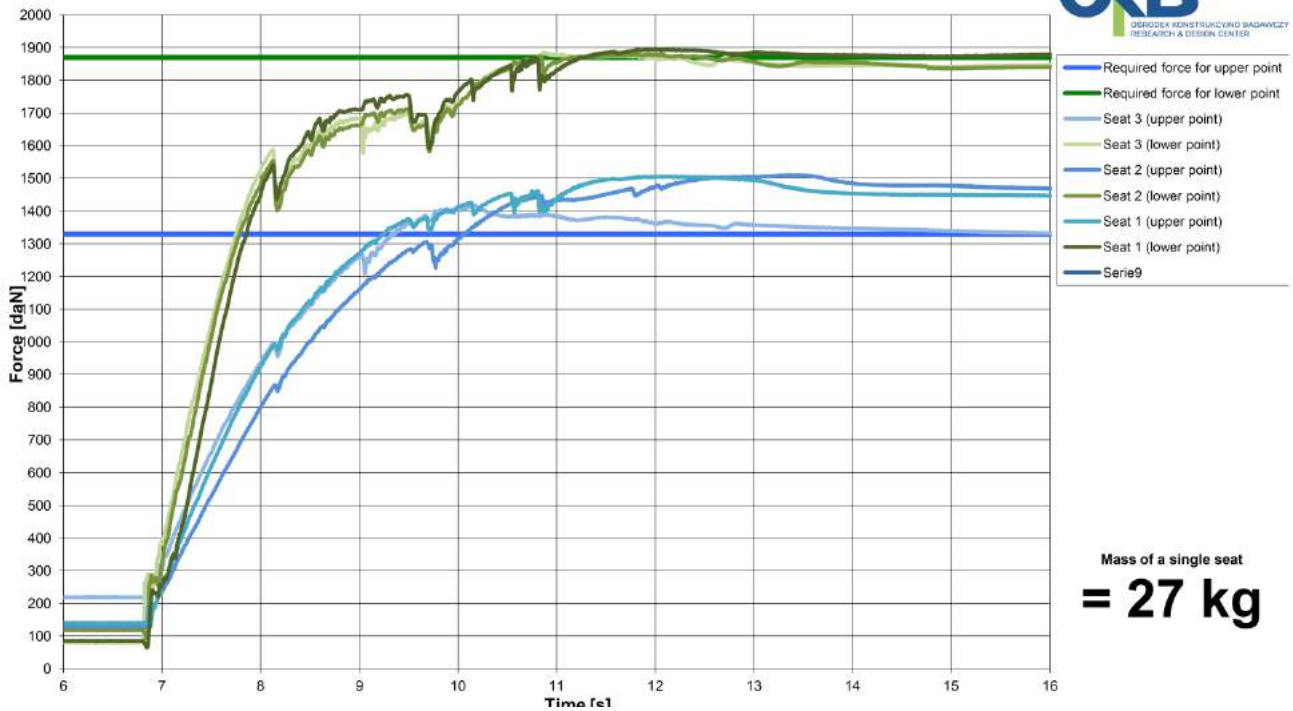
After test



3.6.2. Graphs:
 3.1.4. Veris seat

Date: 17.08.2016
 Test number: 2016_08_18_01

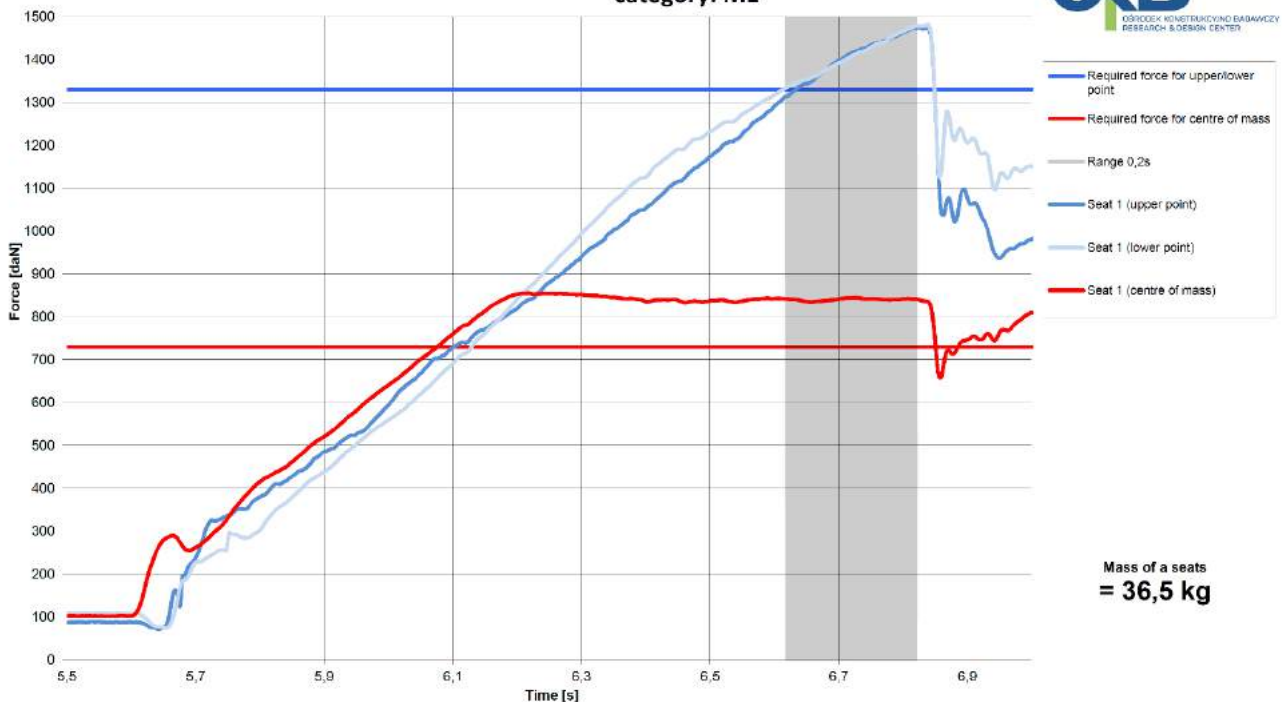
3x Veris seat with stamped leg



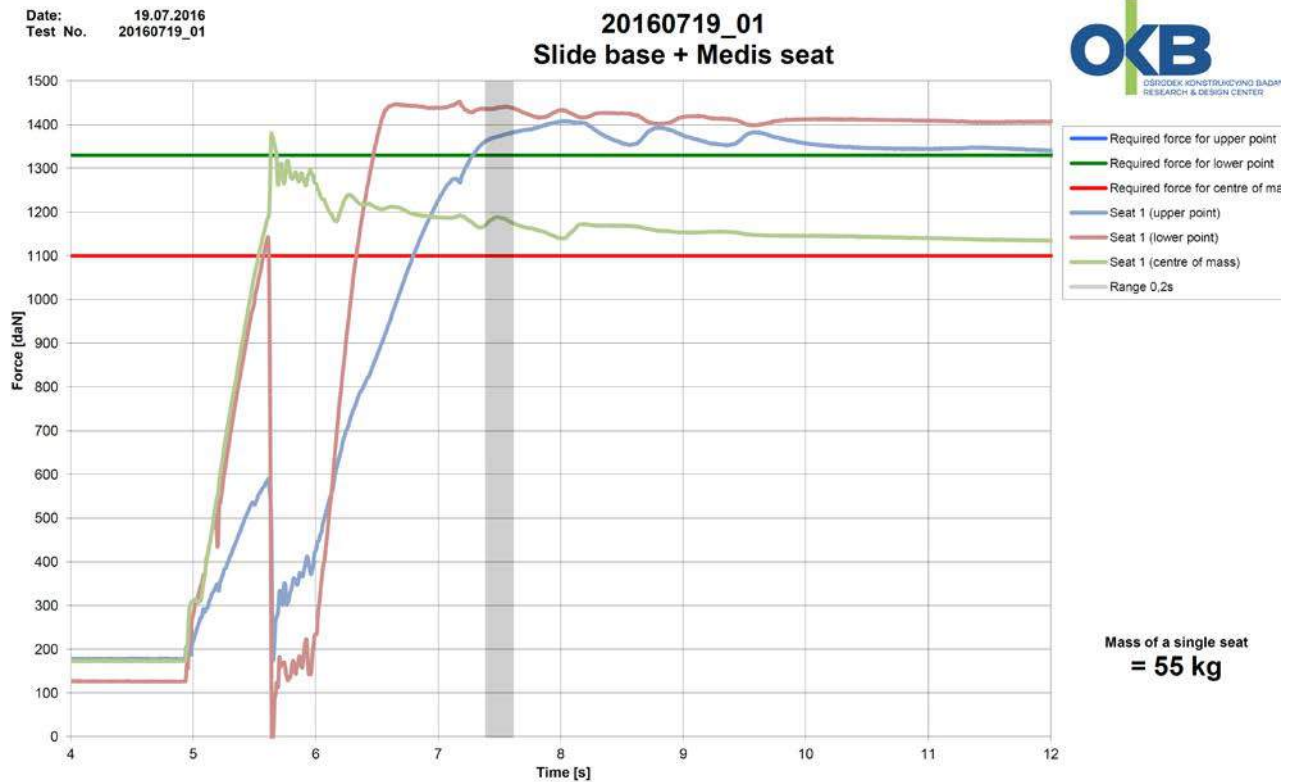
3.1.8 Taxi with sliding base

Date: 14.12.2015
 Test Number: 2015_12_14_03

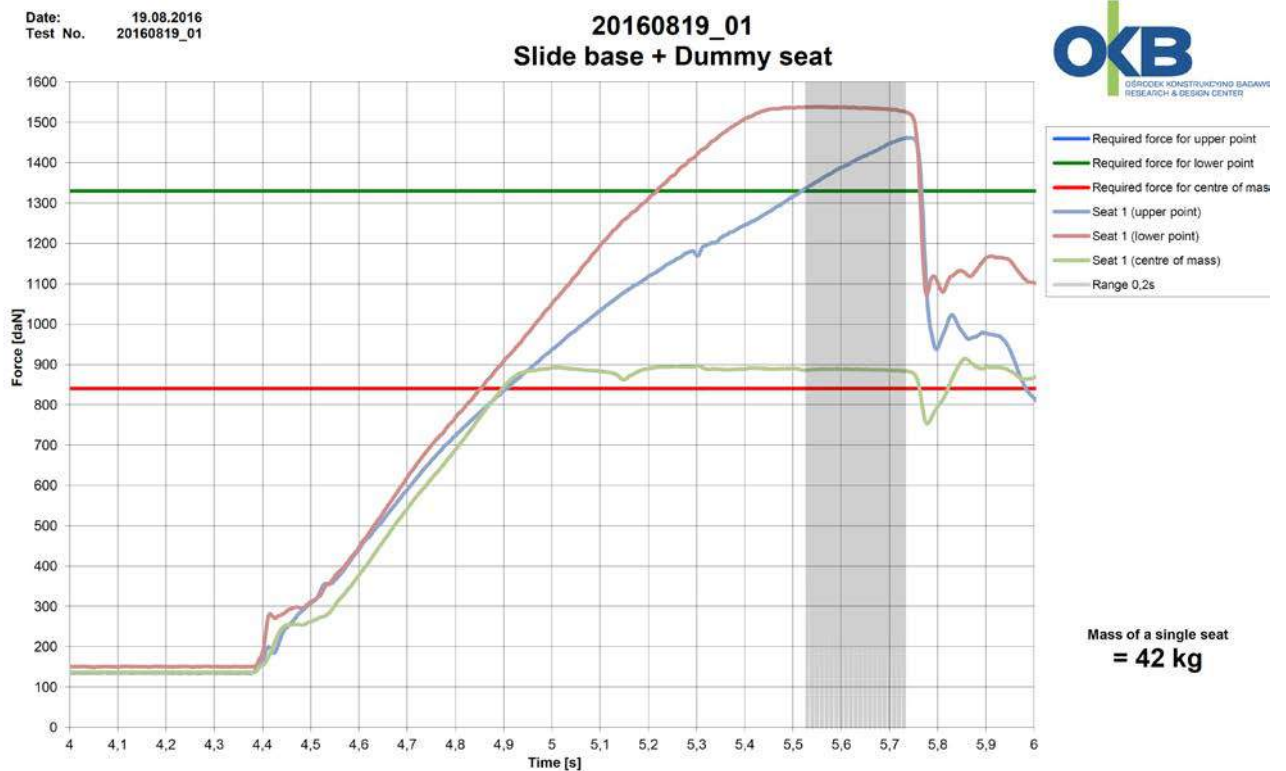
Taxi with sliding base, in front of right wheelarch category: M1



3.1.9. Slide base + Medis seat



3.1.10. Slide base + dummy seat



Test report No.:
 Manufacturer:
 Type:

19-00055-CP-PRG-00
 NMI Safety Systems Ltd., United Kingdom
 FL

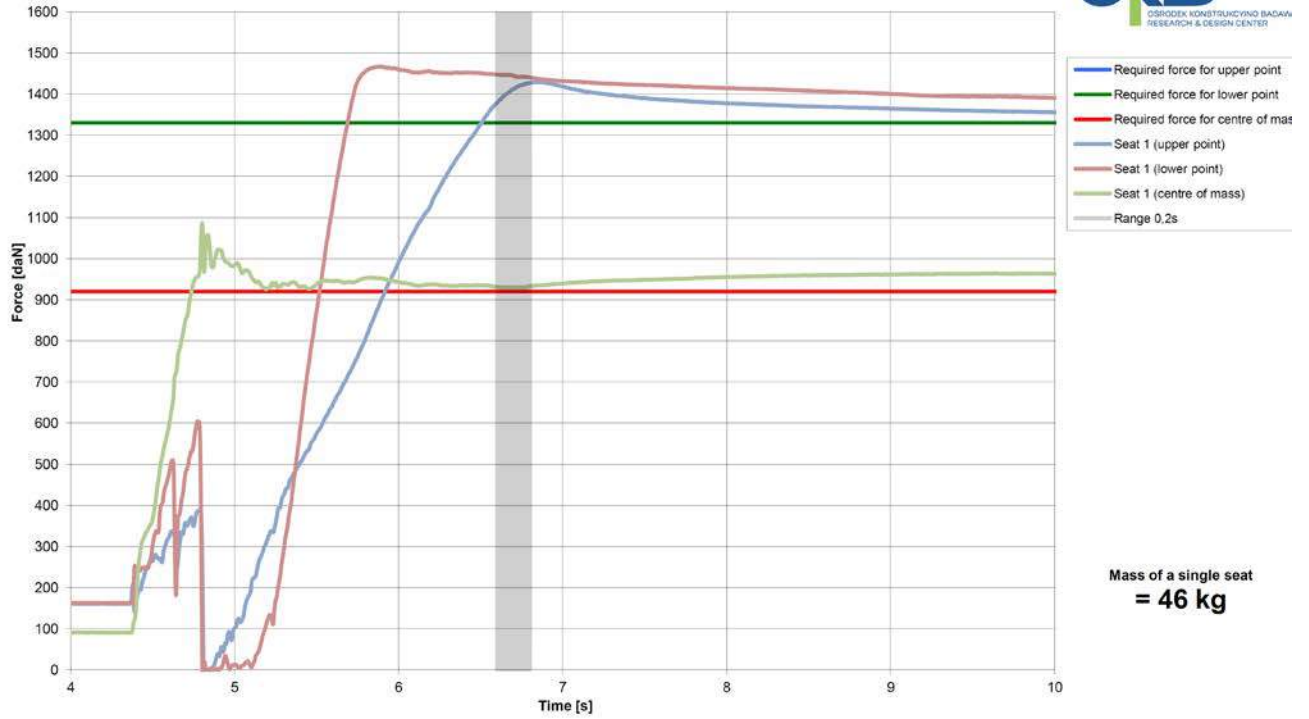


Auto Service

3.1.11. Slide base + Medis

Date: 28.11.2016
 Test No. 20161128_02

20161128_02 Slide base + Medis

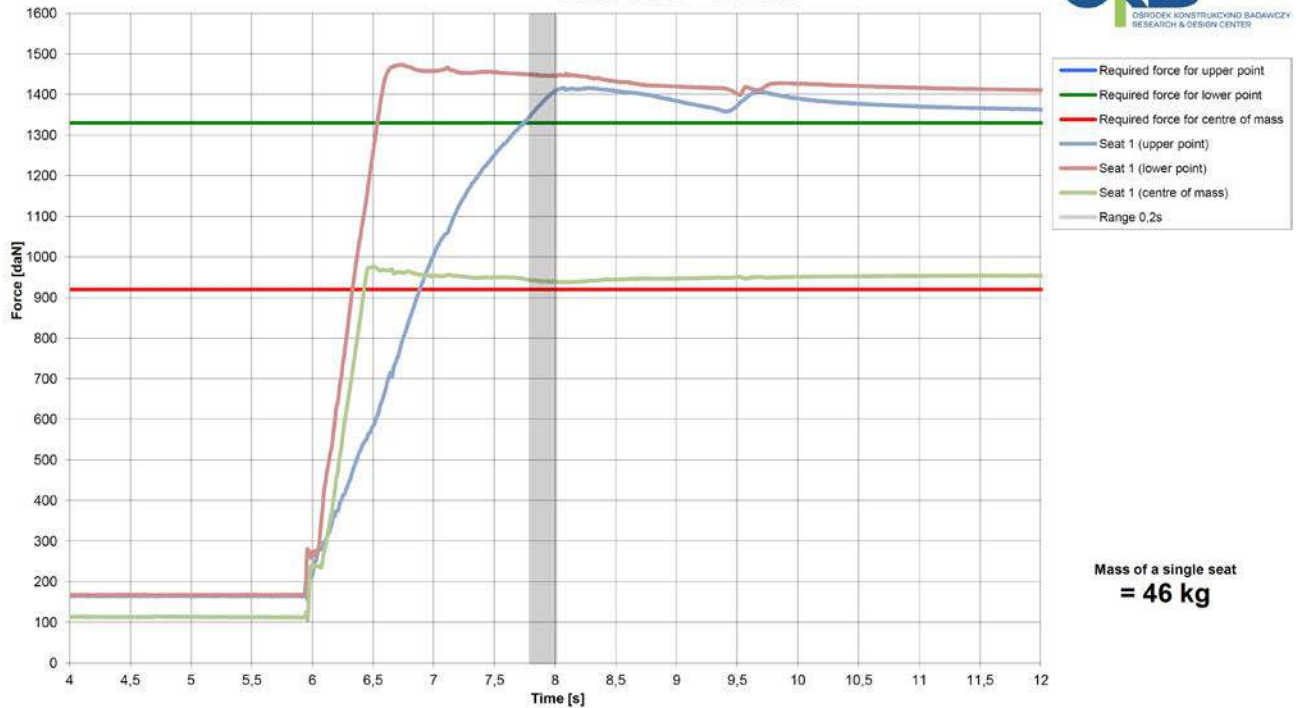


Mass of a single seat
 = 46 kg

3.1.12. Slide base + Ambis

Date: 05.12.2016
 Test No. 20161205_01

20161205_01 Slide base + Ambis



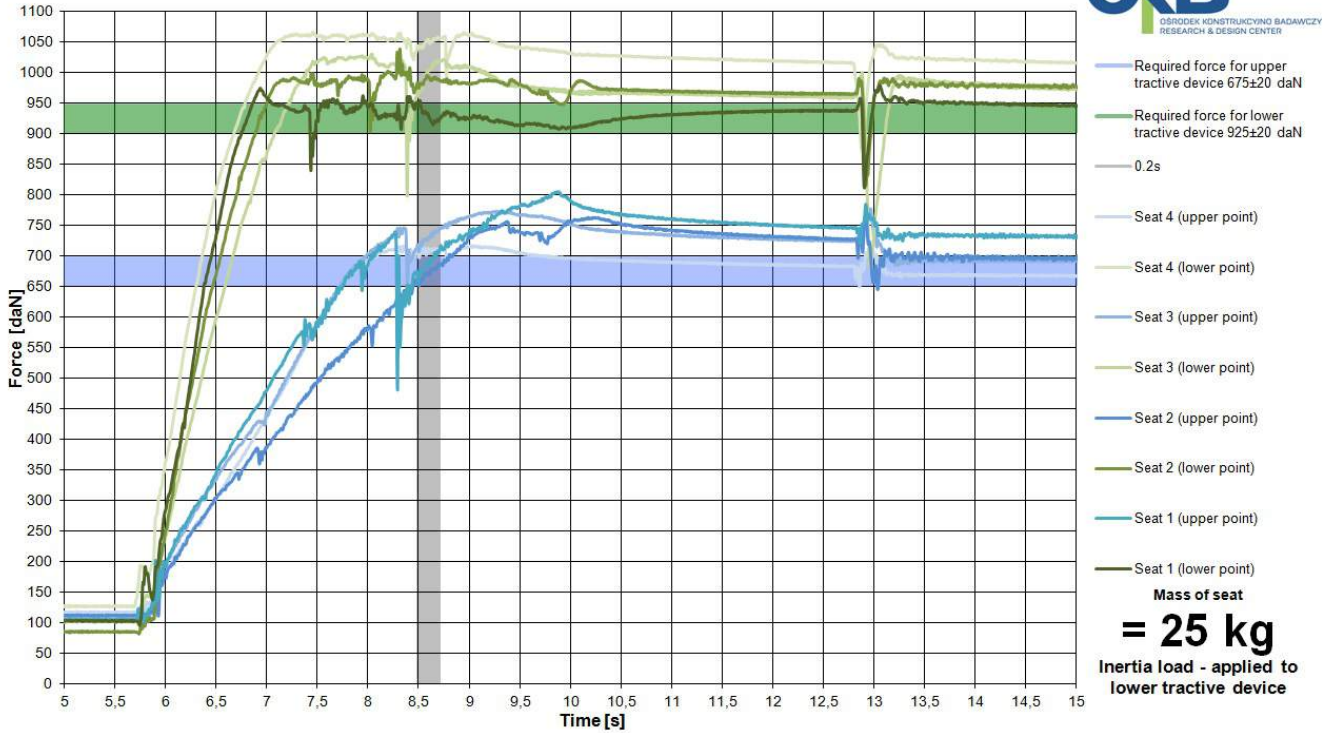
Mass of a single seat
 = 46 kg



3.1.13. Ekolider II double + NOBS17 (leg), vehicle body - Fiat Ducato
 Displacement: S1: 330mm, S2: 340mm, S3: 320mm, S4: 320mm

Date: 14.03.2017
 Test number: 2017_03_14_02

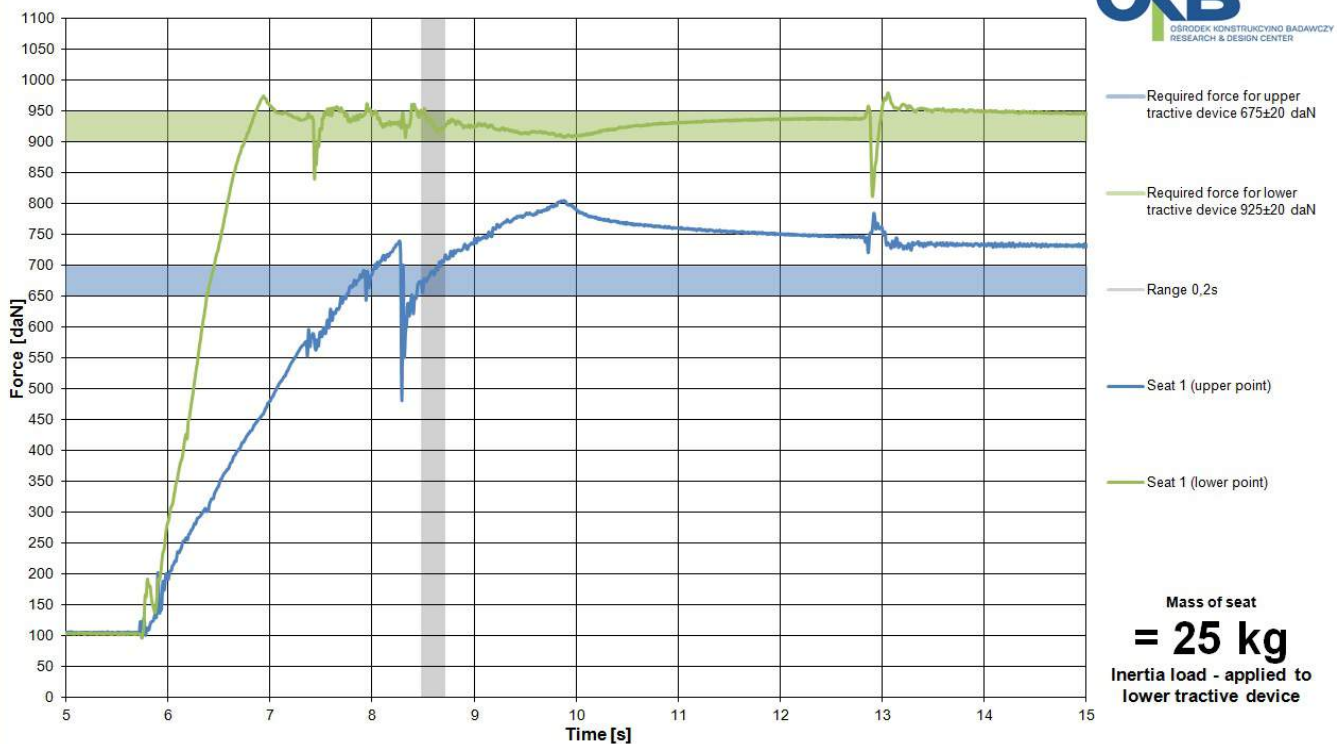
4 seat in last row



3.1.13. Seat S1, displacement = 330mm

Date: 14.03.2017
 Test number: 2017_03_14_02

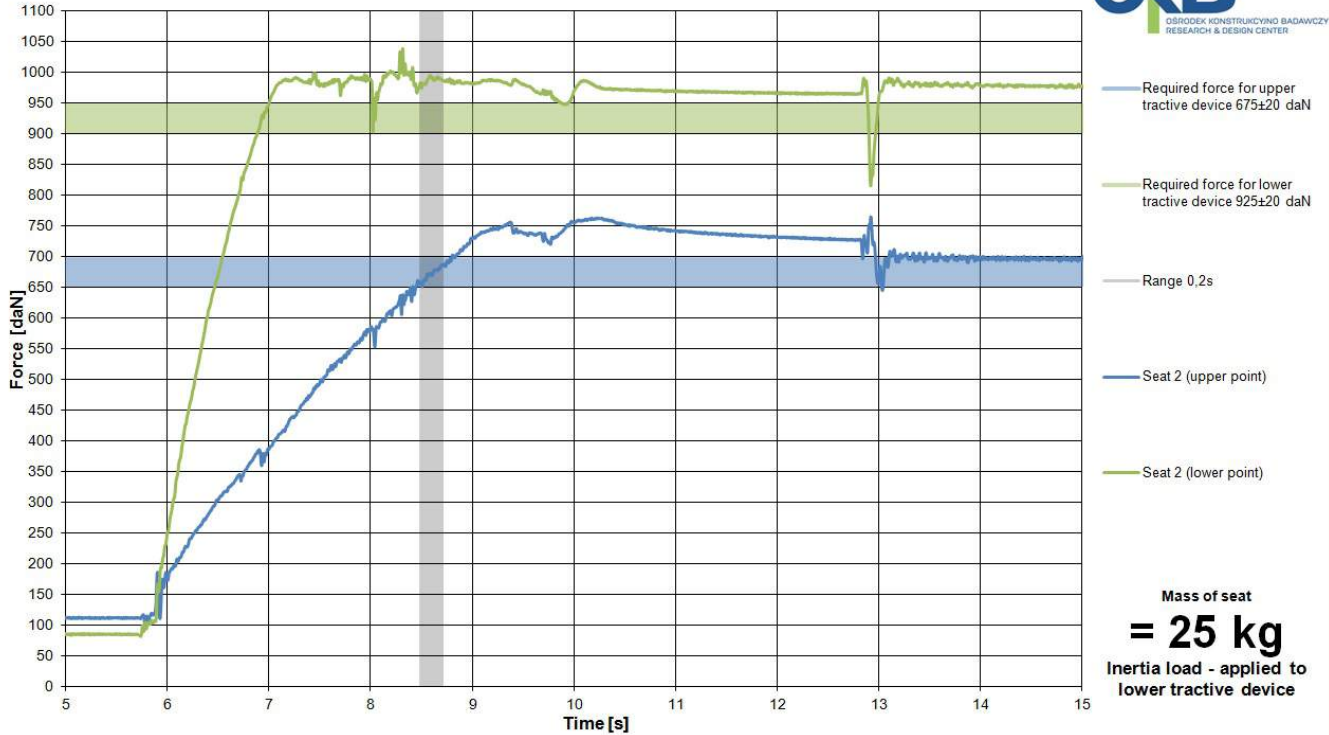
4 seat in last row



3.1.13. Seat S2, displacement 340 mm

Date: 14.03.2017
 Test number: 2017_03_14_02

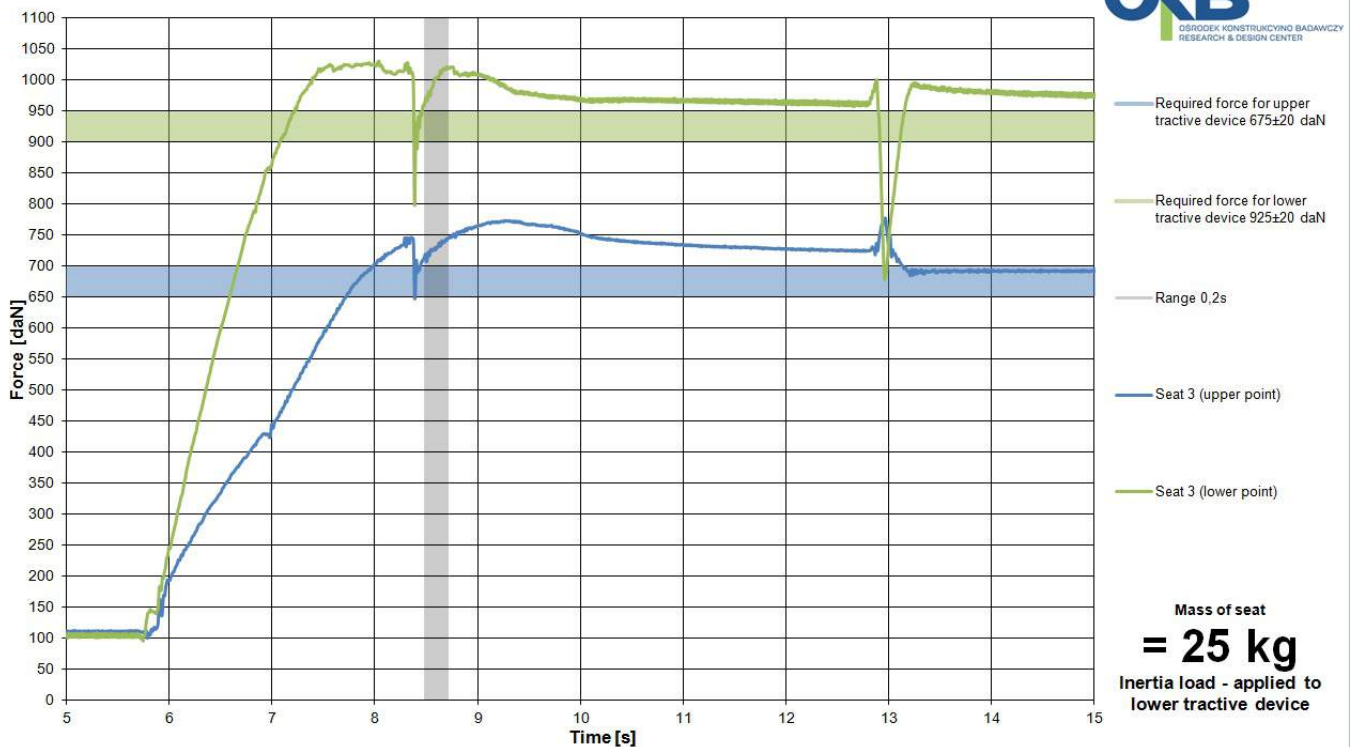
4 seat in last row



3.1.13. Seat S3, displacement 320 mm

Date: 14.03.2017
 Test number: 2017_03_14_02

4 seat in last row

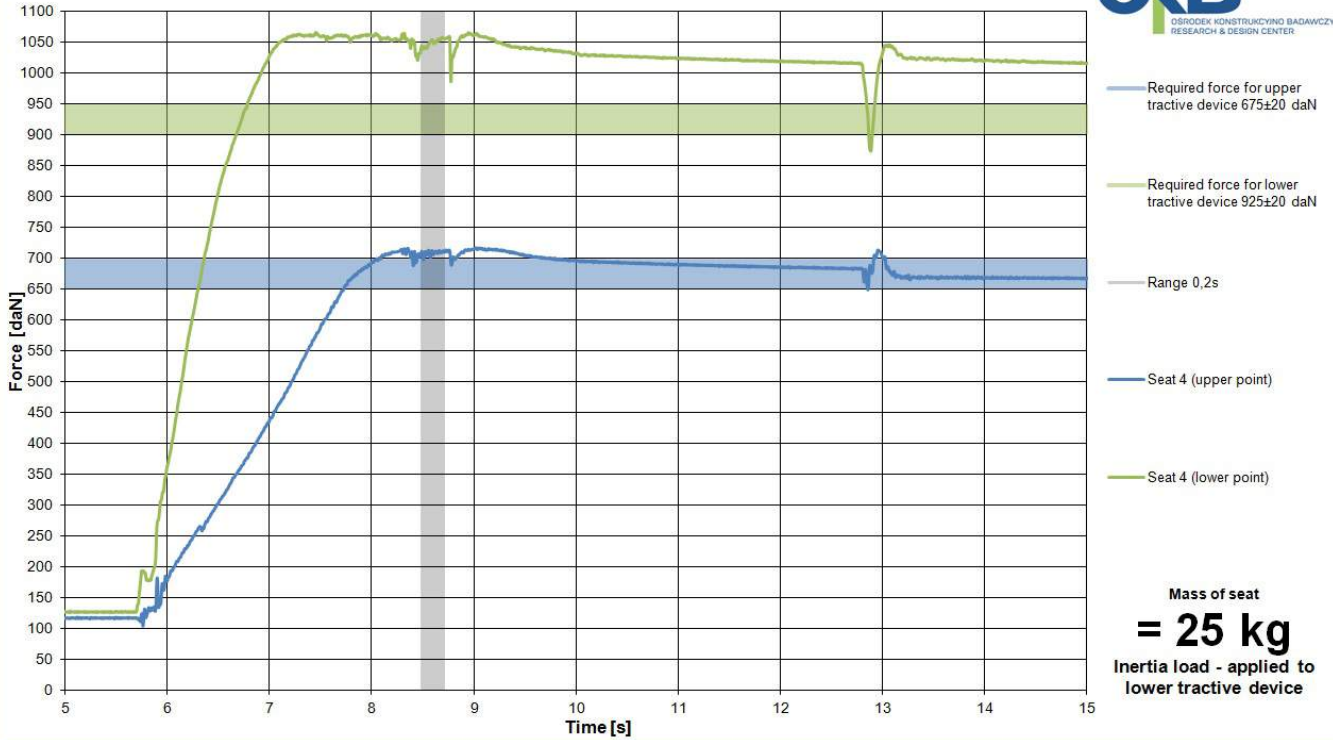




3.1.13. Seat S4, displacement 320 mm

Date: 14.03.2017
 Test number: 2017_03_14_02

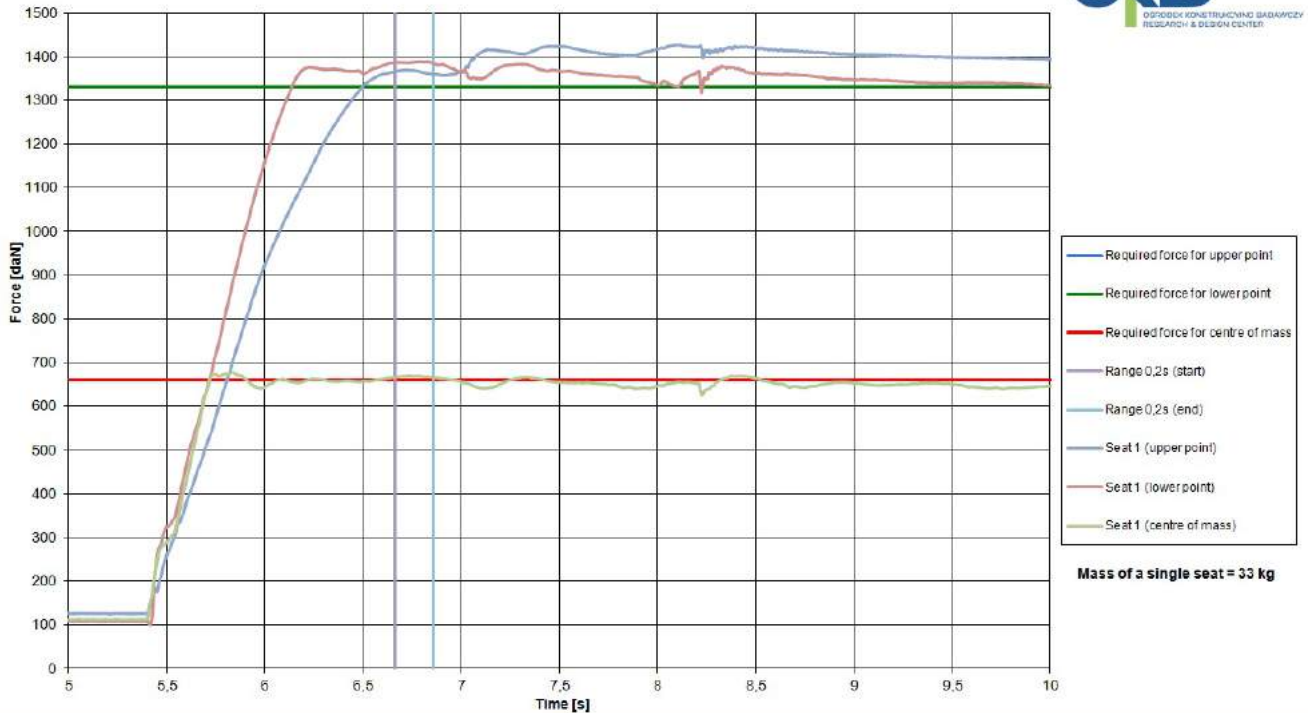
4 seat in last row



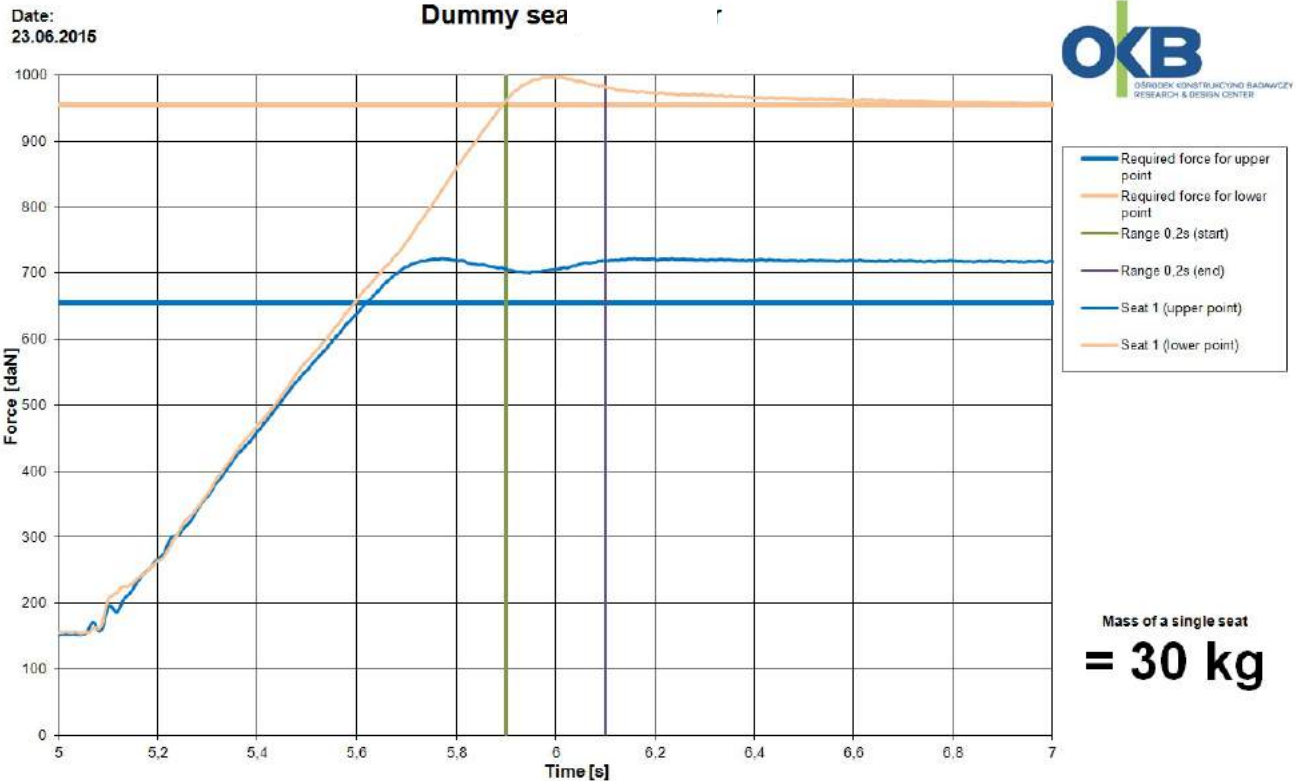
A, Dummy seat, dummy leg, rigid plate

Date: 07.01.2015

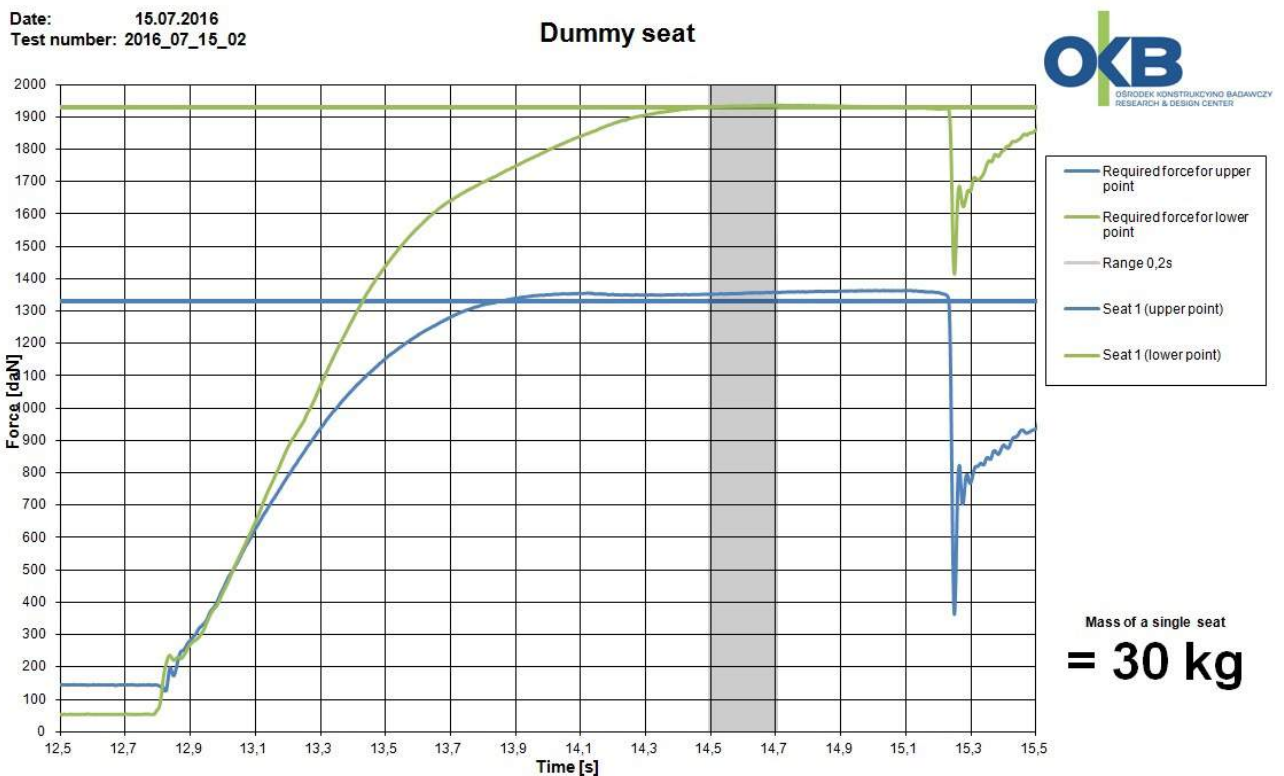
Dummy seat



B, Dummy seat, dummy leg, Fiat Ducato



C, Dummy seat, dummy leg, rigid place



Test report No.: 19-00055-CP-PRG-00
 Manufacturer: NMI Safety Systems Ltd., United Kingdom
 Type: FL

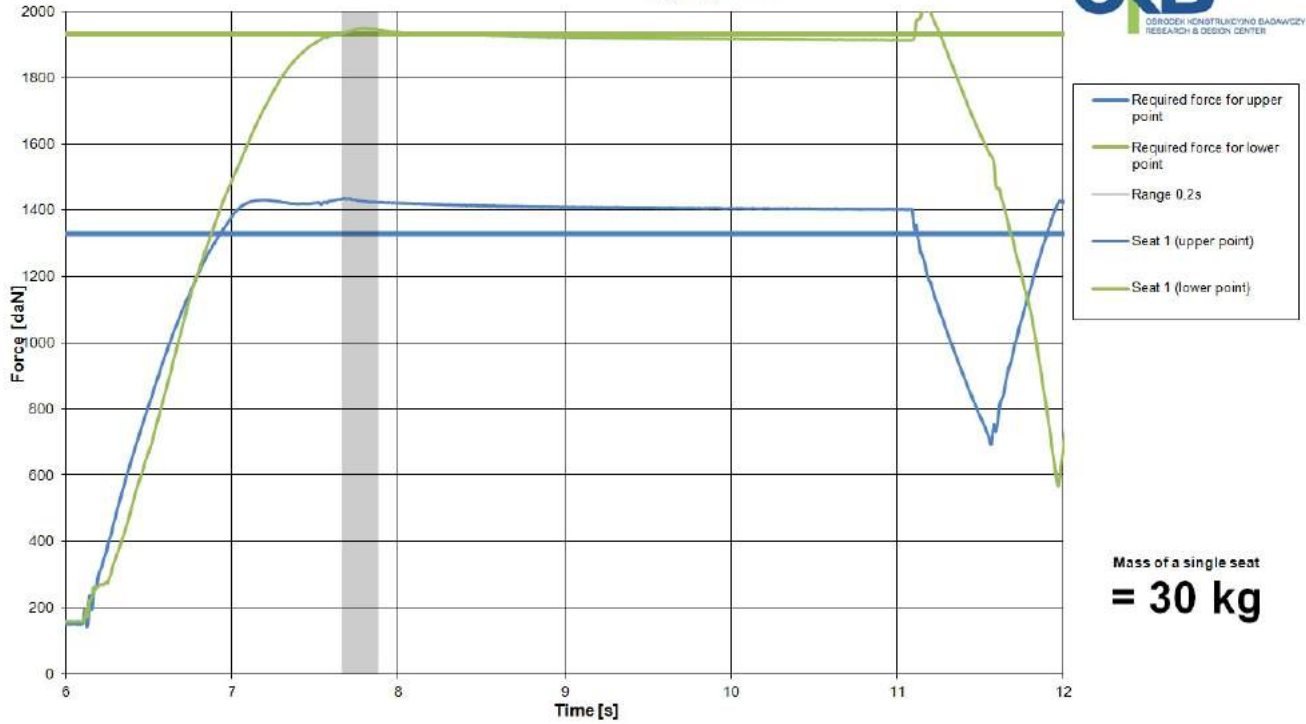


Auto Service

D, Dummy seat, dummy leg, OKBeeLOCK03, rigid plate

Date: 21.09.2015
 Test number: 2015_09_21_02

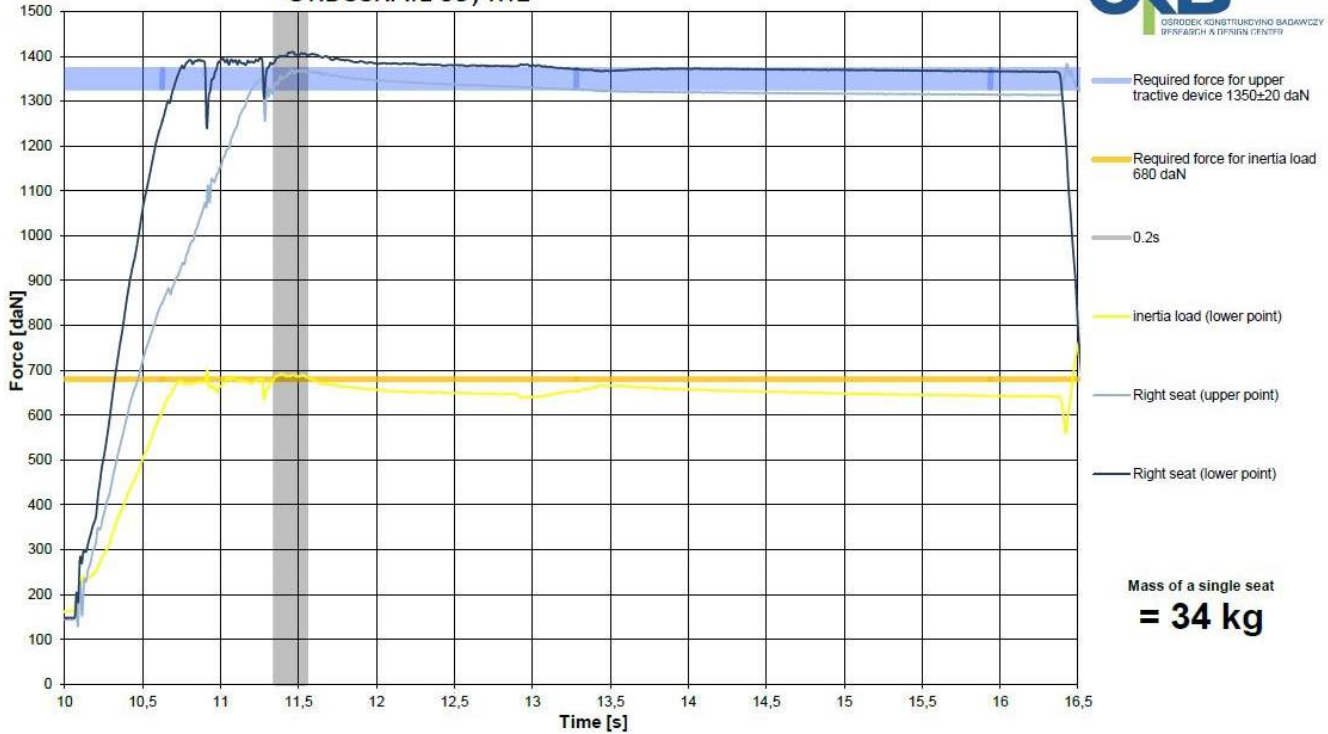
Dummy seat + OKBeeLock03;
 category: M1



Additional graphs of seat belt anchorages and seat to floor attachment.

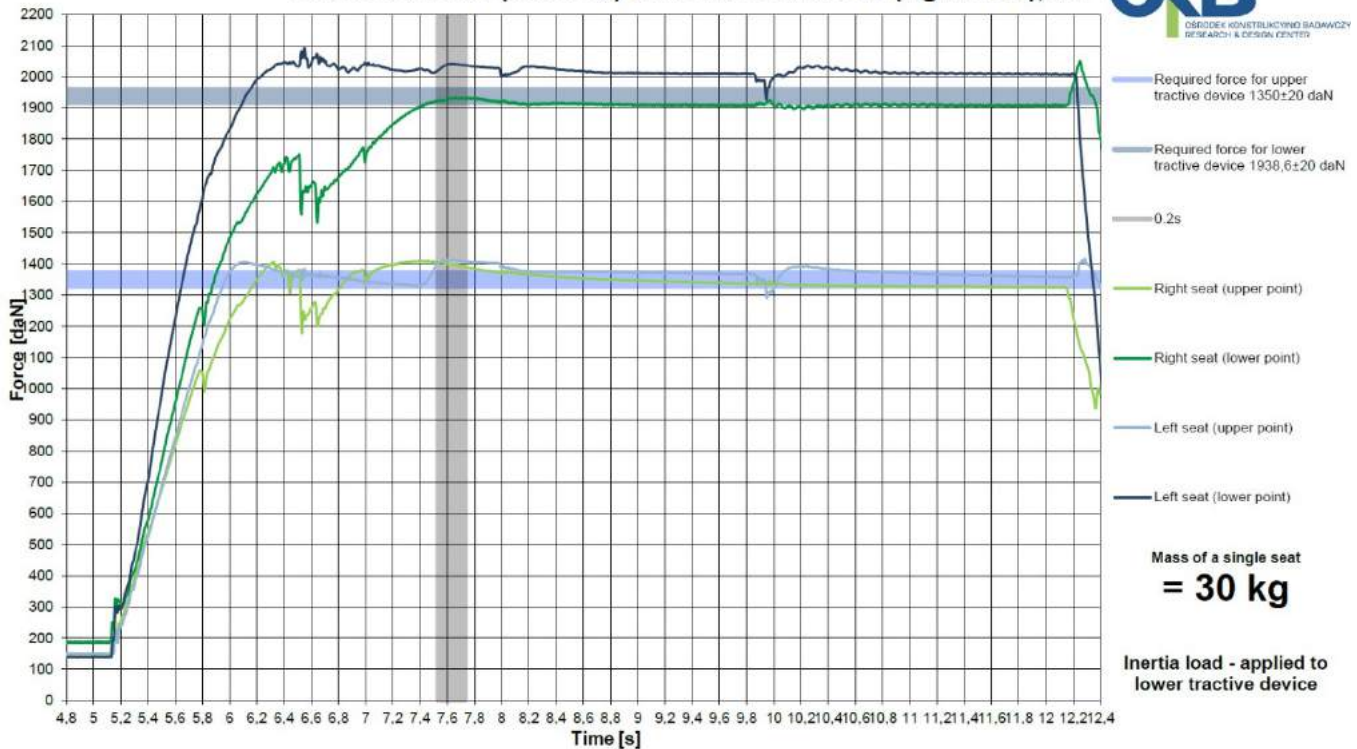
3.2.1. Dummy seat DS-02 with Dummy leg with OKBeerail09 on NMI composite floor

Dummy seat with dummy leg on NMI composite floor with OKBeerAIL 09, M1



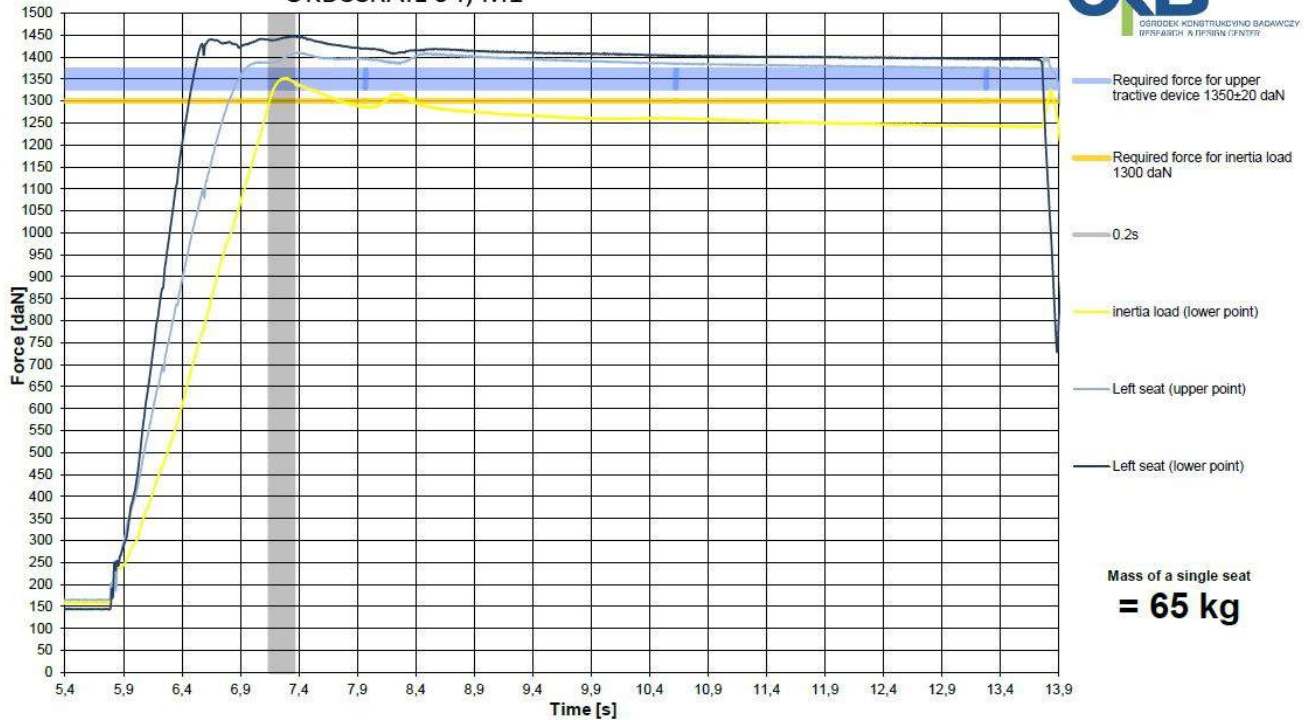
3.2.2. – comparative test NMI composite floor - FLM versus FLR

Comparative test of NMI composite floor with OKBeerAIL 04 (left seat) and OKBeerAIL 09 (right seat), M1



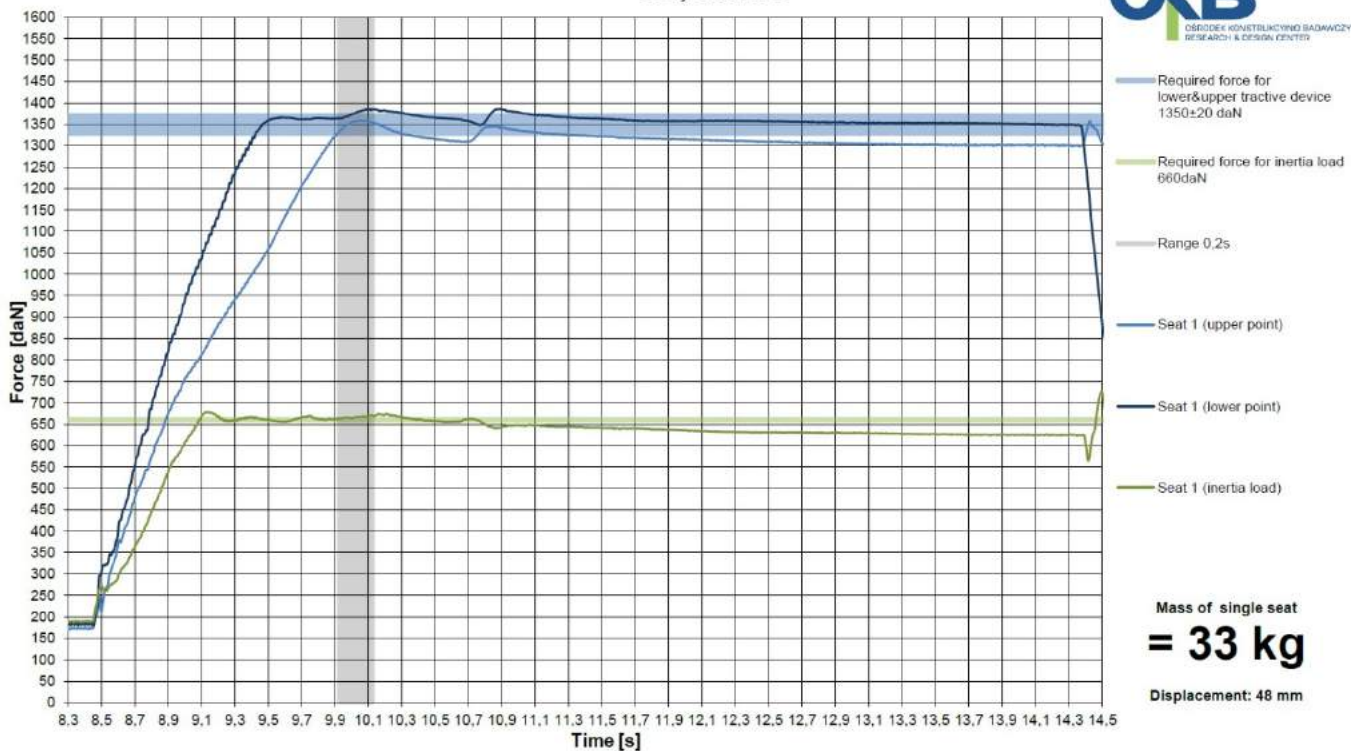
3.2.3. Dummy seat DS-02 on dummy leg with OKBeeRAIL04

Dummy seat with dummy leg on NMI composite floor with OKBeeRAIL 04, M1



3.2.4. – Dummy seat DS-03 on Centro leg with V-fitting mounted on NMI composite floor

Dummy seat + Centro Leg + V fitting + Composite floor M1, cat. M1



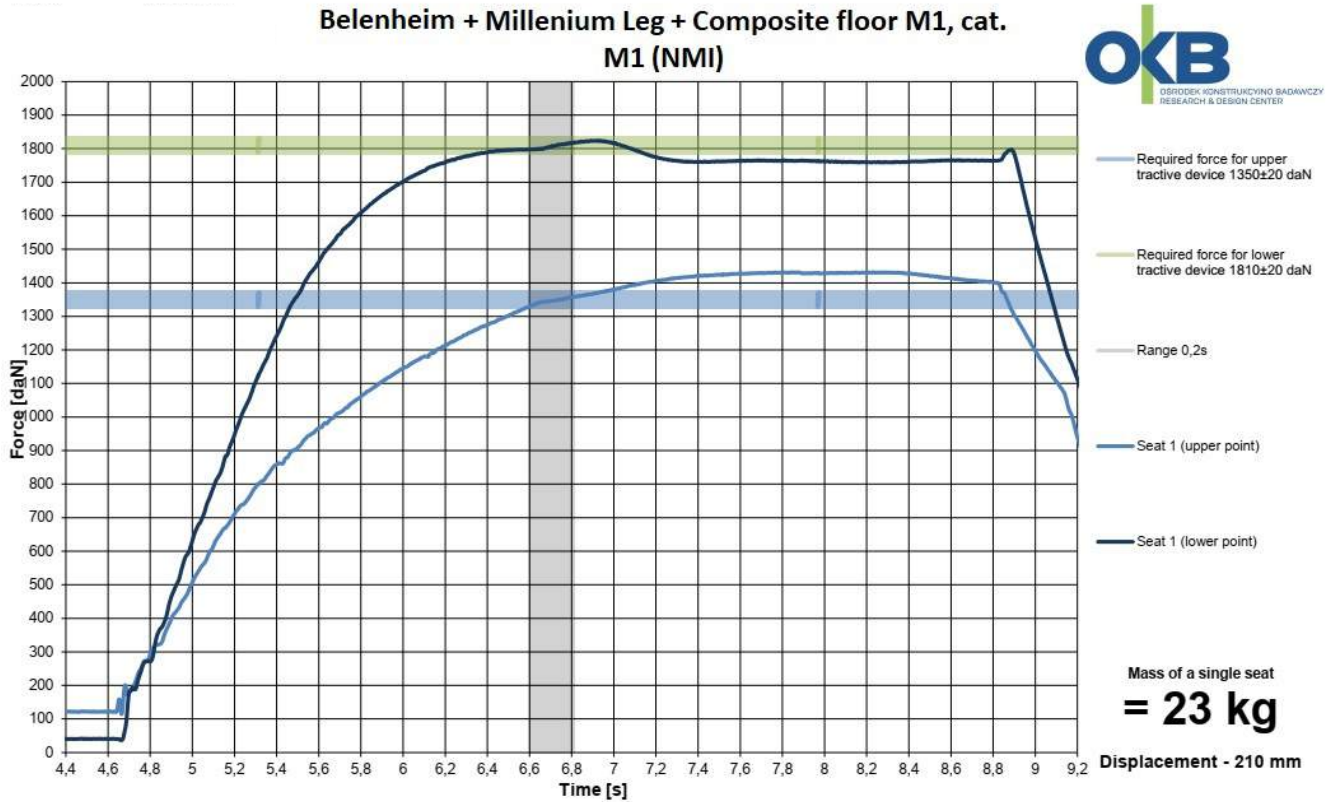
Test report No.:
Manufacturer:
Type:

19-00055-CP-PRG-00
NMI Safety Systems Ltd., United Kingdom
FL

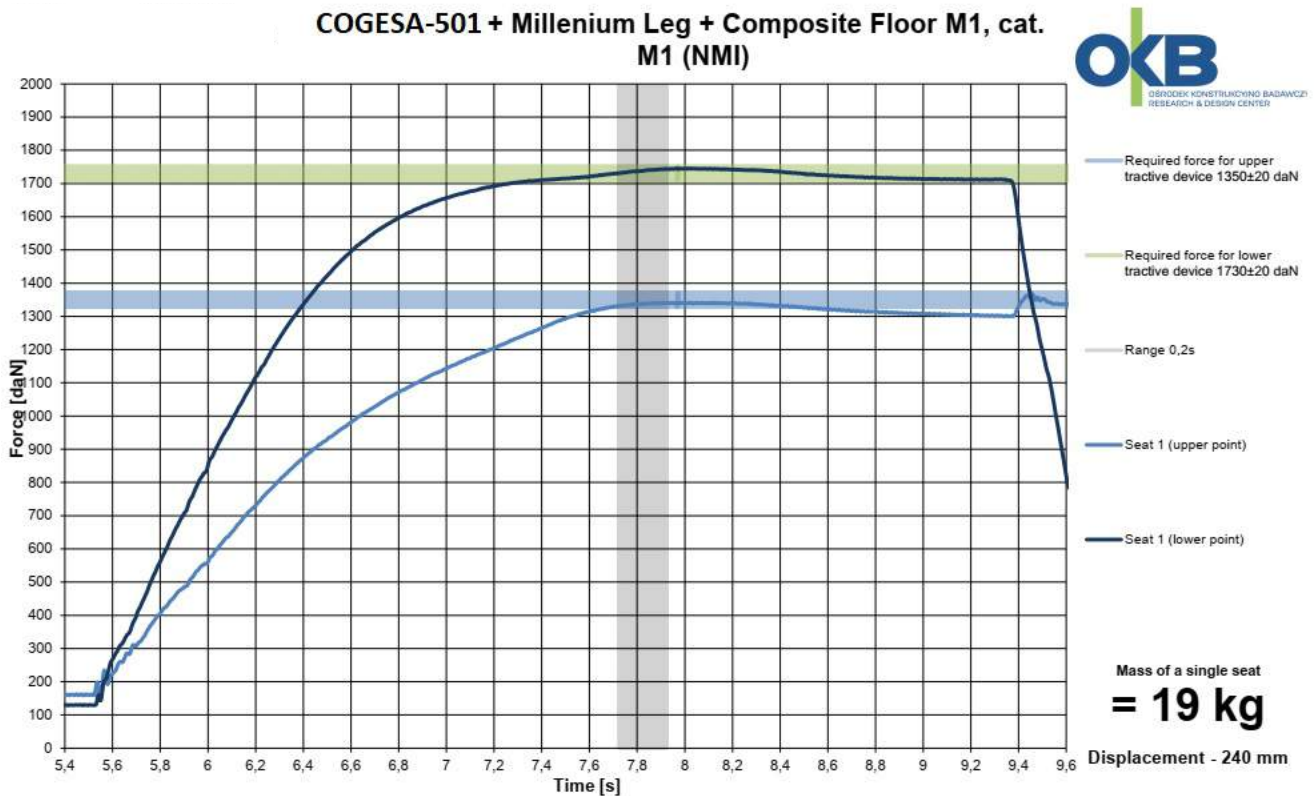


Auto Service

3.2.5. – Seat Belenheim on Millenium leg mounted on NMI composite floor



3.2.6. – Seat COGESA-501 on Millenium leg mounted on NMI composite floor



Test report No.:
 Manufacturer:
 Type:

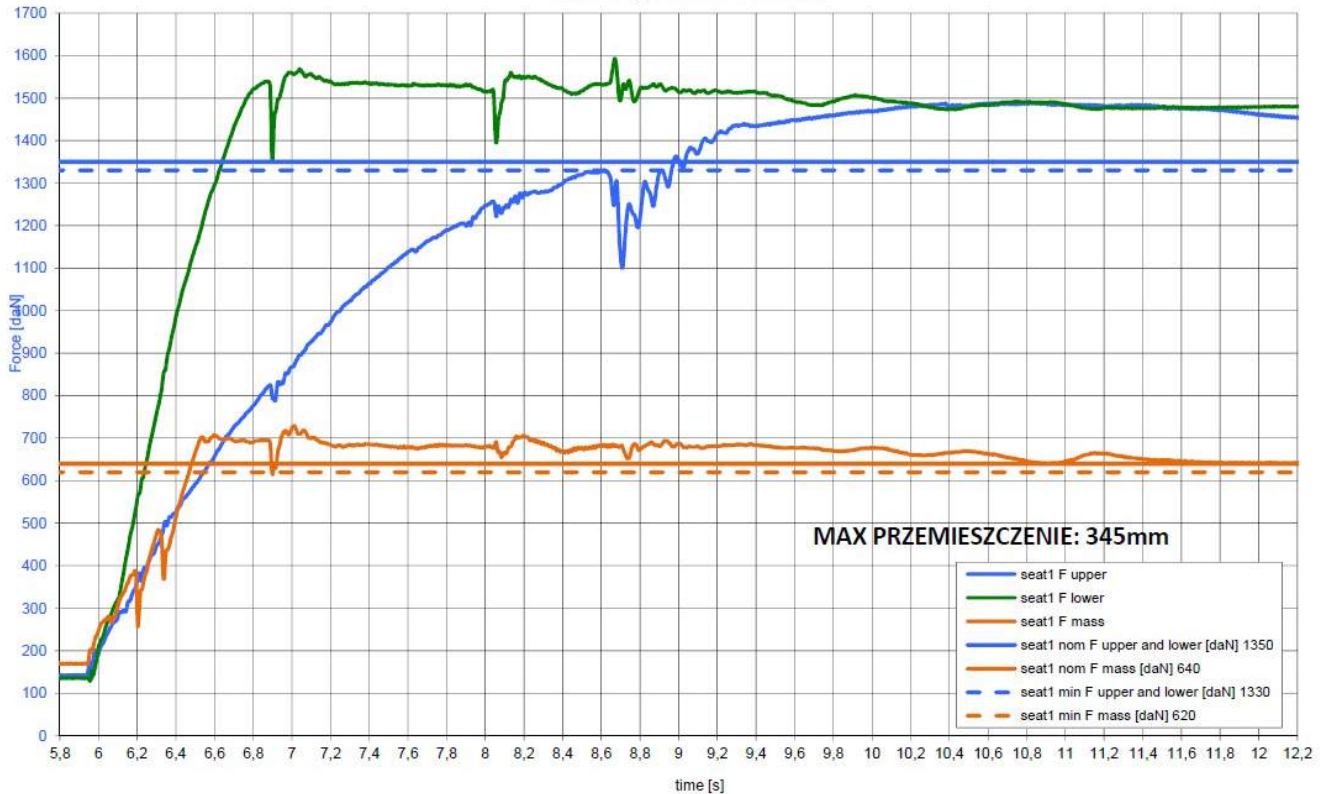
19-00055-CP-PRG-00
 NMI Safety Systems Ltd., United Kingdom
 FL



Auto Service

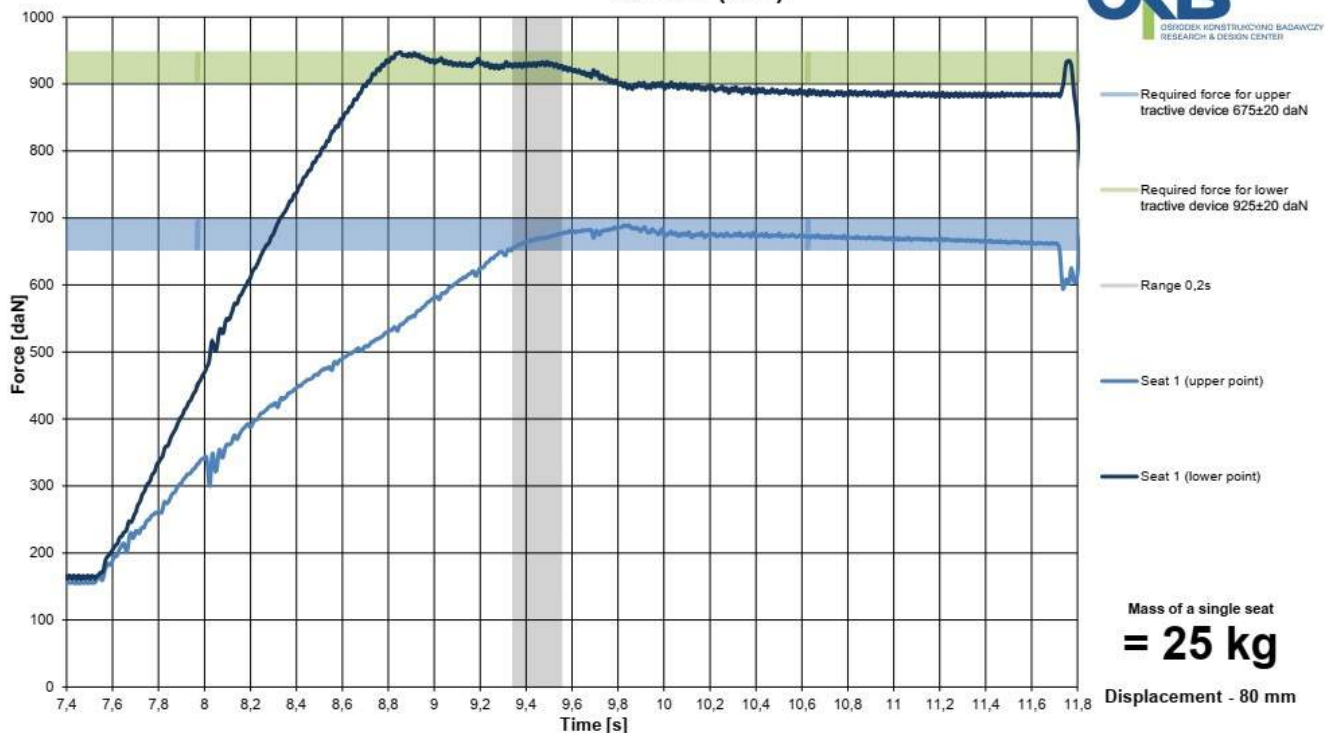
3.2.7. Seat S1TAX08 on leg N0AZM06 mounted on rigid plate

20181204_01 S1TAX08 cat. M1



3.2.8. – Seat CT Space M2 on Space saver leg mounted on NMI composite floor

CT Space M2 + Space saver leg + Composite Floor M1,
 cat. M1 (NMI)



Test report No.:
Manufacturer:
Type:

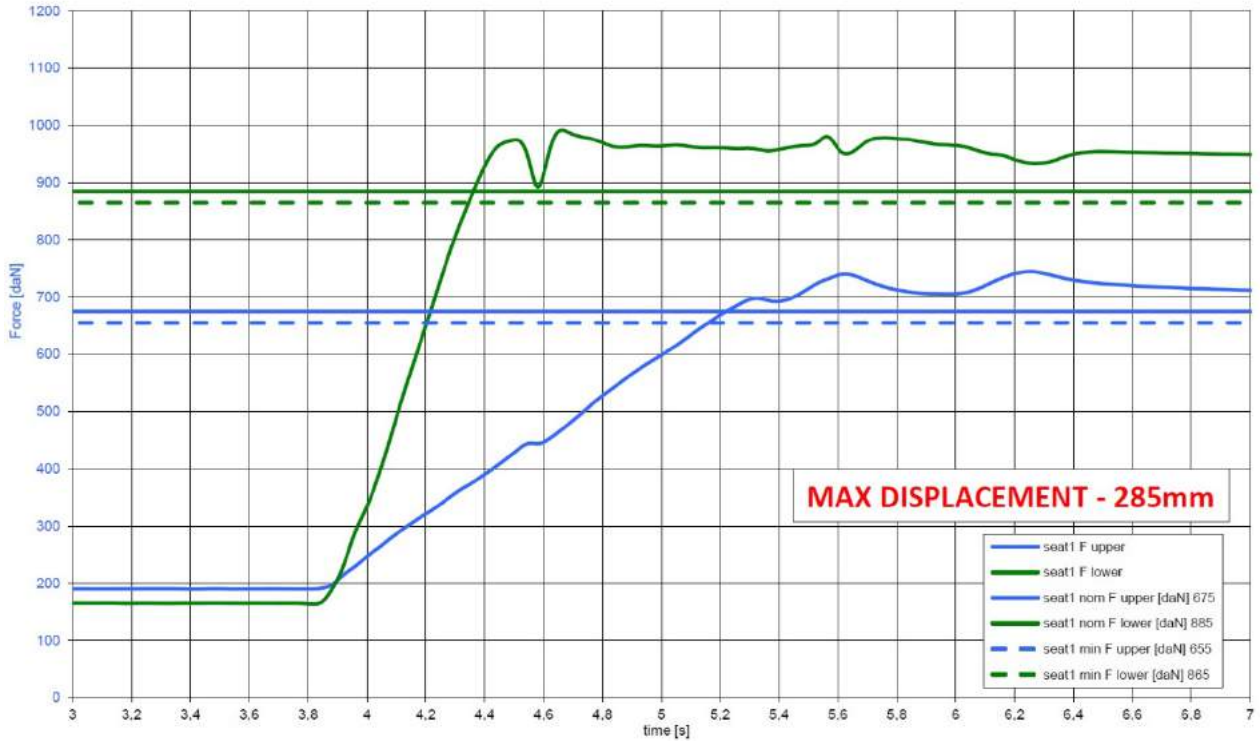
19-00055-CP-PRG-00
NMI Safety Systems Ltd., United Kingdom
FL



Auto Service

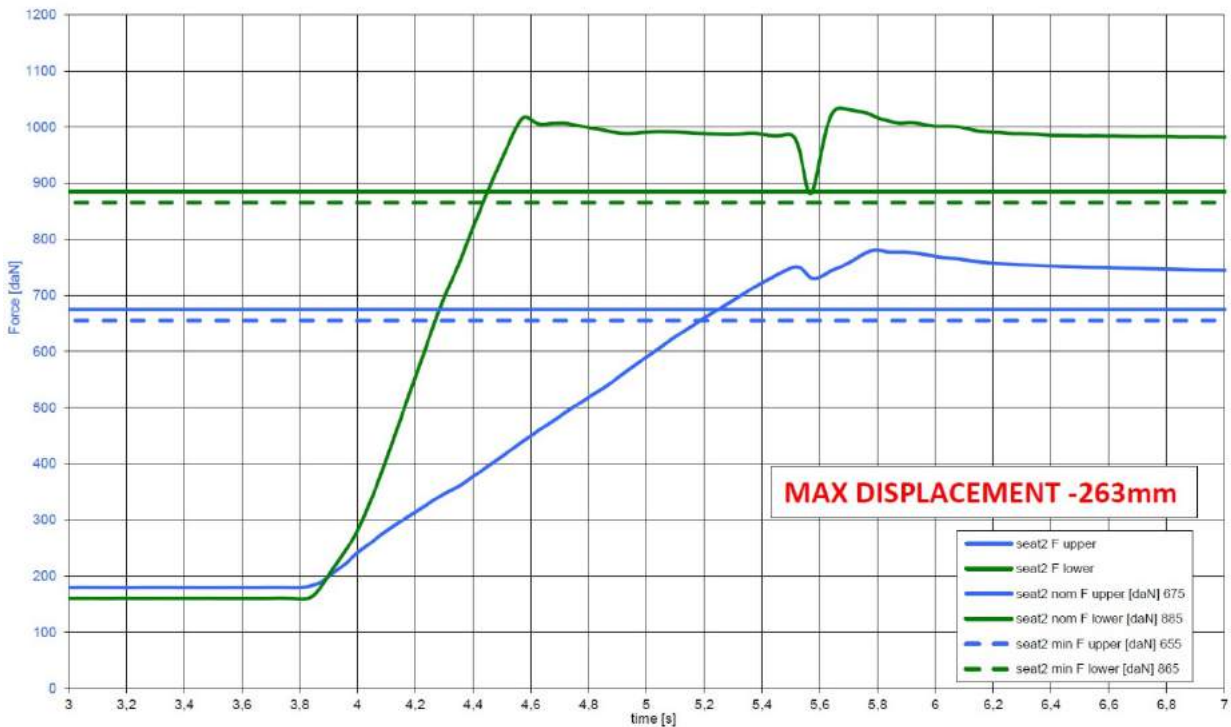
3.2.9. – Double Seat S1LID25 on pressed legs mounted on rigid plate -Left seat

20180316_02 Ekolider II adjustable, double seat, 3p belt, floor-wall mounted on pressed legs H290, internal test, M2



Right seat...

20180316_02 Ekolider II adjustable, double seat, 3p belt, floor-wall mounted on pressed legs H290, internal test, M2



Test report No.: 19-00055-CP-PRG-00
Manufacturer: NMI Safety Systems Ltd., United Kingdom
Type: FL



Auto Service

4. Place and date of testing

As before and 30.08.2018

TÜV SÜD Czech s.r.o., Mladá Boleslav,
Czech Republic,
PIMOT, Warszawa, Poland,
OKB laboratory, Bukowiec, Poland