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March 18 2002

Beteckning / *Reference*
MKp P201541

Sida / *Page*
1 (3)

Crash test according to ISO-7176-19 and ISO-10542 (One appendix)

Assignment

Crash testing of wheelchair and locking device according to ISO-7176-19 and ISO-10542.

Test object

Wheelchair	Wheeler with armed seat back.
Locking system	UNWIN-WWR/ATF/K/R & WWR/HD/ATF/K/R.
Dummy	Hybrid III 5%, mass 50 kg.

Date of arrival

The test object arrived at SP on 18 March 2002. The test objects have been selected by the client without SP's assistance. The test results showed in this report refer only to the tested objects.

Date of testing

The test was performed on March 18, 2002.

Measuring

The deceleration was measured by two accelerometers mounted on the trolley. The test was filmed with a high-velocity camera (1000 frames a second). The measurement uncertainty when determining the deceleration was better than $\pm 5\%$ ($g = 9.81 \text{ m/s}^2$).

Results

Test

Velocity: 50.5km/h

Retardation distance: 640 mm

Retardation pulse according to acceleration curves in appendix.

Locking device with wheelchair model Wheeler and Hybrid III 5% crash test dummy.

The locking device withstands the test without remarks. The seat back of the wheelchair was bent back 7° at the rebound of the dummy. The movement of the dummy is approved according to specification in ISO-7176-19. No other fractures or apparent deformations were noted on the wheelchair or anchorage points. The system fulfil the requirements according to ISO-10542 and ISO-7176-19.



Before test



After test

SP Swedish National Testing and Research Institute
Mechanics



Lars-Göran Nilsson
Technical Manager



Mikael Bynander
Technical Officer

Appendices

Appendix Retardation pulses

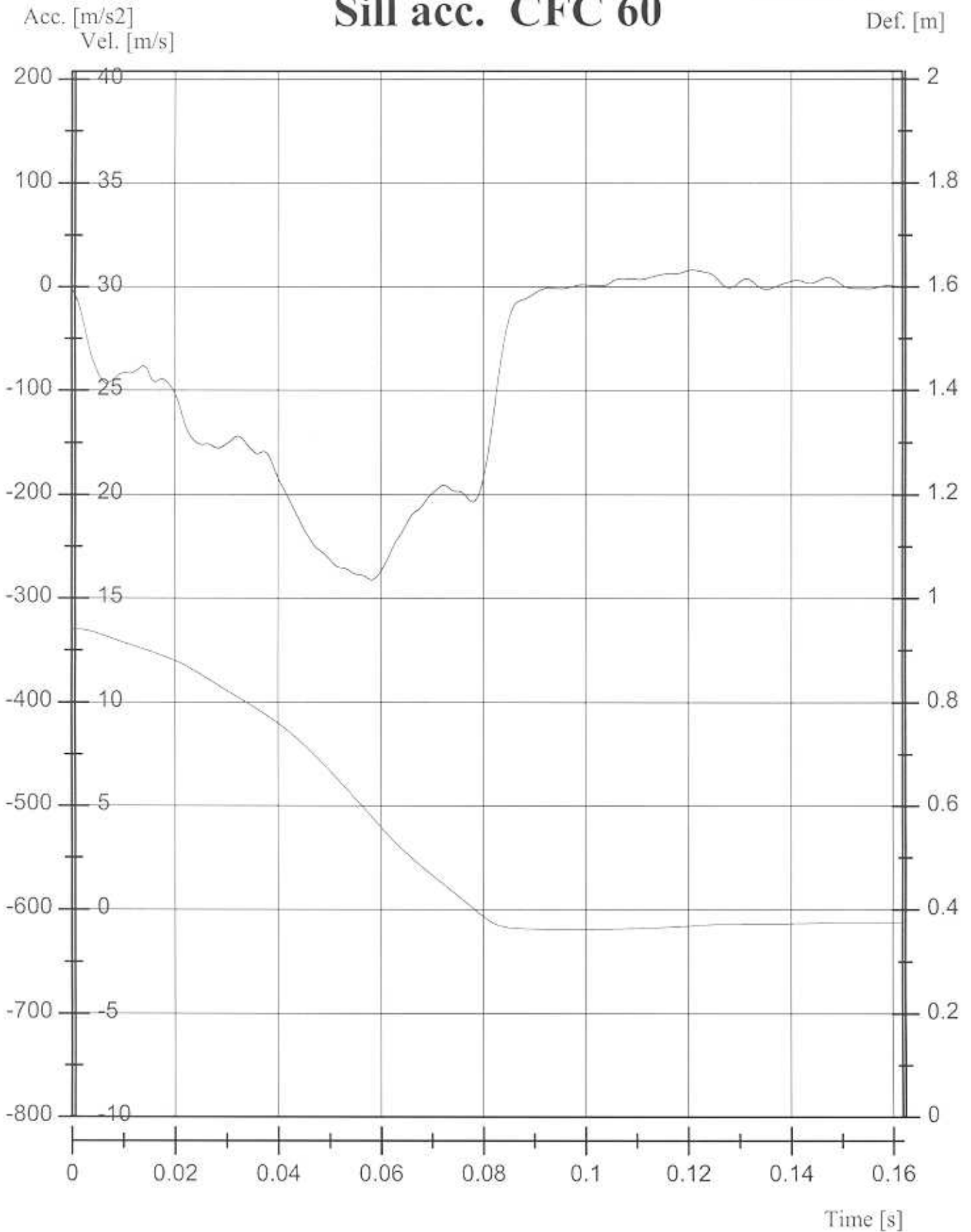


Invacare
wheeler 60KG förstärkt rygg
020318-2

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	max	min	
Acc:	16	-282	[m/s ²]
Veloc.:	13.6	-0.9	[m/s]
Deform.:	6.18	0.00	[m]

Sill acc. CFC 60





Invacare
wheeler 60KG förstärkt rygg
020318-2

P201541

	max	min	
Acc:	18	-269	[m/s ²]
Veloc.:	13.6	-1.1	[m/s]
Deform.:	6.19	0.00	[m]

