

Submitted by the expert from CI

FOR SAFER CARS

EURO NCAP

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LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère du Développement durable
et des Infrastructures











Generalitat de Catalunya
Government of Catalonia









Euro NCAP's Test Campaign on Heavy Quadricycles

- L7e's are seen as a convenient, economical means of Transport
 - Road Legal
 - No driver license needed
 - Alternative to small city cars and motorcycles

- No stringent safety tests apply

	Make and Model	Max Speed	Engine	Weight
 	<p>Renault Twizy</p>	<p>80 km/h</p>	<p>Electric</p>	<p>474 kg</p>
 	<p>ClubCar Villager 2+2 LSV</p>	<p>35 km/h</p>	<p>Electric</p>	<p>541 kg</p>
 	<p>Tazzari Zero</p>	<p>100 km/h</p>	<p>Electric</p>	<p>542 kg</p>
 	<p>Ligier IXO JS Line</p>	<p>70 km/h</p>	<p>Petrol</p>	<p>465 kg</p>

Safety Equipment

	Frontal		Airbag	Side	ESC
	Seatbelt			Airbag	
	Pretensioner	Load Limiter			
 	✗	✗	✓	✗	✗
 	✗	✗	✗	✗	✗
 	✗	✗	✗	✗	✗
 	✗	✗	✗	✗	✗

■ Frontal Impact

- FWDB
- 50 km/h
- HIII-50M dummy

■ Side Impact

- ECE R95 MDB
- 50 km/h
- ES-II dummy

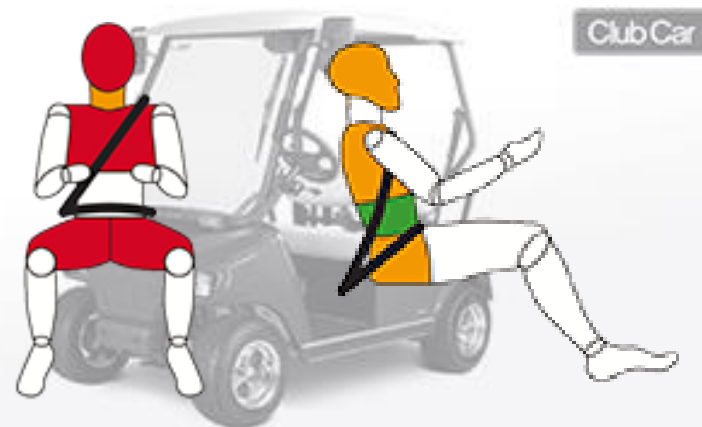


Test Results

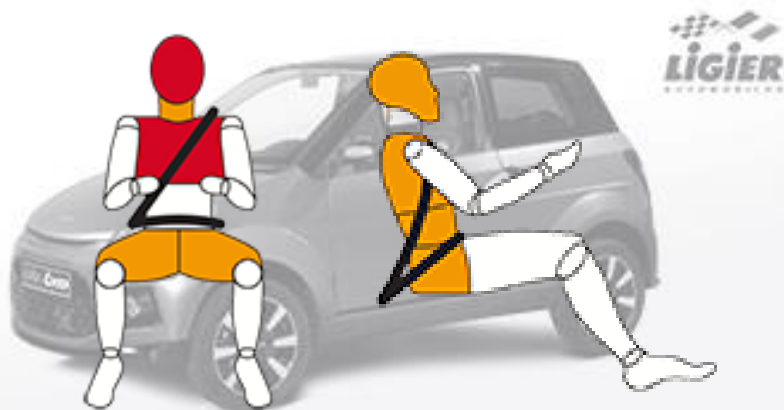
Renault Twizy



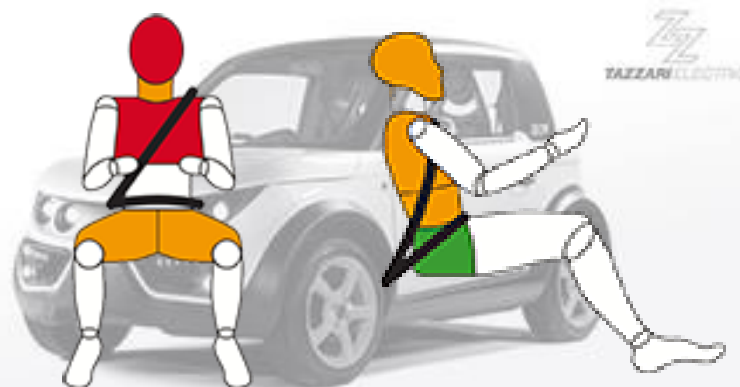
Club Car Villager



Ligier IXO



Tazzari Zero



Renault Twizy



Frontal Impact

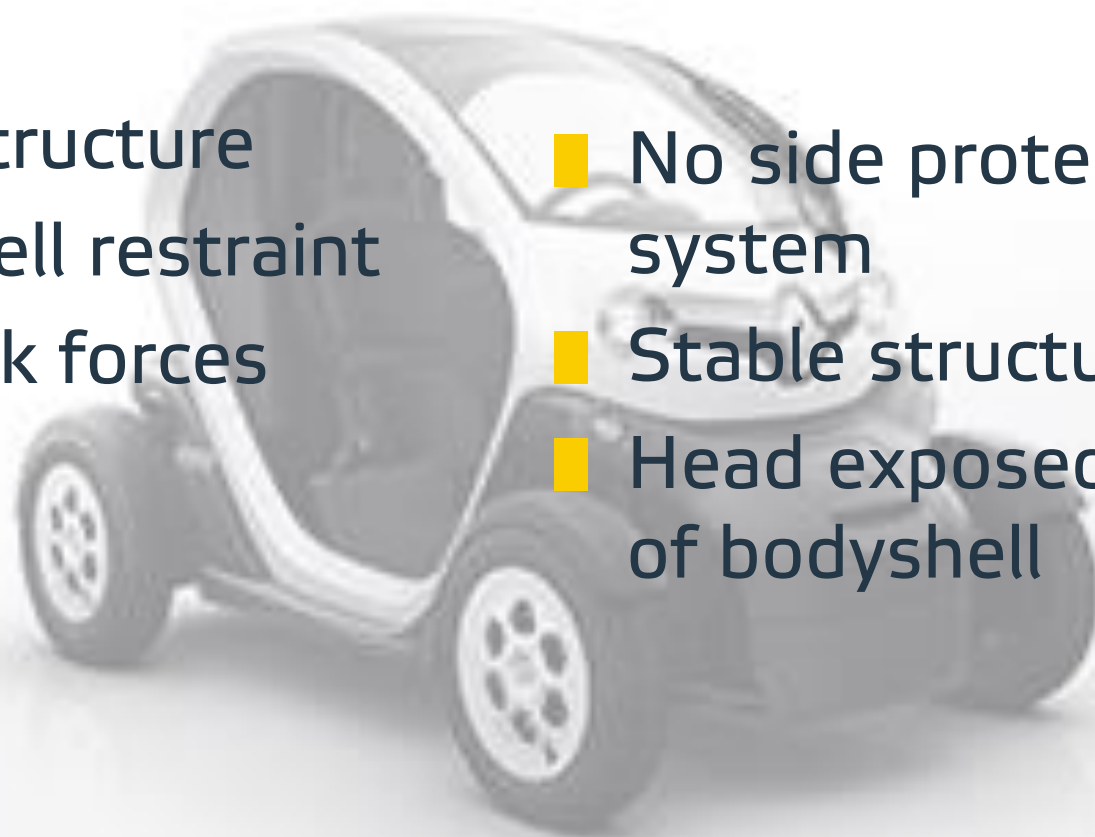
(6 points of 16)

- Stable structure
- Driver well restraint
- High neck forces

Side Impact

(7 points of 16)

- No side protection system
- Stable structure
- Head exposed outside of bodyshell



Tazzari Zero



Frontal Impact

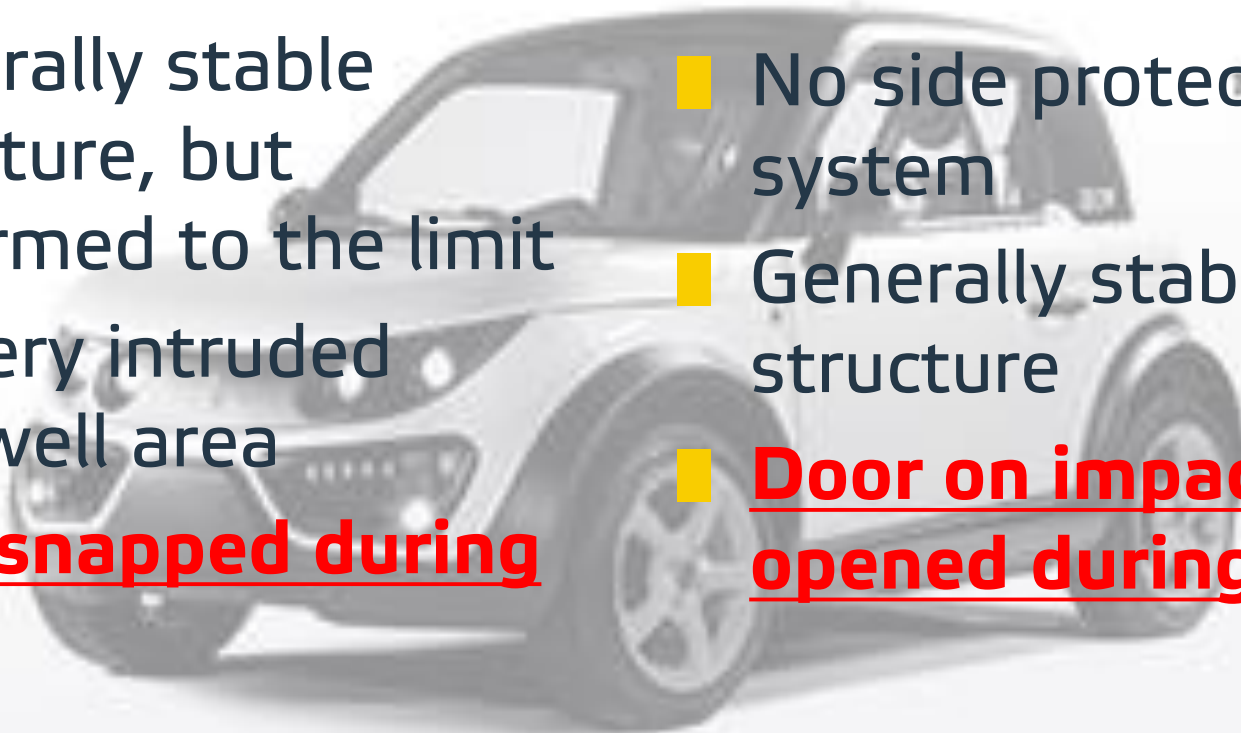
(4 points of 16)

- Generally stable structure, but deformed to the limit
- Battery intruded footwell area
- Belt snapped during test

Side Impact

(8 points of 16)

- No side protection system
- Generally stable structure
- Door on impact side opened during impact



Club Car Villager 2+2 LSV



Club Car Villager 2+2 LSV

Frontal Impact

(2 points of 16)

- Structure collapsed
- Steering wheel intrusion >500mm
- High risk of fatal injury levels recorded

Side Impact

(9 points of 16)

- No protection at all
- Driver directly contacted the MDB
- Seat detached



Club Car

Ligier IXO JS-line



img# 05 Rate 1000

Frontal Impact

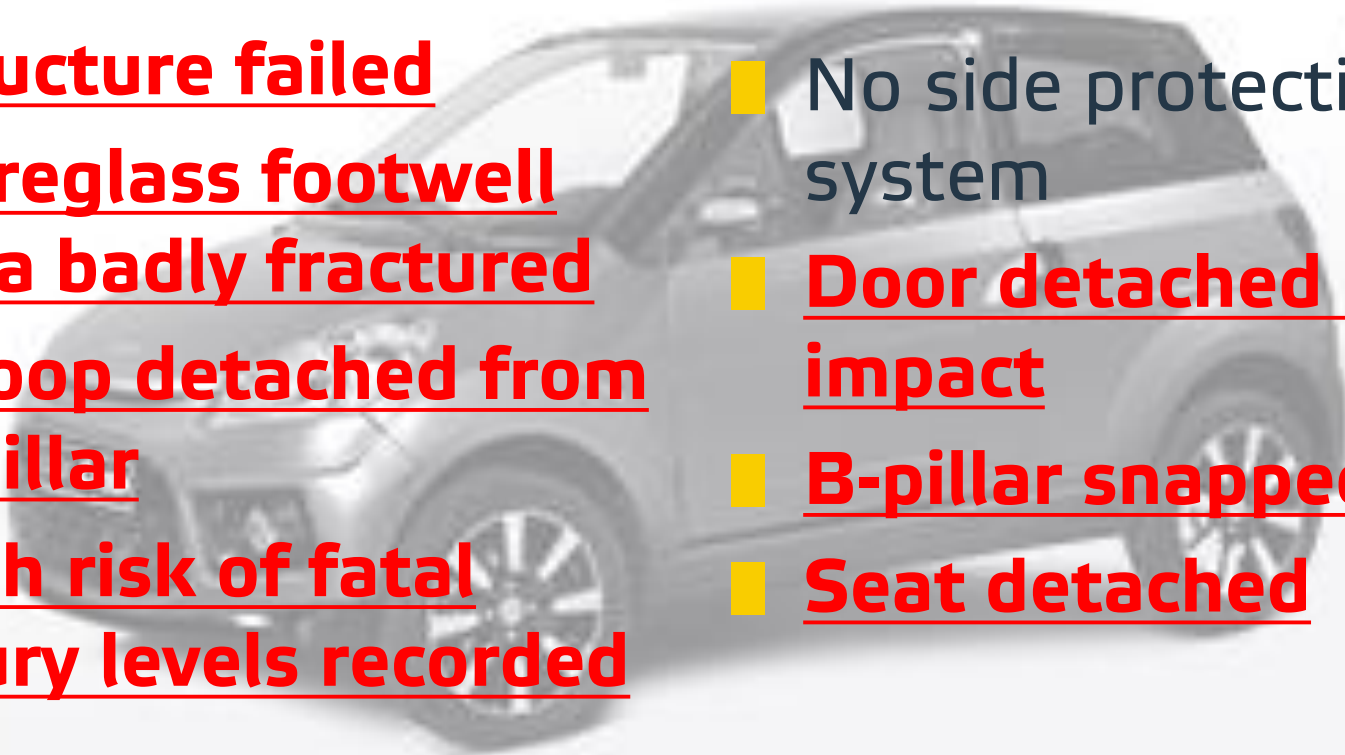
(2 points of 16)

- Structure failed
- Fibreglass footwell area badly fractured
- D-loop detached from B-pillar
- High risk of fatal injury levels recorded

Side Impact

(8 points of 16)

- No side protection system
- Door detached during impact
- B-pillar snapped
- Seat detached



- **Safety levels of tested L7e's significantly lower than that of cars**
- Restraint systems in Tazzari and Ligier failed dramatically
- The stable but stiff Twizy showed dangerously high dummy readings

Thank you!

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