

CLIENT CONFIDENTIAL

Client Invacare Deutschland GmbH

Test Item FDX (192 kg)

Test ISO 7176-19 Wheelchair Test

Millbrook Report No. 10/1320

Millbrook Project No. CR0141-003-01

Millbrook Test No. S11257

Author:



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Engineer

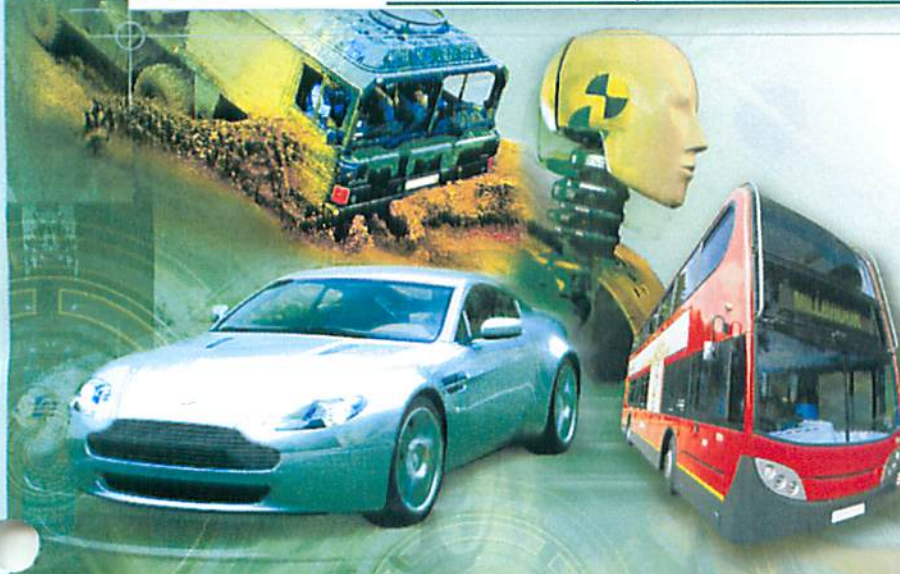
Approved:



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Date:

6th September 2010



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Distribution

Organisation	Recipient	Format	Qty
Invacare Deutschland GmbH Kleiststraße 49 D-32457 Porta Westfalica Germany	D. Hoffman	PDF	1
Millbrook Proving Ground Ltd Millbrook Bedford MK45 2JQ	Contract file	Paper	1

Report Revision History

Rev.	Revision Description	Date	Author	Approver	Pages
0	Initial release	6 th September 2010	M.Bell	K. Forinton	All

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Appendices

Graphical Results	Appendix A
Pre and post test photographs	Appendix B
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High speed digital films	See "Film" directory on data media

Test Facility and Date

The test, number S11257, was performed on 19th August 2010 at the HyGE Sled facility at Millbrook Proving Ground Ltd.

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Test Report



Test Results

ISO/NP 7176/19

7th July 2008

Section 5.2 - Dynamic Performance Requirements

Wheelchair:	FDX (192 kg)	RESULTS
Occupant:	HII 50 %ile (75 kg)	
5.2.1	During the Test	
a).	Horizontal ATD and wheelchair excursion limits as per limits shown in Table 3:-	
	Was the horizontal movement of the test wheelchair P- Point (X_{wc}) less than 200 mm (± 5 mm)	PASS 122 mm
	Was the horizontal movement of the dummy knee (X_{knee}) less than 375 mm (± 5 mm)	PASS 297 mm
	Was the horizontal movement of the dummy head (X_{head}) less than 650 mm (± 5 mm)	PASS 422 mm
b).	Was the ratio $X_{knee}/X_{wc} > 1.1:1$	PASS 2.4:1
c).	Not Measured	
	Did the batteries of powered wheelchairs, or their surrogate parts:-	
	i). move outside of the wheelchair footprint	PASS
	ii). move into the wheelchair user's space	PASS
5.2.2	Post Test	
a).	Did the wheelchair remain upright on the test platform Did the ATD remain in a seated posture in the test wheelchair with a torso angle less than 45°	PASS
b).	Did the wheelchair securement points show visible signs of material failure	PASS
c).	Did any components of a mass greater than 100g become detached from the wheelchair	PASS
d).	Did any occupant contactable components fragment or separate with an edge of less than 2mm	PASS
e).	Did any primary load carrying components of the wheelchair show any visible signs of failure	PASS
f).	Did any 'tilt in space' locking mechanisms show signs of failure	PASS
g).	Was the ATD released from the wheelchair without the use of tools	PASS
h).	Was the wheelchair released from the restraint system without the use of tools	PASS
i).	Was the average decrease of H-Point height relative to the wheelchair platform less than 20% of the pre-test height.	PASS
Has the wheelchair satisfied the Dynamic Test requirements of ISO/FDIS 7176/19 of 7th July 2008		PASS