

TEST CERTIFICATE

Issued by: Medical Devices Laboratory (BAV)
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Mr A Lynch – General Manager

Mr M Rand – Technical Manager

Signature

A handwritten signature in black ink, appearing to be 'M. Rand', written over the printed name 'Mr M Rand – Technical Manager'.

1 **CLIENT:** Advanced Vehicle Concepts **DATE ITEM RECEIVED:** 19 March 2007
c/o AMC Ltd
7 Stadium Way
Craddock Road Industrial Estate
Luton
Beds LU4 0JF **DATE OF TEST:** 21-22 March 2007

2 **ITEM:** Adult electrically propelled scooter

DESCRIPTION:

Manufacturer: Advanced Vehicle Concepts

Model: Quingo

Serial no: AE70100001

Features:

Frame: Welded box section frame

Seat: Captain seat with headrest and armrests hinged at the rear

Rear drive wheels: Split hub nominally 125mm dia fitted with pneumatic tyre marked 260 x 85

Motor: Single motor mounted to rear transverse axle and gear box

Front steering wheels: Steering tiller directly mounted on single central front wheel with split hub and tyre as per rear wheels. The central wheel is linked to a pair of smaller stabilizer wheels, 105mm dia hub fitted with solid tyres marked 7 x 1¾. The wheels are mounted on a yoke that pivots about a point immediately behind the front wheel. The linkage connecting the two wheels to the large central wheel is such that it only moves the outer wheel when the steering centre wheel is moved off centre

3 TEST: ISO 7176-2: 2001 DYNAMIC STABILITY TEST – comprising tests to evaluate the level of dynamic stability measured as follows:

Observed dynamic response		Score
No tip	At least one lifting wheel remains on the test plane.	3
Transient tip	All lifting wheels lose contact, then drop back onto the test plane, whether or not any anti-tip devices contact the test plane.	2
Stuck on anti-tip device ^a	All lifting wheels lift off, the wheelchair anti-tip device(s) contacts the test plane, and the wheelchair remains stuck on the anti-tip device(s).	1
Full tip	The wheelchair tips completely over (90° or more from its original orientation) unless caught by a restraining device or testing personnel for test purposes.	0
Test not possible	This does not indicate a specific dynamic response. The test could not be carried out for the reasons indicated.	X

^aWhen determining whether the wheelchair is “stuck” on the anti-tip device this implies that the wheelchair occupant could not easily restore the wheelchair to the upright position without assistance while remaining seated in the scooter.

LOAD: 136kg comprising human tester with supplementary weights.

SET UP: Controller set by manufacturer to standard performance characteristics. Components specified in ISO 7176-2 with adjustable position set to provide least stability in the direction relevant to direction of each test.

4.3 DYNAMIC STABILITY IN LATERAL DIRECTIONS

4.3.1 Turning on slope

TEST	Stability score				Comments
	0°	3°	6°	10°	
Turning on a slope - 180° from standing start facing down hill	3	3	3	3	Slight understeer but no tip

4.3.2 Turning on level

TEST	Result	Comments
Turning in a circle at maximum speed (minimum diameter)	2.14 metres	
Turning suddenly at maximum speed without full tip or becoming stuck on anti-tip	3	Slight understeer but no tip

4.4 DYNAMIC STABILITY AT STEPS

4.4.1 Rearward

TEST	Kerb-climbing devices	Stability score				Comments
		Step height				
		12mm	25mm	50mm	75mm	
Travelling forward up a step transition from a standing start	No kerb-climbing devices fitted	3	3	3	3	75mm step added at request of manufacturer
Travelling backward down a step transition from a standing start	N/A	3	3	3	3	Anti-tip wheels were removed before testing